

**Wednesday
March 20, 2013
12:00 PM–6:00 PM**

Seminar 01 12:00 PM–6:00 PM 1001

PROBLEM-SOLVING THERAPY FOR DEPRESSION COMORBID WITH MEDICAL ILLNESS

Arthur M. Nezu, PhD^{1,2} and Christine M. Nezu, PhD^{1,2}

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Depression is a major public health problem, particularly when comorbid with a chronic medical illness, such as heart disease, cancer, and diabetes. Its consequences can be severe—for example, major depression, comorbid with a medical illness, increases the odds of mortality within a 1-year period 2.6 times greater as compared to nondepressed medical patients. Problem-Solving Therapy (PST) is an evidenced-based intervention, based on research identifying social problem solving (SPS) to be an important mediator between stressful life events, such as chronic illness and depression. The overarching treatment goal of PST is to foster adoption and implementation of adaptive problem-solving attitudes and behaviors as a means of effectively minimizing the negative effects of stress, including those associated with chronic illness. More specifically, PST is geared to increase optimism, improve emotional regulation, and foster successful resolution of stressful problems. Both qualitative and meta-analytic reviews of the PST outcome literature strongly support its efficacy for the treatment of depression across multiple populations including depressed medical patients. The two presenters are co-developers of this approach.

This seminar will provide participants with (a) an overview of the conceptual and empirical underpinnings of the problem-solving model of depression upon which PST is predicated, and (b) clinical guidelines to conduct PST for a variety of medical patient populations. In addition to lectures, we will demonstrate various PST intervention strategies, engage workshop participants in relevant role-plays, and provide consultations regarding how to apply PST to medical patients with concomitant depression.

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Seminar 02 12:00 PM–6:00 PM 1002

NIH GRANT WRITING SEMINAR FOR EARLY CAREER RESEARCHERS

Wendy Nilsen, PhD,¹ Susan Czajkowski, PhD,¹ Michael Stirratt, PhD,¹ Stacey Fitzsimmons, PhD,¹ Heather Patrick, PhD,¹ Jane Simoni, PhD,⁴ Francis Keefe, PhD³ and Michaela Kiernan, PhD²

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This seminar will provide investigators who are new to the National Institutes of Health (NIH) grant application process with information and advice on writing a successful application for NIH funding. The format will include didactic presentations, question and answer sessions, a “mock” review, guidance on interpreting summary statements, and small group discussion. NIH scientists who oversee programs of research will describe current funding opportunities, grant mechanisms, policies, procedures, and steps in the grant submission process. An NIH review officer will discuss review procedures and considerations, and senior investigators will provide their perspectives on writing a successful application.

Ample time will be provided for questions regarding programmatic, review and grantsmanship aspects of the NIH funding process. In addition, experiential and small-group activities will deepen participants’ knowledge of the grant writing process and provide more tailored information and feedback. A “mock” review session will be conducted to demonstrate the roles and interactions among various participants in a study section, including the NIH review officer, review group Chair and assigned reviewers. Participants will also be asked to submit in advance a 1–2 page synopsis of the research aims, hypotheses, and methods for an application they are considering submitting, and/or specific questions they may have regarding the grant writing and review process. These will be discussed in small groups led by NIH staff and senior investigators, allowing participants to receive detailed feedback and advice to enhance the quality of their future grant submissions.

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Seminar 03 12:00 PM–6:00 PM 1003

APPLYING INTEGRATIVE DATA ANALYTIC METHODS TO POPULATION-LEVEL CROSS-SECTIONAL SURVEY DATA

Richard P. Moser, PhD,¹ Sana Naveed, MPH,¹ Benmei Liu, PhD,¹ Mandi Yu, PhD,¹ Lila F. Rutten, MPH, PhD,² Kelly Blake, ScD¹ and William Riley, PhD¹

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Integrative data analysis (IDA) is a general term for a set of analytic techniques derived from combining or linking independent data sets together and analyzing them as a complete set. This is different from meta-analysis in that one analyzes the actual data in IDA, not the statistical summaries of those data. IDA is a cost-effective way to do science and has the potential to move areas of science forward rapidly by building a cumulative knowledge base. It is an extremely topical issue given the unprecedented access to data that is now afforded to all researchers through cyberinfrastructure (i.e., internet-based research environments), and a push from the Federal government to make data more accessible.

This seminar will focus on applying IDA to nationally-representative survey data. Merging and analyzing these types of data allows researchers to answer questions that cannot be answered with any one data set and contribute to a cumulative knowledge base. This seminar will provide a general overview of the pertinent issues involved with IDA, demonstrate several applied guided examples utilizing data from multiple iterations of the Health Information National Trends Survey (HINTS)—including HINTS Puerto Rico and other nationally-representative survey data— and discuss Federal funding opportunities to support IDA methodology. Extensive notes will be distributed to attendees— including statistical code and related output— with the goal of helping them to do the same or similar analyses.

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Seminar 04 12:00 PM–6:00 PM 1004

MINDFULNESS-BASED EATING AWARENESS TRAINING (MB-EAT): THEORY AND PRACTICES

Jean L. Kristeller, PhD

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Mindfulness approaches to treating overeating and obesity offer substantial promise, as supported to date in three completed NIH trials. This seminar will introduce the conceptual background, research evidence and treatment components of a mindfulness meditation-based intervention used effectively with individuals with compulsive eating problems, significant weight issues, and diabetes. MB-EAT draws on scientific knowledge of eating regulation, including hunger and satiety mechanisms, melding this with the principles of meditation practice. MB-EAT is designed to assist individuals to become more aware of food choice, the experience of eating, and ways to suspend reactivity and re-engage wisdom. Mindfulness appears to act by rapidly promoting self-awareness, internalization of control and self-acceptance in individuals with eating issues.

Our research to date suggests that individuals can bring compulsive overeating under control, and that improvement is associated directly with degree of mindfulness meditation practice. An overview of the treatment components will be presented, along with experiential material related to increasing experiences of improved self-regulation. Portions of a video of participants' experiences will be shared.

Experiential work will include selected guided meditations for the seminar participants to experience. Mindfulness exercises using actual food will be used, in addition to other eating and general meditation exercises. This introductory workshop is intended for practitioners with a range of backgrounds.

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Wednesday
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Seminar 05 12:00 PM–2:45 PM 1005

INTRODUCTION TO ITEM RESPONSE THEORY (IRT) AND ITS APPLICATIONS FOR QUESTIONNAIRE DESIGN AND EVALUATION IN BEHAVIORAL MEDICINE

Bryce B. Reeve, PhD^{1,2} and Angela Stover, Doctoral Student^{1,2}¹University of North Carolina-Chapel Hill, Chapel Hill, NC and ²Lineberger Comprehensive Cancer Center, Chapel Hill, NC

There is a great need in behavioral medicine research to develop instruments that accurately measure a person's health status with minimal response burden. This need for psychometrically sound and clinically meaningful measures calls for better analytical tools beyond the methods available from traditional measurement theory. Applications of item response theory (IRT) modeling have increased considerably because of its utility for instrument development and evaluation, assessment of differential item functioning (DIF) in subgroups, instrument linking, and computerized adaptive testing.

The IRT framework encompasses a group of models that examine the relationship, in probabilistic terms, between a person's response to a survey question and his/her standing on a behavioral medicine construct such as depression or self-efficacy. Differential item functioning (DIF) involves detection of items behaving differently in subgroups after controlling for the level of the measured construct. IRT and DIF information allows instrument developers to develop reliable and efficient behavioral measures tailored for an individual or group.

This introductory seminar will discuss the basics of IRT models and applications of these models to improve behavioral medicine measurement. Illustrations will be used throughout the presentation that focus on measuring key behavioral health domains in different disease and healthy populations. The NIH Patient-Reported Outcomes Measurement Information System (PROMIS) initiative will be discussed for its relevance for assessing patient-reported outcomes using modern psychometric methods, employing technology to better understand behavioral health, and enhancing clinicians' capabilities to deliver patient-centered medicine.

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Seminar 06 12:00 PM–2:45 PM 1006

AN END TO BRILLIANT AND IRRELEVANT RESEARCH AND PRACTICE: INTEGRATING BEHAVIORAL MEDICINE RESEARCH INTO THE PATIENT CENTERED MEDICAL HOME

Rodger Kessler, PhD ABPP

Family Medicine, University of Vermont College of Medicine, Burlington, VT

There is a brilliant research literature demonstrating the efficacy of psychological and behavioral interventions in response to medical presentations. Such research is made irrelevant by its lack of knowledge or use in on the ground medical practice. There is an equally brilliant implementation of models of non single diagnosis specific care integrating behavioral health clinicians into primary care offices. Such efforts are made irrelevant by lack of effectiveness and cost data and lack of use of evidence based treatments in such settings. The Patient Centered Medical Home (PCMH) is seen as the locus of evidence supported whole person care, with particular attention to lifestyle modification and medical, particularly chronic medical conditions. However recent data suggests that a minority of NCQA patient centered medical homes organizationally and clinically respond to behavioral health and health behavior have evidence based protocols for lifestyle and health behavior change. After this discussion we will review the content and findings from an evidence supported clinical and research program which moves past brilliant and irrelevant towards research and practice integrated into the core of panel based PCMH care. It is supported by an integrated electronic health record that produces behavioral screening which generates point of service provider decision support and quality improvement data for research and evaluation purposes. The presentation will report outcomes in excess of previously reported implementation science literature. We will present progress on development of an integrated health risk appraisal integrating lifestyle assessment measure that will ultimately supplant behavioral health screening and be associated with protocolized data driven behavioral health services.

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Wednesday
March 20, 2013
3:15 PM–6:00 PM

Seminar 07 3:15 PM–6:00 PM 1007

CLINICAL SEMINAR IN BEHAVIORAL ACTIVATION TREATMENT FOR DEPRESSION WITH COMORBID HEALTH CONDITIONS

Kristin Schneider,¹ Jessica Magidson, MA,^{2,3} Matthew C. Whited, PhD⁴ and Sherry L. Pagoto, PhD⁵

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Depression is comorbid with many health conditions, such as obesity, HIV/AIDS and smoking. Brief Behavioral Activation Treatment for Depression (BATD) is an evidence-based therapy that is suited for use in medical populations given its straightforward, time efficient nature and ease of application to comorbid conditions. BATD is based on behavioral principles and targets contextual factors that affect behavior. BATD utilizes a values-based approach to help patients identify and increase the rate of healthy behaviors that bring them into contact with positive reinforcers. BATD uses behavioral strategies such as self-monitoring, values assessment, activity ranking, activity planning and behavioral contracts and has been adapted to treat depression when comorbid with conditions such as obesity, diabetes, HIV/AIDS, smoking and substance abuse. This clinical seminar provides instruction on administering BATD in the context of a comorbid health condition for the purpose of treating depression, increasing healthy behaviors (e.g., healthy diet, medication adherence) and decreasing unhealthy behaviors (e.g., smoking, overeating). Mobile applications available in the open market have been developed to assist in the execution of some of the behavioral strategies and may be of use in the clinical setting. We will teach the basic principles of BATD, review the efficacy literature, provide session-by-session instructions and discuss mobile technology that may be leveraged in the delivery of BATD. We will also outline strategies for adapting BATD for application to a variety of comorbid health conditions with practical recommendations on addressing barriers and integrating BATD into other treatments. Participants will receive a treatment manual and reference list. All skill levels are welcome.

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Seminar 08 3:15 PM–6:00 PM 1008

PROMOTING PATIENT ENGAGEMENT IN MEDICAL CARE AMONG PATIENTS WITH COMORBID PSYCHIATRIC AND MEDICAL CONDITIONS: USING ANTIVIRAL THERAPY FOR HEPATITIS C AS A MODEL

Megan Oser, PhD,¹ Maggie Chariter, PsyD, MPH² and Donna Evon, PhD³

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This seminar will provide a trans-diagnostic model grounded in cognitive-behavioral theory for promoting patient engagement in medical care, with a particular emphasis on populations with psychiatric and substance use comorbidities. We rely on hepatitis C patients undergoing evaluation for antiviral therapy as a model and will describe how this approach extends to a range of patient populations presenting for medical care. As our aim is to foster a patient-centered approach for successful medical care engagement despite co-occurring psychiatric/substance use problems, we will demonstrate the myriad of pathways in which malleable psychological processes are implicated within poor patient engagement in medical care (e.g., illness uncertainty, treatment-related burdens). We will cover the nuts-and-bolts of how to promote patient engagement in medical treatment at different stages of care from entry into care, medical care decision-making, treatment initiation and persistence. Informed by both second and third wave cognitive-behavioral therapies, we will provide concrete and specific techniques for conducting pre-treatment assessments, guiding patient decision-making, following patients during medical treatment with brief evaluation and intervention, and implementing group interventions. This seminar is intended for clinicians involved with medical patients in primary or specialty care settings struggling with 'difficult-to-tolerate' medical treatments necessitating both acceptance and behavioral change. Seminar participants will learn assessment strategies and intervention techniques consistent with this model and engage in a discussion about how to tailor to a range of patients.

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Seminar 09 3:15 PM–6:00 PM 1009

BASIC ANDROID PROGRAMMING FOR BEHAVIORAL SCIENTISTS

Yuelin Li, PhD

Psychiatry and Behavioral Sciences, Memorial Sloan-Kettering Cancer Center, New York, NY

This workshop covers basic Java programming on cellular phones running the Android operating system.

My plan is to cover practical programming skills for a real-time data capture app on a cellular phone running Android version 2.3.5 and up. We will go over, step by step, how to program an app to wake up automatically when you power on an Android device, schedule assessments and prompt a user to respond at specific times. After the scheduled assessment the app returns to a background thread until the next assessment. Time permitting, we will also briefly touch on more advanced topics such as data upload safeguards and encryption.

Prior knowledge on the following is helpful but not required: 1) Java programming (because Java is the language of Android); 2) Linux/Unix (because Android is Linux-based); and 3) web (because you may want to upload data to a Cloud server). But do not feel intimidated by these technical terms. There are many free resources online that will help you learn just about any computer programming language.

This workshop is in response to the increasing popularity of mobile technology in behavioral research, in intervention delivery and real-time assessments. The main challenge, of course, is to program the mobile app. This workshop covers the basics in Android app development and deployment. We will not cover iPhone/iPad programming. However, some of the concepts (e.g., a "service" that runs in the background) are also useful for the iOS platform. Workshop participants should come with a laptop installed with the Android SDK (various tools to help you build the app), Eclipse IDE (an Integrated Development Environment that has an editor, debugger, emulator and other useful tools). A smart phone or a tablet with an microSD card and Android OS version >=2.3.5 is also helpful (so that you can see how your app works on a real device). Eclipse and Android SDK installation can be found by an internet search engine or on my website at <http://idecide.mskcc.org>. Additional materials for this workshop will also be posted there when available.

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Wednesday
March 20, 2013
6:30 PM–8:00 PM

Poster Session A

A-001

THE MODERATING ROLE OF ACCULTURATION ON COLLECTIVIST ATTITUDES AND
 CANCER SCREENING VARIABLES AMONG VIETNAMESE WOMEN

Anh B. Nguyen, PhD¹ and Treenette T. Clark, PhD, LCSW, LICSW²¹National Cancer Institute, Bethesda, MD and ²University of North Carolina, Chapel Hill, NC

Vietnamese American women engage in low rates of breast and cervical cancer screening, even in comparison to women in other ethnic minority populations. The aim of the study was to examine socio-demographic correlates of breast and cervical cancer screening attitude, self-efficacy, and behavior. In addition, we were interested in examining the influence of cultural factors on cancer-screening variables; specifically, whether the culturally relevant roles of Vietnamese women were linked to screening behavior. In the study, 111 Vietnamese women were recruited from two faith-based communities. All participants completed measures on demographic traits, cultural measures (acculturation and collectivism), and cancer-screening variables (e.g., self-efficacy for screening, attitudes towards screening, and previous receipt of a clinical breast exam or Pap test). Results indicated that having health insurance, higher levels of educational attainment, having had children, and increasing age were associated with more positive outcomes. Acculturation significantly predicted previous receipt of a Pap test. However, we found an unexpected effect: acculturation was negatively associated with positive attitudes towards breast cancer screening though this relationship was found only for women low in collectivistic orientation but not for women high in collectivistic orientation. The study's findings highlight important implications. Because collectivist women are expected to be primary caretakers of home, children, and husband, understanding inherent cultural values is important as these values may influence a person's motivation for maintaining health. The research findings suggest that health behaviors are influenced by factors other than structural barriers to healthcare.

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A-002

HOW ARE THEY DOING? PSYCHOSOCIAL ADJUSTMENT IN LONG-TERM COLON
 CANCER SURVIVORS

Kellie M. Martens, Bachelor of Arts, Betsy Risendal, PhD, Patrick Blatchford, PhD, Monica McNulty, MS, Jan Lowery, PhD, MPH and Kristin Kilbourn, PhD, MPH

University of Colorado Denver, Denver, CO

BACKGROUND: Colon cancer is the third most common cancer and 74 % of colon cancer survivors live at least 5 years after diagnosis. Current literature suggests variability in the long-term adjustment to survivorship. **PURPOSE:** The purpose of this study is to examine and compare levels of distress (depression and fear of recurrence) and quality of life in long-term colon cancer survivors and a group of matched controls. **METHODS:** Participants, recruited from the National Cancer Institute sponsored Colon Cancer Family Registry, included 346 long-term survivors of colon cancer and 391 matched controls with no cancer history. A computer-aided telephone interview was used to give the Functional Assessment of Chronic Illness Therapy (FACTT), the Center for Epidemiologic Studies Depression Scale (CES-D) and a Fear of Recurrence measure. Multivariate regression analysis was used to examine the relationship between these variables. **RESULTS:** The mean age of participants was 62.4 years (SD=12.2); 53 % female, 74 % white, 77 % married, 82 % completed some college, 65 % had private insurance and 34 % reported at least one non-cancer comorbidity. A mean of 10 years (SD=2.4) had passed since survivors' diagnoses. Survivors' and controls' levels of depression were comparable after controlling for all demographics listed above ($p=0.99$) and there was no significant difference between those who scored above the clinical cut-off for depression (14 % of cases versus 10 % of controls). Among all participants, depression was negatively associated with quality of life after controlling for the same covariates ($p<.0001$). In survivors, fear of recurrence was significantly associated with depression ($p<.0001$) and quality of life ($p<.0001$). **CONCLUSION:** Although survivors' and controls' report similar levels of depression, participants with higher levels of depression reported significantly lower quality of life. Survivors with higher fear of recurrence may be at-risk for higher levels of depression and lower quality of life. **FUNDING:** Colon Cancer Family Registry; American Cancer Society

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A-003

FORMATIVE RESEARCH EXPLORING FOLLOW-UP CARE IN COLORECTAL
 CANCER SURVIVORS

Katherine R. Sterba, PhD, MPH,¹ Jane Zapka, ScD,¹ Marvella Ford, PhD,¹ Dana Burshell, MPH, CPH¹ and Nancy LaPelle, PhD²¹Medical University of South Carolina, Charleston, SC and ²University of Massachusetts Medical School, Worcester, MA

Post-treatment surveillance of colorectal cancer survivors is essential, but some survivors do not receive guideline-recommended care. A better understanding of factors associated with adherence is needed. To develop a comprehensive survey evaluating adherence and to guide intervention development, we conducted formative research (focus groups, key informant interviews, cognitive pretesting) to explore colorectal cancer survivors' experiences. Survivors who completed treatment within 2 years ($N=22$, 57 % female, 24 % African American) completed interviews. Guided by a social ecological framework, we used content analysis and descriptive statistics to define individual, health care provider, and practice-level factors important to care. Findings guided survey design and cognitive pre-testing of the survey followed ($N=16$). Despite varied clinical characteristics and lack of knowledge about their cancer (e.g., 32 % were unaware of cancer stage), participants reported good health status. Most survivors (64 %) visited >2 follow-up care specialists but perceptions varied about which doctor was the main provider and few endorsed primary care physicians. Individual (fear of test results, spirituality), provider (communication, trust), and practice (reminder systems, care coordination) factors were key adherence facilitators. Survivors had varied interpretations of guidelines, doctors' advice, and terms (e.g., end of treatment, survivorship, follow-up). Representative recruitment from clinics with varied practice patterns was challenging. This research highlighted multiple measurement challenges and the complexity of follow-up care from patients' perspectives. The variability in survivors' terminology and care experiences demonstrated challenges to developing surveillance care measures with strong psychometric properties. Item development required acknowledging various shared care models, distinguishing between constructs of worry, needs and barriers and using survivors' terminology and timelines to assess care behaviors.

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A-004

UNMET NEEDS AND QUALITY OF LIFE IN BREAST CANCER SURVIVORS AT THE
 END OF TREATMENT

Katherine R. Sterba, PhD, MPH,¹ Regina Franco, MSN, ANP-C,² Jennifer Harper, MD,¹ James Bearden, MD,² Rebecca Patten, BS,¹ Stacey Kindall, MPH² and Kent Armeson, MS¹¹Medical University of South Carolina, Charleston, SC and ²Spartanburg Regional Healthcare System, Spartanburg, SC

Understanding the unmet needs faced by breast cancer survivors at the end of treatment may provide direction for interventions to ease survivors' transitions to the post-treatment phase. We explored relationships between unmet needs and demographic and clinical factors at the end of treatment and tested whether the number of unmet needs after treatment was associated with survivors' future quality-of-life. As part of a pilot intervention study, we enrolled women at two southeastern cancer centers with stage I-III breast cancer 2 weeks before completing radiation treatment ($N=90$; average age=55, 30 % African American). Participants completed questionnaires assessing unmet needs and a variety of sociodemographic, clinical, and psychosocial factors. We used descriptive statistics and linear regression to examine associations between number of unmet needs and demographic and clinical factors and the relationship between unmet needs at baseline and quality-of-life at 2-months. Women were experiencing an average of 6.5 (SD=6.7) unmet needs at the end of treatment and number of needs was inversely associated with age ($p=.02$) and education level ($p=.005$) and positively associated with ratings of symptom severity ($p<.0001$) and interference ($p=0.004$). Number of needs at the end of treatment was inversely associated with breast cancer-specific ($B=-.39$, $p<.0001$) and overall ($B=-.95$, $p<.0001$) quality-of-life at follow-up, controlling for initial levels of quality-of-life, intervention group, change in needs over time, and demographic and clinical factors. Breast cancer survivors in our study experienced a wide range of needs at the end of treatment. Results highlight potential demographic and symptom risk factors for increased needs and justify future research to identify strategies and resources to meet survivors' needs at the end of treatment. Ultimately, providing breast cancer survivors with the tools and resources they need at the end of treatment may improve quality of life over time.

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A-005

FATALISTIC CANCER BELIEFS AND TRUST IN HEALTH INFORMATION AMONG RURAL AND URBAN ADULTS IN THE UNITED STATES

Christie Befort, PhD, Niaman Nazir, MD, Kimberly Engelman, PhD and Won Choi, PhD

Preventive Medicine and Public Health, University of Kansas Medical Center, Kansas City, KS

Fatalistic beliefs about cancer prevention can be a significant deterrent to one's likelihood of engaging in cancer prevention behaviors. Education is key to combating fatalistic beliefs, and lower education and less access to cancer information among rural residents may influence their level of cancer fatalism. The purpose of the present study was to examine rural-urban differences in fatalistic cancer beliefs, cancer information source preferences, and trust in health information. Data were drawn from the 2007 Health Information National Trends Survey (HINTS) conducted by the National Cancer Institute using a complex stratified sampling design to obtain a nationally representative sample of adults age 18 and older (n=1,482 rural and 6,192 urban). Results showed that rural residents were more likely to endorse fatalistic cancer beliefs than urban residents (62 % vs. 54 %, $p < 0.001$) even after controlling for significant demographic correlates including education, age, and race/ethnicity. Compared to urban residents who reported a stronger preference for the internet as their primary cancer information source, rural residents were more likely to rely on print material and healthcare providers for cancer information. Healthcare providers remained the most trusted source of health information for both rural and urban residents. Overall trust in health information did not differ between rural and urban residents and was not a significant correlate of fatalistic cancer beliefs. Future educational work to communicate relevant and accurate cancer prevention information to rural residents should consider not only information access but also rural culture and fatalistic perspectives.

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A-006

THE ROLE OF SPECIFIC AND CORE DYSFUNCTIONAL BELIEFS IN BREAST CANCER RADIOTHERAPY PATIENTS' FATIGUE

Emily Brackman, Bachelor of Arts,¹ Madalina Sucala, PhD,^{1,2} Julie Schnur, P¹ and Guy Montgomery, PhD¹

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Background: Most breast cancer patients suffer from fatigue during radiotherapy, which drastically reduces their quality of life. Fatigue catastrophizing, a situation-specific dysfunctional belief, contributes to fatigue in breast cancer patients. Fatigue catastrophizing may stem from underlying core dysfunctional beliefs. To date, no study has investigated the relationships between fatigue catastrophizing, core dysfunctional beliefs, and fatigue in breast cancer radiotherapy patients. The goal of the study is to examine these relationships in the breast cancer radiotherapy setting.

Methods: Seventy-eight patients participated (mean age=56.3, SD=10.5; 71 % white; 47.4 % married; 69.2 % >college education, 35.9 % previous chemotherapy, 66.7 % lumpectomy; 33.3 % mastectomy). Participants completed questionnaires on: demographic and medical variables, fatigue catastrophizing (FCS), core dysfunctional beliefs (GABS-SF), and fatigue (FACIT-F, VAS Fatigue, POMS-SV).

Results: Fatigue catastrophizing was significantly related to fatigue, $\beta = .41$, $p < .001$. None of the core beliefs (e.g., need for comfort, self-downing) were significantly related to fatigue (all p 's > .17). As for core dysfunctional beliefs and fatigue catastrophizing, results indicated that need for comfort was the only core dysfunctional belief significantly related to fatigue catastrophizing, $\beta = .27$, $p < .05$, all other p 's > .20.

Discussion: Consistent with cognitive behavioral theory and previous data, higher levels of fatigue catastrophizing were associated with higher levels of fatigue, and fatigue catastrophizing explained a significant amount of variance in fatigue, 21 %. Results also indicated that the greater participants' need for comfort, the higher their levels of fatigue catastrophizing. This study is among the first to investigate fatigue catastrophizing in the context of core dysfunctional beliefs. The study supports fatigue catastrophizing as a target for interventions to reduce cancer-related fatigue.

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A-007

DISTRESS, SPECIFIC PROBLEMS AND SUPPORTIVE CARE NEEDS AFTER AUTOLOGOUS OR ALLOGENEIC STEM CELL TRANSPLANTATION FOR HEMATOLOGICAL MALIGNANCIES: A STUDY UP TO 5 YEARS AFTER THE DIAGNOSIS

Annemarie M. Braamse, MSc,^{1,2} Berno van Meijel, PhD,² Otto Visser, MD,³ Peter C. Huijgens, MD, PhD,³ Aartjan T. Beekman, MD, PhD¹ and Joost Dekker, PhD^{4,1}

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Aim. To assess the prevalence of distress, specific problems and supportive care needs up to 5 years after autologous or allogeneic stem cell transplantation (auto-SCT, allo-SCT) in patients with hematological malignancies.

Method. Patients who over a period of 5 years had been diagnosed with a hematological malignancy and treated with auto- or allo-SCT, were invited to complete the Distress thermometer and the Problem List, thereby identifying practical, family, cognitive-emotional, spiritual/religious, and physical problems. Patients indicated the presence of (met or unmet) supportive care needs with regard to these problems.

Results. 248 (123 allo-SCT and 125 auto-SCT) out of 348 surviving patients (response rate 71 %) participated in the study. Scores on the Distress Thermometer decreased over the years in allo-SCT patients and showed an inverted U shape in auto-SCT patients. Both allo- and auto-SCT patients mainly reported problems in the physical and cognitive-emotional domain. Problems with being out of shape / condition, fatigue, muscle strength, and tingling in hands and feet were most frequently reported, directly after the transplantation as well as at longer follow up. Unmet supportive care needs were present in a minority of patients.

Conclusion. Patients continue to experience problems up to 5 years after auto- or allo-SCT. Our results support a focus of supportive care on problems in the physical and cognitive-emotional domain, in the months after transplantation as well as in the long term.

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A-008

ASSESSMENT OF MAMMOGRAPHY EXPERIENCES AND SATISFACTION AMONG AMERICAN INDIAN/ALASKA NATIVE WOMEN

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Background: Breast cancer (BCA) is the most common cancer among American Indian/Alaska Native (AI/AN) women. Although BCA mortality rates in 2003–2007 were lower for AI/AN women than for non-Hispanic white (NHW) women, mortality rates between 1999–2006 declined among non-Hispanic white women, but not among AI/AN women. American Indian/Alaska Native (AI/AN) women are diagnosed with more advanced BCA, and have lower survival rates than NHW women.

Objectives: The goal of our study was to use an ethnographic approach to identify and understand the mammography experiences and satisfaction among AI/AN women.

Methods: Nine focus groups were held to assess mammography experiences and satisfaction among AI/AN women from rural (N=15) and urban (N=38) populations, with a mammogram in last three years. Questions were asked about patient-provider communication, test scheduling, results, and follow-up. Transcripts from each stratum were independently open-coded by three coders using iterative constant comparative methods. Thematic statements were drafted, reviewed, and revised until agreement was reached. Ten percent (10 %) of the transcripts were cross-checked for inter-coder reliability. Emic/cultural and etic/scientific reviewers generated summary statements, used by the team to write final themes.

Results: Technologist attitude and perceived competence were primary factors in mammography satisfaction regardless of rural or urban location. Distance to mammography facility, cost, prejudice, and time constraints were identified as barriers to screening. Women living near Indian Health Service (IHS) facilities preferred IHS over mainstream providers.

Conclusions: Interventions to enhance professionalism, improve competence, and increase cultural awareness of mammogram technologists could increase satisfaction and compliance with routine BCA screening.

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A-009

ASSOCIATIONS BETWEEN DISPOSITIONAL MINDFULNESS, INSOMNIA, SLEEP QUALITY AND DYSFUNCTIONAL SLEEP BELIEFS IN POST-TREATMENT CANCER PATIENTS

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Objectives. A cancer diagnosis can be stressful regardless of prognosis, resulting in disproportionate rates of sleep and mood disorders. Dispositional mindfulness, or the tendency to be more mindful in daily life, has been associated with better psychological functioning and reduced overall distress. It has yet to be established what impact dispositional mindfulness may have on insomnia severity in cancer patients, prior to any type of mindfulness training.

Design. This cross-sectional study examined the associations between facets of mindfulness, insomnia severity, sleep quality, dysfunctional beliefs and attitudes about sleep, symptoms of stress and mood disturbance.

Methods. Participants (N=111) were adults who had been previously treated for cancer and currently met diagnostic criteria for insomnia. Separate hierarchical regressions were performed to explore the impact of mindfulness facets (acting with awareness, non-judging and non-reacting) on levels of insomnia severity, sleep quality and dysfunctional beliefs and attitudes about sleep. Symptoms of stress and mood disturbance were considered covariates in all of the regression equations.

Results. Higher levels of acting with awareness, non-judging and non-reacting were associated with better sleep and psychological outcomes. Symptoms of stress and mood disturbance explained 24 %, 31 % and 18 % of the variance in insomnia severity, sleep quality and dysfunctional sleep beliefs, respectively. Dispositional mindfulness was not predictive of fewer sleep disturbances.

Conclusions. It is important to address negative mood states and symptoms of stress in individuals with insomnia as predictors of sleep disturbance. Considering the demonstrated associations between lower levels of certain mindfulness facets and sleep difficulty, it is possible that individuals with higher levels of dispositional mindfulness would be less likely to develop sleeping problems.

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A-010

AVAILABILITY OF ONLINE HEALTH INFORMATION FOR OVARIAN CANCER SYMPTOMS, PATIENT-PROVIDER COMMUNICATION, AND ONLINE SUPPORT GROUPS: A CONTENT ANALYSIS OF HEALTH INFORMATION ON OVARIAN CANCER WEBSITES

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An increasing number of adults are seeking health information online, especially in regards to cancer information and support. As ovarian cancer symptoms are often difficult to identify and the disease is frequently misdiagnosed, it is important that accurate information is available for women. This research aimed to identify the number of websites that included information for women about ovarian cancer.

A keyword search using "ovarian cancer" on three popular search engines identified the top 20 websites. After removal of duplicate and irrelevant websites, a content analysis was completed to identify the information about ovarian cancer symptoms and the ambiguity of symptoms, when to see a physician about symptoms, what questions to ask their physician, information about social support, and where to find support information. Frequencies were calculated to determine the amount of information provided on the websites.

A total of 92.6 % (n=25) of the websites had ovarian cancer symptom information. However, only 22 websites explained the ambiguity of symptoms and 18 websites addressed when to see a physician. In addition, only 22.2 % (n=6) of the websites included questions to ask a physician, 29.6 % (n=8) included information about social support, and 22.2 % (n=6) included information about where to find support groups.

Currently, ovarian cancer websites do not provide adequate information to help women increase their knowledge about ovarian cancer symptoms. These websites also lack sufficient information to help women increase patient-provider communication and social support within the context of ovarian cancer. Future research will help inform how websites can be improved to provide information that will assist women with making informed decisions regarding ovarian cancer.

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A-011

TRADITIONAL STORYTELLING EMBRACES TECHNOLOGY

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Cancer is the leading cause of death for Alaska Native people. Alaska's village-based Community Health Workers (CHWs) have requested cancer information for themselves and the people in their community. Purpose: This project explored combining the tradition of storytelling articulated through computer technology as a tool for Alaska's CHWs to create and share cancer information. Methods: Digital storytelling was included in seven, 5-day cancer education courses (May 2009-May 2012), in which 67 CHWs created a personal 2–3 minute cancer-related digital story. Topics included cancer screening exams, tobacco cessation, survivorship, loss, grief and end-of-life comfort care, and self-care for themselves as patient providers. All CHW course participants completed a pre-course needs assessment and end-of-course written evaluation. In July 2012, contact information was available for 48 CHW participants of whom 24 completed an internet survey. Results: On written post-course evaluations participants reported that digital storytelling supported their learning (67/67), was a culturally respectful way to share health messages (67/67), and increased their confidence to share cancer education with their community (64/66). CHWs' digital stories reflected cultural perspectives about cancer, values and language. Up to 3 years post-course, all CHW (24/24) survey respondents reported they had shared their story. Of note, 23/24 CHWs reported personal behavior change including having recommended screening exams (10), quitting tobacco (1), decreasing tobacco use (1), increasing physical activity (10), and eating healthier (12). Conclusions: CHWs reported that digital stories were a culturally respectful way to share cancer-related messages. Digital storytelling integrated the power of the media into the voices and hands of CHWs to increase their cancer knowledge, provide a tool to facilitate patient and community cancer conversations, and promote cancer awareness and wellness. "The [digital] stories come from our community - the voices and faces of our own people - so it's more powerful - has more of an impact - it touches people's hearts."

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A-012

APPLYING THE COGNITIVE BEHAVIORAL MODEL OF HEALTH ANXIETY TO FEAR OF CANCER RECURRENCE IN BREAST CANCER SURVIVORS

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Although there is a growing body of research examining fear of cancer recurrence (FCR) and its psychological sequelae, few studies have applied theoretical models to predict which survivors will report greater FCR. The aim of this study was to determine the utility of the cognitive behavioral model (CBM) of health anxiety in predicting FCR in women who completed breast cancer treatment. We hypothesized that greater perceived risk of recurrence, worse perceived consequences of a recurrence, lower coping self-efficacy, and more engagement in reassurance-seeking behaviors would be associated with greater FCR. The sample comprised women who finished treatment for stage 0-IIIa breast cancer between 6 and 36 months previously. Participants completed the Fear of Cancer Recurrence Inventory; the Severity (SV), Psychological Distress (PD), and Functioning Impairments (FI) subscales were selected as clinically meaningful outcomes. Other patient-reported measures included perceived risk and perceived consequences of breast cancer recurrence, reassurance seeking behaviors, and the Cancer Behavior Inventory to assess coping self-efficacy. FCR was correlated with all CBM variables in univariate analyses ($p < .01$). Multiple regression analyses with forward selection evaluated concurrent relations of CBM variables. Worse severity of FCR (SV subscale) was associated with greater perceived risk, greater severity, and lower coping self-efficacy. Greater psychological distress from FCR (PD subscale) was associated with greater perceived severity, lower coping self-efficacy, and more reassurance seeking. Greater impairment in functioning (FI subscale) was predicted by greater perceived severity and lower coping self-efficacy. The CBM was partially supported, with coping self-efficacy and perceived severity of a recurrence consistently predicting greater FCR. Increasing coping self-efficacy and providing patients with more accurate perceptions about cancer recurrence may be helpful interventions for FCR.

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A-013**COGNITIVE FUNCTIONING IN MEN RECEIVING ANDROGEN DEPRIVATION THERAPY FOR PROSTATE CANCER: A SYSTEMATIC REVIEW AND META-ANALYSIS**

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BACKGROUND: As survival rates for cancer improve, patients and providers are increasingly interested in the long-term quality of life associated with treatments, particularly for cognitive outcomes. Prior research examining the impact of androgen deprivation therapy (ADT) for prostate cancer has found inconsistent relationships between ADT and performance on various cognitive tasks. The purpose of this study was to systematically review the existing literature and determine the effect of ADT across seven cognitive domains using meta-analysis.

METHODS: A preliminary search of published studies from PubMed, PsycInfo, and CINAHL yielded 672 articles reviewed by independent pairs of raters. Meta-analysis was conducted on 14 studies with 403 prostate cancer patients on ADT. Neuropsychological tests were categorized into seven cognitive domains: attention/working memory, executive functioning, language ability, verbal memory, visual memory, visuospatial ability, and visuomotor ability. **RESULTS:** Separate meta-analyses were run for each cognitive domain with pairwise comparisons between three groups: cancer patient controls, non-cancer controls, and pre-ADT baselines. For the mixed effects model, ADT patients performed significantly worse than controls with no history of cancer on visuomotor tasks ($g=-1.07, p<.05$). There were no significant differences between pre- and post-ADT or cancer patient control group comparisons ($ps>.05$). No significant effect sizes were observed on the other six cognitive domains ($ps>.05$).

CONCLUSIONS: Prostate cancer patients who received ADT performed significantly worse on the visuomotor domain compared to non-cancer control groups. These findings are consistent with the known effects of testosterone on cognitive functioning in healthy men. Knowledge of the cognitive effects of ADT on cognition may help patients and providers better understand the possible impact of ADT on overall quality of life.

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A-014**CLINICAL AND PSYCHOLOGICAL CORRELATES OF PERCEIVED COGNITION IN HEMATOLOGIC PATIENTS PRIOR TO ALLOGENEIC HEMATOPOIETIC CELL TRANSPLANT**

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BACKGROUND: Existing literature suggests that cognitive impairment is common prior to hematopoietic cell transplant (HCT) for hematologic disease. Nevertheless, data are scarce regarding patients' perceptions of their cognitive functioning before HCT. The goals of the current study were to: 1) describe perceived cognition prior to HCT, and 2) examine demographic, clinical, and psychological correlates of perceived cognition.

METHODS: Prior to HCT, 125 patients (40 % female; mean age 52 years, range 22–75) were assessed. Participants completed a measure of perceived cognitive functioning across both global and specific cognitive domains (Everyday Cognition scale; ECoG), depressive symptoms (Center for Epidemiological Studies-Depression scale; CES-D), and fatigue (Fatigue Symptom Inventory; FSI). Participants also provided demographic information and clinical variables were extracted from medical records.

RESULTS: Among ECoG subscales, patients endorsed more problems with memory ($M=1.59, SD=0.68$) than other areas of cognitive function ($p<.05$). Perceived impairments in language ($M=1.40, SD=0.55$) and divided attention ($M=1.36, SD=0.58$) were also common. Greater perceived impairments in nearly all domains of cognitive function were correlated with greater fatigue severity, fatigue disruptiveness, and depressive symptoms ($ps<0.05$). Poorer performance status (Karnofsky scale rating) was correlated with greater perceived memory problems and lower overall satisfaction with cognitive functioning ($ps<.05$). The number of previous chemotherapy regimens was not associated with perceived cognition.

CONCLUSIONS: Perceived cognitive impairments are common prior to HCT and overlap with fatigue and depressive symptomatology. Future research should determine whether behavioral strategies to manage cognitive impairments are effective in HCT patients.

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A-015**PSYCHOSOCIAL FACTORS IN NON-ADHERENCE TO CANCER THERAPY**

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A burgeoning set of studies have examined the psychosocial factors associated with adherence to medical regimens. Yet, treatment breaks from cancer therapy that may hinder treatment progression and exacerbate side-effects have been less empirically studied as a form of non-adherence. Depending on cancer site, treatment type, and a variety of other factors, gaps in cancer treatment have been reported to range from 14 % to 75 % (Doggrell, 2011; Tamawski et al., 2002) and are associated with premature mortality, increased rates of distant metastasis, and prolonged treatment (Hershman et al., 2011; Russo et al., 2008). This study examined the relationship between psychosocial factors related to adherence and treatment breaks during cancer therapy. In this cross-sectional study, 144 participants who were receiving or recently received treatment for cancer completed a questionnaire that assessed psychosocial factors related to adherence, as well as the presence of treatment breaks from cancer therapy. Data were analyzed with t-tests, descriptive statistics, X2tests, and a binary logistic regression. Results indicated that higher levels of depression, treatment-related severity and concerns related to cancer conditions and cancer therapy, and poor health provider - patient communication were all independently significantly related to non-adherence. Results also revealed that type of cancer was related to adherence status. Our full model was not statistically significant; however, two predictors (symptoms of depression and perceived stress) made unique statistical contributions to the model. Recent attention on the importance of identifying psychosocial factors related to non-adherence to cancer therapy is a sign that future studies need to examine the unique and complex experiences of cancer patients that affect their likelihood to complete treatment as directed. Accurate identification of patients susceptible to treatment breaks could serve as the basis for the development of interventions aimed at reducing this form of non-adherence to treatment and improve treatment outcome.

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A-016**SUPPORT SERVICE USE AMONG LUNG CANCER PATIENTS**

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Lung cancer patients have shown higher rates of distress than other cancer populations. Despite their high prevalence of distress, studies have found that lung and other cancer patients underuse mental health services. Scarce research, however, has investigated correlates of mental health and complementary and alternative medicine (CAM) service use among lung cancer patients. In this study, we examined the prevalence of mental health and CAM service use (e.g., yoga, meditation, massage) and its demographic and medical correlates among lung cancer patients.

Lung cancer patients ($N=165$) were recruited from two medical centers at least 3 weeks after their first visit to the oncology clinic. A total of 165 consenting patients (51 % male, 80 % Caucasian, mean age=63 years) completed this cross-sectional phone survey. The majority of patients (57 %) had late stage lung cancer, and the average time since diagnosis was 1.6 years ($SD=1.8$). Patients completed the Hospital Anxiety and Depression Scale (HADS) and reported mental health and CAM service use. Medical data were collected via chart review.

Twenty-eight percent of patients (47/165) reported current mental health service use. Furthermore, 37 % of patients (17/46) meeting clinical cutoffs for anxiety or depressive symptoms on the HADS used these services. Women were more likely than men to use mental health services ($\chi^2(1, N=165)=7.48, p<.01$). Additionally, older age was related to higher rates of mental health service use ($r=.20, p<.05$). Higher levels of anxiety were associated with a lower likelihood of mental health service use ($r=-.21, p<.05$). Other demographic variables and medical factors did not predict mental health service use. In addition, 21 % of patients (34/165) reported current CAM use. Levels of anxiety and depressive symptoms and demographic and medical factors did not predict use of these services. Findings suggest that lung cancer patients underuse mental health services and that patients with greater need for services (i.e., higher anxiety) may be less likely to receive them.

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A-017

RELIABILITY AND VALIDITY OF THE PATIENT ASSESSMENT OF MAMMOGRAPHY SERVICES (PAMS)

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Purpose: Mammography satisfaction leads to more routine use of breast cancer screening. Mammography-specific satisfaction assessments are scarcely available. This study aimed to develop and validate a patient satisfaction instrument for use by mammography providers. **Methods:** The Patient Assessment of Mammography Services (PAMS) (21-items) and the PAMS-Short form (7-items) were derived from a large-scale mammography satisfaction focus group study and a resultant uncut version of the PAMS. Both forms cover satisfaction with the exam, comfort and convenience, technologist, and results reporting with the addition of scheduling on the short form. The PAMS was administered to screening mammography patients in 40 Midwestern mammography facilities and confirmatory factor analysis (CFA) was conducted to assess the instrument's reliability and validity.

Results: Female screening mammography patients (N=2,950) completed the original uncut PAMS-Long Form. The PAMS was adapted from the PAMS-Long Form after an initial CFA revealed inadequate standardized item reliability for two items. We then estimated the derived four-factor PAMS as well as a one-factor PAMS-Short Form model with only summary marker items. Results of PAMS and the PAMS-Short Form CFA models show excellent fit to the data (CFI=0.93, RMSEA=0.06 and CFI=0.92, RMSEA=0.04, respectively). Reliability is substantial for the PAMS and each of its domains and the entire PAMS-Short Form.

Conclusions: The PAMS is well suited for use by mammography facilities, both large and small. Consistent use of the PAMS or Short Form version can lead to practice improvements that bolster mammography satisfaction. Increased patient satisfaction has the propensity to lead to more routine use of screening mammography, early cancer detection, and reduced disease-related morbidity and mortality.

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A-018

HEALTH STATUS AND FAMILY HISTORY OF CANCER AS PREDICTORS OF CANCER WORRY IN HISPANIC AMERICANS: IS GENDER A MODERATOR?

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Cancer worry has been shown to impact cancer screening and, in turn, early detection. Understanding cancer worry in the Hispanic American (HA) community is of particular interest, as early detection rates in this population are low relative to other ethnic groups. Demographic variables that may impact cancer worry, both independently and interactively, include self-reported health status, family cancer history, and gender. Few studies, however, have investigated these relationships in the HA community. The present study examined health status and family history as predictors of cancer worry in HAs, and the moderating role of gender on these relationships. A community-based sample (N=436) consisting of 217 men and 219 women completed survey packets. Cancer worry was measured by the Cancer Worry Scale, with higher scores denoting more worry. Health status was measured by the first question of the Health-Related Quality of Life (HRQL-4) measure (i.e., Would you say that your health is: excellent=1 to poor=5). Family history of cancer was measured by a single question (i.e., Have any of your brothers, sisters, parents, children or other close family members ever had cancer?). Hierarchical linear regression predicting cancer worry included: age and highest level of education in the first step; family history, health status, and gender in the second step; the two-way interactions among all step two predictors in the third step. Results revealed significant main effects of health status and age (p<.05). Contrary to the literature, gender did not moderate the relationships between family history and cancer worry, or health status and cancer worry, though it did trend toward significance as an independent predictor (p=.08). Based on these findings, researchers should consider the potential influence of self-reported health status when targeting cancer screening behaviors in the HA community.

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A-019

HEALTH LITERACY AND CANCER WORRY AMONG ENGLISH- AND SPANISH-SPEAKING HISPANIC AMERICANS

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Health literacy, the ability to read and understand information needed to make health-related decisions, has been associated with numerous health outcomes, such as adherence to cancer screening recommendations. Language preference, a proxy for acculturation, has also been associated with such adherence. For example, Hispanic American (HA) women who prefer English (versus Spanish), suggesting higher levels of acculturation, are more likely to have been screened for cervical cancer. Additionally, cancer worry has been associated with cancer screening behaviors. This study investigated the associations among self-reported health literacy, language preference, and cancer worry in HAs. A community-based sample of HA men and women (N=851) completed the Cancer Worry Scale, a brief self-report questionnaire that assesses level of cancer worry and its impact on daily functioning. Self-reported health literacy was assessed using a single validated question regarding confidence completing medical forms. Hierarchical linear regression was used to examine if health literacy was a significant predictor of cancer worry, and if language preference moderated this relationship. After controlling for age, a significant main effect (p<.05) was found for health literacy as a predictor of cancer worry, whereby lower health literacy was associated with greater cancer worry. The interaction of health literacy and language preference was not significant. These findings suggest that health literacy is related to cancer worry in HAs; however, English and/or Spanish language preference was not associated with cancer worry. Therefore, interventions aimed at reducing cancer worry, and thus influencing cancer screening behavior, should consider HAs with low health literacy as a high-risk group independently of their acculturation status.

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A-020

TRAIT MINDFULNESS IS ASSOCIATED WITH LESS SEVERE PHYSICAL SYMPTOMS AND IMPROVED PSYCHOLOGICAL ADJUSTMENT IN YOUNGER BREAST CANCER SURVIVORS

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Mindfulness-based interventions have been shown to reduce stress and depressive symptoms in chronically ill populations, including cancer patients and survivors. However, links between trait mindfulness and cancer-related symptoms have not been well characterized, though many breast cancer survivors experience physical symptoms well into survivorship. Thus, we examined the relationship between trait mindfulness, fatigue, sleep quality, relevant physical symptoms (e.g. hot flashes, forgetfulness) in a sample of younger breast cancer survivors who were participating in a mindfulness intervention. We also examined the relationship between mindfulness and indicators of positive psychological adjustment including self-compassion, positive affect, and peace/meaning. We examined pre-intervention data from 71 women (mean age=47.12, SD=7.75), who were diagnosed with early-stage premenopausal breast cancer and completed treatment within the past five years (mean time since diagnosis=4.05, SD=2.36). Women completed a 40-item measure of trait mindfulness (Five Facet Mindfulness Questionnaire, mean=122.2, SD=21.8), physical symptom inventories (FSI, PSQI, BCPT symptom checklist) and indicators of psychological adjustment (PCS, CESD, SCS, FACIT, PANAS). After controlling for age, time since diagnosis, and treatment variables, radiation, chemotherapy, and current endocrine therapy status, trait mindfulness was associated with less fatigue B=-.03 p<.01, better sleep quality, B=-.06 p<.01, and fewer breast cancer specific physical symptoms, B=-.01 p<.01. Trait mindfulness was associated with fewer depressive symptoms, B=-.20 p<.001, lower levels of perceived stress, B=-.13 p<.001, consistent with previous research and positively associated with self-compassion, B=.02 p<.001, peace and meaning, B=.08 p<.001, and positive affect, B=.13 p<.001. These findings suggest that having higher levels of trait mindfulness is associated with less severe physical symptoms and positive psychological adjustment.

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A-021

FROM RESEARCH TO SERVICE DELIVERY: AN INNOVATIVE PATIENT NAVIGATION NETWORK

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INTRODUCTION: Patient navigation is a patient-centered intervention to improve access to care across the cancer continuum. The core role of the navigator is to eliminate barriers to care. **METHODS:** Leveraging findings from the NCI Patient Navigation Research Program, in 2010 the GW Cancer Institute (GWCI) launched the Citywide Patient Navigation Network (CPNN) with the DC Department of Health, the DC Cancer Consortium, and 40 healthcare and community sites. Demographic and barrier data was collected by 34 navigators at initial point of contact and subsequent encounters. De-identified data was tracked using unique ID codes for each patient. In 2011, CPNN focused its resources to capture aggregate demographics and barriers from 20 navigators across 22 sites. Results from Year 2 are reported here. **RESULTS:** Since inception, CPNN has navigated 4,102 patients across the cancer continuum. Of the 2,933 individuals navigated in Year 2, 62 % were uninsured or on Medicaid and 121 individuals obtained insurance through the program. Year 2 patients self-reported as 19 % male, 81 % female, .1 % transgender, 50 % African or African American, 40 % Latino and 1.8 % LGBQ. First point of contact was 48 % at outreach/screening, 24 % at adverse screening/diagnosis, and 26 % at treatment. Risk category was predominantly breast cancer (59 %) followed by cervical (12 %), colorectal (6 %) and prostate (5 %). Top barriers were social/practical support (17 %), care fragmentation (15 %), financial (14 %) and language (10 %). Program barriers included multiple changes to evaluation methods and staff turnover. Program facilitators were a core coordination node, monthly networking/training, and process improvements responsive to partner feedback. **CONCLUSION:** Navigation is an important strategy for patient-centered care. CPNN provides a critical safety net for cancer patients in the DC area that can be replicated in other urban areas and for other diseases. In Year 3, CPNN looks to launch an improved case management system, maintain navigator training and coordination, and create a policy strategy for sustainability.

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A-022

PSYCHOLOGICAL CORRELATES OF SEXUAL DYSFUNCTION IN FEMALE RECTAL AND ANAL CANCER SURVIVORS: ANALYSIS OF BASELINE INTERVENTION DATA

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Purpose: Sexual dysfunction represents a complex and multifactorial construct that affects both men and women and often deteriorates significantly after treatment for rectal and anal cancer. Despite this, it remains an understudied, underreported and undertreated issue. The current study explored the relationship between sexual functioning and psychological well-being in female survivors of anal or rectal cancer. **Method:** 70 female post-treatment anal or rectal cancer survivors were assessed as part of the current study, 41 of whom reported being sexually active at baseline. Participants were enrolled in a pilot randomized intervention trial to treat sexual dysfunction and completed measures of quality of life (QOL), sexual functioning (FSFI) and psychological well-being (BSI Dep & Anx, IES-R, Body Image). **Results:** Women enrolled in the study intervention were on average 55 years old, predominantly Caucasian (79 %), married (57 %) and a median of 5 years post-primary treatment. For sexually active women, sexual dysfunction was associated with a range of measures of psychological well-being in the hypothesized direction, most notably the Sexual/Relationship Satisfaction subscale of the FSFI (all associations $p < .01$). Further, body image, anxiety and cancer-specific post-traumatic distress were most notable in their association with domains of sexual dysfunction (all $p < .05$), while a broad measure of QOL was largely unrelated. **Conclusion:** Sexual dysfunction was consistently associated with measures of psychological well-being. The role of Sexual/Relationship Satisfaction was most notable, suggesting that attention to this domain may be critical in the development and implementation of interventions for this group of survivors. Further, results suggest that sexual functioning may require focused assessment by providers, beyond global QOL assessments.

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A-023

POSITIVE SPOUSAL SUPPORT MATTERS FOR TRAUMA SYMPTOMS AND SLEEP DISTURBANCE IN PROSTATE CANCER SURVIVORS

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Receiving a cancer diagnosis can lead to negative psychological effects including symptoms of traumatic stress. Trauma symptoms often dysregulate sleep, while sleep disturbance has been linked with negative health outcomes. Trauma and sleep disturbance associated with cancer can affect the spouse of the cancer patient and the couple's relationship, while a supportive relationship can improve mental health in prostate survivors. The impact of spousal support on trauma and sleep disturbance among prostate cancer survivors has not yet been examined. This area needs study, given high rates of trauma symptoms and difficulty disclosing health-related concerns reported by men with prostate cancer.

315 prostate cancer survivors (mean age 66, 89 % Caucasian), 265 of whom were married and 50 of whom were unmarried, completed the Impact of Events Scale (IES), Stanford Sleep Questionnaire, and a measure of positive spousal support. Overall, 13.4 % of survivors reported significant (i.e., >27 on IES) trauma symptoms and 23.2 % reported moderate or higher rates of sleep disturbance. Trauma symptoms ($t = -2.16$, $p < .01$) and sleep disturbance ($t = -3.14$, $p < .01$) were significantly lower in married than unmarried survivors. Positive spousal support was negatively associated with both trauma ($r = -.18$, $p < .01$) and sleep disturbance ($r = -.20$, $p < .05$), and inclusion of positive spousal support as a covariate rendered the relationship between marital status and both trauma and sleep disturbance non-significant ($p > .05$). These effects persisted over 2 years.

Spousal support is associated with reductions in trauma symptoms and sleep disturbance, over and above dichotomous marital status. Future research needs to explore mechanisms by which spousal support leads to improvement in trauma and sleep in this population. Bolstering spousal support could be an intervention for improving mental health in prostate cancer survivors.

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A-024

A TEST OF THE EXTENDED PARALLEL PROCESS MODEL USING A TAILORED RISK-COMMUNICATION INTERVENTION IN FAMILY MEMBERS OF COLORECTAL CANCER PATIENTS

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Witte's (1994) Extended Parallel Process Model (EPPM) posits that as a risk message increases perceptions of personal susceptibility and risk severity, individuals are motivated to change behavior to the recommended action as long as response-efficacy and self-efficacy are high. Low efficacy can increase fear, resulting in defensive actions aimed at controlling the fear rather than protective actions aimed at controlling the threat. Although this model has been used to predict other screening behaviors, to date, little is known about how the EPPM may influence colorectal cancer (CRC) screening behavior. Data from our randomized, clinician-implemented tailored-risk communication intervention study (Pengchit et al., 2012) aimed at 481 individuals at familial risk for CRC has shown an intervention effect. In this test of the EPPM, we examined perceived susceptibility, perceived severity, self- and response efficacy and intention to obtain colorectal screening in study participants. We also examined defensive actions of defensive avoidance.

Structural equation modeling analysis indicated excellent measurement model fit (all CFIs $\geq .98$) and the data fit the model reasonably well (RMSEA = .05; CFI = .93; SRMR = .073). Consistent with EPPM logic, perceived susceptibility ($p < .0001$), self- efficacy ($p = .009$) and response efficacy ($p = .016$) were significantly related to intent to screen; perceived susceptibility was significantly related to fear ($p = .001$). Also consistent with the EPPM, fear was significantly associated with defensive avoidance ($p < .0001$) but fear was not associated with self- ($p = .62$) and response ($p = .25$) efficacy.

Our prospective analysis found general support for using the EPPM for CRC screening communications; results indicated that self- and response efficacy contribute to intention to screen.

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A-025

SYSTEMATIC REVIEW OF SOCIAL MEDIA USE IN CANCER CARE

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Social media (SM) are internet-based communication channels that allow users to create, share, comment on, and modify online content. Although these channels have the potential to affect health communication, little is known about how they are used in cancer care and research. To evaluate the use and taxonomy of SM channels in cancer studies, researchers conducted a systematic review of three scholarly databases using a series of terms related to cancer and SM. They located 420 articles, 30 of which met study inclusion criteria. These articles were reviewed and coded using a data extraction form created by the authors. Studies reviewed were published between the years 1997–2011, and half of the studies described online message boards (n=15), one of the first forms of SM that are considered more conversational as opposed to experiential. Over time, researchers began focusing on the use of blogs (n=6, 20%), video-sharing sites (n=4, 13.3%), virtual worlds (n=1, 4%), social bookmarking sites (n=1, 4%), and social networking sites (n=3) in cancer communication. A majority of the studies were descriptive (n=24, 80%), and 19 (63.3%) discussed the results of content analyses of information posted on SM sites. Only one study (4%) described a SM intervention. This study points to the lag between SM channel development and use of these communication channels in cancer research. Researchers need to focus on how SM channels influence cancer communication and behaviors. Rather than exploring the type of information posted, they can critique the accuracy of health information shared on these channels. Research is also needed to explore how various populations use these channels for cancer communication. The paucity of intervention studies suggests that future research should explore how SM channels can be incorporated in cancer communication interventions aimed at behavior change.

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A-026

BOOSTER TRAINING FOR CANCER SURVIVORS AND CAREGIVERS TRAINED IN MOTIVATIONAL INTERVIEWING: A PILOT STUDY

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Introduction: Health promotion programs using Motivational Interviewing (MI) have expanded to peer-to-peer counseling interventions. A key concern with peer-based MI interventions is how best to maintain fidelity to MI among trainees. This study aimed to assess the efficacy of a six-month booster training among participants enrolled in Peer Connect, a support program that trains cancer survivors and caregivers (Guides) in MI to provide non-medical support to anyone touched by cancer (Partners). Here we report the results of the booster training.

Methods: Fifteen Guides were enrolled in the six-month booster training. Booster sessions occurred once a month following initial MI training. Sessions included guest speakers, role playing scenarios, and group discussions that emphasized MI skill reinforcement, cancer survivorship content, problem-solving and confidence-building. Guides evaluated the booster training based on eight mixed method questions (six open-ended, and two Likert scale questions) regarding quality of skill enhancement and if MI needs were met.

Results: The final analysis included 23 questionnaires. Approximately four Guides attended each booster session. Guides were primarily Caucasian (73%), female (67%), and/or breast cancer survivors (38%). Overall, Guides rated the booster training sessions favorably. Content analysis showed that role-playing scenarios and targeted content discussions were effective in meeting Guide needs, enhancing newly acquired MI skills, and building confidence with complex reflections through group camaraderie. However, Guides did note that a greater peer presence would enhance booster sessions through additional feedback.

Conclusion: A six-month booster training in motivational interviewing is efficacious for reinforcing newly learned skills among volunteer cancer survivors and caregivers. Additional studies may explore retention rates among cancer survivors trained in MI.

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A-027

PROSPECTIVE, LONGITUDINAL EVALUATION OF A SYMPTOM CLUSTER IN BREAST CANCER

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Background: Symptom (sx) cluster research expands cancer investigations beyond focus on individual sx in isolation. We conducted a prospective longitudinal study of sleep, fatigue, depression, anxiety, and perceived cognitive impairment (PCI) in patients (pts) with breast cancer undergoing chemotherapy and examined the association of this cluster on performance status (PS) and quality of life (QOL) over time.

Method: Pt reported outcome measures were administered prior to chemotherapy; cycle 4 day 1; and 6 months post time point 1. Pts were divided into 4 groups and assigned a sx cluster index (SCI) score based on the number/severity of sx reported at time point 1 (e.g. SCI 0, 1, 2, or 3–5 sx). Spearman's Rho and mixed effect models were used to describe findings.

Results: Pts (N=80) were mostly women (97.5%) with Stage II (69.0%) breast cancer, 29–71 years of age (M=49.7; SD=9.2). Scores on all measures were moderately-highly correlated across all time points (absolute values of rho=0.33 to 0.75; p<.01 for all). There were time effects for all sx, except sleep quality (non-significant trend), with most sx worsening during chemotherapy; although anxiety improved (p<.05 to <.0001). There were no significant group x time interactions; all 4 SCI groups showed a similar trajectory of sx over time. Worse PS and QoL were associated with higher SCI score over time (p<.01).

Conclusions: With the exception of anxiety, the coherence of the sx cluster was supported as associations among the severity and trajectory of these common sx were observed. Overall, pts with higher SCI score prior to chemotherapy continued to experience greater sx burden during and after chemotherapy. Early assessment and intervention addressing this sx cluster (vs. individual sx) may have a greater impact on pt PS and QoL for pts with higher SCI. Covariance among sx may indicate a shared underlying mechanism. The improved understanding of sx clusters can advance our understanding of sx biology and inform interventions.

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A-028

CHARACTERIZATION OF SYMPTOM AND DISEASE SELF-MANAGEMENT IN CANADIAN CANCER CARE: ILLNESS REPRESENTATIONS OF SENTINEL DISEASE SITES

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By 2050, it is estimated that the number of cancer survivors will surpass the number of newly diagnosed cases. Self-regulatory models highlight the importance of interpretations, coping, and appraisals of illness representations in understanding disease and symptom management. Extensive evidence in chronic non-cancer illnesses demonstrates the benefits of chronic disease self-management (CDSM), including improved coping, symptom management, and treatment adherence. CDSM programming will inevitably play an important role in cancer care as treatment effects are experienced as both acute and chronic symptoms that require active management. There is little empirical data upon which to base the widespread delivery system changes necessary to support CDSM in routine oncology practice. As part of a mixed-methods evaluation of CDSM support in Canadian cancer care, illness representations of the sentinel disease sites were examined. Breast, colorectal, and prostate cancer outpatients (N=428) completed the Brief Illness Perception Questionnaire (Brief IPQ). Overall, participants with colorectal cancer endorsed the most negative representation of cancer, followed by breast, and prostate cancer survivors, respectively (p<0.002). Implications of unique illness representations across disease sites on tailored CDSM programming are discussed within a self-regulatory framework.

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A-029

RURAL AND SMALL TOWN BREAST CANCER SURVIVORS' PROGRAMMING AND COUNSELING PREFERENCES FOR PHYSICAL ACTIVITY

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Purpose: Recent data suggests that only 35 % of rural and small town breast cancer survivors are achieving physical activity guidelines after treatment. The purpose of this study was to determine preferences for physical activity counseling and programming and barriers to program participation among a sample of rural and small town breast cancer survivors. **Methods:** Rural and small town breast cancer survivors (N=524) residing in rural and small town areas of Alberta, Canada, completed a mailed self-report survey that assessed demographic variables, physical activity, and physical activity counseling and programming preferences. **Results:** 78 % of survivors indicated they would have possibly (i.e., yes or maybe) been interested in being counseled about physical activity at the time of diagnosis, while 70 % would possibly be interested in being counseled about physical activity at this current time. Overall, 85 % of survivors felt they would possibly be able to participate in a physical activity program. Receiving chemotherapy was negatively associated with wanting to receive physical activity counseling (OR=0.58, 95 % CI, 0.39 to 0.86), physical activity program interest (OR=0.43, 95 % CI, 0.28 to 0.67), and physical activity program ability (OR=0.44, 95 % CI, 0.26 to 0.75). Preferred physical activities involved walking (51 %), flexibility and related activities (e.g., yoga, stretching) (36 %), and strength training (27 %). **Conclusions:** Rural and small town breast cancer survivors appear to be interested and able to participate in physical activity counseling and programs. Physical activity initiatives targeted to the preferences of rural and small town breast cancer survivors living in non-urban areas may be more likely to facilitate and maintain physical activity behavior.

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A-030

INVESTIGATING THE EXPERIENCES OF LAY HEALTH ADVISORS (LHAS): FACTORS THAT SUPPORT THE MOTIVATION AND RETENTION OF CANCER SURVIVORS AND LHAS IN THE NATIONAL WITNESS PROJECT

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Eliminating cancer disparities will require the dissemination and sustainability of community-based programs that increase cancer screening adherence among racially and ethnic minority populations. Community-based Lay Health Advisor (LHA) programs hold tremendous promise and have been found to be effective among African Americans. The National Witness Project (NWP) is one example of a LHA program that effectively increases breast and cervical cancer screening among African American women and continues to be disseminated nationally. Despite the success of such programs, little is known about the LHAs who are trained in their communities. Evaluation of these programs has focused on the program impact on participants who receive these services. We conducted a study among 76 African American LHAs and Role Models (RM; breast and cervical cancer survivors) from the NWP over a two year period from eight NWP sites in New York, Arkansas, Florida, Illinois, and Kansas. Participants were interviewed using mixed methods (qualitative interviews and quantitative surveys) at baseline and follow-up (12–15 months later). This research will report on the impact that being a LHA or RM has had on them personally and their communities, and factors that influence their motivation and participation in the program. Key benefits relate to a sense of empowerment, new communication, leadership, and advocacy skills, growth in social networks, and improvements in community capacity. Barriers largely relate to the sustainability of the program. Fifty percent (50 %) of the sample was cancer survivors and 40 % of the sample was inactive or participated minimally in the program at follow-up. Differences between active and inactive volunteers will be reported (e.g. levels of mistrust, knowledge, competencies), as well as factors that influenced and supported their retention.

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A-031

TESTING INVARIANCE OF MECHANISMS OF BEHAVIOR CHANGE FOR SUN PROTECTION: A STAGE INVARIANCE ANALYSIS OF PRECONTEMPLATION AND PREPARATION

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This secondary-data analysis involves the examination of important questions concerning the degree to which the mediation association between variables from the Transtheoretical Model of behavior change (TTM) is moderated by stage. In the TTM, behavior change is conceptualized as a process that unfolds through a series of stages. At each stage, different factors produce progress. A series of sun protection behavior longitudinal mediation models were compared across two of these stages: Precontemplation (N=964) and Preparation (N=463). These models included the Processes of Change (predictors at baseline), Decisional Balance -pros and cons of sun protection behavior- and self-efficacy (mediators at 6-month wave), and sun protection behavior (sun avoidance and sunscreen use; outcomes at 12-month wave). Moderation/interaction effects are important because they help determine whether mediational processes differ between specific subgroups, and they reflect how complex the relations among variables could be. Multiple-sample Structural Equation Modeling was used. An initial unconstrained analysis was tested then a following analysis assumed invariance across model parameters (cross-group equality constrains were imposed). Results showed difference between unconstrained and constrained models when the pros and self-efficacy variables were included as mediators. There were no differences when the cons were used as mediators. Relations between cognitive variables and behavioral outcomes were consistent with the theory.

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A-032

EFFECT OF MAILED BROCHURE AND TELEPHONE RECALL/REMINDER ON ADOLESCENT HPV VACCINATION

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OBJECTIVE: Assess impact of mailed brochure and telephone recall/reminders on HPV vaccine completion in adolescent females attending urban safety-net clinics

DESIGN: Randomized trial

PARTICIPANTS: Parents and unvaccinated daughters aged 11–18

INTERVENTION: We randomized parents of adolescents who had not started the HPV vaccine series and had an upcoming visit based on electronic medical record (EMR) review to receive by mail either a HPV vaccine-specific brochure (Intervention n=375) or a general brochure about recommended adolescent vaccines (Control n=365). Based on formative research, the HPV brochure focused on perceived risk, vaccine efficacy, and perceived barriers. Parents were invited to complete a survey 20 minutes before the visit. Intervention parents who completed the survey also received a telephone recall after two weeks if they declined the vaccine and telephone reminders if they initiated the series and failed to complete Dose 2 and/or 3. Up to 6 attempts were made to deliver recall/reminders. **OUTCOME:** 3-dose coverage within 12 months of randomization ascertained by EMR review

RESULTS: Among survey completers (Intervention n=164; Control n=172), about half received Dose 1 at the visit (Intervention 55 %; Control 49 %). Of those who declined the vaccine at the visit, we delivered the recall to 92 % of the Intervention parents. Among those in the Intervention group who started the series, 67 dyads needed a reminder for Dose 2 and 63 dyads needed one for Dose 3. We delivered Dose 2 reminders to 78 % and Dose 3 reminders to 60 %. Many parents had non-working numbers, which barred delivery. Follow-up is ongoing until November 2012. Among the 84 % of survey completers who finished the 12 month study period, 3-dose coverage rates were significantly higher in the Intervention vs. Control group (33.1 % vs 18.9 %, p=0.007).

CONCLUSION: Our multi-component intervention (brochure, recall, reminders) improved 3-dose HPV coverage in urban safety-net adolescents.

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A-033

INTERNET-BASED INTERVENTIONS FOR CANCER-RELATED DISTRESS: EXPLORING SURVIVORS' UNMET NEEDS

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BACKGROUND: There is a growing literature on use of Internet-based interventions to improve cancer survivors' psychosocial functioning. However, low levels of participant engagement have been a critical limitation of these interventions. The present study qualitatively evaluated the experiences of users that enrolled in an Internet-based trial and made little use of the intervention. **METHODS:** Semi-structured interviews were conducted with a diverse sample of 25 cancer survivors who spent less than 1 hour using the health-space.net intervention. Health-space.net was a 12-week facilitated support group with social-networking components and structured exercises. Interviews were recorded, transcribed, and analyzed using content analysis. **RESULTS:** Three broad categories, consisting of 18 specific themes, were identified. Transcripts were double-coded with near-perfect agreement ($\kappa=.88$). The categories included connecting with similar others, individual expectations of the intervention, and problems with the study design or website. "Similar Others" reflected the reported difficulty of participants to connect with similar survivors (i.e. same cancer type), "Individual Expectations" reflected the reported discrepancy between survivors' expectations of the intervention and the intervention (i.e. personally relevant information), and "Study Design" reflected the reported difficulty with the website's usability (i.e. website structure). **DISCUSSION:** The data indicate that while low-engaged participants with distress have diverse needs, they agree on the importance of connecting with similar others. Bridging the gap between survivors' expectations and study expectations during enrollment could improve engagement. The study provides a foundation for future research to identify and evaluate individual needs that may predict engagement. Using qualitative methodologies to incorporate these needs into the next generation of interventions has the potential to increase engagement and outcomes.

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A-034

DIFFERENCES IN SOURCES OF SOCIAL SUPPORT BETWEEN HISPANIC AND NON-HISPANIC WHITE WOMEN AFTER SURGERY FOR BREAST CANCER

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Objective: Social support (SS) is associated with adjustment in women with breast cancer (BCa). Levels of SS have been shown to differ between Hispanic and non-Hispanic White (NHW) BCa survivors. However, no studies have compared different types of SS received from different sources in Hispanic and NHW women after surgery for BCa. **Methods:** Self-reported SS was assessed in 211 Hispanic and NHW women with stage 0-III BCa 2-10 weeks after surgery and before adjuvant treatment. Levels of emotional, informational, instrumental, and negative (conflict/withdrawal) SS from partners, other family members, adult women, friends, and health care providers were compared. **Results:** Hispanic women ($M=2.67$, $SD=1.33$) reported greater informational SS from family members than NHW women ($M=2.00$, $SD=1.09$), $F(1, 126)=7.52$, $p<.01$, $\eta^2=.06$. Hispanics ($M=3.46$, $SD=1.60$) also reported greater instrumental SS from adult women than did NHW women ($M=2.80$, $SD=1.50$), $F(1, 146)=4.75$, $p<.05$, $\eta^2=.03$. Hispanics also reported greater negative support from partners ($M=3.25$, $SD=1.69$) than did NHW women ($M=2.37$, $SD=0.84$), $F(1, 95)=10.38$, $p<.01$, $\eta^2=.1$. Hispanics reported marginally greater negative support from family members and friends (both $p's<.10$). Findings held on ANCOVAs controlling for age, stage of disease, income, time since surgery, and estrogen and progesterone receptor status. **Conclusions:** Hispanic women reported greater SS from several sources than NHW women. Hispanic women also reported more negative SS. These findings suggest that Hispanic BCa patients may experience more informational and instrumental SS than their NHW counterparts during BCa treatment, and that they might benefit from communication skills training to mitigate negative support that they sense from partners and other contacts during this stressful period.

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A-035

NEVER UNDERESTIMATE THE POWER OF A GOOD RELATIONSHIP: MARITAL ADJUSTMENT BUFFERS AGAINST THE ADVERSE EFFECTS OF PAIN CATASTROPHIZING ON THE PSYCHOLOGICAL ADJUSTMENT OF METASTATIC BREAST CANCER PATIENTS AND THEIR SPOUSES

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Metastatic breast cancer (MBC) can be challenging for couples because patients and their spouses must cope with increasing physical disability, pain, and distress. While the use of catastrophizing (e.g., ruminating, exaggerating) as a pain coping strategy has been shown to exacerbate distress in breast cancer patients, little is known about its effects on their spouses. Likewise, even though spousal relationships are a fundamental resource for couples coping with cancer, few studies have examined how relationship factors help couples cope with pain. This study prospectively (6 months) examined whether marital adjustment buffers patients and their spouses from the adverse effects of pain catastrophizing on their psychological adjustment. Surveys were administered to 191 heterosexual couples (23.2% maritally distressed; M age=53.6 years, $SD=10.6$) where the woman was initiating treatment for MBC. Multilevel models using the couple as the unit of analysis showed that pain catastrophizing (CSQ) had negative effects on patients' depressive symptoms (CES-D) over time ($p<.01$), and that patients and spouses who had high levels (+1SD) of marital adjustment (DAS7) experienced fewer depressive symptoms than those who had low levels (-1SD) of marital adjustment ($ps<.01$). Although this association existed when the patient had high levels (+1SD) of pain (BPI), it was more pronounced at low levels (-1SD) of pain. Our findings suggest that: 1) people in troubled relationships are more reactive to the effects of pain catastrophizing than people in healthy relationships, and 2) marital adjustment is an important coping resource in MBC - particularly for patients who have low levels of pain. As such, future pain management programs in MBC could benefit from including patients with low pain levels, actively involving partners, and including components that focus on improving marital adjustment and teaching adaptive pain coping strategies.

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A-036

CHALLENGES AND LESSONS IN IMPLEMENTING A PHOTOVOICE STUDY OF COLORECTAL CANCER PREVENTION

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OBJECTIVE: Colorectal cancer (CRC) screening reduces the incidence and mortality of CRC, the third leading cause of cancer death in the US. However, it is underused, and there exist stark socioeconomic and racial disparities in screening and survival. With slow progress in reducing cancer disparities, new strategies are needed to understand screening barriers and develop effective messaging.

METHOD: Using community-engaged research methods, we worked with community partners to recruit for a photovoice study in which participants were given digital cameras to document and discuss CRC screening in their lives. Participants were eligible for the study if they previously had CRC screening. In each group ($n=5$ to 6 per group), participants were instructed in photovoice and basic photography. Groups developed CRC-related topics (e.g., fear, finance) on which to individually take photographs. Each participant then shared and discussed their images with the group.

FINDINGS: Recruitment of unacquainted individuals was a challenge that delayed initiation of the project and required time to build group rapport. However, the participants held similar experiences and interests: most had CRC in their families and all were interested in promoting CRC screening. To build rapport within the group and between participants and researchers, we included activities such as eating lunch as a group. A further challenge was varying levels of camera experience, which necessitated extending the length of the study. Once participants gained familiarity with their cameras and became more comfortable in the group, they began taking photos with poignant CRC screening and healthcare messages.

CONCLUSION: The photos and narratives will be the basis of future message-testing interventions to promote CRC screening. They also provide valuable lessons for physicians and preventive health practitioners and researchers.

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A-038**PERCEIVED DISABILITY AND HEALTH STATUS IN WOMEN AT RISK OF OR WITH CARDIOVASCULAR DISEASE: IS IT MORE THAN AFFECT?**

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Cardiovascular disease (CVD) is a leading cause of death and disability in the U.S. and diabetes or hypertension (HTN) diagnoses significantly increase risk of CVD. Improved perceptions about health status and disability are common desired outcomes that are associated with positive/negative affect (PA/NA). NA is associated with increased risk of CVD and worse outcomes while PA has been found to play a protective role for health status. Acceptance comprised of 1) engagement in valued activity and 2) willingness to experience negative aspects of illness, has consistently been associated with positive CP patient outcomes; however, the role of Acceptance has not been explored in other CI samples. We examined the role of PA, NA and Acceptance in women with diabetes, HTN or CVD who seek support from online CI groups (N=154; M age=57.33, SD=10.96). Our sample was primarily Caucasian (89.7 %), married/partnered (59.9 %), insured (89.3 %) and well-educated (M=14.79 yrs, SD=2.6). CI prevalence: CP 65 %, Diabetes 39.4 %, HTN 69.7 %, and CVD 25.8 %. Notably, over 90 % had >1 CI (M=3.65, SD=1.63). Ppts completed demographic/medical items, Perceived Disability Index (PDI), CI Acceptance Questionnaire (CIAQ), Positive/Negative Affect Scale (PANAS) and questions related to health status, function, and activity interference. Multiple regression was conducted to ascertain the degree to which CIAQ factors [Activity Engagement (AE) and Willingness (W)] predicted total PDI and health status (general health, physical/emotional/social functioning) above and beyond PA/NA while controlling for age, yrs of education, BMI and presence of CP. Overall, the models were significant (all p 's < .000, R2 model range=.28-.59). PA/NA did contribute significantly to emotional functioning but CIAQ domains consistently predicted total PDI and health status ratings. Results suggest that interventions designed to increase AE and Willingness to experience CI sx in addition to targeting affective sx may lead to improved health status and perceived disability ratings in women at risk for or with CVD.

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A-039**PSYCHOPHYSIOLOGIC REMODELING OF THE FAILING HUMAN HEART**

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Biofeedback training (BF) can be used to control autonomic input to the cardiovascular system. It has been well-established in our laboratory and others that heart failure (HF) is accompanied by hyper-activation of the sympathetic nervous system (SNS), and decreasing sympathetic input with a beta blocker or left ventricular assist device improves clinical status and also reverses cellular and molecular alterations associated with HF. We hypothesized that HF patients could be trained with BF and that this method of regulating the SNS would also produce myocardial remodeling in the direction of recovery. To test this hypothesis, end-stage HF patients at the Cleveland Clinic were enrolled in a research study which included an initial assessment of psychophysiological reactivity to mental stress, six sessions of BF-mediated stress management training with a certified BF therapist, and a final assessment of psychophysiological reactivity to mental stress. Quality of life was also evaluated before and after BF using the SF-36 and Kansas City Cardiomyopathy questionnaires. Plasma norepinephrine and six minute walk distance were measured before and after BF, as a marker of clinical status. After BF, at the time of heart transplantation, explanted hearts were transported to the laboratory to study the HF phenotype. Left ventricular trabecular muscles were dissected and studied in a tissue bath, measuring the inotropic response to sympathetic stimulation. A single dose of isoproterenol, a synthetic norepinephrine analogue, was used as an index of SNS recovery. Beta adrenergic receptors on myocardial cell membranes were also measured, using radioligand binding and Scatchard analysis. Preliminary data suggest that BF produces remodeling of the HF phenotype, in the direction of normal, similar to what we have previously shown in hearts supported with a left ventricular assist device.

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A-040**ROLE OF HEART FAILURE (HF) PATIENT CHARACTERISTICS ON TELEHEALTH ALERT GENERATION**Kavita Radhakrishnan, PhD, MSEE¹ and Kathryn H. Bowles, PhD RN FAAN²¹University of Texas, Austin, TX and ²University of Pennsylvania, Philadelphia, PA.

Alerts associated with cardiac medical events form a tiny proportion of all telehealth alerts and are unable to guide meaningful homecare interventions. Understanding the triggers behind elevated telehealth alerts may enable meaningful utilization of telehealth for HF management.

Purpose: To explore the role of patient characteristics on generation of telehealth alerts
Methods: Six months of retrospective data on Medicare HF patients admitted to a New England homecare agency was collected. Outcome and Assessment Information Set (OASIS) provided patient characteristic data of demographic, psychosocial, and disease severity factors. Telehealth logs provided the vital sign alerts for systolic and diastolic blood pressure, pulse, pulse oximetry and weight. Association of patient characteristics with total number of telehealth alerts was analyzed using multiple regression after adjusting for telehealth length of stay.

Results: 168 patients (Mean age=82.75; 56 % females) comprised the sample. A total of 6025 telehealth alerts (Mean=35.9; SD=30.8) were generated over telehealth service ranging from 1 to 25 weeks. The telehealth parameter of weight generated the highest number of alerts (38 %) followed by SBP (24 %). Patients with co-morbidities of anxiety ($p=0.03$), cardiac arrhythmia ($p=0.04$) and renal disorders ($p=0.02$) had statistically significant association with high telehealth alert generation.

Discussion: HF patients have attributed anxiety as a barrier to HF self-management. Weight fluctuations associated with renal co-morbidity and interference by cardiac arrhythmia on the accuracy of telehealth devices may trigger frequent telehealth alerts. Such patients may not be the best candidates for telehealth and parameters other than telehealth vital sign changes need to be monitored. Telehealth care protocols including telehealth referrals and follow-up interventions could be tailored to patients' contextual information such as psychosocial status, involvement with HF self-management, symptom status and presence of co-morbidities using decision support models.

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A-041**ADHERENCE TO LONG-TERM MEDICATION: USING HABIT THEORY TO AUGMENT RESEARCH AND PRACTICE**L. Alison Phillips, PhD,¹ Howard Leventhal, PhD² and Elaine A. Leventhal, PhD, MD²

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Up to half of US patients on long-term medications are non-adherent. Patients' treatment-related beliefs predict adherence to medication short-term (Leventhal et al., 2008; Horne et al., 1999), but their prediction in the long-term is less documented; if long-term adherence is driven by stimulus cues (Wood & Neal, 1997), then patients' treatment habit strength should better predict adherence than do their treatment-related beliefs; also, providers should be able to get a better sense of adherence from asking about patients' habits than about their beliefs. The current study tests these hypotheses.

74 patients on long-term hypertension pills answered standardized items and open-ended items about their medication-related beliefs, habits, and adherence and used electronic monitoring pill bottles for 30 days. Hierarchical regression tested the relative importance of beliefs and habit strength, as well as their interaction, for predicting adherence using the scaled items. Two independent raters estimated the patients' adherence from their responses to the open-ended habit and belief items; the estimates were regressed on adherence to see which more accurately predicted adherence.

Patients' beliefs did not predict adherence (highest $B=-0.21$, $p>.05$), but habit strength did (lowest $B=.39$, $p=.002$; interaction ns). The raters' adherence estimates from patients' habit-responses correlated with the habit strength scale (Pearson $r=.26$, $p<.05$) and predicted adherence (lowest $r=.22$, $p<.05$); from patients' belief-item responses, estimates correlated with the belief scale ($r=.30$, $p<.05$) but not with adherence (highest $r<.16$, $p>.05$).

Adherence to long-term medication was better predicted by habit strength than by patients' treatment-related beliefs. Variation in adherence may be determined by situational factors and not by differences in patients' beliefs. Furthermore, providers may make more accurate estimates of patients' adherence to long-term treatments by asking simple open-ended questions about their habits rather than about their beliefs.

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A-042

SELF-REPORTED MINDFULNESS IS ASSOCIATED WITH SPECIFIC CHD RISK FACTORS

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Mindfulness practice randomized controlled trials demonstrate potential efficacy in reducing coronary heart disease (CHD) risk factors in those with elevated CHD risk. However associations of mindfulness with CHD risk factors in the general population are poorly understood. Objectives were to evaluate cross-sectional associations of self-reported mindfulness with CHD risk factors in a community sample. Participants (n=400) were from a subset of the New England Family Study, and included 173 males, 227 females, 65 % white, 27 % black race/ethnicity, with mean age 47.0 y. Mindfulness was measured with the Mindfulness Attention Awareness Scale (MAAS), which assesses self-reported lapses of attention. Mean blood pressure was assessed in seated participants. Total and HDL cholesterol were assayed from plasma using standardized methods. Type 2 diabetes was determined from fasting plasma glucose, diabetes medication use and self-reported professional-diagnosed diabetes. In regression analyses adjusted for age, race/ethnicity, gender and education, those in the highest MAAS tertile (representing higher mindfulness) had significantly greater HDL cholesterol (beta=4.2, 95 % CI: 0.2, 8.3 mg/dL) and lower smoking (OR=0.47, 95 % CI: 0.27, 0.81) compared to lowest MAAS tertile. Non-significant associations were demonstrated for highest vs. lowest MAAS tertile with total cholesterol (beta=4.3, 95 % CI: -6.0, 14.5 mg/dL), systolic blood pressure (beta=3.6, 95 % CI: -0.1, 7.4 mmHg), diastolic blood pressure (beta=1.8, 95 % CI: -0.7, 4.3) and diabetes (OR=0.93, 95 % CI: 0.43, 2.01). Further adjustment for depressive symptomatology reduced effect sizes for highest vs. lowest MAAS tertile, where for HDL cholesterol, beta=3.1 (95 % CI: -1.5, 7.6) mg/dL and smoking OR=0.76 (95 % CI: 0.41, 1.38). In conclusion, a higher rate of self-reported lapses of attention may be associated with elevated risk for certain CHD risk factors, particularly smoking and HDL cholesterol; depressive symptomatology may be a mechanism. Funding provided by NIH/NIA RC2AG036666.

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A-043

THE EFFECTS OF PROGRESSIVE RELAXATION ON BLOOD PRESSURE RESPONSES TO A CHALLENGE TASK

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Progressive relaxation techniques have been shown to effectively reduce short-term stress and may be effective interventions for test anxiety. The current study was designed to analyze the effects of a 15-minute progressive relaxation intervention on blood pressure responses to a challenge task. It was hypothesized that participants who would complete a progressive relaxation exercise would have lower blood pressure responses to a challenge task and would perform better on the task than control participants.

Methods: Twenty-three college or university students participated in small groups that were each randomly assigned to either an experimental or a control condition. All participants completed a demographic questionnaire as well as a state self-esteem measure. Three blood pressure readings were taken: immediately after the questionnaires were completed, at the end of either a progressive relaxation exercise or a control task, and at the end of a timed arithmetic test. Participants then completed a post-stress measure.

Results: The relative changes in blood pressure and pulse were compared across the three measurements via a Mixed ANCOVA. There was a significant difference between the quadratic trends of change in pulse across the three readings between the two conditions (F=6.730, p=.020) when controlling for age, gender, ethnicity, performance self-esteem scores, and subjective stress ratings. No significant differences were found between the two conditions in terms of change in systolic or diastolic blood pressure. A one-way ANOVA revealed no significant differences in arithmetic test scores between the two conditions.

Discussion: Although the relaxation intervention yielded a greater initial decrease in pulse than the control condition, participants in the relaxation condition exhibited a much greater increase in pulse at the end of the arithmetic test. These results suggest that progressive relaxation may be effective at initially reducing physiological stress but may also sensitize participants to environmental stressors.

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A-044

MULTIPLE HEALTH BEHAVIOR CHANGE USING THE TRANSTHEORETICAL MODEL

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Despite considerable evidence to support efficacious and effective intervention for single health behaviors, relatively little is known about simultaneously changing multiple health behaviors. This research analyzed participants who were recruited by telephone and provided a stage-based, interactive, and computer-tailored intervention (CTI) for smoking cessation, unhealthy diet, and unprotected sun exposure. The sample (N=9,461) was predominantly White (93.8 %), middle-aged (M=43.9 years-old, SD=10.74) adults in the United States. A series of logistic regressions analyzed sun protection and diet, smoking and diet, and smoking and sun protection as three sets of behavior pairs for participants who were at-risk for both behaviors in each pair at baseline and who met criteria (Action/Maintenance) at 24-month follow-up. Four of the 8 odds ratios (ORs) were significant and all 8 ORs>1.0, indicating that participants were more likely to progress to Action/Maintenance on both behaviors if they were in Contemplation or Preparation compared to the Precontemplation stage of change at baseline. Specifically, in the sun protection and diet behavior pair analyses, the entire sample, treatment and control groups were significant, OR=5.40 [2.68, 10.90], p<.001, OR=4.53 [1.89, 10.85], p<.001, and OR=6.97 [2.11, 23.04], p<.001, respectively. In the smoking and sun protection behavior pair analyses, the entire sample was significant, OR=4.38 [1.00, 19.03], p<.049. Overall, results demonstrate that participants are more likely to move to criteria (Action/Maintenance) on both behaviors if they are in later stages of change (Contemplation or Preparation) compared to participants who are in the earliest stage of change (Precontemplation). Finally, results suggest that alternative multiple behavior analytical approaches can be utilized to provide more insight into multiple behavior change.

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A-045

CULTURAL DIFFERENCES IN HABITUAL USAGE OF REAPPRAISAL AND SUPPRESSION AS RELATED TO CARDIOVASCULAR AND EMOTIONAL CONSEQUENCES

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Background: Studies have shown that different emotion regulation strategies can have different physiological and psychological consequences. Most studies have instructed participants to use specific emotion regulation strategies with less consideration of the individual differences in habitual usage of such strategies. Further little is known about the influence of culture on such responses.

Methods: The effects of habitual usage of two emotion regulation strategies, reappraisal and suppression, on cardiovascular reactivity (CVR) and emotional experience were investigated. Eighty-one Chinese and Indian females in Singapore participated a laboratory experiment, with their emotional response and CVR to a simulated task being recorded. A counting task with negative feedback was used to induce negative mood in participants. Emotional experience was measured before, during, and after the task with six cardiovascular indices measured continuously during the experiment.

Results: Participants with higher scores on habitual reappraisal usage reported more positive emotional experience and showed a healthier CVR profile, compared to those with lower scores; whereas habitual suppression usage had no significant association with participants' self-reported emotion or CVR pattern during the experiment.

Conclusion: These results confirmed previous findings that reappraisal is an adaptive regulatory strategy, as well as supported the process model of emotion regulation such that the earlier cognitive effort, reappraisal, has noticeable impact on all downstream elements of emotional response, whereas later behavioral effort, suppression, has little impact. The non-significant association between suppression and consequences might indicate that for Asian participants coming from cultures that discourage overt emotion expression, suppression become automated and therefore does not lead to the negative consequences found in studies in North America.

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A-046

RELATIONSHIP BETWEEN STRESS AND CORONARY HEART DISEASE

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BACKGROUND: Coronary heart disease (CHD) is the leading cause of death worldwide and accounts for 13.7% deaths in countries like Pakistan. Its association with psychological stress, as one of the contributors to ischemic heart disease, is not well considered in our setup. Patients with CHD may have a high prevalence of stress, which may increase the risk of adverse surgical outcomes.

OBJECTIVES: To ascertain The Prevalence of stress in coronary artery disease patients and to find a relationship between stress and CAD in patients admitted for CABG.

METHODOLGY: Data collected for 60 patients with coronary artery disease admitted to Civil Hospital Karachi for Coronary artery bypass graft surgery (CABG), from January 1st to March 31st year 2012, was evaluated using a stress evaluation scale [Holmes, TH and Rahe, RH Booklet for Schedule of Recent Experience (SRE), University of Washington, 1967]. The collected data was analyzed and results computed and evaluated for statistical significance using Z scores and ANOVA test.

RESULT: Stress, of varying degree, was found to be a significant independent predictor in patients with CHD. Analysis of our collected sample (N=60) of patients with stress showed that 60% had high stress (Z=2.23, p=0.025) and 36.7% with moderate stress (p=0.0025). An appreciable relation between degree of stress and patient's age (P=0.01), Gender (p=0.059), BMI (p=0.04), incidence of myocardial Infarction (p=0.004), blood group and any addiction has been found.

CONCLUSION: Our study concludes a consistent evidence of an independent causative association between psychological stress and CHD, which is found to be of similar order to the more conventional CHD risk factors.

We recommend a comprehensive psychological evaluation and management of heart surgery candidates and post bypass patients, in an attempt to ameliorate the cardiovascular outcomes in these patients and improve their quality of life.

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A-047

IMPACT OF GOAL COMPATIBILITY ON SELF-CARE ADHERENCE AMONG OUTPATIENTS WITH HEART FAILURE

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Increasing adherence to self-care behaviours can optimize the health of patients with heart failure (HF). Most work in this area has focused on the requisite knowledge and behavioural skills to perform self-care but has largely ignored motivational barriers. This study examined whether considering the compatibility of self-care regimens to valued life goals can improve the prediction of self-care adherence, above and beyond knowledge (general and applied) and self-efficacy. Forty HF outpatients (22.5% female; mean age=66.2 yrs) identified their goals through a card-sort and rated the compatibility of self-care regimens to these priorities using an interactive scale. Aspects of general and applied HF knowledge, self-efficacy and adherence to daily weighing, dietary restrictions and physical activity recommendations were also assessed. General and applied knowledge correlated with compliance to weighing (r=.35, p<.05) and diet (r=.33, p<.05), respectively, whereas self-efficacy correlated with diet (r=.53, p<.01) and exercise (r=.36, p<.05). There was a significant relationship between the degree to which patients viewed physical activity as compatible with valued life goals and subsequent adherence to that self-care behaviour (r=.33, p<.05). After controlling for other predictors in a hierarchical regression analysis, goal compatibility explained a significant amount of variability in physical activity adherence ($\Delta R^2=.08$, F (1, 34)=4.13, p<.001). These findings point to the merit of helping patients leverage their valued goals as a means to increase motivation to follow physical activity recommendations. Implications for assessing goal compatibility in self-care management interventions will be discussed.

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A-048

POSTTRAUMATIC GROWTH FOLLOWING OPEN-HEART SURGERY: THE ROLE OF RELIGIOUS COPING AND THE UNDERLYING MECHANISM

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Introduction: The literature on posttraumatic growth as health and mental health outcomes is growing. However, few studies have investigated personal growth after cardiac procedure, a life-altering event in middle-age and late life. Similarly, longitudinal research is lacking on the implications of religious coping for patients with advanced cardiac diseases. This prospective study aims to examine the long-term effect of preoperatively using religious coping on postoperative growth and underlying mediation factors, controlling for key confounders.

Methods: Analyses capitalized on a preoperative survey and medical indices from the Society of Thoracic Surgeons' National Database of patients undergoing cardiac surgery. Preoperative data were collected via interviews, using standardized instruments. Participants in the current follow-up study completed a mailed survey 30 months postoperatively. Hierarchical regression analysis was performed to evaluate the role of religious coping on growth at follow-up, adjusting demographics, medical indices, mental health, and protective factors.

Results: Predictors of posttraumatic growth at follow-up were positive religious coping and a living status without a partner. Medical indices, optimistic expectations, social support, and other religious factors were unrelated to posttraumatic growth. Including religious factors diminished effects of gender, age, and race. Including perceived spiritual support completely eliminated the role of positive religious coping, indicating mediation.

Conclusions: Use of positive religious coping may have some positive long-term effect in cardiac surgery patients. Its influence on postoperative growth, however, may be explainable by perceived support from a spiritual entity. More research should address other mechanisms underlying the popular usage of religious coping, in medically ill patients.

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A-050

BARRIER-BASED DIABETES SELF-EFFICACY SURVEY: MEASURE DEVELOPMENT AND IMPLICATIONS FOR SELF-MANAGEMENT OF TYPE TWO DIABETES

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Diabetes is a significant problem in the United States, particularly among ethnic minorities. Diabetes self-management, which requires a complex regimen of lifestyle behaviors that are difficult to initiate and maintain, is critical in obtaining and maintaining optimal glycemic control, and contributes to reducing or eliminating diabetes-related complications. Healthy eating, physical activity, and problem solving are particularly challenging self-management activities that are influenced by the individual's self-efficacy to perform these behaviors. There are a number of diabetes-specific measures of self-efficacy in the literature, however these existing measures, by and large, ignore situational contexts influencing diabetes self-management. The purpose of the current study was to assess the psychometric properties of a new measure of diabetes-specific self-efficacy, the Barrier-Based Diabetes Self-Efficacy Survey (BB-DSES), which evaluates self-efficacy for key, challenging self-management behaviors (i.e., healthy eating, physical activity, and problem solving) in specific situational contexts. One hundred participants enrolled in a larger research study, Project DECIDE (Decision-making Education for Choices In Diabetes Everyday), were included in the analyses. Cronbach alpha coefficients, bivariate correlations, and OLS regression models were assessed to examine reliability and validity of the BB-DSES. Hierarchical multiple regression was used to examine the relations between behavior-specific self-efficacy and glycemic control. In the current study sample, the behavior scales of the BB-DSES uniquely predicted their respective self-management behaviors (i.e., healthful eating, physical activity, and effective problem solving). Overall the BB-DSES demonstrated adequate reliability and validity. However, the BB-DSES did not explain a significant amount of variance in glycemic control. Results are discussed in terms of both clinical and research significance.

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A-051

BETA TESTING AN INTERNET-BASED INTERVENTION TO ENHANCE PARENTAL SUPERVISION OF AFRICAN AMERICAN ADOLESCENT'S DIABETES CARE

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Managing type 1 diabetes (T1D) is complex, demanding, and requires daily motivation and self-control. Effective illness management behavior (IMB) is linked to better outcomes, but declines during adolescence, particularly among African Americans. Parental supervision is a protective factor for good IMB that, to date, no researchers have targeted. The 3 Ms is a brief, three session internet-based intervention targeting caregiver motivation to supervise adolescents' IMB and a companion intervention to enhance adolescent's motivation to complete their daily IMB. Psychosocial education describing the benefits of parental supervision and good IMB is also included. A two-phase feasibility study was conducted to develop and test The 3 Ms. In Phase 1, the 3 Ms content was developed using Motivational Interviewing theory. Experts, a pediatric diabetologist and a minority health researcher, reviewed the intervention. In Phase 2, members of the target population, five African American adolescents with T1D and six caregivers beta tested the program and completed semi-structured interviews. Both caregivers and youth found The 3 Ms helpful and they would recommend it. Caregivers preferred directive education over motivational, stating they perceived the directive approach to provide more information and to be appropriate for discussions of children's health. Youth preferred the motivational approach, partly because of its emphasis on personal choice. Both indicated high satisfaction with peer testimonials suggesting they conveyed a sense of community. Caregivers also thought The 3 Ms was a good reminder that even responsible, competent adolescents need supervision. Youth responded to the suggestions for improving IMB and the consequences of poor IMB. These results suggest that the intervention is appropriate and acceptable. A pilot RCT is currently underway to examine the intervention's ability to influence health outcomes in this high risk population.

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A-053

EMERGING DYNAMIC PATTERNS IN THE RELATIONSHIP BETWEEN PHYSICAL ACTIVITY AND GLUCOSE LEVELS IN TYPE 2 DM: A PILOT STUDY

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Physical activity (PA) is key for improving biological and psychological health outcomes in type 2 diabetes (T2DM), however, most of the supporting evidence has come from self-report and cross-sectional studies. Accelerometry has been used to objectively quantify PA intensity, duration and frequency, allowing scientists to describe dose-response patterns between PA and health outcomes in T2DM. What remains unknown is if there are dynamic, covarying relationships between PA and other dynamic factors related to T2DM; especially glucose levels.

The aim of this exploratory study was to use continuous glucose monitoring (CGM) and actigraphy to capture real-time, dynamic patterns between blood glucose and PA levels, and to explore the effects of differing individual and group characteristics on these patterns. Ten patients (age 64.3+13.5; 1 female; 4 non-white) with T2DM (A1C 7.6+1.3 %) wore wrist actigraphy monitors and a CGM for three days. Cross-correlation analyses revealed distinct time-lagged patterns between momentary PA and glucose responses in 40 % of the sample, while no significant response was seen in the other subjects. In the responsive group, there were time lags between PA and the lowest glucose concentrations that ranged from 3–7 h. In some cases, glucose levels increased 1–2 h prior to decreasing. There may be other factors causing these excursions. The responsive group had lower A1C (6.5 vs 8.3 %, $P < .05$) and higher non-rest average activity counts/minute (337 vs 276, NS), suggesting that, even slight increases in routine daily activity level may lead to improved glucose levels. These early findings suggest the presence of time-specific, dynamic relationships between routine daily PA and glucose levels. Ultimately, identifying the underlying individual and group characteristics that inform these patterns may help HCPs assist patients in planning exercise, so that health effects are maximized.

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A-054

VARIATIONS IN CLINICAL AND BEHAVIORAL OUTCOMES BY DEPRESSION AND SOCIAL SUPPORT: RESULTS FROM A RANDOMIZED DIABETES TRIAL AMONG LOW-INCOME LATINOS

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Objective: This study examines whether the effect of a randomized diabetes trial on clinical and behavioral outcomes may differ by depression status and presence of social support for diabetes self-management (DSM) behaviors among a sample of low-income Latinos with type 2 diabetes. **Methods:** The intervention (12 weekly and 8 monthly group sessions) targeted knowledge, attitudes, and behaviors related to DSM. Participants (N=252) were recruited from community health centers and randomized to the intervention or usual care. Data on depression (CES-D score), support for DSM behaviors, HbA1c, weight, diet, and physical activity were assessed at baseline, 4 months, and 12 months. Mixed effects models were used to estimate whether changes in outcomes over time by intervention status varied by depression and social support at baseline. **Results:** Among those depressed at baseline, participants who received the intervention had decreased CES-D scores ($\beta = -3.516$; $p = 0.0222$) and decreased HbA1c levels ($\beta = -0.6226$; $p = 0.0118$) at 4 months and increased healthy diet scores at 4 months ($\beta = 4.5932$; $p = 0.0013$) and 12 months ($\beta = 3.1264$; $p = 0.0300$) than participants who received usual care. Among those who reported social support for DSM behaviors at baseline, intervention participation was associated with decreased CES-D scores at 4 months ($\beta = -3.5615$; $p = 0.020$) and 12 months ($\beta = -3.1136$; $p = 0.0454$) and decreased HbA1c levels at 4 months ($\beta = -0.7635$; $p = 0.0013$) and 12 months ($\beta = -0.4746$; $p = 0.0449$). Intervention status did not differentially impact outcomes among those who were not depressed or who had little or no social support for DSM behaviors at baseline. **Conclusion:** Findings suggest the potential of DSM- and weight-management interventions in targeting multiple outcomes among low-income Latinos with depression and type 2 diabetes. Social support for DSM behaviors may also facilitate improvements in depressive symptoms and health outcomes.

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A-055

CONCERNS ABOUT CHINESE MEDICINE AMONG CHINESE IMMIGRANTS WITH TYPE 2 DIABETES

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BACKGROUND: Two prevailing assumptions in mainstream U.S. health care are that Chinese immigrant patients embrace Chinese Medicine (CM), and that culturally sensitive care must incorporate CM treatments. These assumptions remain untested and may not reflect the true state of affairs. Little is known about concerns that these patients have with CM.

PURPOSE: This study examined Chinese immigrant patients' beliefs about the safety and efficacy of CM in diabetes management.

METHODS: The sample comprised 20 foreign-born Chinese American couples who participated in a 4-year study of family processes in diabetes management from 2004–2008. To qualify, 1 member of each couple had to have type 2 diabetes for at least 1 year. Interpretive phenomenology guided the study. With each couple, six interpretive interviews were conducted in group, couple and individual contexts in Cantonese. Participants' reflections and narratives about their beliefs about and use of western medicine and other treatments were solicited. Interview text coded "Cultural Health Beliefs" (225 quotations), "Cultural Health Practices" (188 quotations), and "General Health Beliefs" (188 quotations) were retrieved for thematic and narrative analyses. **RESULTS:** Participants reported a wide range of reactions, ranging from rejection to endorsement, to CM treatments such as acupuncture, qi-gong, and herbal formulas or CM drugs prescribed by CM providers. Four concerns about CM were identified: i) low product quality and safety, ii) questionable provider qualifications, ethics and motives, iii) the lack of scientific evidence for CM products and methods, and iv) possible adverse interactions of CM products with Western medicine drugs.

CONCLUSIONS: CM was not unquestionably accepted by all Chinese immigrant patients. Culturally sensitive care requires assessing patients' acceptance of indigenous or cultural treatments, understanding their concerns about those treatments, and offering support to help them make informed decisions.

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A-056

ESTABLISHING SMART RECRUITMENT TOOLS FOR DIFFICULT TO REACH STUDY POPULATIONS

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Recruitment of participants with a low-frequency diagnosed medical condition for behavioral medicine research can be a difficult endeavor. Many new recruitment resources are available, but few are used to their potential if at all. This report describes and evaluates tools used to enhance recruitment of adults between ages 18–30 with Type 1&2 diabetes in Tempe, Arizona. Several tools were used including: fliers, Craigslist, medical providers, Facebook advertising, and word of mouth. The response rates of the diabetic community, $N=75$, compared to control non-diabetic population, $N=520$, gives a picture regarding the effective reach of the methods. Potential participants typed, clicked, or followed a link provided by each system. This link redirected them to a short questionnaire, which asked questions such as age, education, if they were diabetic, and where they found the link to the survey. Response rates were: Craigslist $N=434$ (72.9 %), fliers at Arizona State University (ASU) $N=58$ (9.8 %), Fliers not at ASU $N=20$ (3.4 %), Facebook $N=14$ (2.4 %), doctor or medical provider $N=7$ (1.2 %), other= 62 (10.4 %). The “click-through rate” (CTR), calculated as the percent of individuals exposed to the advertisement compared to those who completed the screening survey, helps evaluate the effectiveness of electronic methods. Craigslist had a 67.1 % CTR, while Facebook had only a 17.5 % CTR. However, only 6.68 % of Craigslist responses were eligible based on screening. In contrast, 71.4 % of individuals from Facebook were eligible. The ability to directly target potential participants and the ease of response behavior may help explain these differences. More analytics are currently being implemented; systems that analyze peak click activity, testing recruitment page CTR, and smart fliers which highlight foot traffic based on time and location. Despite the initial challenges, Facebook and similar contemporary targeted advertisement services, have the potential to dramatically enhance recruitment of unique targeted populations.

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A-057

EXTENDED CARE WITH FADED CONTACTS FOR RESISTANCE TRAINING IN PRE-DIABETIC OLDER ADULTS

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Resistance training (RT) has been shown to positively affect the aging process, including benefits to muscle mass and strength, bone health, weight and mood, and RT can improve biological processes related to the onset and progression of diseases, such as diabetes. The current study, Resist-Diabetes, sought to examine the effects of a whole body resistance training protocol using moderate resistance but a high degree of effort at the end of a set in older adults with pre-diabetes and employed an extended care protocol likely to facilitate long-term RT maintenance. Participants are adults aged 50–69 with a BMI between 25–39, sedentary and de-conditioned, fitting pre-diabetic criteria. Resist-Diabetes consists of three phases, including supervised in-lab RT 2/week (Initiation Phase), assisted transition to health clubs (Transition), and social cognitive theory (SCT) based extended care with faded face-to-face and electronic contacts revolving around scheduling, planning, and recording workouts, with feedback provided, plus problem solving (Follow-Up). Focusing on Follow-Up outcomes only, in the first 2 waves, for 37 participants, we found good adherence to the SCT based protocol. Specifically, participants have attended 93 % of follow-up meetings ($M=8.49$). Of the total number of RT workouts scheduled, all 37 participants are doing some amount of planning and recording. While the number of scheduled training sessions varies, participants on average are planning 63.3 % (Range=2 %–94 %; Median=64.6 %) and recording 82.2 % (Range=38 %–100 %; Median=83.5 %) of their RT workouts. Overall, these findings suggest that SCT based extended care can lead to moderate to high adherence for behaviors associated with maintaining RT.
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A-059

NURSES IN RURAL HEALTH CARE RESIST USING COMPUTERIZED PATIENT INFORMATION SYSTEM (CPIS)

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Background: Computerized patient information system (CPIS) use in the delivery of patient care can be challenging for rural health-care nurses with limited training and knowledge. Objective: The aim of this study was to determine relationships between the levels of computer literacy, perceived competence in using CPIS, informatics training received during formal nursing education, and nursing experience with resistance to using CPIS in rural clinical settings. Methods: A prospective approach to data collection was used with a descriptive-correlational design. Registered nurses ($n=89$) were randomly selected from five rural hospitals in the state of Georgia. Data were collected using the Nurse Computerized Patient Information System Questionnaire, a 5-point Likert-scale instrument with a Cronbach's alpha of 0.84. Multiple linear regressions were performed to predict the outcome of resistance. ANOVA analysis was undertaken to determine the differences among the average resistance scores of the groups. Results: Statistical analyses showed formal nursing education (p -value=0.8923), age (p -value=0.3753), and experience (p -value=0.4484) were not significant predictors of resistance to using CPIS. There was a significant relationship between resistance and nurses who had computer informatics training through workshops or conferences (p -value=0.0335). Conclusions: Nurses with CPIS training are less resistance to using CPIS than those without training. Nurse educators and administrators may use findings from the study to develop measures that will reduce and overcome nursing resistance and to advance the effectiveness and efficiency in the use of CPIS in rural clinical settings to improve patient care outcomes.

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A-060

CAN LEARNING DISABLED COLLEGE STUDENTS ATTENTION BENEFIT FROM MAHAPRAAN SOUND MEDITATION

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Background: Mahapraana, a buzzing sound is a technique of Preksha meditation, as taught by Acharya Mahapragya. This technique involves deep breathing followed by a long buzzing sound with improved attention shown in students with ADHD in India. This is a pilot study to assess the ability of US learning disabled college students to learn this technique. Method: Fifteen students were enrolled: six with learning disability (LD) and 9 control students. All students attended 30 minute sessions for 3 days a week, for four weeks. Respiratory changes using a Peak Flow test and duration of the buzzing in seconds was measured. Connors Continuous Performance Test II (CPT), a standardized computer based test for error rates, discriminating power, attention, vigilance, and impulsivity was also collected. Results: Buzzing/ Peak Flow: LD group the Peak Flow increased from 311 sd 84 to 384 sd 96, and length of buzzing from 13.3 s sd 5.3 to 20.0 s sd 5.9. For the controls, PF increased from 268 sd114 to 397 sd 90 and length of buzzing from 13 sd 5.7 to 20.1 sd 4.9. Net improvement for both groups was similarly ($p>0.1$). CPT results: At baseline, the LD students had poorer discriminating power, and had higher commission errors, omission errors and inconsistent reaction time scores to stimulus than the control group. After 4 weeks, the discrimination power and the consistency of reaction to stimulus showed a significant improvement ($p<0.05$) in LD group. Commission and omission scores, Vigilance and Impulsivity showed small but not significant improvements. The control students showed significant increase in rate of response while maintaining accuracy. Conclusion: Mahapraana could be learnt by LD students, with improved duration of buzzing sound and pulmonary function attained even over 4 weeks. Some promising improvements were also seen in their discrimination power and consistency of response. A larger randomized longer term study is warranted to assess true benefits.

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A-062

INCREASES IN PROTECTED SEX FOLLOWING A BEHAVIORAL INTERVENTION ARE ASSOCIATED WITH REDUCTIONS IN INCIDENT STIS: A META-ANALYTIC REVIEW

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Background: Unprotected sex accounts for the largest proportion of new HIV infections even though correct and consistent condom use can prevent the transmission of HIV. Behavioral interventions seek to reduce STIs, including HIV, by promoting changes in condom use. Therefore, this meta-analysis examined the efficacy of behavioral interventions to increase condom use and determined if these changes affected incident STIs.

Methods: To be included, studies had to examine interventions focusing on reducing sexual risk behaviors, assess pre/post-test condom use, and provide sufficient information to calculate effect sizes (ES). Included were 277 studies with 389 separate interventions (N=191,835; M age=27 years; 49 % women; 46 % Black). Independent raters coded participant, design and methodological characteristics, and intervention content. Weighted mean ES, using random-effects models, were calculated; positive ES indicated increased condom use and fewer incident STIs. **Results:** Compared to controls, intervention participants increased their condom use across measures of protected vaginal, anal, or unspecified sex with a number of partner types. The magnitude of ES ranged from small (e.g., number of protected sex events with an unspecified partner: $d+=0.13$, 95 % CI=0.04, 0.21; $k=64$) to large (e.g., frequency of protected vaginal sex occasions with a steady sex partner: $d+=0.87$, 95 % CI=0.50, 1.24; $k=10$). Weighted regressions analyses predicting incident STIs from condom use indicated that improvements in condom use were associated with reductions in incident STIs and HIV ($P<.01$).

Conclusions: Behavioral interventions increase protected sex. Changes in protected sex are associated with fewer STIs, including HIV. Implementing behavioral interventions to improve condom use, and ultimately reduce the transmission of HIV, should be a public health priority.

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A-063

STREAMING CULTURALLY TAILORED INTERACTIVE HIV PREVENTION INTERVENTIONS FOR BLACK AND LATINO HIGH-RISK MSM

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Black and Latino men who have sex with men (MSM) are disproportionately affected by HIV. To address this risk, culturally-tailored interactive video interventions (IAV) were developed for each group. Viewed on DVD in a laboratory setting, exposure to the IAV resulted in a reduction in unprotected anal intercourse(UAI) among young African American and Latino MSM. Could these IAVs also be migrated to, or successfully delivered over, the internet, and, if so, could a sufficient sample be recruited to assess the effectiveness, generalizability, and reach of the resulting intervention? To consider these questions, a streaming version of the IAV was developed and implemented to reach the selected population across urban, rural, northern and southern California. 360 MSM enrolled in the study (277 Latino and 83 Black MSM). To reach the sample size, we screened 2,122 MSM applicants of which 617 were Latino MSM and 284 were Black MSM. 41.3 % of those screened (876MSM) met the screening criteria (over 18 years of age; identified as Black or Latino; in the last six months had both a) one or more instances of same sex UAI and b) no injection drug use.) Of 360 MSM who completed the baseline intervention, 253 (104 IAV, 124 control) also completed the immediate post measure. MSM in the IAV condition were significantly more likely to increase their intent to use condoms in the IAV as compared to those in the Control condition (following the intervention) as assessed by an overall multivariate test ($F(7,220)=2.35$, $p=.025$). At the univariate level, the largest change (IAV $M=72$; Control $M=19$) was in willingness to talk about safer sex with a partner ($F(1,226)=7.60$, $p=.006$). These findings demonstrate the promise of interactive media delivered over the web and suggest the efficacy and reach of this approach for use with hard-to-reach populations.

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A-064

USING DECISIONAL BALANCE FOR CONDOM USE AND TEMPTATIONS FOR UNPROTECTED SEX TO PREDICT CONDOM USE AMONG GAY AND BISEXUAL MEN

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Condom use remains the most effective prevention behavior against the sexual transmission of HIV, yet improved behavioral interventions are needed to increase condom use among gay and bisexual men. Valid measures to predict condom use are required to develop tailored interventions for this population. This study assessed the utility of Transtheoretical Model (TTM) measures for condom use in a community sample of gay and bisexual men. HIV-negative men (N=133, ages 18-50, median=37, 80 % white) with ≥ 2 male partners in the past year were recruited to complete an Internet-based questionnaire. The median number of male partners in the past year was 5, and 74 % of men reported unprotected anal sex with ≥ 1 male partners. Staging distribution for condom use was 38 % precontemplation, 19 % contemplation, 14 % preparation, and 29 % action/maintenance. Results indicate the Pros, Cons, and Temptations scales supported hypothesized structures and showed good to excellent reliabilities (Pros $\alpha=.80$; Cons $\alpha=.80$; Temptations $\alpha=.93$). All TTM constructs were significantly related to Stage of Change ($p<.05$) and effect sizes were medium to large (Pros $\eta^2=.21$; Cons $\eta^2=.07$; Temptations $\eta^2=.26$). Pros ($\beta=-.24$, $p<.01$), Cons ($\beta=.33$, $p<.001$), Temptations ($\beta=.47$, $p<.001$), and Stage ($\beta=-.63$, $p<.001$) were significant independent predictors of sexual risk behavior and together accounted for 43 % of the variance in unprotected sex. Findings support the application of TTM condom use measures to gay and bisexual men at risk for HIV and other sexually transmitted infections. Future directions include studies with larger, more diverse samples to examine additional predictors of condom use, and to conduct longitudinal and confirmatory analyses.

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A-065

MEDICAL MARIJUANA AND HAART ADHERENCE IN HIV CLINIC PATIENTS IN SAN FRANCISCO

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Introduction: Many HIV-positive individuals are turning to marijuana to treat physical symptoms, medication side effects, and psychological distress. However, marijuana use has been associated with poor HAART adherence in previous research. Differences between medical and illicit marijuana users have not been fully investigated.

Methods: Marijuana use was assessed with Addiction Severity Index, with an additional question asking about whether or not the participant had a medical marijuana card. Individuals were coded as "non-users", "illicit users", and "medical users". Adherence was assessed with the visual analogue scale on audio computer assisted self-interview (ACASI) and dichotomized at 95 %. Chi-square tests were run between marijuana use groups and adherence. When comparing two groups together, a correction was applied for the three tests ($p=0.05/3=0.017$).

Results: We collected adherence and drug use data on 294 participants. In total, 55 % participants reported no use of marijuana, while 15 % reported illicit marijuana use, and 30 % reported medical marijuana use. While 53 % of non-users and 46 % of medical users were adherent, only 27 % of illicit marijuana users were adherent. The relationship between adherence and marijuana use status is significant ($X^2[2]=9.08$, $p=0.011$). When comparing two groups at a time, we found that illicit marijuana users were less likely to be 95 % adherence than non-users ($X^2[1]=9.03$, $p=0.003$). While medical marijuana users displayed better adherence than illicit users at the $p=0.05$ level, it did not reach the threshold of significance for this analysis ($X^2[1]=4.27$, $p=0.039$). There was no difference in rates of 95 % adherence among non-users and medical users ($X^2[1]=1.04$, $p=0.307$).

Discussion: Medical marijuana users demonstrated better adherence than illicit marijuana users, and similar rates as non-marijuana users, emphasizing the distinction between medical and illicit marijuana use. The benefits and risks of medical marijuana in HIV-positive patients bears further evaluation.

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A-066**ALCOHOL AND CIGARETTE USE AMONG MEDICAL MARIJUANA USERS IN AN HIV CLINIC**Howard Newville, PhD,¹ Christine E. Grella, PhD² and James L. Sorensen, PhD¹¹University of California, San Francisco, San Francisco, CA and ²University of California, Los Angeles, Los Angeles, CA.

Introduction: With increases in access to medical marijuana, the public health ramifications of this major policy change require thorough examination, especially amid concerns of the use of other drugs. Though illicit marijuana use has been associated with greater alcohol and tobacco use in the general population, it is unclear if this is also the case with medical marijuana users.

Methods: We collected information on alcohol, tobacco, and marijuana use for 294 participants in an HIV-clinic in San Francisco with the ASI-Lite. We also asked about medical marijuana status. Individuals were coded as “non-marijuana users”, “illicit marijuana users”, and “medical marijuana users”. We compared participants on cigarettes smoked per day, days of any alcohol use, and days of alcohol use to intoxication.

Results: In total, 55 % participants reported no use of marijuana, while 15 % reported illicit marijuana use, and 29 % reported medical marijuana use. There was a significant difference in cigarettes smoked per day ($X^2=6.73$, $p=0.035$), with medical marijuana users ($M=9.3$, $SD=17.7$) and illicit users ($M=8.0$, $SD=9.2$) reporting more cigarettes smoked per day than non-users ($M=5.6$, $SD=7.9$). Regarding alcohol use, there was a significant difference in days of any use ($X^2=15.67$, $p<0.001$), as both medical ($M=4.6$, $SD=8.8$) and illicit marijuana users ($M=5.9$, $SD=8.7$) reported more days of any drinking than non-marijuana users ($M=2.2$, $SD=5.1$). There was also a significant difference in days of drinking to intoxication ($X^2=11.02$, $p=0.004$), with medical marijuana users ($M=2.9$, $SD=7.6$) and illicit marijuana users ($M=2.6$, $SD=6.0$) reporting more days of drinking to intoxication than non-marijuana users ($M=0.8$, $SD=2.8$).

Discussion: Similar to illicit marijuana users, medical marijuana users engage in high rates of alcohol and tobacco use. While medical marijuana may present benefits to certain patients, high rates of alcohol and cigarette consumption raise concerns. The public health implications of medical marijuana use should be fully considered.

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A-067**FACTORS THAT INFLUENCE ADHERENCE TO ANTIRETROVIRAL THERAPY AMONG ADULT AIDS PATIENTS AT BAHIR DAR TOWN, NORTH WEST ETHIOPIA**

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Introduction - Adherence is a complex dynamic behavior influenced by characteristics of the patient, treatment regimen, disease, patient-provider relationship, and clinical setting. Non-adherence to ART endanger good clinical outcome in people living with HIV/AIDS. Understanding the factors influencing adherence and development of effective interventions are critical for improved clinical outcomes among persons on ART. **Methods -** Both cross sectional survey and qualitative methods (In-depth interview and FGDs) were used in the study. Randomly selected adult patients on ART for at least 6 months were included in the study. Self-reported data were collected by interviewer administered questionnaire. In-depth interview and FGDs among selected ART users, health workers and community leaders were also included. Quantitative data were analyzed using SPSS 12.0. $P<0.05$ was considered as significant. Qualitative data were transcribed and analyzed using themes. **Results -** Out of the total 249 participants 222(89.2 %) were adherent to their prescribed medication optimally in the seven days before data collection. The main reasons for suboptimal adherence were forgetfulness, far from home, went to holly water and busy time. Patients who use reminders were 9.31 times more likely to have optimal adherence than not using ($OR=9.31$, $95\%CI$ 1.43, 60.74). Those patients adhering to the prescribed food restriction were 3.33 times more likely to have optimal adherence ($OR=3.33$, $95\% CI$ 1.4, 7.7). Factors like initial counseling, side effects of the drugs, disclosure, family support and socio demographic variables didn't show significant association in this study.

Conclusions and recommendations - This rate of adherence is higher than results in other studies in Ethiopia and abroad in resource poor countries. This has to be further strengthened and studies with different methods and approaches have to be done. Patients have to be encouraged and use reminders. Discussion with the religious leaders in the community has to be made to address the problems of interruption due to holly water.

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A-068**CERVICAL CANCER SCREENING ADHERENCE AMONG HIV-POSITIVE, FEMALE SMOKERS: A RETROSPECTIVE STUDY FROM A COMPREHENSIVE HIV CLINIC**Faith Fletcher, PhD, MA,¹ Damon J. Vidrine, DrPH,¹ Irene Tami-Maury, DrPH, DMD, Msc,¹ Heather Danysh, MHS,¹ Rachel Marks King, MPH,¹ Roberto Arduino, MD,² Meredith Buchberg, MA¹ and Ellen R. Gritz, PhD¹¹Behavioral Science, The University of Texas MD Anderson Cancer Center, Houston, TX and ²Internal Medicine, Division of Infectious Diseases, The University of Texas Medical School-Houston, Houston, TX.

HIV+women are at elevated risk for developing cervical cancer. Factors related to this increased risk include persistent HPV infection, infection with oncogenic HPV subtypes, and high rates of tobacco smoking. Emerging research suggests that gynecologic health care is underutilized by HIV+women. Expanding on such work, the purpose of this study is to examine cervical cancer screening (pap smear) rates among a high risk sample of HIV+women who smoke. Data for this secondary analysis are derived from a smoking cessation randomized controlled trial for HIV+smokers ($N=474$). In the current study, we utilized electronic medical records to examine pap smear screening adherence rates among HIV+female smokers ($N=138$) receiving care at an urban HIV clinic, which offers comprehensive services, including gynecologic care. Majority of individuals reported heterosexual contact as the mode of HIV acquisition (68.8 %), self-identified as African American (79 %), and reported a mean smoking initiation age of 18.7 years. Forty-six percent of the women (64/138) had at least 1 pap test 1 year following study enrollment. Multiple logistic regression analysis indicated that younger age ($OR=0.94$; $95\% CI=0.89$, 0.99), African American race ($OR=4.41$; $95\% CI=1.23$, 15.8), hazardous drinking ($OR=5.30$; $95\% CI=1.92$, 14.67), cigarettes smoked per day ($OR=1.07$; $95\% CI=1.03$, 1.12) and smoking risk perception ($OR=1.24$; $95\% CI=1.04$, 1.47) were associated with pap smear screening non-adherence. Gynecologic care was severely underutilized by women in this study. Identifying women at risk for non-adherence and understanding multiple risk behavior patterns among HIV+women could potentially improve pap smear adherence rates. Findings also underscore the importance of integrating gynecologic and smoking cessation services as a routine component of HIV care to address the unique needs of HIV+women.

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A-069**CONDUCTING AN ONLINE HIV PREVENTION 3D GAME INTERVENTION FOR YMSM: OVERCOMING RECRUITMENT, ENROLLMENT AND RETENTION CHALLENGES**Paul Robert Appleby, PhD,¹ Chris O. Tacto, BA,¹ Milton E. Fuentes, WD,² Alexandra N. Anderson, MPH,¹ Lynn Carol Miller, PhD¹ and Stephen J. Read, PhD¹¹University of Southern California, Los Angeles, CA and ²M Concept, Los Angeles, CA.

The internet makes it possible to reach and provide HIV prevention interventions to at-risk audiences across the nation. There are, however, a myriad of challenges for randomized control trials (RCT) using on-line interventions. For example, in our ongoing trial targeting at-risk 18–24 year old MSM, variability and changes in technologies and in flux media preferences reduced initial online intervention-site recruitment compared to our experience a few years earlier. Furthermore, only a fraction of recruited MSM were eligible, agreed to participate (enrolled), completed baseline and intervention, and were thereby eligible for subsequent follow-up ($N=585$). Adaptive solutions allowed us to increase our subject yield (i.e., from number of subjects screened to number who completed baseline) from 1.83 % in months 1–2 to 7.40 % in months 3–4. This increase was attributable to many factors including our in-house creation of a “hip” Tumblr blog in which ads are embedded for our study and using meta-data to advertise on online sites affording greatest yield cost effectiveness. Another challenge was retention of eligible subjects from baseline to three-month follow-up. In our early pilot wave, retention of MSM was poor (15 %). However, after identification of and addressing potential obstacles from this pilot, retention from baseline to three-month follow-up improved to 80 % at most recent count in the RCT. One obstacle, for example, was participant cyber security and trust concerns (e.g., spyware and viruses sometimes are present in downloads from internet sites). This was addressed by adding instructions for participants to call us during business hours with questions and concerns. Other issues to be discussed are finding the best incentive structures given limited funds, using additional audiovisual elements for instructional design, and utilizing Tumblr to enhance retention.

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A-070

SPIRITUALITY, SELF-EFFICACY AND SOCIAL SUPPORT: CORRELATES OF PSYCHOLOGICAL QOL IN PEOPLE LIVING WITH HIV

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According to Social Cognitive Theory, self-efficacy and social support lead to safer behaviors associated with increases in quality of life (QOL) among people living with HIV (PLH; Fisher & Fisher, 2000). Another construct associated with QOL in PLH is spirituality (Tsevat, 2006), which can be examined through mindfulness skills and measures of spirituality (Logsdon-Conradsen, 2002). We hypothesize that spirituality, mindfulness skills, self-efficacy and social support account for a significant proportion of variance in QOL. Psychometrically sound instruments used in our study include: the mental health subscale ($\alpha=.74$) of the MOS-HIV Survey (Wu et al., 1991); the accepting subscale ($\alpha=.77$) of the Kentucky Inventory of Mindfulness Skills (Baer, Smith & Allen, 2004; Multidimensional Scale of Perceived Social Support ($\alpha=.96$; Zimet, Dahlem, Zimet & Farley, 1988); Spirituality Index of Well-being ($\alpha=.95$; Daaleman & Frey, 2004) and Self-Efficacy for Managing Chronic Disease scale ($\alpha=.94$; Lorig, et al., 2001). Our gender-balanced sample ($N=68$, mean age=47.7 years, $SD=8.4$, range=24–66 years) consisted of African American (64.7%), European American (30.4%), Latino (1.4%), American Indian (1.4%), and Biracial (1.4%) participants. We found significant positive relationships between QOL and spirituality ($r=.68$, $p<.001$), self-efficacy ($r=.49$, $p<.001$), social support ($r=.30$, $p=.01$), and mindfulness ($r=.31$, $p=.01$). Controlling for age and years of education, a hierarchical regression analysis indicated our model accounted for 55.3% of the variance in quality of life ($F(6, 61)=14.79$, $p<.001$) with self-efficacy ($\beta=.13$, $t=3.22$, $p<.01$), spirituality ($\beta=.24$, $t=5.23$, $p<.001$) and mindfulness ($\beta=.26$, $t=3.15$, $p<.01$) as significant predictors. Our results suggest self-efficacy, mindfulness and spirituality contribute to QOL. Knowledge of this relationship may guide practitioners in treatment plans by suggesting methods to increase quality of life in PLH, such as including mindfulness and spirituality in interventions, as well as methods to increase self-efficacy.

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A-071

FOCUS GROUPS INFORM REFINEMENT OF THE INDIVIDUALIZED TEXTING FOR ADHERENCE BUILDING (ITAB) INTERVENTION TO IMPROVE MEDICATION ADHERENCE AMONG HIV+METHAMPHETAMINE USERS

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Among HIV+ individuals, methamphetamine (MA) use consistently predicts antiretroviral treatment (ART) nonadherence. Because ART must be taken on a daily basis, improving adherence lends itself to a technology-based intervention that can intervene on the same schedule. We employed qualitative analysis of focus groups to identify barriers and strategies for ART adherence specific to HIV+/MA+ persons and to integrate feedback on the content of a text-messaging intervention (i.e., individualized Texting for Adherence Building; iTAB). Methods: Two focus groups, each with ten HIV+/MA+ individuals, were conducted. The participants were middle aged (43.6 years, $SD=7.7$), predominantly male (90%), Caucasian (60%), and high school educated (12.3 years; $SD=2.8$). Using a methodology of "Coding, Consensus, Co-occurrence, and Comparison," transcribed audio recordings were independently coded by two investigators using QSR NVivo software to identify emergent themes related to barriers and strategies of adherence, and content of proposed text messages. Disagreements in coding were resolved through consensus, and kappa was calculated for final assigned codes. Results: Interrater reliability of 31 themes of 549 coded statements was high (kappa of 98.7; $SD=.02$). Barriers to ART adherence included MA-related barriers (e.g., shift in priorities; lost track of time), lack of adherence education, and HIV stigma. Use of reminders, adherence education, and social support were among 13 recommended adherence strategies. Participants identified and endorsed eight motivational themes for text messages for iTAB, including social support, dangers of nonadherence, and spirituality. Conclusions: Focus groups informed the refinement of iTAB to improve ART adherence among a poorly adherent population. Such interventions have potential for improving health outcomes by assisting with behavior modification and disease self-management.

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A-072

ACCEPTABILITY OF AN INTERACTIVE, COMPUTER-TAILORED INTERVENTION TO PROMOTE CONDOM USE AMONG AFRICAN AMERICANS VISITING AN STI CLINIC

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Background: African Americans are dramatically disproportionately affected by HIV/AIDS. The current study reports data from an ongoing randomized controlled trial testing the ability of an interactive, computer-tailored intervention to promote condom use among low income, heterosexually active African Americans visiting an STI clinic.

Methods: The study setting was a large, publicly funded STI clinic in the Southeastern United States. A total of $N=274$ participants were enrolled at baseline (54% randomized to intervention and 46% to control). Intervention participants completed a 30-minute on-screen, theory-based computer-delivered intervention session and were given tailored "take-away" print materials and condoms. Control participants completed a 15-minute computerized survey and were given generic safer sex print materials and condoms.

Results: A majority of study participants were female (59%; mean age=23.40), had a high school diploma or less education (67%), and made less than \$10,000 a year (64%). While multiple sex partners were common (59% of the sample), consistent condom use with main (9%) and casual (27%) partners was low. Intervention participants overwhelmingly reported liking the intervention (95%), and that it kept their attention (96%), fit their needs (80%), and that they would return for another session (95%) and recommend it to others (96%). Multiple regression analyses predicting an 8-item measure of intervention acceptability ($\alpha=.87$) revealed that gender (female) and age (being older) were significant ($p<.05$) predictors. Other demographic, structural, and sexual characteristics were not significantly associated with intervention acceptability.

Conclusions: Although some demographic differences were observed, a computer-delivered risk reduction intervention was broadly acceptable to at-risk, low-income African Americans. Increased investment in such approaches is warranted.

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A-073

PUTTING LESBIAN BODY IMAGE IN CONTEXT WITH CULTURALLY-SPECIFIC MODELING

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Body image is an important component of women's physical and mental health. Poor body image has been linked to disordered eating, obesity, depression, and reduced perceived quality of life. Although body dissatisfaction is a pervasive problem among women generally, mounting evidence points to lower rates among lesbian women. Theorists have offered several explanations for less dissatisfaction among lesbian compared to heterosexual women, but few hypotheses have been empirically tested and many fail to consider key variables known to influence lesbian health. In the current study I tested an empirically- and theoretically-derived model of factors influencing lesbian women's body dissatisfaction. I hypothesized that lesbian cultural norms and attitudes are protective against body dissatisfaction, while discrimination and stigmatization due to one's sexual minority status confer risk. These countervailing influences are moderated by individual differences such as involvement in the lesbian community and internalization of society's negative attitudes toward homosexuality. I tested components of this model with data from the Epidemiological Study of Health Risk in Women (ESTHER) Project, a large cross-sectional study of women's health. Using structural equation modeling, I examined the relative influences of lesbian community involvement, perceived discrimination, and internalized heterosexism on body dissatisfaction among lesbian participants ($n=479$). Although the measurement model showed good fit to the data, the structural model did not show a significant improvement in fit, suggesting that specifying relationships between the lesbian-specific factors and body dissatisfaction did not enhance prediction. This study represents a first attempt at modeling culturally-specific influences on lesbian women's body image. I discuss next steps for identifying socio-cultural mechanisms whereby women's sexual orientation influences body dissatisfaction, and how this research can provide clinically useful information to enhance women's health.

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A-074

ETHNIC DIFFERENCES IN PERCEPTIONS OF THE SEVERITY OF ALZHEIMER'S DISEASE: IMPLICATIONS FOR SEEKING ASSISTANCE IN CARING FOR AN ILL PARENT

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Objective: To examine ethnic differences in perceptions of Alzheimer's disease (AD). **Method:** Participants were 974 individuals who identified as White, Black, Hispanic, or Asian/Pacific Islander. Participants read a hypothetical vignette about a 75-year-old man, Daryl. They were instructed to imagine that they were James, Daryl's son, and asked to rate the severity of Daryl's medical condition and their likelihood of hiring an HCA to assist him. Physical malady (Daryl having a heart attack or hip fracture), cognitive state (Daryl being cognitively healthy or having AD), and distance (residing near or far from Daryl) were manipulated.

Results: A 2 (Physical Malady) x 2 (Cognitive State) x 2 (Distance) x 4 (Ethnicity) multivariate analysis of covariance was performed to assess differential responses among ethnicities. A priori interaction contrasts were examined to determine whether Black, Hispanic, or Asian/Pacific Islander participants rated the severity of Daryl's condition and their likelihood of hiring an HCA to assist him differently from White participants as a function of cognitive state. There were no significant differences as a function of cognitive state between Black or Asian/Pacific Islander and White participants with respect to severity ratings or likelihoods of hiring an HCA ($\psi_{1A}=-.115$, $t(929)=-.227$, $p=.821$; $\psi_{1B}=-.942$, $t(943)=1.57$, $p=.116$; $\psi_{2A}=.303$, $t(929)=.708$, $p=.479$; $\psi_{2B}=.515$, $t(943)=1.02$, $p=.308$, respectively). However, Hispanic participants did not rate Daryl's condition as more severe when he had AD, unlike White participants, and were less likely than White participants to seek assistance from an HCA when he had AD ($\psi_{3A}=1.016$, $t(929)=2.776$, $p=.006$; $\psi_{3B}=.997$, $t(943)=2.319$, $p=.021$). **Conclusion:** Ethnic differences in the perceptions of AD may not be as extensive as previously thought, but it seems there is a need for culturally-sensitive education regarding AD among the Hispanic community.

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A-076

TEXT ANALYSIS OF EXPRESSIVE WRITING ESSAYS PROVIDES A TOOL FOR MONITORING TREATMENT RESPONSE IN FEMALE SURVIVORS OF CHILDHOOD SEXUAL ABUSE UNDERGOING AN EXPRESSIVE WRITING TREATMENT

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Analyzing word choice in client's essays during expressive writing treatments may provide clinicians with a new implicit method of assessing response during treatment. The current study consisted of a secondary analysis of a clinical trial of an expressive writing treatment which was shown to reduce depressive symptoms and improve sexual satisfaction in a sample of women with a history of childhood sexual abuse and adult sexual dysfunction. Linguistic analysis of essays from this study showed that change in the use of specific word categories throughout the course of treatment was significantly associated with measures of sexual and psychological health. A reduction in the use of the word "I" (indicative of self-focus and depression) and an increase in positive emotion words (indicative of positive affect) were associated with decreased depression symptoms and increased sexual satisfaction. A change in negative emotion words was not associated with any treatment outcomes, suggesting that an increase in positive emotion might be more salient than a decrease of negative emotion for improving psychological and sexual health. The study suggests that, as language may serve as an implicit measure of depression and sexual satisfaction, monitoring language changes during treatment might provide clinicians with a reliable indicator of clients' treatment response.

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A-077

WHO DO PHYSICIANS REFER FOR BEHAVIORAL MEDICINE?: COLLABORATIVE CARE SERVICES IN FAMILY MEDICINE

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The collaborative care model will be described as implemented in a low-SES primary care medical clinic/family medicine resident training facility that offers free behavioral medicine services. Data on the types of behavioral medicine (B. Med.) referrals received from physicians at various levels of training will be discussed in relation to physician education needs. **Methods:** Year in residence/faculty status, B. Med. training received to date by residents, and referral reason over 1 year were collected by B. Med. interns. **Results:** Physicians made 471 referrals. The five most common reasons for referral include depression (N=171, 36.3%), diabetes management (N=89, 18.9%), anxiety (N=89, 18.9%), stress (N=69, 14.6%), and grief (N=43, 9.1%). Few referrals were received for: substance misuse (N=15, 3.2%), treatment/medication adherence (N=9, 1.9%), obesity (N=7, 1.5%), pain management (N=10, 2.1%), sleep (N=5, 1.1%), and weight loss (N=12, 2.5%). Faculty physicians made more referrals for relationship problems ($F(470,1)=9.63$, $p<.01$) and fewer for diabetes management ($F(470,1)=5.94$, $p<.05$) than residents. The types of referrals made did not differ by years in residence or B. Med. training received. **Conclusion:** Collaborative care provides immediate physician and patient access to B. Med. professionals. Most physician referrals were for conditions causing patient distress. Fewer referrals were made in areas such as health behaviors, management of chronic conditions, and sleep. Physician education on the role of B. Med. in these conditions may increase referrals and strengthen the collaboration.

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A-078

SEDENTARY BEHAVIOR AND PSYCHIATRIC SYMPTOMS IN OVERWEIGHT AND OBESE ADULTS WITH SCHIZOPHRENIA AND SCHIZOAFFECTIVE DISORDERS

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Objective: Examine the association between sedentary behavior and psychiatric symptoms among overweight and obese adults with schizophrenia or schizoaffective disorders (SZO/SA). **Design:** Randomized clinical trial; Weight Assessment and Intervention in Schizophrenia Treatment (WAIST) Study: baseline data collected 2005-2008.

Setting: University of Pittsburgh Medical Center, Pittsburgh, PA, USA

Participants: Community-dwelling adults diagnosed with SZO/SA, with mild symptom severity [Positive and Negative Syndrome Scale (PANSS)<90], who were interested in losing weight, age 18-70 years, BMI>27 kg/m².

Measurements: Objectively measured sedentary behavior by accelerometry, and psychopathology assessed by PANSS. Participants wore the actigraphs for 7 consecutive days during their waking hours. Sedentary behavior was defined as <100 counts per minute during wear-time and excluded sleep and non-wear time.

Results: On average, 81% of the participant's monitoring time or 756 mins/day was classified as sedentary behavior using accelerometry. No association was observed between sedentary behaviors and PANSS psychiatric symptoms [total ($p>0.75$), positive ($p>0.81$), negative ($p>0.59$) and general psychopathology ($p>0.65$) subscales]. No association was observed between sedentary behaviors and age, race, gender and BMI.

Conclusion: From a clinical and public health perspective, the amount of time (approximately 13 hours) and percentage of time (81% excluding non-wear time associated with sleeping) engaged in sedentary behavior among overweight and obese adults in this population is alarming and points to an urgent need for interventions to decrease sedentary behaviors. The lack of associations between sedentary behavior and psychiatric symptoms may be due to a ceiling effect for sedentary behavior.

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A-079

IMPACT OF PSYCHOLOGICAL TREATMENT ON ANXIETY AND DEPRESSION IN PRIMARY CARE PATIENTS

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The primary care setting is the entry point for the vast majority of patients with chronic health problems, most of whom are experiencing elevated anxiety and depression. Psychological services should be integrated into primary care but few studies have measured the effectiveness of an integrated model. The present study evaluated the effects (on primary care patients' anxiety and depression) of treatment provided by psychology graduate students who worked on a direct referral basis with medical residents to provide on-site psychological services to those patients. Brief interventions (relaxation training, cognitive restructuring, behavior modification, problem solving) were used to address patients' problems. Pretreatment data (GAD-7, PHQ-9) on 160 referred patients indicated they were experiencing moderately high anxiety and depression. Females were higher in anxiety and depression than males; younger adults were higher in anxiety than older adults, and Caucasians were higher in anxiety than African Americans. Evaluation of anxiety and depression scores over time indicated reductions in scores from time block 1 (visits 1 or 2) to time block 2 (visits 3, 4, or 5). Changes in anxiety and depression from block 1 to block 3 (6+ visits) were significant only for anxiety and trended for depression; changes from block 2 to 3 were nonsignificant. This suggests that patients with more persistent symptoms may benefit from receiving treatment at a specialty care clinic where their psychological needs can be addressed more consistently. Also, depression change varied based on ethnicity, such that African Americans' scores remained stable over time whereas Caucasians' scores dropped significantly. This finding requires further investigation. This study demonstrated that anxiety and depression can be effectively treated using an integrated multidisciplinary approach in primary care.

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A-080

USING TECHNOLOGY TO PREVENT ADOLESCENT DEPRESSION

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Online interventions increase access to care for depression, but there is little research on their feasibility and efficacy in adolescents. There is also debate about whether cognitive techniques are useful in adolescent populations. This study aimed to establish the feasibility of administering an online cognitive restructuring exercise to high-school adolescents as part of an health education intervention.

Students in two 9th grade classes were presented with the online exercise. Students identified a negative thought and provided (1) "evidence" for and against their thought; (2) a "rational conclusion"; and (3) a "helpful behavior" to address their thought. The Center for Epidemiological Studies Depression Scale was administered pre- and post-intervention; at-risk was defined as a score ≥ 21 . Accurate completion of the exercise was rated on a seven-item scale created for this study.

230 students (56 % Hispanic/Latino) completed the exercise. Females were more likely to correctly complete the exercise than males (60 % versus 32 %; $p < .01$). There was a significant negative correlation between risk for depression and exercise completion score ($r = -.264$, $p < .01$) in female students. Compared to their low-risk counterparts, at-risk females and at-risk males had significantly lower scores on "rational conclusion" and "helpful behavior" combined items ($p < .05$).

Using cognitive restructuring in an online intervention for adolescents is feasible. Students at risk for depression may have trouble accessing positive and helpful cognitions; targeted skill-building may be particularly useful for this population.

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A-081

SOCIAL INTERACTIONS IN THE STUDY OF SECOND LIFE AS A SOCIAL SUPPORT TOOL

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Background: Research into online virtual worlds (VW) demonstrates their utility as a methodological tool for measuring psychosocial behaviors and traits due both to the ability to control aspects of experimental design (previously unattainable in real-life settings) and to measure user behavior unobtrusively and with reduced bias (Blascovich et al., 2002). These findings have extended to health psychology, where the use of VW serves as support tools for patients suffering from chronic mental and physical ailments (Gomi et al., 2008). The current study extends previous research by assessing the importance of social interactions with other avatars as a key component to immersion (i.e., the psychological state of being enveloped by an experience, Witmer & Singer, 1998) in VW. Method: Undergraduate students ($n=37$) navigated a virtual "hotel" for 15 minutes. Confederate avatars interacted with participants when approached. Behaviors in the VW included measures of exploration (coded as the number of room boundaries crossed), and interaction (coded as number of avatars with whom the participant spoke). Linguistic analyses were performed using LIWC (Linguistic Inquiry and Word Count) Software (Pennebaker et al., 2007). Immersion (i.e., sense of presence in the real world) was assessed by a one-item self-report questionnaire.

Results: Participant word count and immersion were significantly correlated ($r=.46$, $p < .01$), but exploration was negatively correlated with immersion ($r=-.42$, $p < .05$), and with participant word count ($r=-.56$, $p < .01$). The amount of exploration was correlated with the participant's use of positive emotion words, suggesting that positivity may influence users' experience of VW.

Discussion: Immersion in VW may be contingent on whether users' experiences are social rather than just having a physical environment to explore. This finding is important not only for researchers interested in using VW as a methodological tool for studying human behavior but also for the development of psycho-educational tools, support groups, and interventions for both psychological and medical purposes.

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A-082

DEPRESSION CARE MANAGERS OFFER SUPPORT AND SELF-MANAGEMENT STRATEGIES: PATIENT OPINIONS OF CARE MANAGEMENT FOR DEPRESSION IN PRIMARY CARE

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The collaborative care model, using allied health personnel, to act as care managers, has been consistently shown in studies to be effective in achieving sustained treatment outcomes in chronic disease management such as depression. Little research exists on patient perspectives and satisfaction with care management. This study evaluated patient perceived satisfaction with care management and opinions of the effectiveness of care management in promoting self-management. Qualitative and quantitative responses were collected from 125 patients (79 % female, average age 46) enrolled in care management for depression. Results indicate that patients were satisfied with depression care coordination ($M=8.5$ [$SD=2$]; 10=very good). Patients felt that care coordination improved their treatment beyond other aspects of their depression treatment ($M=6.7$ [$SD=2$]; 10=very much), increased their understanding of depression self-management ($M=7.2$ [$SD=2$]; 10=very much), and increased frequency of self-management goal-setting ($M=6.9$ [$SD=3$]; 10=very much). Qualitative responses were coded with methods of content analysis by two independent analysts. Predominant themes included that care managers were viewed as caring and supportive, that they created accountability for patients, and that they were knowledgeable experts about depression care. Care managers were viewed as supporting self-management by collaborating to find solutions rather than fixing the issue for the patient. Although patients were satisfied with care management relationship and focus, logistical challenges associated with a telephonic intervention were problematic for some. Our findings suggest that care managers are valued by patients. Barriers in care coordination, such as scheduling telephone calls, should be addressed in future care management implementation and study.

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A-083

USING THE TECHNOLOGY OF GOOGLE INSIGHTS FOR SEARCH TO EVALUATE THE IMPACT OF A MENTAL HEALTH MEDIA CAMPAIGN

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Background: In a society that is increasingly more likely to search the web for health information, the use of web tracking applications can be useful to evaluate the effectiveness of media campaigns. This study seeks to analyze the effectiveness of San Diego's Up2SD Mental Health awareness campaign launched in September 2010 by tracking 21 mental health related search terms using Google Insights for Search (GIS). Ads, which included English and Spanish television and radio commercials, posters, and billboards, encourage San Diegans experiencing symptoms of a mental health challenge to "read up, listen up, speak up, and follow up".

Methods: Using a geo-quasi experimental method, this study investigated the impact of San Diego's Up2SD campaign on internet search volume for select mental health terms provided by GIS and analyzed search volume pre and post campaign implementation. Search data from San Diego was compared to Los Angeles, San Francisco, New York City, Philadelphia, Chicago, San Antonio, Houston, Boston, Seattle, Kansas City, Sacramento, and Santa Barbara. A multivariate ANOVA was run and compared differences in changes among all cities from 2009–2010.

Results: GIS data showed a significant increase of 9.69 % ($p=0.000001$) in mental health related queries in San Diego following the launch of the Up2SD campaign. San Diego was the only city to show a significant increase in mental health related search queries from 2009 to 2010. Data collected from comparison cities did not show significant increases in mental health related search queries when compared to San Diego.

Conclusion: The current study expands the uses of GIS into the public health program evaluation domain. Cost-effective internet tracking software may have potential to be used in evaluating the effectiveness of mass media campaigns by tracking population interest and information seeking activity on the internet over time. Results demonstrating campaign effectiveness may help encourage other locales to implement mental health efforts similar to San Diego's Up2SD campaign.

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A-084

THE INFLUENCE OF ATTENTION ON CEREBRAL METABOLISM FOLLOWING MILD TRAUMATIC BRAIN INJURY

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In some cases of mild traumatic brain injury (mTBI), individuals may experience cognitive, emotional, behavioral, and neurological deficits that can persist more than a year after injury. It has been suggested that cerebral metabolic changes following mTBI may be different in individuals with similar mild head injuries. Knowledge of the relationship between metabolic and cognitive changes may provide a better understanding of why some individuals experience chronic post-concussive symptoms following mTBI and others do not. Using 3D magnetic resonance spectroscopic (MRS) imaging to measure metabolic changes in individuals following mTBI, this study aims to determine if potential metabolic changes might explain reported differences in cognitive functioning between mTBI patients with similar injuries when compared to healthy controls.

This preliminary study included 13 mTBI subjects and 6 control subjects. Neuropsychological tests administered to subjects included measures in cognitive domains such as intelligence, attention, language, verbal and non-verbal memory, visual construction, fine motor speed, and executive functioning. It was found that measures of attention were predictive of alterations in cerebral metabolism. Specifically, analyses suggested that performance on tasks of attention had a significant influence on the choline (Cho) to creatine (Cr) ratio (Cho/Cr) within the corpus callosum and the parieto-occipital white matter for mTBI subjects, with little or no influence for controls. The findings from the current study suggest that cerebral metabolic changes as measured by MRS may be different in mTBI patients with chronic post-concussive symptoms when compared to healthy controls. In addition to understanding the relationship between metabolic and cognitive changes following mTBI, this knowledge may potentially guide future research to explore ways to alter cerebral metabolism in efforts to relieve post-concussive symptoms.

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A-085

DIAGNOSED DEPRESSION IN YOUNG ADULTS WITH SPECIAL HEALTH CARE NEEDS

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Introduction: A large body of literature implicates special health care needs (SHCN) as a risk factor for increased internalizing symptoms in youth (e.g. Barlow & Ellard, 2005). The majority of investigations to date have used levels of depressive symptomatology to measure these symptoms, with very few examining rates of diagnosed depression.

Methods: The current study utilizes information from the Adolescent Health Study (Add Health), which is comprised of longitudinal data from a nationally representative sample. Individuals from Wave 3 of Add Health (ages 18–26) were selected for the current study if they had ever been diagnosed with asthma (N=818), diabetes (N=53), cancer (N=39), or epilepsy (N=68), and compared to the remainder of the sample (N=4879). Childhood socioeconomic status (SES) was controlled for and operationalized as the highest level of education completed by the head of household (HH).

Results: Preliminary Chi Square analyses indicated that SES was not associated with any of the medical diagnoses except epilepsy, and only in the event that the mother was HH ($\chi^2=10.03$, $p=0.04$). Among youth with a SHCN, 28.2 % of those with cancer, 16.6 % with asthma, 24.5 % of with diabetes, and 17.6 % with epilepsy had been diagnosed with depression, as opposed to approximately 11 % without each of these diagnoses. Chi Square analyses revealed that the higher incidence of depression in cancer ($\chi^2=11.56$, $p<0.01$), asthma ($\chi^2=30.03$, $p<0.01$) and diabetes ($\chi^2=9.70$, $p<0.01$) was significant, however, the higher rate of depression among young adults with epilepsy was not significant ($\chi^2=2.05$, $p=0.15$).

Conclusions: The current study is one of the first to compare rates of diagnosed depression in a sample of young adults with a history of a SHCN. Results indicated that even when controlling for SES, children diagnosed with cancer, asthma and diabetes exhibit significantly higher rates of depression than individuals without these illnesses. These results shed light on the severity of risk youth with SHCN face, and provide further confirmation for attending to mood symptoms in pediatric specialty settings.

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A-086

IMPROVEMENT IN MENTAL WELLBEING AMONG PROBLEMATIC ALCOHOL USERS IN AN INTERNET-BASED INTERVENTION TRIAL

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A total of 633 problematic alcohol users were recruited via the Internet to a study investigating the effectiveness of three different Internet-based interventions for reducing such use. As a sequel to this study it is of interest to further explore the significance of changes in problematic alcohol use for changes in other health-related outcomes. The alcohol use of the study participants was measured with the Alcohol Use Disorders Identification Test (AUDIT) at baseline, along with experienced levels of general health as well as additional items reflecting well-being or its absence. Changes were assessed 12 months after recruitment with a follow-up rate of 45 percent. At the 12 month follow-up, 35.9 % of study participants had changed to a clinically lower level of alcohol use while 61.9 % remained at the same level and 2.2 % changed to a clinically higher level of alcohol use. A large proportion (48 % to 66 %) of those who had significantly reduced their alcohol use reported an improvement in experienced levels of feeling sad or down, losing interest in everyday activities, feeling a lack of vigor and energy, feeling lower self-confidence, feeling worthless, having bad conscience or feeling guilt, sense of humor, back and neck pain and meaningfulness of life. In comparison, a smaller proportion (26 %–40 %) of those who did not change and those who increased their alcohol use reported such improvements. All differences were statistically significant at the $\alpha=0.05$ level, except for improvements in experienced level of general health, back and neck pain and sense of humor. Study results showed that a clinically significant improvement in alcohol use is associated with an improvement in many symptoms of mental wellbeing. However, this was not the case for the two symptoms measuring physical wellbeing as well as sense of humor.

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A-087

TV VIEWING, INVOLVEMENT, PARENTAL MEDIATION, AND MENTAL WELL-BEING AMONG LATINO, AFRICAN AMERICAN, AND CAUCASIAN CHILDREN

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Research among adults has demonstrated concurrent and prospective associations between TV viewing and mental health, yet very little research has examined these associations among youth, particularly Latino and African American youth in the U.S. In addition, little is known about the role of children's involvement with TV and parental mediation as potential moderators of associations between TV viewing and mental health. The purpose of the present study is to examine whether TV viewing is negatively associated with mental well-being in Latino, African American, and Caucasian children, whether children's TV involvement or parental mediation moderates these associations, and whether racial/ethnic differences exist in these relationships. Associations between mental well-being and TV viewing, TV involvement, and parental mediation (i.e., rules and discussion/coviewing) were examined using data from Healthy Passages™, a study of 4,824 African American (30%), Latino (47%), and Caucasian (23%) 5th graders. Results indicated Caucasian children reported significantly higher mental well-being than Latino and African American children, and African American and Latino children reported higher amounts of TV viewing and TV involvement. In addition, TV viewing and TV involvement were negatively associated with mental well-being, and parental mediation was positively associated with mental well-being across racial/ethnic groups. There were few significant moderating relationships. This study extends findings from adult research on media exposure and mental well-being into a diverse sample of 5th graders and extends the field beyond TV viewing to illuminate the role of TV involvement and parental mediation.

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A-088

IMPROVING CONTROL AND ITS IMPACT ON SUBSTANCE USE COGNITIONS

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High perceived control is associated with lower substance use (Tangney & Baumeister, 2004; Wills, 1994), and high self-control is associated with lower levels of adolescent substance use (Wills et al., 2008). Furthermore, high self-control buffers against the harmful effects of aversive life events on substance use outcomes among young adults (Wills, Pokhrel, Morehouse, & Fenster, 2011). The present study was conducted to determine an effective way to improve perceived control, and examine how improving perceived control impacts substance use cognitions. The impact of several perceived control manipulations on self-report and implicit inhibitory control and substance use cognitions were examined.

Undergraduates (n=137) were randomly assigned to five conditions designed to manipulate perceived control. Two conditions followed the work of Glass & Singer (1972), where the respondents listened to aversive noises and either had control over the volume and duration of the noises or not (Warburton, Williams, & Cairns, 2006). In a third condition, participants wrote about a time they felt in control (Galinsky, Gruenfeld, & Magee, 2003), and the fourth condition was a word completion task to prime feelings of control (Schmidt et al., 2009). A fifth condition was a comparison group. Stroop response latency was used to measure inhibitory control. Self-report feelings of control and substance use (alcohol/drug) willingness were assessed.

Controlling for gender, mood, and past use, an ANCOVA comparing all five conditions was not significant, but revealed that the essay writing condition had the strongest effect on all DVs ($F=1.02$; $p>.05$). Compared to the neutral condition, students in the essay condition reported higher control (Messay =3.84, $M_{neutral}=3.18$, $p<.04$), lower response latency in the Stroop trials, ($M_e=1445.08$ milliseconds, $M_n=1657.19$ ms, $p<.02$), and lower willingness to use substances ($M_e=2.54$, $M_n=3.74$, $p<.03$). Findings demonstrate that writing about feeling in control is an effective way to enhance perceived and inhibitory control, and is negatively associated with use cognitions.

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A-089

PARTITIONING METHODS: EXPLORATORY ANALYSIS OF CHILDHOOD OBESITY INTERVENTION DATA

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Introduction: Even with a randomized design, variations in primary variables are inherent. Investigating changes in obdurate variables such as BMI among children calls for an alternative way of approaching prevention data. Data mining, in addition to traditional hypothesis testing and statistical significance, can provide invaluable insights. In this study, we evaluate a school-based obesity prevention program by applying an exploratory approach commonly used in business. Methods: We used data from a school-based obesity prevention (N=656), employing partitioning method ("decision tree") to identify cutoff points maximizing information in the data while minimizing errors sum of square. JMP was used to predict the changes in age-gender-adjusted BMI percentile from Wave 1 and Wave 4, with fifteen splits. We split on the intervention group and, for comparison purpose, mirrored the same splits on control group. Results: The mean change in BMI percentile was -1.16 . On average, the intervention group experienced decrease in BMI percentile ($M=-2.39$, $SD=13.11$) whereas the control group slightly gained ($M=.25$, $SD=13.44$). Among intervention, the greatest decrease was observed for 47 children who were overweight at baseline and who engaged in physical activity outside school ($M=-9.07$, $SD=13.56$). Similar magnitude of decrease was observed among 96 children with normal weight at baseline and with executive cognitive function impairment >1.23 ($M=-8.19$, $SD=14.51$). Nineteen children in intervention group with normal weight at baseline who engaged in physical activity within school <2.67 showed the greatest amount of gain ($M=10.42$, $SD=15.78$). In comparison, a total of 114 children in control group showed BMI percentile decrease in much smaller magnitude ($-2.37 \leq M \leq -3.89$, $3.07 \leq SD \leq 9.52$). Conclusion: Our findings provide insights for subgroups of children for whom the intervention was particularly protective and for whom supplemental component might be necessary. These insights serve utility in comprehensively evaluating the efficacy of a prevention program and offer detailed, evidence-based recommendations.

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A-090

MISSING DATA IN A CHILDHOOD OBESITY PREVENTION PROGRAM: APPLICATION OF RANDOM EFFECTS PATTERN MIXTURE MODEL

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Background: Longitudinal clinical trials are fraught with attrition. Nonetheless, the extent to which the missingness is non-ignorable is often overlooked. Random effects pattern mixture analysis (REPMA) is one modeling strategy to examine the extent of non-ignorable missingness in the data. The aims of this study were: 1) to compare the complete case analysis and REPMA, and 2) to quantify the impacts of incomplete cases on trajectories of obesity risk among children in an obesity prevention program.

Methods: Data from a longitudinal, school-based, randomized trial for a childhood obesity prevention program in California (Pathways) was used (N=1005 at Wave 1). The attrition rate was 0.6%, 20.4% and 9.0% at Wave 2 through 4, respectively. A series of multilevel models were conducted to test the effects of incomplete cases in confounding the prevention effects.

Results: Using the complete cases for all 4 waves (n=630), the intervention group showed a significantly steeper growth rate in Body Mass Index (BMI) ($p=.02$) than control group, adjusting for gender, ethnicity, SES. Subsequently, the missing data pattern was included as a level-2 predictor in a separate model (N=1005). By including the "incompleters," the slope difference in BMI between the intervention and control disappeared ($p=.17$) although the missing pattern had no impact on the intercept ($p=.91$) or the slope ($p=.21$) of BMI change. In another set of models, complete case analysis (n=630) showed that the intervention group showed a significantly steeper growth rate in waist circumference (WC) than the control ($p=.03$), adjusting for gender, ethnicity, SES. The slope difference in WC between intervention and control persisted ($p=.02$) when the "incompleters" were included in a separate model (N=1005). The slope difference in WC between completers and incompleters was significant ($p=.02$).

Conclusion: The results highlight the importance of considering missing data in longitudinal obesity prevention data. Relying solely on complete case analysis can lead to erroneous conclusions about prevention effects.

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A-091

USING GEOGRAPHIC INFORMATION SYSTEM (GIS) TECHNOLOGY TO UNDERSTAND THE IMPORTANCE OF BEHAVIOR AND OTHER FACTORS IN EXPLAINING MORTALITY DIFFERENCES BETWEEN ADJACENT COUNTIES

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Little is known about reasons for widely varying mortality differences between directly adjacent counties. We estimated the extent to which various county-level factors explained differences in mortality rates between two spatially adjacent counties. County-level data (2005–2008) from the Missouri county-level study, Census Bureau, and claims data included 1) behaviors (smoking, physical inactivity), 2) socio-economic conditions (poverty rate), 3) lack of access to medical care (primary care physician availability, preventable hospitalizations, lack of health insurance, lack of care because of cost), and 4) health care utilization (hospitalization rate, emergency department use), and health status (self-rated health, diabetes, obesity, hypertension). The outcome variable was 2005–2008 age-race adjusted all-cause mortality data for all 115 Missouri counties. Using a GIS, we determined which counties were spatially adjacent and calculated the difference in the mortality rates per 100,000 population between each set of 2 spatially adjacent counties. Differences in mortality rates varied from -442.2 to 435.3 (mean:-0.68) between adjacent counties. Using a Gaussian regression with a spatial correlation adjustment showed that differences in all 4 types of factors were associated with mortality differences between adjacent counties. A one percentage point (1 %) difference in smoking prevalence or physical inactivity was associated with a 10.7 and a 10.3 per 100,000 population difference in mortality rates, respectively. Nonbehavioral factors also played important roles. For a 1 % difference in diabetes, lack of medical care because of cost, and poverty rate, there was a difference in adjacent mortality rates of 24.3, 20.1, and 14.8, respectively. GIS technology and spatial analyses are useful tools in identifying factors that explain mortality differences between adjacent counties.

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A-092

DEVELOPMENT AND VALIDATION OF TRANSTHEORETICAL MODEL DECISIONAL BALANCE AND SELF-EFFICACY MEASURES FOR BEHAVIORAL HEALTH PROFESSIONALS' READINESS TO PRACTICE INTEGRATED PRIMARY CARE

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Integrated primary care (IPC) has received growing attention recently because of its demonstrated ability to improve access to care, quality of care and health outcomes. Although the benefits of IPC are clear, the integration process has met barriers. One barrier is limited understanding of behavioral health professionals' (BHP) attitudes towards IPC. Better understanding could allow us to improve BHP training and motivation for IPC. This study aimed to develop Transtheoretical Model (TTM) measures to assess BHP attitudes toward and readiness to practice IPC using split-half cross-validation procedures. The sample consisted of 319 licensed and practicing BHPs with a stage distribution of Precontemplation 50.6 %, Contemplation 2.8 %, Preparation 1.6 %, Action 6.0 %, and Maintenance 39.0 %. Exploratory principal components analyses yielded a 2-factor (Pros $\alpha=.90$; Cons $\alpha=.83$) 16-item scale for the decisional balance (DCBL) measure and a 1-factor 5-item scale for the self-efficacy measure ($\alpha=.93$). Confirmatory structural analyses replicated the hypothesized scale structures. For DCBL, the two-factor correlated model was the best fitting model, CFI=.89, AASR=.05, with loadings ranging from .51-.81. The unifactorial self-efficacy model also fit well, CFI=.90, AASR=.03, with loadings ranging .60-.90. MANOVA results by stage of change replicated hypothesized patterns for the Pros, Cons and Self Efficacy, Wilk's $\Lambda=.78$, $p<.001$, $F(12, 807.25)=6.51$, multivariate $\eta^2=.08$. Follow-up tests found significant stage group differences, accounting for between 8 % and 14 % of the variance. This study demonstrated the applicability of the TTM to this new and increasingly important area; both measures demonstrated good internal and external validity. Future research should explore these measures longitudinally and investigate methods to improve training to increase BHP readiness to practice IPC.

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A-094

IN PURSUIT OF HEALTHY EATING: A SCALE TO ASSESS HOW A PERSON'S GOAL FOR HEALTHY EATING INTERACTS WITH OTHER LIFE GOALS

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Maintaining a healthy lifestyle may be challenged by competing personal priorities or life goals. Goal Systems Theory posits that an individual's goals exist within a hierarchical system of goals that compete, conflict or facilitate each other. There are no validated instruments that assess a person's goals and their characteristics (e.g., how they compete, conflict or facilitate each other). This study developed a scale to assess the characteristics of goal pursuit for healthy eating in a sample of adults ($n=397$; 77 % white, 53 % female, and mean age 42 yrs). Participants were asked to rate on a 5 pt Likert scale how well 29 statements described them. Some examples of items included: Working toward this goal is exciting; I try not to let other goals interfere with this goal; I reward myself for working hard on this goal; I routinely criticize myself for unsatisfactory work on this goal; I evaluate my progress toward this goal in comparison to how well other people are doing in pursuing it; I possess the necessary skills to attain this goal. Exploratory principal component analysis, using varimax rotation and minimal average partial methods, was used to determine the number of items and components. Analysis resulted in a 6 component solution with 3–4 items each, loadings ranged from .55-.89, and 76 % variance explained. Internal consistency was .86 for the entire scale with components alpha ranging from .74-.92. The constructs represented were: 1) the benefits of goal pursuit, 2) goal shielding strategies, 3) reinforcement strategies, 4) criticizing self, 5) regulation of effort through evaluation and comparison, and 6) behavioral capability. This scale may be used to understand the characteristics of the goal of healthy eating and how it relates to other life goals. Future studies will examine how these goal pursuit constructs predict the achievement of a healthy eating goal.

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MOTIVATING HEALTHY EATING BEHAVIORS THROUGH A SELF-AS-DOER INTERVENTION

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Self-as-doer identity, a construct which aims to describe individuals in terms of their identification with doing a behavior, has been associated with improved exercise and healthy eating behaviors (Authors, 2011; Houser-Marko & Sheldon, 2006). Yet to date no one had explored the causal effects of self-as-doer identity on healthy eating behaviors. Therefore, the aim of the current study was to determine whether the self-as-doer identity could be induced among a sample of college women interested in healthy eating. We examined whether the experimental manipulation of the self-as-doer would lead to improved healthy food consumption, intentions, and a stronger healthy eater identity. Participants were 79 women, 18–53 years old ($M=22.92$, $SD=6.92$) randomly assigned to one of three conditions (i.e., control, nutrition education only, or education and self-as-doer activity) and asked to record their diet for four days using a food diary. Intentions to eat a healthy diet, identity as a healthy eater, and healthy eating behaviors were recorded over a six week period: before, after, and one month post-intervention. Repeated measures ANOVAs were performed to determine if the self-as-doer intervention created change in intentions, self-identity, and healthy food consumption. Self-as-doer participants strengthened self-identity and intentions over the course of the study, but no differences between the groups were found. However, self-as-doer participants increased overall healthy eating behaviors while education and control participants decreased overall healthy eating behaviors. Self-as-doer participants ate significantly more healthy foods at one-month post intervention than did education and control participants. Findings provide evidence for a causal relationship between self-as-doer identity and change in healthy eating identity, intentions, and behaviors. The self-as-doer intervention may provide individuals with unique motivational tools needed for diet change. Further research targeting other health behaviors and employing the intervention in a clinical population is needed.

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A-096

DOES GOAL ATTAINMENT ENHANCE YOUTH FRUIT-VEGETABLE INTAKE IN A SERIOUS VIDEOGAME?

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Background: Children consume few fruit-vegetables (FV). Videogames (VG) are popular. An earlier VG enhanced child FV intake; goal setting and FV intake were related. Implementation intentions (II) expand goal setting and may enhance FV intake.

Purpose: Examine whether goals met was related to FV intake in a 10-episode VG.

Methods: Ethical approval was received; written consent/assent was obtained. English-speaking 4th and 5th graders with computer access and high speed internet were recruited. Children were randomized to play a 10-episode serious VG promoting FV; groups varied on II (none, action, coping, both). 3 dietary recalls were collected [baseline, post-study (p1), 3 mo later (p2)] (NDSR 2009). During gameplay, children set FV and recipe goals and reported goals met; 9 FV and 9 recipe goals were possible. FV and recipe goals met were summed. A linear mixed model with repeated measures tested relationships between goals met and FV intake. Stepwise modeling examined two-way interactions.

Results: Preliminary analyses revealed 91 % of children played all 10 episodes; 362 had complete data. 79 % met 9 FV goals; 66 % met 9 recipe goals. Groups did not differ on # goals met (FV- $p=0.259$; Recipe- $p=0.513$). Regardless of group or time, #FV goals met was positively associated with FV intake ($p=.002$). Time effects revealed #FV goals met was positively associated with both p1 ($p=.034$) and p2 ($p=.000$) FV intake. A significant interaction (group x goals met) was observed for FV goals ($p=.020$); no group was significantly different from the group that did not create II, but pairwise comparisons revealed significant differences between the group that created 2 II (both) and action ($p=0.016$) and coping II ($p=0.007$) groups. #Recipe goals met was not significantly associated with FV intake overall ($p=.079$) or by time (p1, $p=.198$; p2, $p=.086$). A significant group by #Recipe goals met was observed ($p=.007$); compared to the no II group, the action II group had a greater increase in FV intake ($p=.006$).

Conclusion: Meeting FV goals was positively associated with FV intake immediate post-intervention and 3 mo later. II may enhance maintenance.

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A-097

FRUIT AND VEGETABLES AS SNACKS IN THE HOME FOOD ENVIRONMENT: FINDINGS FROM A SURVEY OF PARENT-CHILD DYADS

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Most Americans fail to eat the recommended amount of fruit and vegetables (FV). The aim of this study was to assess FV served as snacks and associated factors in parent-child dyads. A cross-sectional sample of U.S. caregivers/parents ($n=537$) and their children, aged 9 to 18, were part of a Consumer Panel of households for the 2008 YouthStyles mail Survey ($N=1,704$). Of the weighted analytic sample of parents, 40.8 % were male, 64.2 % were non-Hispanic white, 14.8 % were non-Hispanic black, and 15.0 % were Hispanic. Of the sample of children, 47.3 % were male with an overall mean age of 13.4 ± 2.4 years. Multiple logistic regression was used to assess the association between FV snacking pattern and covariates including dietary (assessed through a prior day screener) and home mealtime habits. We found that 73.7 % of parents reported regularly serving FV as snacks, 23.4 % regularly serving FV at main meals but not as snacks and 2.9 % not serving FV at all. Odds ratios (OR) were adjusted for sociodemographic characteristics. Compared to children whose parents served FV only at meals, children whose parents reported serving FV as snacks were significantly more likely to have consumed FV the day before (OR=2.42, CI=1.48-3.95). Additionally, parents who reported serving FV as snacks when compared to parents who served FV only at meals were significantly more likely themselves to consume FV at least a few times a week (OR=2.21, CI=1.42-3.44) and significantly more likely to have eaten dinner made at home most days of the week (OR=1.75, CI=1.03-2.99). Contributing to the relatively sparse parent-child dyad literature on dietary behaviors, these preliminary findings highlight data that promoting FV access and consumption throughout the day, including serving as snacks may benefit FV intake among older children and adults.

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A-098

DO PARENT ANHEDONIA AND STRESS CONTRIBUTE TO WEIGHT-RELATED PARENTING PRACTICES, CHILD DIETARY FAT INTAKE AND CHILD BMI PERCENTILE?

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Parent affect and psychosocial stress are associated with child dietary intake and obesity risk, but underlying mechanisms are not fully understood. We hypothesize that weight-related parenting practices (ex., rules about child diet) may contribute. This cross-sectional study examined associations between parent anhedonia (i.e., inability to experience positive affect), perceived psychosocial stress, weight-related parenting practices, dietary fat intake, and body mass index (BMI) percentile.

Participants were 548 parent/child dyads from a study on obesity risk called Healthy PLACES. Parents were 81 % female, 39 yrs. old ($SD=6$ years), and 51 % Hispanic. Children were 53 % female, 11 yrs. old ($SD=1.53$), 42 % Hispanic, and 30 % received free lunch.

Parent anhedonia was related to higher perceived stress ($r=0.52$, $p<0.001$), more negative attitudes about parent influence on child diet ($r=0.16$, $p<0.001$), fewer rules about eating ($r=-0.09$, $p=0.03$) and fewer positive family meal practices ($r=-0.12$, $p<0.01$) but not child BMI percentile or child dietary fat intake. Parent perceived stress was related to having fewer rules about eating ($r=-0.12$, $p<0.01$), more negative attitudes about parent influence on child diet ($r=0.10$, $p=0.02$), lower child dietary fat intake ($r=-0.11$, $p=0.02$), marginally with fewer positive family meal practices ($r=-0.08$, $p=0.06$) but not child BMI percentile.

Parent anhedonia and perceived psychosocial stress were associated with poorer weight-related parenting behaviors. Potentially, they deplete psychological resources used in positive weight-related parenting. Longitudinal studies may show whether parent stress affects future child obesity risk. Nutrition programs may consider teaching stress management for weight-related parenting practices.

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A-099

A FIELD EXPERIMENT TO TEST WHETHER METACOGNITIVE PROCESSING MEDIATES THE EFFECTS OF IMPLEMENTATION INTENTIONS ON HEALTH BEHAVIOR CHANGE

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BACKGROUND. Implementation intentions increase the activation of critical situations and automatize appropriate responses, but this does not fully explain why significant changes in health behavior have been observed up to two years after the experimental manipulation.

PURPOSE. The main objective was to test the hypothesis that implementation intentions change health behavior (increase fruit intake) partly by increasing metacognitive processing. **METHODS.** Seventy-nine health care workers were randomly allocated to a control condition or to one of two experimental conditions in which they formed implementation intentions using standard instructions or using a tool (volitional help sheet). Fruit intake and metacognitive processing were measured at baseline and follow-up.

RESULTS. Participants who formed implementation intentions ate significantly more fruit, $F(2, 79)=6.49$, $p=.003$, and engaged in significantly more metacognitive processing, $F(2, 79)=7.70$, $p=.001$, at follow-up than did participants in the control condition, with more pronounced effects in the volitional help sheet condition. Increases in self-monitoring significantly (95 % CI=0.01, 0.13) mediated the effect of implementation intentions on behavior change.

CONCLUSION. The findings support the efficacy of implementation intentions for increasing fruit intake in health care workers and for the superiority of the volitional help sheet to support implementation intention formation. There is also evidence to support the idea that implementation intentions change behavior via increases in self-monitoring. Further research is required to replicate these findings.

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A-101

FORMATIVE RESEARCH ON INTERNET GROCERY SERVICE WITH CAREGIVERS IN A CHICAGO FOOD DESERT

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Local access to healthful foods is a key contributor to child obesity disparities. An unexplored strategy to improve food access is to facilitate and promote the use of internet grocery services (IGS) that deliver healthful foods to the home. This project examined whether IGS is feasible, acceptable, and likely to facilitate healthful food purchases in a Chicago food desert. Thirty-four low-income caregivers (77 % female, 79 % ethnic minority, 77 % overweight or obese) in a documented food desert used a commercial IGS to buy groceries. Caregivers received \$80 towards their IGS purchases to promote participation. Surveys assessed food security, food shopping habits, and IGS acceptability. Caregivers were highly disadvantaged; 79 % reported household incomes below \$40,000, 32 % received food assistance, and 59 % were "low" or "very low" in food security. Consistent with prior research, 44 % reported difficulty obtaining affordable, quality fruits and vegetables locally. High prices (82 %), lack of transportation (55 %), and physical distance (46 %) were the most commonly reported barriers to shopping at supermarkets. Caregivers purchased a mean of 23.5 (SD=11.1) items via the IGS at a cost of \$69.36 (SD=\$16.08). Of these, a mean of 8.9 items (\$15.16) were fruits or vegetables, 1.5 (\$5.99) were caloric beverages, and 3.9 (\$21.40) were meat, fish, or poultry. On a 5-point scale, caregivers were moderately satisfied with the quality (M=3.5) and variety (M=3.4) of foods offered, but were somewhat dissatisfied with IGS prices (M=2.6). Food prices (79 %), speed of delivery (56 %), ability to shop on a home computer (44 %), and acceptance of food assistance (44 %) were reported as strong influences on intentions to use IGS. Among low-income caregivers in a Chicago food desert, IGS was generally well-accepted and facilitated healthful food purchasing. Competitive pricing, rapid delivery, home internet access, and acceptance of food assistance are potentially important determinants of IGS uptake in this population.

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A-102

DO OVERWEIGHT/OBESE WOMEN COMPENSATE FOR LIQUID CALORIES WITHIN MEALS OR ACROSS DAYS?

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Caloric beverages may contribute to obesity by yielding energy without promoting satiety, but prior laboratory research has been inconclusive. This study examined whether overweight/obese women reduce their solid food intake to adjust for calories obtained from beverages, both within individual eating occasions and across entire days. Participants [N=82; body mass index (BMI): M=32.0, SD=3.9; age: M=32.6, SD=8.0; 70.7 % ethnic minority] completed weighed diet records for seven days. Consumed beverages were coded as high-calorie (≥ 0.165 kcal/g) or low-calorie (< 0.165 kcal/g). In linear mixed models controlling for BMI, type of eating occasion (meal vs. snack), and demographic variables, eating occasions that included a high-calorie beverage were significantly higher in total energy than eating occasions consumed with a low-calorie beverage (est.: 196.9, 95 % C.I.: 145.7, 248.2) or no beverage/water (est.: 171.4, 95 % C.I.: 140.9, 201.9). Rather than compensating for liquid calories, energy from solid food and high-calorie beverages were positively associated within eating occasions (est.: 0.28, 95 % C.I.: 0.03, 0.53). The number of high-calorie beverages consumed per day was unrelated to daily energy from solid foods (est.: -4.7, 95 % C.I.: -56.3, 47.0), indicating that women did not compensate for liquid calories. Each high-calorie beverage consumed per day contributed an additional 152 kcal (95 % C.I.: 98.8, 204.3) to women's daily energy intake, whereas low-calorie beverage intake was not associated with daily energy intake (est.: 35.1, 95 % C.I.: -45.3, 115.5). Overweight/obese women do not adjust solid food intake to compensate for energy consumed in liquid form within eating occasions or across days. Policies and interventions that reduce high-calorie beverage consumption should be pursued in the context of obesity reduction.

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A-103

USING INTERGROUP CONTACT TO REDUCE WEIGHT BIAS: AN EXPERIMENTAL MANIPULATION

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Despite a current obesity epidemic in the U.S., negative attitudes toward overweight and obese individuals are widespread. Interventions aimed at reducing anti-fat attitudes have produced mixed results. One approach that has successfully reduced prejudiced attitudes toward discriminated individuals is intergroup contact (e.g., direct, imagined, and vicarious contact). Despite its success with other forms of bias reduction, intergroup contact has not been examined with regard to weight stigma. The current study examined whether and how various forms of intergroup contact can reduce explicit weight bias and increase intentions to interact with obese persons among normal weight participants (BMI<25) and whether intergroup anxiety mediated this relationship. One hundred fifty six self-reported normal weight individuals between the ages of 18 and 50 were randomized into one of three experimental conditions that manipulated intergroup contact or a control group. Results indicated that the direct contact group had lower levels of explicit weight bias and increased behavioral intentions to interact with obese persons than the indirect conditions (i.e., imagined and vicarious) and control group. Moreover, intergroup anxiety was found to mediate this relationship. This study highlights the potential importance of using positive, meaningful contact between people of different body sizes as a tool to reduce negative attitudes and stereotypes about overweight.

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A-104

THE IMPACT OF FOOD ADDICTION ON WEIGHT LOSS AND PSYCHOSOCIAL WELLBEING

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Introduction: The study of food addiction and its biopsychosocial correlates has recently burgeoned. While research has examined food addiction among normal weight young adults, obese individuals, and those with previously diagnosed binge eating disorder and bulimia nervosa, it has not been studied in a sample of overweight and obese adults seeking weight loss treatment. The present study examined food addiction symptomatology and its relationship to eating pathology and psychological distress among treatment-seeking adults. Also of interest was an examination of the relationship between food addiction symptoms and short-term weight loss.

Method: Adults beginning a behavioral weight loss program (N=57) were given the Yale Food Addiction Scale (YFAS), as well as measures of psychological distress, disordered eating, weight bias, and weight-focused attitudes. Weight loss was measured after seven weeks.

Results: Severity of food addiction was related to increased depression, emotional eating, binge eating, anti-fat attitudes, internalized weight bias, body shame, and low eating self-efficacy, but not body satisfaction. Increased food addiction symptomatology was also related to less weight lost at seven weeks.

Conclusion: Findings suggest that individuals attempting to lose weight while dealing with symptoms of food addiction may be especially prone to eating-related pathologies, internalized weight bias, and body shame. Importantly, findings provide evidence that food addiction may undermine efforts to lose weight. The pathology associated with addiction (e.g., tolerance, withdrawal) could make the adoption of more healthful eating habits especially difficult.

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ENVIRONMENTAL LEVEL FACTORS AND OBESITY PREVALENCE IN MISSOURI

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Background: Three environmental level factors, 1) Food Stamp program participation, 2) urbanicity, and 3) the quality of wellness policies have conflicting or limited findings on their respective relationships with obesity and with each other. The objectives of this study were to test the relationships of each of the three factors with obesity prevalence in the state of Missouri and the relationships of the factors with each other.

Methods: We made a matrix of six maps using Geographic Information Systems 10 to illustrate and examine the relationships between each environmental factor and obesity as well as the relationships among the factors. We then ran Pearson Correlations.

Results: Food Stamp participation was positively related to obesity prevalence. There was no relationship between urbanicity and obesity or quality of wellness policies and obesity. Urbanicity was positively associated with Food Stamp participation and negatively associated with quality of wellness policies. There was no relationship between Food Stamp participation and quality of wellness policies.

Conclusion: This study provides evidence to support that quality of wellness policies and urbanicity are not directly related to obesity in Missouri. Rural counties have lower quality wellness policies and higher Food Stamp program participation than urban counties in Missouri. The Food Stamp program could be a promising channel for reaching people at high risk for obesity. Future research should explore the potential moderating effect of Food Stamp participation on the relationship between urbanicity and obesity.

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A-106

MATERNAL STRESS AS A PREDICTOR OF POSTPARTUM WEIGHT RETENTION

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Background: Postpartum weight retention (PPWR) can be a significant contributor to the development of overweight and obesity in first time mothers. Established predictors of PPWR are high pre-pregnancy body mass index (BMI), excessive gestational weight gain (GWG), and African American race (AA). Some research suggests that psychosocial factors may also contribute to PPWR. This study explored the associations of life-course specific stress, as measured by the Parenting Stress Index (PSI), with PPWR at 6 and 12 months postpartum.

Methods: Participants were 123 first time mothers living in Georgia and South Carolina. PSI subscales selected for analysis were maternal isolation, depression, attachment (to baby), and life stress. PPWR was calculated as the difference between measured weight at 6 and 12 m postpartum and pre-pregnancy weight. Other covariates tested were race, education, pre-pregnancy BMI, and GWG. Linear regression models were used to assess the relationship between stress at 6 m and PPWR at 6 and 12 m.

Results: Mean age=24.3 years (58.5 % AA). 51.3 % were overweight or obese before pregnancy, 71.0 % at 12 m. Mean PPWR at 6 and 12 m was 12.7lbs and 14.2lbs respectively. Significant predictors of 6 m PPWR were higher pre-pregnancy BMI ($p=.002$), higher GWG ($p<.001$), higher depression ($p=.04$), and fewer problems with attachment ($p=.001$). The total model explained 46 % of the variance ($p<.001$). Significant predictors of 12 m PPWR were AA ($p=.04$), higher GWG ($p=.01$), higher life stress ($p=.04$), and fewer problems with attachment ($p=.01$). Higher depression ($p=.1$) and less isolation ($p=.09$) trended toward significance. The total model explained 33 % of the variance ($p<.001$).

Conclusions: During the first year postpartum, depression and life stress were significant predictors of PPWR in the context of women's attachment to their babies. As the effect of depression diminished, the effect of life stress became significant. It appears to be important for interventions to address the impact of life-course specific stressors to minimize PPWR.

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PREVENTING THE FRESHMAN 15: EFFECTS OF A BRIEF LIFESTYLE INTERVENTION ON CHANGES IN BODY WEIGHT, CALORIC INTAKE, AND PHYSICAL ACTIVITY

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Due to the slow, incremental nature of weight gain, an emerging strategy has been to conduct prevention programs with individuals at high-risk for gaining excess weight, such as college freshmen. The current study was a randomized controlled trial investigating the effect of an innovative lifestyle intervention on weight gain in college students. The intervention, derived from the "buffer" theory of weight gain prevention, focused on having participants lose a small amount of weight to "buffer" the expected weight gain during the first semester of college. Participants were 95 freshman students (mean±SD BMI=26.80±6.45 kg/m²) randomized to a four-week, five-session lifestyle treatment or to a wait-list control condition. The hypothesized difference in weight change between groups from baseline to post-treatment and follow-up (end of the semester) was not significant, $p=.393$; however trends in the data suggested that while participants in the control group tended to maintain their baseline weight, those in the intervention group initially lost weight from baseline to post-treatment (mean±SE change -2.07 ± 2.52 kg) but then regained weight from post-test to follow-up (1.05 ± 2.42 kg) such that change from baseline to follow-up was -1.02 ± 2.61 kg. Similar non-significant trends were demonstrated for changes in caloric intake and physical activity. Although not significant due to sample size, we found that among participants who were overweight or obese at baseline, those in the lifestyle intervention group demonstrated a loss of 4.22 ± 2.53 kg at post-treatment, compared with a gain of 0.29 ± 1.92 kg for those in the control group. Future research should focus on lengthening initial intervention to enhance effectiveness and on identifying and treating subgroups at high-risk for additional weight gain, such as overweight or obese college students.

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A-108

PRELIMINARY ASSESSMENT OF A SCHOOL-BASED HEALTHY LIFESTYLE PROGRAM AMONG RURAL CHILDREN: PROJECT BALANCE

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Introduction: School-based healthy lifestyle programs play a promising role in preventing and controlling childhood obesity.

Purpose: To assess the preliminary effects of a school-based program, Project BALANCE (Beneficial Activity Levels and Nutritional Choices Everyday), on healthy behaviors among rural children.

Methods: Children from kindergarten to fifth grade in four elementary schools in Kentucky participated in the study. The interventions included physical education curriculum, nutrition education, community Fitness Fun Nights, classroom physical activity sessions, and schools' wellness policy. Physical activity was assessed by pedometer logs of step counts (4 consecutive days) and fruits and vegetables consumption were assessed by a previous day recall survey. Data were collected in January (baseline), February (t1), March (t2), April (t3), and May (t4) of 2010. The Repeated Measures ANOVA and Mixed Regression Model were used.

Results: 1,508 students, 814 boys and 679 girls (15 missing gender), participated in this study. The program had significant effect on increasing the percentage of children meeting nutrition and physical activity recommendations. There were significant school, time, gender and grade main effects on physical activity and nutrition. The effect of the intervention on physical activity and nutrition depended on school, grade, and age of the children. There were an increasing linear trend of physical activity and an increasing quadratic trend of nutrition over time.

Discussions and conclusion: The school-based healthy lifestyle program had gratifying effects on improving healthy behaviors among children. Further studies are needed to assess its long-term effects and cost-effectiveness.

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A-110

MEALTIME INTERACTIONS AMONG RACIALLY/ETHNICALLY DIVERSE FAMILIES WITH PRESCHOOL-AGED CHILDREN

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Childhood obesity disproportionately affects African American (AA) and Hispanic children. Evidence of racial/ethnic disparities is apparent in children as young as 2–5 years, which highlights the need for early childhood obesity prevention efforts. Family meals are thought to play a role in predicting better diet and weight outcomes; however, results from large nationally representative samples suggest these relationships vary by race/ethnicity. It is unclear why these differences exist; therefore, a more precise examination of mealtime interactions may help to identify behaviors that contribute to these differences.

Methods: In this observational pilot study, a total of 30 families (n=10 AA, n=10 Hispanic, n=10 non-Hispanic White), with a child enrolled in the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), were videotaped during a family mealtime in their home. The ABC Mealtime Coding system was used to assess the following domains: Action (actions that divert attention from eating), Behavior Control (behaviors intended to modify another person's behavior), and Communication (e.g., meal-oriented, interpersonal, and critical).

Results: Median percent time spent in behavioral control was significantly less in AA households (2.4%) compared to Hispanic (6.5%; $p=0.0019$) and Non-Hispanic White households (4.9%; $p=0.0043$). Non-Hispanic White households (0.64%) exhibited significantly more critical communication (e.g., harsh statements) than Hispanic households (0.08%; $p=0.0007$).

Conclusion: This pilot study found racial/ethnic differences in mealtime interactions and is an initial step in identifying behaviors that may contribute to differences observed in family meal and diet/weight relationships. Future research will need to assess mealtime interactions with children's dietary intake and weight in a larger multi-racial/ethnic sample to fully examine these relationships. These findings may lend insight for the development of interventions targeted for AA and Hispanic families.

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Meritorious Poster

A-111

EATING TO REGULATE EMOTION, LANGUAGE USE, AND BODY COMPOSITION

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Purpose: The present study investigates the use of eating to regulate emotion (ERE) as one factor that could undermine healthy weight management. Emotional states often occur in social contexts and are reflected in the use of language, particularly emotion words. The quality of social context and interpersonal dynamics are reflected in pronoun use and may also be linked to weight measures. To better explain why some individuals are unable to maintain a healthy weight status, we examined the interaction between their tendency to eat to regulate emotions and their socio-emotional environment as reflected in language use.

Methods: Forty-five committed heterosexual couples (mean age=32.4, SD=12.8; mean relationship duration=6.2 years, SD=7.1) reported on their height, weight, and use of ERE. During a laboratory session, participants discussed health habits with their romantic partners. Their speech was transcribed and subjected to Linguistic Inquiry Word Count (LIWC). We then used a cross-sectional model to test whether ERE and language use are associated with body-mass index (BMI).

Results: We found the following main effects: (1) People who used more we-talk when discussing their health with partners had higher BMIs, $F(1,83)=6.15, p=0.015$; (2) Those who expressed more positive emotion had lower BMIs, $F(1,83)=4.07, p=0.047$; (3) Those with higher ERE had marginally higher BMIs, $F(1,84)=3.62, p=0.060$. The interaction between I-talk, ERE, and gender was significant, $F(1,79)=6.15, p=0.015$. Women with high ERE who used more I-talk had lower BMIs than those who used less I-talk. For women with low ERE, I-talk was not associated with BMI. No significant relationships between BMI, ERE, and I-talk were found for men.

Conclusions: Higher we-talk during health-related discussions and the use of eating to regulate emotion were associated with higher BMIs, whereas expression of positive emotion was linked to lower BMI. The use of I-talk when discussing health may serve as a protective factor for women. More studies are needed to examine psychosocial contributors to weight gain.

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A-112

ASSOCIATION BETWEEN USE OF EMERGING TECHNOLOGIES FOR INDIVIDUAL NUTRITION AND EFFECTIVENESS AT MAINTAINING AND IMPROVING OVERALL HEALTH

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Background: Based on the need for a better understanding of the impact personal technology has on facilitating and optimizing health and nutrition efforts, recent attention focused on social networking and technology for improving diet and weight.

Methods: An exploratory cross-sectional survey of 209 college students (69.9% female, 30.1% male, average age 21.51±4.39 years) at the University of Kentucky in 2012 assessed types of devices and programs, functionality preferences, and usage patterns of available resources to improve health, nutrition, and physical activity. Descriptive statistics and multinomial regression were performed using Stata 11.0.

Results: Seventy-seven percent of students that used technology to improve their own or someone else's health and nutrition reported an effectiveness rating of 4 or 5 (scale from 1–5), indicating achievement of weight goal and improved perception of body image. A moderate significant correlation existed between personal use of technology for health and using technology to oversee someone else's nutrition ($r=0.3, p=0.0001$) and health information ($r=0.3, p=0.00001$). A significant correlation was observed between an individual's personal technology use for tracking their own and someone else's physical activity ($r=0.3, p=0.0001$). Individuals that were aware of a social networking app component that could be used in conjunction with their nutrition, health, and physical activity maintenance efforts were 4 times more likely to use the app than those that were unaware of the app's social networking capability (OR 4.02 95% [CI 1.78-9.09]).

Conclusion: Students' reported effectiveness ratings were increased by their awareness and use of technology in self and non-self health, nutrition, and physical activity monitoring.

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A-113

THE IMPACT OF 'SMALL' VERSUS 'LARGE' REDUCTIONS IN CALORIC INTAKE ON REPORTED LEVELS OF HUNGER, DISINHIBITION, AND RESTRAINT DURING LIFESTYLE INTERVENTION FOR OBESITY

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Prior research has reported reductions in hunger and disinhibition and increases in dietary restraint during lifestyle obesity interventions that utilize caloric restriction. However, it remains unclear whether 'small' versus 'large' reductions in caloric intake impact changes in hunger, disinhibition, and restraint levels. This study randomly assigned 125 obese women (mean BMI=37.9±3.9 kg/m²; mean age=52.0±10.8 yrs) to either a 1,500 or 1,000 kcal/day goal (i.e. 'small' versus 'large' reduction) during a 6-month lifestyle intervention followed by a 6-month extended care program. Participants completed the Three Factor Eating Questionnaire at Months 0, 6, and 12 to report levels of hunger, disinhibition, and restraint. At baseline, the 'small' and 'large' reduction conditions reported consuming 1,930±475 and 1,914±523 kcal/day, respectively ($p>.05$). From Months 0–6, the 'large' reduction condition reported a significantly greater caloric deficit than the 'small' reduction condition (747±464 versus 407±362 kcal/day, $p<.001$); significant differences were also seen from Months 6–12 (727±476 versus 486±344 kcal/day, $p=.036$). While reported hunger and disinhibition significantly decreased for both conditions across time ($ps<.001$) and restraint increased significantly throughout the program ($p<.001$), conditions did not significantly differ in reported levels of hunger ($p=.35$), disinhibition ($p=.19$), or restraint ($p=.99$). Results indicated that despite the significantly greater caloric deficits demonstrated in the 'large' reduction condition, these participants did not report levels of hunger, disinhibition, or restraint that differed from participants who made 'small' reductions in caloric intake. Therefore, lifestyle obesity interventions serve as important avenues to decrease hunger and disinhibition and increase restraint, regardless of 'small' or 'large' caloric reductions.

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A-114

THE INFLUENCE OF CHILDHOOD HEALTH BEHAVIORS ON ADOLESCENT HEALTH BEHAVIORS, HEALTH INDICATORS, AND ACADEMIC OUTCOMES

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Unhealthy behaviors learned early in childhood are thought to influence development leading to a larger risk of chronic diseases and even compromised academic performance. Three cohorts of elementary school students in Denver, CO completed baseline (2003–2006) and five-year follow-up (2008–2011) surveys ($n=334$; 14.76 [SD=0.87] years old; 55.1 % female; 53 % Asian, 19.8 % Native Hawaiian or other Pacific Islander, 15.3 % White and 11.9 % other). Regression analyses tested the influence of childhood physical activity, fruit and vegetable consumption, and sedentary behavior on 1) adolescent physical activity, fruit and vegetable consumption, and sedentary behavior; 2) adolescent Body Mass Index (BMI) percentile, general health, and stress; and 3) adolescent school grades and school absenteeism due to illness. Results found that childhood physical activity and fruit and vegetable consumption tracked into adolescence; sedentary behavior did not. Less sedentary behavior in childhood (but not physical activity or fruit and vegetable consumption) predicted lower BMI percentiles in adolescence (but not better general health or less stress). Childhood fruit and vegetable consumption and sedentary behavior (but not physical activity) were related to adolescent grades. Overall, this shows that childhood health behaviors influence adolescent health behaviors. Specifically, the results suggest that childhood sedentary behavior is related to adolescent health and academics. Healthy behaviors should be emphasized early in childhood in order to positively influence adolescent outcomes.

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A-115

WHAT IS THE BEST MEASURE OF SUCCESS IN ADULTS WEIGHT LOSS INTERVENTIONS? A SYSTEMATIC REVIEW

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With obesity's high prevalence and toll, measuring the success of interventions is critical. Currently, there are a variety of methods for measuring outcomes of weight loss interventions, however, there is no consensus on best practices for measuring success. This systematic review sought to examine and evaluate the relevant outcomes (weight loss, BMI change, % body fat, and fat mass decreases) to determine which might be the best indicator(s) of success. A systematic review was conducted to include articles describing adult weight loss interventions that included both diet and physical activity components and at least one measure of weight change and one measure of body composition change. Twenty-eight full-text articles met all inclusion criteria and were included in this review. These articles encompassed a wide range of subjects, settings, intervention lengths, and intensities of intervention components. All 28 studies measured body weight loss (-2.9 to -17.3 kg), 9 studies measured BMI decrease (-1.1 to -5.1 kg/m²), 20 studies measured % body fat decrease (-0.7 to -10.2 %), and 22 studies measured fat mass loss (-0.9 to 14.9 kg). All studies found agreement between weight or BMI and body fat mass or body fat % decreases, though there was some discrepancy in degree of significance between measures. Nearly all weight/BMI and body composition measures were in agreement. Since body fat is the most metabolically harmful tissue type, and it may be a more meaningful measure of health and change in weight loss interventions, future studies should consider primarily measuring body fat %, rather than or in addition to weight and/or BMI.

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SOCIOECONOMIC FACTORS AFFECTING ADHERENCE TO STANDARD BEHAVIORAL WEIGHT LOSS TREATMENT IN TWO CLINICAL TRIALS

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Intro: An inverse relationship exists between socioeconomic status (SES) and obesity. Identifying the impact of SES on adherence to weight loss treatment strategies might allow for the tailoring of an intervention to those individuals with lower SES.

Methods: We used 12-month data from 375 adults in the SMART and PREFER Trials, which provided standard behavioral treatment for weight loss. Generalized Estimating Equation and Generalized Mixed Modeling were used to examine association between socioeconomic variables (age, income, and education) and adherence (session attendance, self-monitoring, fat goal and energy goal), while controlling for the parent study.

Results: On average (\pm SD), participants were 45.5 ± 9.04 years of age with 15.45 ± 2.81 years of education. Most subjects were White (74.6 %), female (85.8 %), and had a gross annual income $>$ \$50,000 (57.5 %). Higher education and age were significantly associated with increased adherence to self-monitoring (OR=1.20 and 1.55, $p=.01$) and session attendance (OR=1.13 and 1.04, $p<.01$). Low-income participants were less likely to be adherent to the fat goal ($p=.01$), compared with those with high income (OR=.53) or middle-level income (OR=.47). There was a significant interaction between study (PREFER and SMART) and income (low, middle, high) in adherence to energy goals ($p=.045$). In SMART, the low-income group was less likely to be adherent than the middle-income group to the energy goal. However, in PREFER, the two groups were no different.

Conclusion: Results suggest that being older, having access to greater economic resources, and completing more years of education may support better adherence to behavioral weight loss treatment strategies. Future research needs to identify the reasons for these associations and new approaches or modifications to currently available treatments that can better support the needs of low-income participants and improve weight loss outcomes.

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A-117

EXAMINATION OF THE PSYCHOMETRIC PROPERTIES OF THE HUNGER SATIETY SCALE

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Overeating and consuming food in the absence of hunger have been associated with the occurrence of overweight and obesity. The Hunger Satiety Scale (HSS) is a brief 6-item scale that asks about overall hunger, fullness and meal satisfaction over the previous 7 days. The value of this scale is in its brevity and focus on the individual's overall measure of satiation over time, rather than at each eating episode.

Methods: This analysis examines the psychometric properties of the HSS in a sample of 305 overweight and obese adults who completed it prior to enrollment in two clinical trials for weight loss. **Results:** The sample was, on average, 47.9 ± 10.2 years old with 15.4 ± 2.8 years of education. It comprised 85.3 % females and 70.9 % Whites with a mean BMI of 33.9 ± 3.9 . Although Bartlett's test of sphericity supports the inter-item correlation matrix not being an identity matrix ($p<.01$), 9 of the 15 inter-item correlations were $<.30$ in absolute value, revealing weak inter-item correlational structure. The resulting Kaiser-Meyer-Olkin statistic of .60, based on partial inter-item correlations, suggested marginal adequacy of the sampling of items, particularly for the item on overall hungeriness (MSA=.52). Exploratory factor analysis via on principal component extraction with orthogonal rotation yielded three factors for the HSS—taste, hunger, and satiety—accounting for 79.7 % of the total item variance. Internal consistency estimates for these factors based on Cronbach's α were .76 for taste, .60 for hunger, and .78 for satiety.

Conclusion: Based on the inter-item correlation analysis, observed factor loadings, and examination of item content, we concluded the scale may need to include more items to be a more robust and comprehensive measure of these constructs. The HSS provides a conceptual framework, identifying variables that may contribute to hunger and fullness. Future studies need to assess the validity of the HSS and also its psychometric properties in a more diverse population.

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A-118**SEX DIFFERENCES IN EMOTIONAL FACTORS CONTRIBUTING TO OVEREATING IN PRE-SURGICAL BARIATRIC PATIENTS: A PILOT STUDY**

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Over 1/3 of U.S. adults are obese and obesity is considered the 2nd leading cause of preventable death. Bariatric surgery candidates report greater emotional eating than those seeking psychotherapy and high emotional eaters have higher levels of depression. Yet, emotional eating is rarely targeted or considered a contributing factor in failure to lose or maintain weight loss. Surgery candidates complete a psychological evaluation which assesses contributing factors to overeating. One factor is emotional eating; a tendency toward overeating in response to negative emotions such as depression, anger, or anxiety. Two studies have examined independent samples of men and women to determine most frequently endorsed factors. In an initial study, eating when stressed, bored, and depressed were the most common factors reported by women. A follow-up study of 100 male patients indicates that nearly 20 % reported emotional factors contributing to weight, with "eating when bored" receiving the highest rating. The purpose of the present study is to describe the impact of emotional eating factors on overeating in pre-surgical patients and to determine if there is a sex difference in ratings. As part of a comprehensive pre-surgical psychological evaluation, 79 subjects completed the Weight and Lifestyle Inventory. Subjects range in age from 20–64; the majority identifying as Caucasian and high-school educated. Sixty (76 %) are female, 19 (24 %) are male with BMI range from 35.0 to 63.8 g/m². Subjects rated six emotional factors on a scale from 1 to 5. Results indicate "eating when stressed" (42.9 %) and "eating when depressed/upset" (40.3 %) were cited as significant contributing factors for both men and women, while female participants indicated higher ratings of all six emotional factors. Results suggest there may be gender differences in the experience of emotional eating or in self-reports of eating in response to emotions. Implications for pre- and post-surgical intervention will be discussed.

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A-119**NEW HORIZONS FOR WEIGHT LOSS USING MOBILE TECHNOLOGIES**

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Background: Over one billion individuals worldwide are overweight or obese. However the menu of evidence-based weight management treatments is limited. The pervasive use of mobile phones and the internet provides the opportunity to deliver weight management support direct to individuals in a cost-effective, tailored manner.

Objective: Our aim was to develop and pre-test an evidence-based mHealth (mobile phone and internet-delivered) weight management programme for overweight and obese New Zealand adults. **Methods:** An iterative development process with mixed methods was used to develop the programme. Content development was overseen by an expert group who advised on effective weight management interventions and useful behaviour change techniques. Overweight adults interested in losing weight contributed to content development via focus groups and an online survey. 130 text messages, a participant website, and a hard copy toolkit were then developed, incorporating the findings from this phase.

Results: 145 overweight adults participated in the content development phase. There was a high demand for personalisation of the programme and messages; practical tips; and opportunities to self-monitor behaviour. Findings from the focus groups (n=25) suggested the need to focus on lifestyle behaviour goals rather than weight loss, and to prioritise support and motivation for behaviour change over education/information delivery.

Conclusions: An evidence-based mHealth weight management programme is technically feasible, and the content we developed is appropriate for our target population. The acceptability and potential efficacy of the programme is being tested currently in a 12-week pilot study.

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A-121**INCREASING PARTICIPATION IN WORKSITE HEALTH PROMOTION FOR UNDERSERVED POPULATIONS**

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Worksite health promotion (WHP) and employee incentive programs (EIP) can have substantial biopsychosocial benefits. However, benefits are not experienced by all employees equally. Blue collar, low wage and immigrant workers are less likely to participate in and benefit from WHPs than their white collar, higher wage, native-born counterparts. A culturally sensitive, accessible, paper-based, face-to-face WHP was developed to help underserved workers participate in assessments, set lifestyle goals, engage in health behavior change and qualify for the EIP.

The intervention, delivered to 281 blue collar, low wage, diverse (42 % White, 33 % Latino, 8 % Black, 8 % Asian, 7 % Filipino/Pacific Islander, 2 % Other) employees of a large university was evaluated relative to a control group of 335 comparable employees in a different department. The intervention included face-to-face coaching to create a personal wellness plan (PWP) using results from paper-based health risk appraisals (HRA) and screenings (finger stick fasting glucose and cholesterol, BMI, cardio-fitness, flexibility, BP) and customized classes led by a designated health educator in the employees' shop or tool yard. Controls were shown how to participate in the company-wide web-based WHP (online HRA and PWP, centrally located screenings, company-wide health classes).

After 6 months, the intervention group showed statistically significant improvements in participation (all aspects), EIP eligibility, health behaviors and health status. PWPs increased from a pre-intervention annual average of 7 % to 80 % post-intervention. Healthy behaviors increased (p<0.05) including vigorous exercise, strength training and adherence to all Healthy People 2010 physical activity recommendations. Health status improvements (p<0.0001) included cardio-fitness, BMI, BP, glucose and flexibility.

A WHP addressing social-ecological factors via a paper-based, face-to-face, non-technology approach was effective for increasing participation among blue collar, low wage workers to bring them known benefits of a WHP such as improved health behaviors and health status.

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A-122**THE CONTRIBUTION OF OCCUPATION TO RACIAL AND ETHNIC DISPARITIES IN PHYSICAL ACTIVITY**

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Background: When physical activity is assessed by national surveys such as BRFSS, health disparities are found, with blacks and non-Hispanic whites less active than non-Hispanic whites. However, when NHANES assessed physical activity using an objective assessment (accelerometer), Hispanics were the most active group. This disagreement might occur because BRFSS questions do not assess occupational activity, while accelerometers worn during waking hours assess all domains of activity including occupational activity. Understanding this disagreement is important to efforts to reduce health disparities.

Objective: To determine if Hispanic adults have higher levels of occupational light-intensity physical activity (PA) and higher levels of occupational moderate-to-vigorous intensity activity (MVPA).

Method: Data from the 2003–2004 NHANES survey (N=1630) were analyzed. An existing classification scheme was used to classify self-reported occupation as sedentary, low-active, or moderately active. From NHANES accelerometer data, minutes of light-intensity PA and MVPA were calculated.

Results: In the sample, 54.2 % of respondents were male; 23.7 % were Mexican American and 20.1 % were Black. Percent of the sample in each occupational group was 34.7 % for sedentary, 23.1 % for low active, and 42.2 % for moderately active. There was a significant dose–response association between level of occupational activity and level of light-intensity PA. There was not a significant dose–response relationship for MVPA. Mexican Americans with annual incomes between \$10,000 and \$55,000 were more likely than whites and Blacks to report active occupations. **Conclusion:** The data support the conclusion that Hispanics have higher total physical activity levels in NHANES because they are more likely to work in active occupations. Occupation group was a significant predictor of amounts of light-intensity activity, but not of amounts of MVPA.

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USE OF CAM, BELIEFS ABOUT MEDICATION, AND ADHERENCE IN UNDERGRADUATES

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Complementary and alternative medicine (CAM) is used by approximately 38 % of the US population and with greater frequency by undergraduates. Its use has been associated with concerns about the safety of medications and questionable adherence to medication but higher levels of adherence to positive health behaviors. Little research has examined the beliefs that influence CAM use in students, and how this may affect adherence outcomes. This study aims to examine the relationship between the use of CAM, beliefs about medications, and adherence to medical regimens in an undergraduate population. It was predicted that use of CAM would lower adherence to traditional treatment and negative beliefs about prescribed medications would be related to increased use of CAM. Data were collected from 291 undergraduates; 80.4 % female and 64.9 % Caucasian. Participants completed a Demographics Questionnaire, Medication Adherence Scale, Medical Screening Questionnaire, Beliefs About Medicines Questionnaire, and the Complementary and Alternative Medicines Questionnaire. 62 % of students reported using at least one CAM modality in the past year, most frequently yoga, spiritual healing, and massage therapy. Concerns about medication were associated with use of fewer CAM modalities ($r=-.17, p=.02$). Use of CAM was not a significant predictor of lower medication adherence, though there was a trend in the hypothesized direction ($r=-.11, p=.06$). Use of CAM did not significantly predict lower levels of adherence to traditional medical treatment, though this relationship was approaching significance in the hypothesized direction. Contrary to our hypothesis, increased concerns regarding prescribed medications were related to lower use of CAM, which may indicate that participants' beliefs about dependency on and long-term effects of conventional medicines extend to similar concerns about the use of CAM to treat illness. CAM use in undergraduates may reflect interest in general well-being and stress relief rather than a search for alternative treatments.

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UNFUDGING NUDGING: A LARGE-SCALE SCOPING REVIEW OF CHOICE ARCHITECTURE INTERVENTIONS TO CHANGE POPULATION HEALTH BEHAVIOUR

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Background: The idea that behaviour can be changed by nudging people—through changing the environments within which they make choices (choice architecture)—has gained traction in policy circles worldwide. However, empirical evidence to support this idea has been limited and a coherent conceptual map of interventions has been missing. We aimed to: develop an operational definition of choice architecture applicable to public health interventions; map the available evidence as it applies to health behaviour; and, develop a provisional typology of interventions. **Methods:** A large-scale, systematic scoping review of primary studies and reviews of intervention effects. We used highly sensitive searches of electronic literature databases in parallel with snowball searches and used text mining technologies to prioritise records for manual screening. Data were extracted from eligible full-text articles. **Results:** We identified over 800,000 unique records and manually screened over 54,000 abstracts. Data from 346 full-text articles were included in the analysis. We produced a definition and a typology of choice architecture interventions, comprising nine intervention types that involve altering the properties or placement of objects or stimuli within micro-environments. We mapped the numbers of studies identified by intervention type and target behaviour. **Conclusions:** This review is the first attempt to consolidate understanding of choice architecture interventions as they apply to public health and demonstrates a substantial body of existing applicable research. We have identified significant requirements for further work to assess which interventions are likely to be most effective in achieving sustained health behaviour change and reducing health inequalities.

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FEASIBILITY AND ACCEPTABILITY OF PHYSICIAN-PARENT MEETINGS AFTER A CHILD'S DEATH IN A PEDIATRIC INTENSIVE CARE UNIT (PICU)

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To improve end-of-life care, the Collaborative Pediatric Critical Care Research Network developed a framework for conducting physician-parent meetings after a child's death in a PICU. The framework includes strategies for inviting parents and physician communication skills for addressing bereaved parents' questions, feedback, and need for emotional support. This study assessed the feasibility and acceptability of implementing the framework in clinical practice.

Method: 46 physicians from 7 PICUs were trained to apply the framework. Families of 194 deceased children were sent letters inviting them to meet with a trained physician who participated in their child's care. Parents and physicians completed a survey a week later. Two trained research assistants viewed the video recorded meetings and assessed items representing 20 physician behaviors consistent with the framework. Items were rated as present/absent; if present, they were rated on quality (1=low-5=high). Discrepancies were resolved by consensus.

Results: 119 families were contacted; 39 (32.7 %) agreed to participate. 36 meetings were held with 54 bereaved parents, their support persons, their PICU physicians, and 47 other staff 3.4±1.5 months after the death. 92 % of parents agreed or strongly agreed the meeting was helpful to them, 89 % that it was helpful to family, and 78 % that it will help them cope. 75 % of physicians agreed or strongly agreed they adhered to the framework, 92 % that it was easy to use, 92 % that the meeting was beneficial to parents and 86 % that it was beneficial to them. Fidelity to the framework was high; 13/20 physician behaviors occurred in >85 % of the meeting. The mean quality score for these behaviors was 4.4 (SD=0.22).

Conclusion: Physician-parent follow-up meetings are feasible in this vulnerable population and viewed positively by parents and physicians. Further research should examine the effects of follow-up meetings on bereaved parents' health outcomes.

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THE EFFECTS OF ETHNICITY AND SOCIAL SUPPORT ON THE LIKELIHOOD OF HIRING A HEALTH CARE ADVOCATE

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The health care system is complex and may be difficult to navigate. A health care advocate (HCA) may provide patients with an organized and methodical approach to the health care system. An HCA can assist patients with both "advisory services" (i.e., coordinating medical appointments) and "support services" (i.e., helping with daily symptom management). The present study examined the effects of ethnicity and social support on the likelihood of hiring an HCA. Participants (N=508) were randomly selected and completed a survey about their likelihood of hiring an HCA. Participants were asked to state their ethnicity and the number of people they were living with, not including themselves. A 2 (Living Alone vs. Not Living Alone) by 2 (Caucasian vs. Ethnic Minority/Multi-Ethnic/Other) between-subjects ANOVA demonstrated a main effect of social support, $F(1, 482)=5.29, p=.022$. Individuals who did not live alone were more likely to hire an HCA ($M=6.45, SD=.13$) than those who lived alone ($M=5.57, SD=.36$). Ethnicity was not significantly related to the likelihood of hiring an HCA, $F(1, 482)=.68, p=.41$. A simple effects test demonstrated that, among those who lived alone, there was no significant difference between those who identified as Caucasian and those who identified as an ethnic minority/multi-ethnic/other, $F(1, 71)=.41, p=.52$. However, among participants who did not live alone, those who identified as an ethnic minority/multi-ethnic/other were significantly more likely to hire an HCA ($M=7.01, SD=.23$) than those who identified as Caucasian [$M=5.90, SD=.13; F(1, 411)=18.46, p<.001$]. Thus, social support affects the likelihood of hiring an HCA. More research is needed to better understand how living with others increases the probability of seeking assistance in health care.

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A-128**WELCOME TO MCMEDICINE. PERCEPTIONS OF MEDICAID CLIENTS' FREQUENT USE OF EMERGENCY DEPARTMENTS**

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Background: Medicaid clients have high rates of emergency department (ED) use. This formative study examined healthcare professionals' views about frequent ED use among Medicaid clients, influences, and prevention strategies.

Methods: Healthcare professionals (N=76) participated in semi-structured interviews (n=9) and focus groups (n=11). Participants defined frequent ED use, identified characteristics and predisposing, reinforcing and enabling risk factors contributing to frequent ED use among Medicaid clients. Data were transcribed verbatim and thematically analyzed. Three project staff independently and iteratively coded transcripts. Themes were operationalized into an ecological framework.

Results: Most participants were nurses, doctors, directors, and social workers (88 %). Frequent ED use differentiated between emergent and non-emergent illness. Most frequent health conditions were pain, asthma, and addiction. Characteristics included age, compromised life skills, and limited health-literacy. Intrapersonal factors involved entitlement beliefs, manipulation, and perceived social norms. Interpersonal factors included family/peer referral and interactions with ED staff. ED function served as an enabler/reinforcer for its accessibility/availability of services, provision of shelter/safety, and no co-pay. External influences were limited primary care provider (PCP) access and PCP referral to the ED. Other reinforcers included healthcare policies and a revenue-generating hospital business model. Prevention strategies included patient education, patient navigators, promote social responsibility, improve technologies to facilitate effective communication within/among health and social service providers, pre-triage gatekeeping, and extend continuum of care to include broader social programs.

Conclusion: Healthcare professionals have insight regarding Medicaid clients' use of the ED. From an ecological perspective, this behavior is influenced by multiple interacting factors that should be considered for intervention planning. Funding: Delaware DHHS Division of Medicaid and Medical Services

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A-129**WHO COMES BACK? A PATH ANALYSIS OF REPEAT DONATION BEHAVIOR AMONG NOVICE BLOOD DONORS**

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BACKGROUND: Recent efforts to expand the blood donor pool by recruiting younger donors have resulted in higher numbers of initial donations, but retention of young donors has continued to be a significant problem.

STUDY DESIGN AND METHODS: Path analysis was used to examine the complex simultaneous relationships among syncopal reactions, donation anxiety, needle pain, donor satisfaction, and donation intention in the prediction of repeat donation. Participants included 421 first- and second-time donors recruited for an intervention study comparing the effects of pre-donation water loading with and without the use of applied muscle tension during donation (52 % female, 60.8 % first-time donor, mean age 20.3 years). For this longitudinal follow-up, donor database records were accessed to determine whether a repeat donation had been attempted in the two years after the index donation.

RESULTS: Results of a series of path analyses demonstrated the influential role of donor anxiety in shaping donor retention (final model $X^2=35.75$, RMSEA=0.03, CFI=0.98, WRMR=0.74). First, anxiety exerted a direct negative influence on donation intention, the proximal and sole direct predictor of repeat donation. Second, anxiety increased the likelihood of the donor reporting needle pain, which adversely affected donation satisfaction and, in turn, donation intention. Finally, anxiety contributed to syncopal reactions through its influence on needle pain, and these reactions also reduced donation intention.

CONCLUSION: These results provide novel evidence that donation anxiety plays a central role in shaping future donation behavior; hence, individual differences in anxiety must be considered when developing and testing strategies to enhance blood donor retention.

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A-130**PILOT STUDY OF A BIOBEHAVIORAL TREATMENT FOR HOT FLASHES**

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Background: Hot flashes (HF) negatively impact women's health, quality of life, and emotional well-being. Effective, non-hormonal treatments are needed. This study evaluated the effect of a combined behavioral and non-hormonal pharmacologic intervention for hot flash relief.

Design: Postmenopausal women with at least 28 HF per week were randomized to receive either: hypnosis+venlafaxine (HV), sham hypnosis+venlafaxine (SV), hypnosis+placebo pill (HP), or sham hypnosis+placebo pill (SP). The dose of venlafaxine was 75 mg. The behavioral intervention involved 4 weekly visits. The sham hypnosis condition provided white noise in the context of hypnosis. Women recorded HF for one week before randomization. Participants were followed for 8 wks. Primary endpoint was the change from baseline in HF score (severity x frequency) over 8 wks, measured by a prospective HF daily diary. The study was powered to detect a difference of 16 % between the HV and SV arm.

Results: Seventy-one women were randomized. The mean age was 55; baseline average daily HF was 9; most women had been menopausal for >6 years. At 8 wks, HF scores decreased 25 % in the SP group, 51 % in HP, 51 % in SV and 52 % in the HV group. All active arms were significantly better than the SP arm. Compared to those in the SP group, there were no significant differences in reported side effects for those on HP. However, those on SV reported significantly more appetite loss, a trend toward more somnolence, but significantly better sleep during the first 3 weeks of the study. Nausea was significantly worse in the HV arm at week 3, but improved.

Conclusion: HP reduced hot flashes similarly to SV, supporting hypnosis efficacy. There was no evidence of additive effects of hypnosis plus venlafaxine. There were side effects with venlafaxine 75 mg. SP resulted in the known placebo effects and was an acceptable intervention to participants. Given the side effects with 75 mg of venlafaxine, future research should focus on even lower doses of antidepressants with behavioral interventions.

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A-131**PATIENT PERCEPTIONS OF PROVIDER EMPATHY**

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Healthcare determinants operate at the systems level and through individual discrimination, such as provider bias. Physicians are more likely to have negative perceptions of African American than white patients. A fundamental issue in addressing such racial healthcare disparities is the need to reduce, often unconscious, provider bias. Provider empathy has been highlighted as an important ingredient in overcoming bias. However, more research is needed to promote more empathetic care.

The conceptual framework for this study draws on models for reducing racial bias, which places provider empathy within the broader context of unconscious bias as a determinant of racial healthcare disparities. In-depth interviews were conducted with 24 white and minority Ob/Gyn patients about their most recent visit with their provider to explore aspects of provider empathy. Inter-rater reliability of the codes was established. The mean age of the women was 32.5 years and 87 % of the women had at least a high school education. A total of 17 % did not have health insurance, and 29 % reported meeting their provider for the first time. Patients indicated that the following provider characteristics impacted provider empathy: Being in a hurry, provider demeanor, asking and answering questions, listening, relating on a personal level, patient validation, the patient as a number, clear communication, providing information, provider expertise, and the healthcare system. All Black patients discussed the importance of the healthcare system, whereas only half of the White patients mentioned the healthcare system (p=0.019). A total of 12 out of 14 of the White patients indicated the importance of the provider relating to the patient on a personal level, compared to 4 out of 9 Black patients (p=0.066).

This information has important implications for interventions designed to improve provider empathy in the context of reducing racial disparities in the delivery of healthcare to women. Educating providers that black patients appear to value care in the context of a broader system may be one key component of these interventions.

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SOCIAL MEDIA USE BY COMMUNITY-BASED ORGANIZATIONS IN THREE MASSACHUSETTS COMMUNITIES: A CONTENT ANALYSIS HIGHLIGHTING PATTERNS AND OPPORTUNITIES

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Community-based organizations (CBOs) are uniquely positioned to leverage relationships with community members and stakeholders to support health promotion at the local level. CBOs may be able to increase engagement with and impact on communities by using social media tools, such as social networking sites and blogs. Despite interest among the public and practitioners, it is unclear to what extent and how CBOs utilize social media for engaging with communities. To address this question, we conducted a content analysis of Facebook, Twitter, and YouTube content put forth by CBOs engaged in health outreach in three diverse Massachusetts communities: Boston, Lawrence, and Worcester. We conducted a census of CBOs (170 organizations) and analyzed 30 days' worth of content for Facebook and Twitter accounts and the five most recent videos uploaded to YouTube accounts.

About 41 % of CBOs utilized Facebook, 24 % utilized Twitter, and 13 % used YouTube. Much of the content included a self-promotion theme (66 % of Facebook posts, 61 % of tweets on Twitter, and 92 % of YouTube videos). Other popular themes included: health education, fundraising, and promotion of other organizations. Interactive features, such as sharing others' content or sharing content that could be spread among networks (e.g. videos) were utilized infrequently.

The CBOs in this study may benefit from shifting away from static "Web 1.0" platforms towards "Web 2.0" models: from unidirectional information flow to interactive, multi-directional communication capable of harnessing collective intelligence and user-generated content. At the same time, CBOs must consider the investments and shifts in organizational culture required to support a new method of communication. Social media usage is growing rapidly and may represent an important opportunity for many CBOs.

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DOCTORSHIP STYLES: APPLYING LEADERSHIP RESEARCH TO EXPLORE PHYSICIANS' PATTERNED APPROACHES TO PATIENT CARE

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Adherence rates vary widely, despite clear indications that following clinician recommendations is critical for patients to achieve desirable health outcomes. To improve patient adherence, researchers suggest that clinicians motivate their patients to initiate and maintain recommended behaviors. Leadership research is ideally suited to provide empirically supported approaches for guiding clinicians to become better motivators. Using the Full Range of Leadership model, which describes an array of leadership styles, we explored doctorship styles (i.e., patterned approaches to patient care) that clinicians exhibit and examined how those styles predict important patient outcomes.

In two studies, we administered a questionnaire to healthcare recipients to assess their adherence and their clinician's doctorship style. In Study 1, trained research assistants recruited participants from their existing social networks. In Study 2, participants were recruited onsite at two asthma/allergy clinics.

Results from the two studies showed similar relationships between clinicians' doctorship styles and their correlation with patient outcomes. The transformational doctorship style was positively and significantly related to patient adherence (Study 1, $r=.32$, $p=.045$; Study 2, $r=.23$, $p=.047$); the active-monitoring style was uncorrelated with adherence ($rs<.072$, $ps>.65$); and the passive/avoidant style was negatively correlated with patient adherence in Study 1 ($r=-.45$, $p=.003$) and was in the same (nonsignificant) direction in Study 2 ($r=-.15$, $p=.22$).

Our results indicate that some doctorship styles are more effective for motivating patients than other styles and clinicians may be able to lead their patients to be more adherent by displaying transformational doctorship and by abstaining from the passive/avoidant style. Finally, by drawing on leadership research to study clinician-patient relationships, health researchers can use established findings to design and implement intervention programs to teach clinicians to become more effective motivators.

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RELATIONSHIPS BETWEEN EMOTIONAL EATING AND MULTIPLE ASPECTS OF EXECUTIVE FUNCTION IN A NONCLINICAL SAMPLE

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Emotional eating (EE) is a maladaptive coping mechanism for stress and negative emotions that may lead to weight gain and negative health outcomes. Although no studies have focused specifically on EE and executive function (EF), previous research with obese individuals suggests those who binge eat, an eating behavior that may be related to EE, have greater deficits in EF than those who do not. We aimed to examine the relationship between EE and EF in a nonclinical sample of 32 young adults (BMI $M=23.9$, $SD=6.08$), who completed a measure of EE (Dutch Eating Behavior Questionnaire (DEBQ) EE subscale) and a battery of EF measures designed to tap multiple aspects of EF, including abstract reasoning, mental flexibility, planning, and decision making. EF test scores were standardized using normative data and partial correlation analyses were used to examine associations between EE and EF, controlling for key demographic/clinical characteristics, including reported level of negative emotionality. Results indicated a statistically significant association between the DEBQ EE and the DKEFS - Proverb Test ($r=-.371$, $p=.047$). Non-statistically significant trends toward an inverse relationship between EE and EF were supported for 4 of 5 other EF measures (r 's $=-.101$ – $-.135$). The moderately-sized effect that emerged for the relationship between EE and a test of proverb interpretation suggests that decrements in abstract reasoning may be involved in EE, even in nonclinical populations. In addition, trends noted for relationships between EE and other aspects of EF suggest the possibility that smaller, but meaningful associations may be detected in larger samples. Future studies should examine EE and EF prospectively and in individuals with a greater range of BMI, as research has shown that obese individuals use EE as a coping mechanism more than healthy peers and that executive dysfunction may be directly related to obesity. The current findings carry important clinical implications, including potential modifications to treatment of emotional eating in individuals with executive dysfunction.

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THE EFFECTS OF SIMPLE INTERVENTIONS ON VASOVAGAL SYMPTOMS AND INTENTION TO DONATE BLOOD: THE IMPORTANCE OF PERCEIVED CONTROL

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Many obstacles prevent attaining an adequate blood supply worldwide. They range from personal factors that inhibit certain people from giving blood, such as fears and anxiety, to more global events such as natural disasters that suddenly increase the demand for blood. With this in mind, the goal of the current project was to examine whether it would be possible to influence non-donors' intention to give blood, by delivering simple interventions aimed at increasing self-efficacy and perceived control, as well as decreasing anxiety. 148 healthy students participated in this laboratory study, and were randomly assigned to one of four conditions. The Control group sat quietly for 20 minutes. The Education group browsed the website of U.K.'s National Blood Services for 20 minutes. The Relaxation group browsed the same website for ten minutes, and learned relaxation techniques for another ten minutes. The Applied Tension (AT) group also browsed the site for ten minutes, and then learned and practiced AT for ten minutes. Then, all participants watched videos depicting blood draws and injections, allowing them to practice the techniques they learned in a simulated blood donation setting. Self-report questionnaires revealed that the Education and Relaxation interventions decreased anxiety, $F(3, 140)=3.42$, $p=.019$; whereas Education and AT groups increased participants' perceived sense of control, $F(3, 140)=2.86$, $p=.039$. In turn, increased control translated to less vasovagal symptoms while watching the videos, $F(13, 134)=2.62$, $p=.003$, and higher intention to donate blood in the future, $F(13, 134)=2.95$, $p=.001$. Overall, our interventions seemed to influence anxiety and perceived control, which resulted in decreased vasovagal symptoms and increased intention to donate blood. These findings could be integrated into the framework of donor recruitment and preparation, aiming to ensure adequate blood supply at the local and global level.

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ROLE OF PATIENT CONTROL BELIEFS IN ADHERENCE TO A CHRONIC TREATMENT REGIMEN

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Over 350,000 patients with end-stage renal disease are treated with hemodialysis. Self-management requires adherence to a restrictive fluid and dietary regimen and may be influenced by the patient's individual control beliefs. Previous research suggests that patients participating in treatments congruent with their control beliefs show better adherence and increased satisfaction with the regimen. As part of a behavioral intervention comprising seven one-hour weekly sessions designed to improve fluid-intake adherence, 114 nonadherent patients recruited from hemodialysis centers across Iowa completed baseline measures of perceived control (i.e., health locus of control; HLOC) and preference for control (i.e., information and behavioral involvement) in the treatment setting. Patients were predominantly male (66 %) and on dialysis for an average of 54 months (SD=65). The primary outcome was change in interdialytic weight gain (IWG), which reflects adherence to fluid intake recommendations. IWG was collected at pretreatment, posttreatment, and 3- and 6-month follow-up. Hierarchical linear regression analyses controlling for time on dialysis and pretreatment IWG indicated that, although HLOC and preference for control alone did not significantly predict changes in IWG, the interaction between these variables explained a significant portion of variance in IWG from pre- to posttreatment ($\beta = .191, p < .05, sr^2 = .032$). Further analysis of the interaction results revealed that patients with strong perceptions of control (i.e., an internal HLOC orientation) and also preferring much control in the treatment setting showed, on average, over a half kilogram decrease in IWG from pre- to posttreatment. Conversely, those with an internal HLOC orientation but preferring less control, or generally holding an external HLOC orientation, showed little improvement from pre- to posttreatment. These results are consistent with previous research and suggest that patient control beliefs are important for patient adherence and adaptation in the hemodialysis population.

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PREDICTING COMPLEMENTARY AND ALTERNATIVE MEDICINE (CAM) USE IN COLLEGE STUDENTS USING THE SOCIO-BEHAVIORAL MODEL OF HEALTHCARE UTILIZATION

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The use of Complementary and Alternative Medicine (CAM) among U.S. college students and the general public is substantial and growing. However, research on the characteristics of college students who use CAM and the factors that influence their decision to use CAM is scarce. The present study applied the Socio-behavioral Model of HealthCare Utilization to the examination of CAM utilization in sample of college students in the Western U.S. The project's major aim was to test the application of this model of healthcare utilization to CAM use within the college student population. A total of 592 college students from ages 18–52 from two universities within the Western U.S. completed a web-based survey assessing the relationships between their demographic characteristics, health locus of control beliefs, religious and spiritual beliefs, and physical and mental health status with their lifetime and past 12 month use of CAM across five domains (alternative medicine systems, biologically based therapies, manipulative and body based treatments, mind-body medicine, and energy medicine). Statistically significant relationships were found between CAM use and biological sex, financial dependency status, Internal Health Locus of Control, mental health status, and bodily pain. These predictors were combined, along with college attended, according to the Socio-behavioral Model of Healthcare Utilization and tested for their predictive efficacy. Multiple linear regression analyses of these variables revealed that their combination explained from 4.0 % to 17.6 % of the variance in CAM use in this sample. Results indicated that this model can be successfully applied to CAM use. These findings were evaluated and compared with previous findings regarding CAM use in both general population and college student samples. Specific implications for the fields of psychology, medicine, and health education are discussed.

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(MORE) EVIDENCE FOR ENLISTING TOBACCO QUITLINE COUNSELORS TO PROVIDE ORAL HEALTH PROMOTION COUNSELING

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Oral disease is preventable, but affects millions of Americans, particularly smokers. We surveyed tobacco quitline callers to understand their relevant lifestyle risk factors for oral disease and interest in oral health promotion services. All had enrolled in the quitline through their health insurance. Respondents (n=455) were mostly female (65.1 %), non-Hispanic White (84.4 %), with at least a high school education (66.6 %). 58.8 % had household incomes over \$40,000 per year and most had all their natural teeth (85 %). The results demonstrated a significant opportunity to intervene with quitline callers to prevent future oral disease. 73.8 % drank alcohol (which synergistically interacts with tobacco to cause oral cancer) and 41.1 % drank daily. 22.8 % met daily recommendations for brushing and flossing, and only 67.4 % had visited a dentist in the past year. Even among those with dental insurance, 29.1 % had not visited the dentist in more than a year. 44 % reported they were interested in learning how to improve their oral health and 29 % were interested in talking with a tobacco quitline counselor about how to improve their oral health. Even more were open to receiving intervention materials by mail (47.5 %) or Internet (49.8 %). Additional data will be presented on respondents' barriers to oral self-care and professional dental care, motivation for change, and self-efficacy. Outcomes will be contrasted with that from a lower SES representative sample of callers to a state-funded, free tobacco quitline (n=816). Data from both samples underscore that tobacco users are at high risk for oral disease. Important public oral health promotion opportunities exist to address unmet oral health needs among this group. Given the broad reach of quitlines—counseling hundreds of thousands of Americans each year—quitlines could represent a promising strategy to improve smokers' oral health behaviors and dental care utilization, and may be an important ally in public oral health promotion efforts.

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THE GAD-7 IN ENGLISH- AND SPANISH- SPEAKING HISPANIC AMERICANS

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The GAD-7 is a self-report questionnaire that is widely used to screen for anxiety, and GAD-7 scores have shown significant relationships to health and disability outcomes. The GAD-7 has been translated into numerous languages, including Spanish. Previous studies evaluating the structural validity of the English and Spanish versions indicate a unidimensional factor structure in both languages. However, the psychometric properties of the Spanish version have yet to be evaluated in samples outside of Spain, and the measure has not been tested for use among Hispanic Americans (HAs). This study evaluated the reliability and structural validity of the GAD-7 across English- and Spanish-speaking HAs in the U.S. A community sample of HAs with an English- (n=210) or a Spanish-language preference (n=226) completed the GAD-7. Multiple group confirmatory factor analysis (CFA) was used to examine the goodness of fit of the unidimensional factor structure of the GAD-7 across language-preference groups. Three separate models (e.g. configural invariance, metric invariance, and factor variance invariance models) were evaluated. Descriptive model fit was determined based on the Comparative Fit Index and the Standardized Root Mean Residual. The Satorra-Bentler X2 difference test was used to determine which model was the statistically superior fit. Results from the multiple group CFA indicated a similar unidimensional factor structure with equivalent response patterns, but different variances in language-preference groups. Internal consistency was good for both English ($\alpha = 0.91$) and Spanish ($\alpha = 0.94$) groups. Overall, results indicate that the unidimensional GAD-7 is suitable for use in the U.S. among HAs with English and/or Spanish language preference. Future studies should examine why HAs with a Spanish language preference had greater variability in GAD-7 scores as compared to HAs with an English language preference.

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SYSTEMATIC REVIEW OF THE APPLICATION OF AN ECOLOGICAL MODEL TO OPERATIONALIZE EMERGENCY ROOM UTILIZATION BEHAVIOR PATTERNS

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Background: Initiatives to examine and reduce frequent emergency room use have grown in the US. Despite emerging research that describes this phenomenon, there has been little scholarship that forges conceptual linkages using an ecological approach. Bronfenbrenner's ecologic model has been used in related context with unquestioned accuracy. This review evaluates empirical research using this model applied to health service use and evaluates the accuracy with which it is applied. Conclusions are drawn about the application of the model to understanding behavior patterns of emergency room utilization.

Methods: An extensive but non-exhaustive literature search was conducted to identify relevant research that cites the use of Bronfenbrenner's ecological model. Key word, author citation, and journal-specific searches were conducted on a variety of electronic data bases. Following review of an initial set of articles, subsequent searches were conducted in primary source journals/books for additional empirical-based literature.

Analysis: One author read and coded the articles meeting search criteria for Bronfenbrenner's model, guided by a comparison publication (Tudge, Mokrova, Hatfield & Kamik, December, 2009; *Journal of Family Theory and Review*, 198–210). An additional author read the articles and cross-checked initial coding.

Results: To date*, seven peer reviewed articles published since 2000 have been identified. All seven articles were purportedly based on Bronfenbrenner's model; however, four relied on outdated versions resulting in conceptual confusion and inadequate application of the model as it pertains to frequent ER utilization. *article collection continues.

Conclusion: If Bronfenbrenner's ecological model is important for explaining behavioral patterns of ER use, it is necessary that future research examining this behavior correctly apply the model as it was conceptualized. Failure to do so limits generalizability of empirical data which support or refute the effectiveness of the model.

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TEACH TO GOAL: A HEALTH LITERACY APPROACH TO INCREASING COMPREHENSION OF INFORMATION

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There is limited empirical evidence on the utility of using teach back methods to improve health literacy in behavioral trials. We examined the relationship between participants' health literacy status and ability to teach back key concepts previously presented in a small group education session. As a part of a larger 2-arm RCT, participants were randomly assigned to a behavioral intervention focused on reducing sugary beverages (SipSmartER) or increasing physical activity (MoveMore). One week following an initial small group session, participants received a telephone-based teach back strategy related to key intervention concepts. The Newest Vital Sign was used to assess health literacy status at baseline. Of the 71 participants enrolled, 100 % were Caucasian, 85.9 % were female, 32.4 % had<high school education, and 59.2 % had<\$20,000 annual household income. Fifty-seven (80.3 %) participants completed the teach back call. Health literacy was significantly associated with the proportion of correct answers in the first teach back attempt [i.e. high likelihood of limited literacy (n=9; M=59+22 %), possibility of limited literacy (n=13, M=79+22 %), adequate literacy (n=35, M=84+20 %) (F=7.7, p=.001)]. SipSmartER participants answered a significantly higher proportion of questions correct (M=83+17 %), as compared to MoveMore participants (M=63+22 %)(F=13.2, p=0.001); however, there was no significant interaction between health literacy status and study condition. Out of 3 possible teach to goal attempts, participants in the lowest 2 health literacy categories required a significantly higher number of teach to goal attempts (M=1.8+0.7), as compared to those with adequate health literacy status (M=1.5+0.6) (F=4.0, p=0.5). These data confirm the need for teach back opportunities to ensure participant comprehension of key intervention content—in particular for those with lower health literacy. Future research is needed to determine how teach to goal findings are related to other study factors such as retention, engagement, and health outcomes.

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UTILITY OF CHRONIC PAIN PATIENT SUBGROUPS FOR TAILORED INTERVENTION: AN ACCEPTANCE-BASED APPROACH

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Over 116 million Americans experience chronic pain (CP) incurring an annual cost of \$635 billion in healthcare and lost work. Acceptance-based therapies have gained increasing recognition for improving functional outcomes. In our online CP patient support group sample, we predicted 1) CP patients would cluster into low, medium and high groups of CP Acceptance and 2) self-reported scores of Positive Affect (PA), Negative Affect (NA) and Perceived Disability (PD) would differ overall by cluster, with the most positive outcomes found in the high cluster and the least found in the low. The total sample (N=300; Mean age=44.7 years, SD=11.2) was primarily female (85.6 %), Caucasian (82 %), married/partnered (53.1 %), and well educated (M=14.8 years, SD=2.4). Years with chronic pain was 14.4 (SD=11.6) and average pain intensity was 7.4/10. Participants completed demographic, medical history, the Chronic Pain Acceptance Questionnaire (CPAQ), Positive and Negative Affect Scales (PANAS), and the Pain Disability Index (PDI). A k-means cluster analysis was conducted using Activity Engagement (AE) and Pain Willingness (PW) totals from the Chronic Pain Acceptance Questionnaire (CPAQ). As predicted, cluster analysis with a maximum of 10 iterations specified three clusters: Low AE/Low PW (Lo; n=81); High AE/High PW (Hi; n=50); and Medium AE/Medium PW (Med; n=71). A MANCOVA was then conducted to examine differences in PA, NA and PD within each cluster group, covarying for age, number of surgeries, years of education, and current pain level. Significant MANCOVA results were obtained according to Wilks' λ , (.55), F(6, 266)=15.39, p<.01. Follow-up ANCOVAs revealed mean differences in the predicted directions: the Hi group showed the most PA (M=32.03 (SD=6.49)); and the least NA (M=17.57 (SD=5.81)) and PD (M=32.28 (SD=15.64)). Conversely, the Lo group displayed the least PA (M=20.28 (SD=7.86)); and the most NA (M=28.05 (SD=9.33)) and PD (M=49.57 (SD=9.46)). Findings support utility of tailored interventions targeting CP Acceptance subgroups to improve functional status.

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ACCEPTANCE AND PERCEIVED DISABILITY IN AN ONLINE FIBROMYALGIA SUPPORT GROUP SAMPLE

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Fibromyalgia Syndrome (FMS) is a complex and debilitating chronic pain (CP) condition that affects .5-5.8 % worldwide, primarily middle-aged women. Associated widespread pain, fatigue, depression, and sleep disturbance often contribute to poorer occupational functioning and perceived disability. Current FMS treatments have not proven to be wholly effective; however, in CP patients, Acceptance-based interventions have been effective in improving functional outcomes. We predicted FMS pts with higher CP Acceptance would have lower perceived disability than those with lower Acceptance. Online CP support group pts (N=160; Mean age=51.9 years, SD=10.9) who were primarily female (88.8 %), Caucasian (91.7 %), married/partnered (63.0 %), and well educated (M=15.2 years, SD=2.7) completed online surveys. Total years with CP was 16.4 (SD=13) and avg weekly pain intensity was 6/10. Ppts completed medical history, Chronic Illness Acceptance Questionnaire (CIAQ) and Pain Disability Index (PDI). Subgroups were based on high, medium and low scores on both CIAQ subscales, Activity Engagement (AE) and Willingness (W). ANCOVAs, controlling for age and avg pain intensity, were conducted with differences between AE tertiles and PDI [F 2,108]=10.22; p<.01] and W tertiles and PDI [F 2,112]=9.49; p<.01]. Marked elevations in perceived disability were seen across all three tertiles (M range from 6.68-7.39/10) in five significant domains suggesting high overall disability in this FMS group. Most notably, those with high Acceptance, despite CP and FMS symptoms, reported significantly less perceived disability than those with low Acceptance. Comparison of means between PDI items suggest that both the High AE and W groups reported significantly lower perceived disability across six of the seven domains than the Low AE and W groups: family/home responsibilities; recreation; social activity; occupation; self-care; and life-support activity [all p's<.05]. Findings suggest that tailored interventions, targeting CI Acceptance for FMS patients, may improve perceived and functional disability in key life domains.

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PSYCHOSOCIAL PROFILE OF COMPLEX REGIONAL PAIN SYNDROME

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Complex regional pain syndrome (CRPS) is a painful and debilitating condition that is poorly understood by medical professionals. Its profound impact on quality of life prompts a closer examination of the psychosocial profile of individuals suffering from CRPS. The extant literature examining psychological variables associated with CRPS is inconclusive with regard to the role that these factors play in the course of the syndrome. It has been shown, however, that CRPS patients experience physical pain that is significantly disabling and this is reflected in increased emotional distress. The purpose of this study is to articulate the psychosocial profile of patients with CRPS to better understand psychological and social features of the condition as a step toward improved treatment planning.

This study assesses pain, anxiety, depression, disability, intrusive thoughts, quality of life, and demographic variables using a sample (N=326) obtained from an online survey distributed to members of a CRPS resource organization. Demographic characteristics provide an overview of the sample: a majority (86 %) were female, most were Caucasian (91 %) and married (59 %), level of education varied (42 % with college education or higher), and most (56 %) were on disability. Examination of the psychological variables revealed that this sample endorsed high levels of anxiety and depression and reported low levels of physical and mental quality of life. When compared to normative data, this sample of CRPS patients endorsed more anxiety, reported lower quality of life, and reported a greater level of pain than patients with other chronic pain conditions ($p < .01$). In summary, this study provides a profile of the demographic characteristics and psychosocial distress associated with CRPS. Understanding the demographic profile, psychosocial features, and psychological sequelae of this disorder will help both physicians and psychologists better understand CRPS and its impact on patients, and will hopefully provide a foundation for developing improved comprehensive interdisciplinary treatments.

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SELF-REPORT DISABILITY AND FEAR AVOIDANCE PREDICT HEALTHCARE UTILIZATION ABOVE AND BEYOND OBJECTIVE PHYSICAL DISABILITY

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Chronic musculoskeletal pain is a significant problem in the United States, generating billions of dollars in costs associated with occupational disruption and medical care. This study examined the influence of physical disability on healthcare utilization, and further explored the added benefit of considering psychosocial variables when predicting healthcare utilization. Participants were 48 active-duty military service members categorized as high or low healthcare utilizers based on their use of pain-related medical interventions (e.g., injection series, surgery, ablation, emergency department visit for pain management) recorded in outpatient electronic medical records for one year prior to study participation. Potential variables were identified and entered into a zero-order correlation matrix to assess their relationship with the criterion variable (pain procedures) and to assess multicollinearity. Only three variables (of the 13 entered) were significantly related to healthcare utilization: physical disability, self-reported disability, and fear avoidance beliefs. While logistic regression indicated that physical disability accounted for nearly 12 % of the variance in healthcare utilization (Nagelkerke $R^2 = .115$), the inclusion of self-report disability and fear avoidance beliefs increased the model's predictive ability to over 49 % (Nagelkerke $R^2 = .492$). These results indicate that, while assessing objective physical disability is appropriate when predicting healthcare utilization, the addition of self-report measures of disability and fear avoidance beliefs improves the predictive accuracy more than four-fold. Interdisciplinary treatments that target functional capacity, perceived disability, and pain-related cognition contributing to self-limitation are likely to have a significant impact on future healthcare utilization.

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MINDFULNESS-BASED STRESS REDUCTION BIBLIOTHERAPY FOR WOMEN WITH CHRONIC PELVIC PAIN

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Chronic pelvic pain (CPP) is a prevalent condition that accounts for 10 % of women's gynecological office visits, is often a source of emotional distress, and is associated with decreased quality of life. Mindfulness-based stress reduction (MBSR) has been shown to reduce pain and distress in chronic pain populations. We examined the effects of an MBSR bibliotherapy intervention in women with CPP. Forty women were randomly assigned to either an 8 week: 1) weekly telephone-guided intervention of the book "Full Catastrophe Living" (Kabat-Zinn, 1990) and the "Mindfulness Meditation for Pain Relief" CD (Kabat-Zinn, 2009), or 2) a self-guided intervention whereby participants were instructed to use the same book and CD without phone calls. Participants completed baseline and posttest assessments. Outcome measures included the Mindful Attention Awareness Scale (Brown & Ryan, 2003), a brief stress measure, the short-form McGill Pain Questionnaire (Melzack, 1987), and PROMIS Pain Interference short form (Amtmann et al., 2010). Intent to treat analyses were conducted using 2 X 2 repeated measures ANOVAs. There was a significant main effect of time for pain interference [$F(1, 34) = 14.91, p < .001$], such that women in both groups reported reduced pain interference in daily activities. Significant and marginally significant time X group interactions emerged for mindfulness [$F(1, 34) = 3.56, p < .07$], pain intensity [$F(1, 34) = 4.70, p < .05$], and stress [$F(1, 34) = 3.142, p < .09$]. For each time X group interaction, women in the guided intervention reported greater improvements than women in the self-guided intervention. These findings suggest that MBSR bibliotherapy may be an effective alternative for women with CCP who may be unable to attend the traditional 8-week workshop. The results further suggest that weekly calls from a mindfulness expert could enhance the effect of MBSR bibliotherapy in this population.

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MBMD PSYCHOSOCIAL AND PERSONALITY FACTORS OF RESPONSE TO MULTIDISCIPLINARY PAIN TREATMENT

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Psychosocial and personality factors are seen to contribute to the maintenance of and recovery from chronic pain conditions. Less is known about their influence on the efficacy of pain treatment programs. The present study aimed to examine the ability of the Millon Behavioral Medicine Diagnostic (MBMD), a broadband measure of personality and psychosocial characteristics normed on pain populations, to predict response to multidisciplinary pain treatment. The program (8 hrs/day, 5 days/wk, Mdays attended=26) included psycho-educational, process, and biofeedback/relaxation groups, as well as individual therapy and physical therapy services. Prior to participation in the pain management program, 93 patients completed the MBMD, and ratings of current and average pain on the Pain Outcomes Profile (POP, American Academy of Pain Management, 2003) were completed upon before and after program completion. Overall patients showed significant pre-post intervention decreases in POP current pain ($t(92) = 7.34, p < .001$) and POP average pain ($t(92) = 6.93, p < .001$). Participants were classified as "successful" or "unsuccessful" program completers based on pain reductions of ≥ 2 POP scale points. After program completion, 47 % of participants evinced successful pain reductions. ANCOVA revealed that successful participants had lower pre-intervention scores on MBMD depression and coping style scales measuring introversion, inhibited, dejected, and denigrated tendencies ($p < .05$). Multiple regression showed that lower pre-treatment depression and coping style scores predicted lower POP pain ratings at discharge independent of educational level and pre-treatment pain ratings ($p < .01$ to $.04$). This study demonstrates that the MBMD may be a useful tool to delineate patients who are likely to make significant treatment gains in intense, multidisciplinary pain treatment programs.

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CHRONIC ILLNESS ACCEPTANCE MEDIATES ANXIETY SENSITIVITY AND PERCEIVED DISABILITY IN CHRONIC PAIN PATIENTS: A REPLICATION AND EXTENSION

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Functional outcome is an important focus of behavioral interventions in patients with chronic pain (CP) and illness (CI). Perceived Disability (PD) has been shown to be a key predictor of functional outcome in CP and CI patients. Anxiety Sensitivity (AS), in turn, predicts CP patients' PD. CP Acceptance has been shown to mediate this relationship. We examined the Chronic Illness Acceptance Questionnaire (CIAQ) - adapted from the CP Acceptance Questionnaire - as a mediator of AS and PD in patients in online CI (e.g., diabetes, COPD, CVD) support groups. Study ppts with a CP dx were included in our final sample (N=236; Mean age=52.5 years, SD=10.7). Ppts were primarily female (85.2%), Caucasian (91.3%) and well educated (M=14.9 years, SD=3). Years with CP was 16.4 (SD=12.3); avg pain intensity was 5.7/10. Ppts completed the CIAQ, Anxiety Sensitivity Index (ASI) and Illness Disability Index. Regression equations were conducted to test the degree to which CI Acceptance mediates AS and PD. Total scores for the CIAQ and ASI were examined, as well as subscales: CIAQ Activity Engagement and Willingness, and ASI Physical, Social, and Cognitive Concerns. Five of the seven tests were significant (all p 's<.05). Sobel tests were subsequently conducted to determine the strength of mediation and ranged from $Z=1.887$ to $Z=3.136$ ($p=.002$ – $.059$). Results suggest that while there may appear to be a direct relationship between AS and PD, increased AS is inversely related to CI Acceptance, which in turn predicts PD. These study results highlight clinical, assessment, and measurement implications. In CP patients, interventions targeting CI Acceptance may foster reduced PD, reduce the impact of AS, and hence increase functional outcome. This study also lends support to the newly created CIAQ by replicating and extending upon a previous study using the pain-focused CPAQ. The CIAQ - a broader measure for use with CI populations - may have utility among patients with multiple co-morbidities and myriad associated symptoms in addition to and including pain.

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A BRIEF PRIMARY CARE INTERVENTION TO REDUCE FEAR OF MOVEMENT IN CHRONIC BACK PAIN PATIENTS

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The fear-avoidance model proposes that chronic pain, when erroneously interpreted as a sign of serious injury or harm, leads to excessive fear and avoidance of movement followed by disability and depression. The Tampa Scale for Kinesiophobia (TSK) has been used to identify patients with fear-avoidant beliefs who can benefit from cognitive-behavioral treatment (CBT). TSK and CBT data are rarely available to primary care providers, so fear-avoidance beliefs are often untreated or inappropriately medicated. Four patients with chronic low back pain and TSK raw scores >2.5 participated in this multiple baseline with changing criterion design study. Baseline, end-of-study, and 2 week follow-up measures included TSK, MPI-interference scale, Beck Depression Inventory, CSQ catastrophizing and coping self-statement scales, Pain and Impairment Relationship Scale, and a 100 mm visual analogue scale. During baseline, subjects were timed (in sec) as they walked two laps of a clinic hallway (56.4 m). Following a stable baseline, subjects were provided a 45 min talk emphasizing that (a) their pain was chronic, (b) pain was not an indication of harm; (c) movement be plan not pain directed; and (d) they take a management approach to pain. Subjects were given graphed baseline results and asked to speed-walk on the course (i.e., an in vivo exposure to fear of movement) with a goal set at 3 sec below baseline. After 3 successful trials at Goal 1, Goal 2 was set at 3 sec faster than the mean Goal 1 time. Intervention ended with 3 successful trials at Goal 2 and completion of outcome measures. Two weeks later, subjects completed the measures and did 3 trials of speed-walking. Results indicated that (a) subjects markedly improved speed-walking times, (b) 3 of 4 subjects had 100% and a 4th had 83% non-overlapping data between baseline, intervention, and follow-up phases, and (c) participants improved on all outcome measures from baseline to end-of-study and maintained positive results at follow-up. Implications for primary care providers are discussed.

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EXAMINING THE RELATIONSHIP BETWEEN DEPRESSION AND CATASTROPHIZING IN A MULTI-DISCIPLINARY TREATMENT PROGRAM OF CHRONIC LOW BACK PAIN

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Multi-disciplinary treatment programs for chronic low back pain (CLBP) have been shown to improve psychological and physical outcomes for individuals with chronic pain. Rates of depression highly co-occur with CLBP, and catastrophizing scores in chronic pain patients. The aim of this study was to examine the relationship between catastrophizing and depression in individuals with CLBP at admission and discharge from a four-week multi-disciplinary treatment program. The program took place at Unsted Park Rehabilitation Hospital in Surrey, England, and required patients to participate four days a week. Components of cognitive-behavioral therapy, hypnosis, biofeedback, physical and occupational therapy, behavior modification and medication counseling were included. Forty-seven CLBP patients participated in this study, and completed measures of depression and catastrophizing at admission and discharge. We found significant pretreatment to posttreatment changes using paired t-tests examining mean depression scores at admission and discharge $t(46)=6.82$, $p<.001$. We also found significant pretreatment to posttreatment changes using paired t-tests examining the mean catastrophizing scores at admission and discharge $t(46)=4.3$, $p<.001$. Change scores were conducted for depression and catastrophizing from admission to discharge to determine whether the changes in these scores were related. Changes in depression were positively correlated with changes in catastrophizing ($r=.43$, $p=.003$). These findings suggest that not only did the rates of depression and catastrophizing decrease significantly from pretreatment to posttreatment, but also the changes in depression and catastrophizing scores at pre- to posttreatment were significantly related. In addition, these findings suggest that multi-disciplinary treatment programs for CLBP are effective in reducing both levels of depression and catastrophizing, and offer important implications for treatment.

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DISENTANGLING THE RELATIONSHIP BETWEEN PAIN QUALITY AND DEPRESSION IN A MULTI-DISCIPLINARY TREATMENT PROGRAM OF CHRONIC LOW BACK PAIN

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Chronic low back pain (CLBP) is an extremely disabling, widespread health concern. Multi-disciplinary treatment programs for CLBP have been shown to improve psychological and physical outcomes. Rates of CLBP highly co-occur with depression and pain. The aim of this study was to examine the relationships between depression and different qualities of pain (sensory, affective, and evaluative) in individuals with CLBP at admission and discharge from a four-week multi-disciplinary treatment program. The four-week program took place at Unsted Park Rehabilitation Hospital and Surrey, England, and included aspects of CBT, hypnosis, biofeedback, physical and occupational therapy, behavior modification and medication counseling. Eighty-nine CLBP patients participated in this study, and completed measures of depression (BDI) and sensory, affective, and evaluative pain (MPQ) at admission and discharge. We found significant pre- to posttreatment changes using paired t-tests examining mean depression at admission and discharge, $t(88)=10.09$, $p<.001$. We also found significant pre- to posttreatment changes using paired t-tests examining the mean sensory pain scores at admission and discharge, $t(88)=5.57$, $p<.001$, the mean affective pain scores at admission and discharge $t(88)=5.15$, $p<.001$, and the evaluative pain scores at admission and discharge $t(88)=7.47$, $p<.001$. We calculated change scores for depression and sensory, affective, and evaluative pain scores from admission to discharge to determine whether the changes in these scores were related. Changes in depression were positively correlated with changes in sensory pain ($r=.25$, $p=.019$), and with changes in affective pain ($r=.34$, $p=.001$). Interestingly, changes in depression were not significantly related to changes in evaluative pain. Our findings suggest that multi-disciplinary treatment programs for CLBP are useful for reducing depression and qualities of pain, and offer important implications for the relationship between depression and sensory and affective pain.

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CRITERION-RELATED VALIDITY OF THE PHYSICAL ACTIVITY QUESTIONNAIRE FOR OLDER CHILDREN IN OBESE CHILDREN

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The increased prevalence of child obesity highlights the importance of physical activity (PA) interventions for this population. As many intervention studies use self-report measures of PA, it is important that valid tools exist. The Physical Activity Questionnaire for Older Children (PAQ-C; Crocker et al., 1997) is a commonly used, self-administered, 7-day recall tool. However, its validity for obese children has yet to be explored. In this study, we assessed the criterion validity and relatedness to physical fitness of the PAQ-C among obese children who participated in the Children's Health and Activity Modification Program (C.H.A.M.P.). The purpose of the 4-week group-based lifestyle intervention was to improve PA levels, dietary behaviors, and several physiological and psychological outcomes among obese children. Following the intervention, 41 children (55 % female; Mage=10.5 years; BMI \geq 95th percentile for age and sex) wore an Actical accelerometer for 7 days before completing the PAQ-C and the Cooper 12-minute walk/run fitness test (distance covered; Cooper, 1968). Resting heart rate was also assessed. Complete accelerometer data (\geq 10 hours/day for \geq 4 days) were obtained from 49 % of the participants and used to determine time spent in sedentary, light, moderate, or vigorous intensity activity. PAQ-C item scale correlations ranged from 0.36-0.76, and overall reliability was excellent (Cronbach's α =0.89). PAQ-C scores were positively correlated with raw accelerometer counts ($r=.52$, $p=.02$), minutes of moderate intensity PA ($r=.54$, $p=.01$), and vigorous intensity PA ($r=.46$, $p=.04$), as well as inversely correlated with minutes of sedentary activity ($r=-.59$, $p=.006$) and resting heart rate ($r=-.32$, $p=.04$). No significant correlations emerged between the PAQ-C and fitness test results. In conclusion, the PAQ-C is a valid measurement tool for PA and sedentary behavior among obese children; however, its relationship to physical fitness needs to be further explored.

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GENERALIZING THE FINDINGS FROM GROUP DYNAMICS-BASED PHYSICAL ACTIVITY RESEARCH TO PRACTICE SETTINGS: WHAT DO WE KNOW?

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The rate at which evidence-based programs translate into practice is proposed to increase when investigators report on external and internal validity factors and use study designs that align with typical delivery contexts. We completed a systematic review of group dynamics-based physical activity interventions ($n=17$) to determine the degree to which they: 1) reported dimensions of RE-AIM (Reach, Effectiveness, Adoption, Implementation, Maintenance); and 2) were designed to be effective under optimal parameters (explanatory design) or under more typical practice parameters (pragmatic design). Each study was coded using a dichotomous 21-item measure that reflected the RE-AIM dimensions. Studies were also evaluated using the Pragmatic Explanatory Continuum Index Summary (PRECIS); a 4-point Likert scale addressing 10 domains (e.g., flexibility of the intervention condition, strategies for participant compliance). Five of the 17 interventions had a high RE-AIM quality reporting score, 11 were rated as moderate, and one was considered to be low quality. The studies reported most frequently on aspects of reach (60 %) and effectiveness (61 %) and less frequently on aspects of adoption (50 %), implementation (38 %), and maintenance (40 %). Notably, none of the 17 studies reported on costs associated with implementation or maintenance. Four studies were identified as explanatory, three as pragmatic, and the remaining 10 were categorized as utilizing a combination of explanatory and pragmatic techniques. Of the 10 PRECIS domains, participant compliance and practitioner adherence were rated as more pragmatic while practitioner expertise and flexibility of intervention protocol were rated as more explanatory across the studies. Relative to other behavioral interventions, group dynamics-based PA interventions are more likely to report across RE-AIM dimensions and use pragmatic study features. Still, important issues related to intervention costs are absent from the literature.

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UNDERSTANDING PARENTAL SUPPORT OF CHILD PHYSICAL ACTIVITY BEHAVIOR

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Background: The benefits of regular physical activity for children have been well-established, yet participation rates are extremely low. A sound understanding of the correlates of child activity in the family home is needed to hone intervention efforts. The purpose of this paper was to focus on parental support within the context of an adapted theory of planned behavior (TPB) model.

Methods: Participants were a representative sample of Canadian mothers ($N=663$) with children aged five to eleven years of age, who completed measures of priorities during family time, TPB, and perceptions of the physical activity level of their children.

Results: An assessment of family priorities showed that mothers ranked physical activity (58 %) as high as homework (57 %) and far higher than arts/music (14 %), peer socialization (13 %), and family activities (39 %). Our structural equation model of the TPB showed a modest fit of these data [$\chi^2(38)=276.84$; $p<.01$; CFI=.97; RMSEA=.09]. Attitude about child physical activity (standardized effect=.23), attitude about support of child activity (standardized effect=.59), and perceived behavioral control of support (standardized effect=.17) all predicted intention and explained 77 % of its variance, yet only perceived control over support predicted behavior (standardized effect=.53).

Conclusions: Mothers perceive great import and benefit of physical activity for their children but they are inhibited by a low perception of control over support of physical activity. Interventions aimed at increasing control over support that span individual (e.g., self-regulatory), social (e.g., family support), environmental (e.g., access/opportunity to child activity), occupational (e.g., time to provide support from employers), and policy (low cost, high availability) are recommended.

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DEEPENING THE MEASUREMENT OF MOTIVATION IN THE PHYSICAL ACTIVITY DOMAIN: INTRODUCING BEHAVIOURAL RESOLVE

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Objectives: Intention is theorized as the proximal determinant of behaviour in many leading theories and yet tests of its absolute predictive utility show discordance. While one line of research has been investigating constructs that may augment intention, another possibility may be to improve measurement. The purpose of this study was to compare a typical measure of exercise intention with a measure that attempts to deepen the motivational domain via considerations of contextual barriers and other competing goals (named behavioural resolve). **Method:** Participants were a random sample of university students who were subsequently randomized to groups who completed either measures of exercise intention ($n=179$) and resolve ($n=227$) and a 2-week follow-up of exercise behaviour.

Results: Comparing the two measures in a two-group structural equation model showed that both measures had similar reliability coefficients yet the resolve construct explained significantly more variance in exercise behaviour than the standard intention construct [$\chi^2(1)$ difference=45.88, $p<.01$; Δ CFI=.12; resolve=.50 vs. intention=.24 variance explained]. Further comparison of the two measures showed that absolute discordance with subsequent exercise behaviour was considerably lower ($d=.65$) with behavioural resolve (mean=-0.09) compared to behavioural intention (mean=-1.28) and that resolved individuals were 10 % more able to translate into actual behaviour than well-intentioned individuals [$\chi^2(1)=3.16$; $p<.05$].

Conclusions: These findings indicate that at least some of the intention-behaviour gap may be from inadequate measurement of the motivational domain, and this can be partially rectified with shifting to a behavioural resolve measure.

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EXAMINING EXERCISE MOTIVES: EVIDENCE OF A HIERARCHICAL FACTOR STRUCTURE FOR THE REASONS FOR EXERCISE INVENTORY (REI)

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Physical inactivity is a significant public health problem, contributing to several chronic diseases and conditions. Elucidating underlying motivations of an active lifestyle is a vital component to breaking the physical inactivity barrier. The Reasons for Exercise Inventory (REI) is a 24-item self-report tool, with each statement rated on a 1 to 7 scale. Although this is a valuable tool, there is a lack of agreement on the underlying structure, ranging from 3–7 subscales (i.e. latent factors). This inconsistency is not trivial because (1) comparison between studies becomes challenging; and (2) the use and implementation of normative data is virtually impossible. Therefore, the purpose of this study was to examine the factor structure of the REI in a large cohort (N=550) of young (n=314, 18 to 54 yrs, mean 24±6.5 yrs) and older (n=234, 65+, mean 72.8±5.9 yrs) adults. Principal axis factoring (PAF) with oblimin rotation was used to examine multiple factor structures (2 through 7 factors) based on the scree plot, eigenvalues, and interpretability. The 7-factor solution corresponded closely with the original conceptual model (Silberstein et al., 1988), with the exception of one item ("maintain my current weight"). A hierarchical relationship was demonstrated between factors, with each successive solution from 7 to 2 factors consistently combining 2 factors to a single factor. Although 7 to 2 factor solutions explained 75.9 % to 47.3 % of the variance (respectively), the 4-factor solution (Physical Health/ Fitness, Socialization, Mental Health, Weight/Attractiveness) provided the most concise model of exercise motives (62.8 % of the total variability). Identifying the proper REI structure will hopefully lead to a more useful tool for future studies. Ultimately, we hope proper assessment of exercise motives will allow clinicians to better address barriers and increase activity to improve overall health and well-being.

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EXERCISE MOTIVES DIFFER BY AGE AND SEX: EVIDENCE FOR TARGETED HEALTH PROMOTION STRATEGIES

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Most Americans do not meet recommended exercise guidelines in spite of the health benefits. Regular exercise is particularly important for older adults due to the loss in strength and muscle mass, yet little is known about what motivates older adults to exercise, and whether their motivations differ from young adults. Also, prior research suggests sex differences in exercise motives, but it is not known if these differences persist with age. The purpose of this study was to examine age- and sex-related differences in exercise motives in a large cohort of young (n=256, 139 F, mean 24.9±6.9 yrs) and older (n=232, 143 F, mean 72.7±5.9 yrs) adults. Based on our previous research, we used a 4-factor structure of the Reasons for Exercise Inventory to examine between-group differences in: Physical Health/Fitness, Socialization, Mental Health, and Weight/Attractiveness. Significant age- and sex-differences were noted for each subscale, but there were no significant interactions. Young adults rated Weight/Attractiveness (p<.001), Mental Health (p<.001), and Socialization (p=.002) higher than older adults as motivations for exercise. Motives associated with Physical Health/Fitness did not differ between age groups (p=.18). Females were more likely than males to exercise for Weight/ Attractiveness (p=.02), Mental Health (p=.002), and Physical Health/Fitness (p=.004), but Socialization was not different between females and males (p=.94). Across all subjects, Physical Health/Fitness was rated as the highest exercise motivation (mean±SD: 5.3±1.2), followed by Weight/Attractiveness (4.0±1.4), Mental Health (3.5±1.7) and Socialization (3.4±1.6). These findings suggest that focusing on the health benefits of exercise is important for increasing participation, regardless of age or sex, but females and younger adults are more motivated by certain reasons for exercise. This knowledge may better direct health promotion strategies designed to increase exercise participation.

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LEVELS AND TYPES OF PHYSICAL ACTIVITY ACROSS AFRICAN AMERICAN, LATINO, AND WHITE GIRLS

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Relatively few studies have focused on physical activity (PA) among girls from different ethnic groups. The objectives of this investigation are: (a) to examine and compare PA levels of African American, Latino, and White girls aged 10–14 years using multiple measures of PA, including accelerometers, and (b) to identify most popular types of PA among these girls. Data are presented from the first year of a longitudinal study (N=372) of African American (n=128), Latino (n=121), and White (n=123) girls recruited from three age cohorts (10-, 12-, and 14-year-olds). Participants were drawn from the Portland-Gresham, OR metropolitan area using telephone, door-to-door, and word-of-mouth methods. The sample was socioeconomically diverse, with 27.9 % having family income <\$20,000 and 40 % from \$20,000-\$60,000. PA data were collected using self-report and parent-report surveys, PA diaries, and accelerometers. Analyses of variance results showed significant differences across ethnic groups on multiple PA measures. Latino girls were lower than African American and White girls in number of physical activities in the past week (p<.05) and number of days in a week of at least 60 minutes PA (p<.001). African American girls belonged to more sports teams than Latino and White girls (p<.01). Accelerometer results showed that White girls spent more time being sedentary (p<.05) and less time engaged in light activity (p<.01) compared to African American and Latino girls, and African American girls spent more time in moderate activity (p<.05). Most frequently reported physical activities across ages and ethnicities were walking, running, dancing, swimming, and bicycling. But African American girls reported more participation in basketball and volleyball than the others, and Latino girls participated in less rollerblading and weight training than African American and White girls. Across ethnicities and measures, PA rates were lower for 14-year-old than 10-year-old girls. Findings highlight both differences and similarities in PA levels and types across African American, Latino, and White girls.

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PERCEIVED BARRIERS TO PHYSICAL ACTIVITY ACROSS AFRICAN AMERICAN, LATINO, AND WHITE GIRLS

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Barriers self-efficacy has been associated with physical activity (PA) levels in youth. Less is known about whether PA barriers efficacy differs across racial/ethnic groups. The objectives of this investigation are: (a) to identify which PA barriers girls (10–14 years) feel least confident they can overcome and (b) to examine whether barriers differ significantly across African American, Latino, and White girls. Data are presented from the first year of a longitudinal study (N=372) of African American (n=128), Latino (n=121), and White (n=123) girls recruited from three age cohorts (10-, 12-, and 14-year-olds). Participants were drawn from the Portland-Gresham, OR metropolitan area. The sample was socioeconomically diverse, with 27.9 % having family income <\$20,000 and 40 % from \$20,000-\$60,000. Total PA barriers efficacy scores were significantly (p<.05) related to a variety of PA measures. Total barriers efficacy scores were lowest for Latino girls (p<.001). There were significant differences across ethnic groups in confidence to overcome individual barriers. Across the three ethnicities, girls were least confident they could overcome barriers related to health problems and unenjoyable activities. Analyses of variance revealed that Latino girls, compared to African American and Whites, were significantly less confident they could overcome barriers of health problems (p<.05), transportation (p<.05), disliking others in the activity (p<.01), having no one look similar (p<.001), expense (p<.001), no friends taking part (p<.01), friends asking to do something else (p<.05), disliking the coach or instructor (p<.01), feeling tired (p<.05), preferring to do something else (p<.001; African American and Latino girls were both less confident than White girls), having people make fun or tease (p<.05), and the activity including both boys and girls (p<.05). Findings underscore differences in perceived PA barriers across African American, Latino, and White girls.

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WHAT DO GIRLS LIKE TO DO AFTERSCHOOL?

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Background: Afterschool programs (ASPs) represents an opportunity for youth to achieve recommendations for physical activity. However, girls continue to participate in less physical activity in ASPs than boys. The purpose of this study was to determine if there is a difference in girls preferred activity versus boys in the ASP setting and to determine if there is a difference in moderate-to-vigorous physical activity (MVPA) levels during these.

Methods: Data was collected from 35 ASPs in the Midwest. Physical activity was measured via direct observation using the System for Observing Play and Leisure Activity in Youth (SOPLAY). Girls' and boys' physical activity choices and MVPA were collected.

Results: Type of physical activity from the SOPLAY categories were divided into four main categories: Sport (basketball, football, soccer, volleyball, kickball, baseball, softball), Recreation (racquet sports, playground games, board games, acting, dodgeball, hula hoop, four square, hopscotch, Frisbee), Fitness (gymnastics, jump-rope, tag, jogging/running, martial arts), and Unknown (free play). Most activities for girls and boys were categorized as Unknown (66 % and 68 %, respectively), followed by sports (6 % and 11 %, respectively), recreation (~22 %), and 2 % as fitness. During sports (~37 %) or recreational (~20 %) opportunities boys and girls engaged in MVPA similarly. During fitness, 47 % of girls compared to 57 % of boys engaged in MVPA, while during unknown activities 5 % of girls and 11 % of boys engaged in MVPA.

Conclusions: Data presented here provide evidence that girls participate in similar activities to boys while attending ASPs. However, girls may not be as involved in some of these activities during this time. Afterschool staff may play a large role in helping to make sure girls are involved in activities and achieve at least moderate levels of physical activity during this time.

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CONCURRENT AND LAGGED RELATIONS BETWEEN MOMENTARY AFFECT AND SEDENTARY BEHAVIOR

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Sedentary behavior (SB) is prevalent in westernized societies and has negative health consequences independent of physical activity levels. The psychological correlates of SB are not well understood, but SB has been linked to lower self-esteem and academic achievement in children and to depressive symptoms and lower quality of life in adults. The relationship between SB and affect has been demonstrated at the between-person level but no studies have investigated the reciprocal associations between momentary SB and affect in the context of daily experiences. Community-dwelling midlife women (N=121; age range 40–60 years) were recruited for a 15-day daily diary study. The women rated their positive and negative affect when prompted on a personal digital assistant device four times per day and wore an accelerometer for objective assessment of SB. Multilevel models were estimated to test concurrent and lagged associations between momentary estimates of sedentary behavior and affect. Both SB (ICC=0.235) and affect (positive affect ICC=0.59; negative affect ICC=0.21) varied significantly from moment to moment at the within-person level. In models that controlled for day of week, number of hot flashes, and total minutes of accelerometer wear time, greater concurrent positive affect was associated with fewer minutes spent being sedentary (b=-.21, p<.001) and greater concurrent negative affect was related to more sedentary minutes, though only on weekdays (b=.15, p=.05). In lagged models, neither positive nor negative affect predicted later sedentary behavior, however, more sedentary minutes marginally predicted lower positive affect at the next occasion (b=-.02, p=.06). These results suggest that SB has negative affective consequences from moment to moment. The implications of reduced positive affect following prolonged bouts of SB for subsequent motivational, behavioral, or wellbeing outcomes remain to be determined.

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DOES AFFECT PREDICT SUBSEQUENT PHYSICAL ACTIVITY IN MIDDLE-AGED WOMEN?

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Physical activity (PA) has well demonstrated positive effects on mood. It has also been theorized that affect may determine subsequent PA. Experimental studies have linked affective responses to acute exercise as predictors of subsequent PA, but it is unclear whether momentary changes in affect predict subsequent PA in the context of one's daily experiences. We investigated the reciprocal associations between PA and affect across a 15-day period as part of a daily diary study. Community-dwelling midlife women (N=121; age range 40–60 years) rated their positive and negative affect when prompted on a personal digital assistant device four times per day and wore an accelerometer for objective PA assessment. Multilevel models were estimated to test concurrent and lagged relations between momentary PA estimates (light, moderate, vigorous PA) and affect. There was substantial within-person variability in estimates of PA (ICClight=.19; ICCmoderate=.09, ICCvigorous=.07) as well as affect (positive affect ICC=.59; negative affect ICC=.21). In models that controlled for day of week, number of hot flashes, and total minutes of accelerometer wear time, greater concurrent positive affect was associated with more minutes spent in light (b=.10, p<.0001), moderate (b=.06, p<.0001), and vigorous (b=.01, p=.0014) PA. There were no concurrent associations between negative affect and any of the PA estimates. In lagged models, by and large, PA did not predict subsequent affect, however, in high fit women, negative affect at a previous occasion predicted subsequent minutes spent in light PA (b=-.24, p<.01). A moderation effect by levels of depressive symptoms was also observed, whereby women with higher depression scores engaged in less light PA following episodes of higher negative affect (b=-.63, p=.02). These results suggest that although PA covaries with concurrent positive affect, it is momentary negative affect that predicts subsequent PA, with effects varying by fitness or depression status.

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THE CAPACITY OF DISABILITY NARRATIVES TO MOTIVATE LEISURE-TIME PHYSICAL ACTIVITY AMONG INDIVIDUALS WITH SPINAL CORD INJURY

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Few individuals with spinal cord injury (SCI) engage in the recommended amount of leisure time physical activity (LTPA) despite numerous benefits. Theoretical determinants explain approximately 20 % of the variance in LTPA behaviours among individuals with SCI. To supplement and ultimately enhance our understanding of LTPA post-injury, Frank's disability narratives, the understanding that individuals have that guides their experience of disability, can provide context to theory by incorporating how the perspective of disability itself influences behaviour. This study explored how disability narratives motivate individuals with SCI to engage routinely in LTPA. Fourteen active individuals with SCI participated in hour long, life story interviews. Two forms of narrative analysis were used to identify and contrast disability narratives with respect to LTPA. The chaos narrative (n=1) dwelled on the past, pre-injury self; exposure to others with SCI was a constant reminder of the lost "able-bodied" self. Therefore she accessed solitary forms of LTPA. Restitution narratives (n=6) used LTPA as a vehicle to maintain the body for a future cure for paralysis. The focus on a "cured" future self motivated these individuals to seek LTPA programs that emphasized the restoration of function. Individuals who used a restitution narrative expressed no desire to engage in LTPA that would keep them in the "disabled world", such as adapted sport. Quest narratives (n=7) expressed more positive thoughts towards LTPA and described an emerging self as one who would improve the lives of others with SCI. These participants explored LTPA options that fit their interests. Moreover, these individuals were open to new LTPA including sport and outdoor recreation. Overall, different disability narratives motivate specific forms of LTPA while limiting participation in others. This understanding can enhance future theory-based LTPA interventions when information that appeals to different disability narratives is included.

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INDIVIDUAL AND INTERPERSONAL INFLUENCES ON ACTIVE COMMUTING AMONG WOMEN

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Introduction: Active commuting (AC) to the workplace is a potential strategy for incorporating more physical activity into daily life and is associated with many health benefits. Despite these known benefits, rates of AC remain low in the United States, especially among women. Understanding the influences on AC can allow for the development of tailored interventions. The purpose of this study was to examine the influences on AC in a population of women.

Methods: Participants in the study were a volunteer convenience sample of employed adult women working outside the home. Women responded to an online survey regarding: number of times/week walking and biking to work (dichotomized as no AC and AC 1+/week), individual (demographics, perceived behavioral control for AC, self-efficacy for AC, AC beliefs) and interpersonal (spouse and coworker AC patterns, spouse and coworker normative beliefs for AC) influences. Basic descriptive statistics and frequencies described the sample. Logistic regression was used to predict likelihood of AC considering individual and interpersonal influences.

Results: Respondents were primarily Non-Hispanic White (92 %), aged 44.09±11.38 years with a college degree or higher (82.3 %). Among respondents, 16.6 % (n=117) reported AC 1+X/week. Single women were more likely to report AC than married women (OR=1.59) and normal weight women were likely to AC than overweight women (OR=2.40). Older age (OR=0.96), reporting more chronic disease (OR=0.75), and more children (OR=0.96) were associated with no AC, while greater perceived behavioral control (OR=1.21), self-efficacy (OR=1.93) and AC beliefs (OR=1.05) were associated with AC. Women reporting that their coworkers (OR=1.89) or spouse (OR=1.36) actively commuted were more likely to actively commute themselves. Coworker (OR=1.33) and spouse (OR=1.32) normative beliefs for AC was associated with AC.

Conclusion: These results identified some significant influences on AC behavior among women. Future intervention strategies should include family oriented approaches or target workplace social support for improving active travel participation.

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MEETING PHYSICAL ACTIVITY GUIDELINES FOR INDIVIDUALS WITH ARTHRITIS: HOW CHALLENGING ARE FLARES TO PERCEPTIONS OF SELF-REGULATORY EFFICACY AND PAIN?

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Physical activity (PA) is recommended for individuals with arthritis at levels similar to asymptomatic adults (150 mins/wk mod to vigorous). Self-regulatory efficacy (SRE) to overcome arthritis barriers (SRE-AB) to PA and to schedule/plan activity (SRE-SP) were greater for individuals meeting PA guidelines in studies when symptoms were either usual or more extreme (e.g., arthritis flare). Flares are presumed to be an increased challenge to engaging in PA and to reduce SRE. Surprisingly, whether perceptions about SRE for PA and pain intensity differ within the same person as a function of symptom severity (flare vs. no-flare) and PA level has not been addressed. In this observational study, participants (N=53) reported SRE for PA during the next 4 weeks (SP & AB), pain intensity, and PA volume over the past 6 months. Mixed-model ANOVAs compared those meeting/not meeting PA guidelines in both flare and no-flare conditions. Main effects for SRE-SP were significant between PA groups ($p<.05$) and within flare/no-flare comparisons ($p<.001$). Sufficiently active individuals have a distinct psychological advantage of greater SRE-SP over the insufficiently active. However, all participants were less efficacious to be active during a flare. For pain, a within-subjects effect was found for flare vs. no-flare ($p<.001$) confirming flares are perceived as more challenging for engaging in PA than usual arthritis symptoms. A sub-sample of 31 participants was examined about other anticipated arthritis-related barriers to PA in upcoming weeks. ANOVA revealed a within-subjects effect for SRE-AB ($p<.001$). Regardless of meeting PA guidelines or not, participants reported lower SRE-SP and AB and higher pain intensity during a flare. Adhering to PA during a flare may require tailoring the self-management of symptom severity and of PA to be able to approach and meet recommended guidelines.

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DOES INTENTION PREDICT PHYSICAL ACTIVITY PRESCRIPTION AMONG MEXICAN MEDICAL RESIDENTS?

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Although physicians are in a unique position to promote physical activity (PA), their PA prescription levels are low. Limited evidence from developed countries shows that physicians face barriers to prescribing PA and that intention and their own PA involvement influence PA prescription. The purpose of this study was to describe current PA prescription practices of Mexican physicians-in-training and to determine if intention predicts PA prescription. Fifty-one residents (59 % female; all medical specialties; mean age 28 years) from two teaching hospitals in Guadalajara, Mexico, responded to an online questionnaire about their PA prescription practices, knowledge and barriers to PA prescription. Validated measures were used to assess residents' attitudes, subjective norms, perceived competence and intentions to prescribe PA. Residents' PA levels were assessed with the Godin Leisure Time Exercise Questionnaire. Residents reported asking and providing verbal advice about PA (70 %), referring patients to PA-related resources (24 %), providing PA written instructions (12 %) and evaluating patients' fitness (12 %). Main barriers were lack of knowledge and low patient adherence but these were not significantly associated with PA prescription. The proportion of residents prescribing PA was significantly higher among active than inactive residents (70 % vs. 30 % $p<.05$). Attitudes ($\beta=.37$, $p<.01$), subjective norms ($\beta=.37$, $p<.05$) and perceived behavioral control ($\beta=.37$, $p<.01$) were significant predictors of residents' intentions to prescribe PA, together explaining 67 % of the variance ($R^2=.67$, $p<.01$). Intention was the only significant predictor of PA prescription ($\beta=.48$, $p<.01$), explaining 30 % of the variance ($R^2=.30$, $p<.01$). We conclude that intention predicts PA prescription in this sample of Mexican medical residents. Strategies for improving residents' PA prescribing practices should target their intention and related psychosocial constructs.

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Meritorious Poster

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AFFECTIVE RESPONSES TO A NOVEL VS. TRADITIONAL BOUT OF PHYSICAL ACTIVITY

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Many Americans do not engage in enough physical activity (PA) and females engage in less PA than males. Recent work has found relationships between positive affective responses to PA and higher rates of future PA. The present study compared affective responses to a traditional form of PA (treadmill walking) against a novel form of PA (hula-hooping). A total of 120 ethnically diverse, physically inactive women, aged 18-45, were randomly assigned to either 30 minutes of treadmill walking (n=62) or hula-hooping (n=58) and affect measures were collected pre- and post-activity. A series of ANCOVAs were run to compare post-task affect, controlling for pre-task affect, across groups. Results revealed statistically significant differences between groups for positive affect $F(1, 117)=6.24$, $p=.014$, $\eta^2=.051$, physical exhaustion, $F(1, 117)=5.97$, $p=.016$, $\eta^2=.049$, energetic mood, $F(1, 117)=6.01$, $p=.015$, $\eta^2=.049$, and affective valence, $F(1, 117)=8.17$, $p=.005$, $\eta^2=.065$ such that participants in the hula-hoop group had higher mean ratings of post-task positive affect, energetic mood, and affective valence and lower mean ratings of post-task physical exhaustion compared to participants in the treadmill walking condition after controlling for affect at baseline. A number of ethnic groups under-represented in PA research were included in the present sample and for exploratory purposes, a univariate ANOVA was run to test the main effects of ethnicity and condition, and the interactive effect of ethnicityXcondition on positive affect change from pre-task to post-task. In this model, condition was significantly associated with positive affect change such that participants in the hula-hoop condition had greater positive affect change than participants in the treadmill walking group, $F(1, 114)=4.14$, $p=.044$, $\eta^2=.035$, regardless of ethnic affiliation. The results of this study hold implications for the future targeting and tailoring of PA interventions among ethnically diverse, physically inactive women.

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WOMEN'S WALKING PROGRAM

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Purpose: A challenge for translating behavioral change interventions into practice is successful recruitment and retention. The purpose of this study is to present recruitment efforts, screening outcomes, and retention for the community-based culturally sensitive 12-month Women's Walking Program for midlife African American (AA) women.

Methods: The study design was a randomized cluster Latin Squares clinical trial with random assignment of the order of administering three conditions to six community healthcare centers in predominately AA, low-income communities. The intervention consisted of six group visits (GV) with (1) an automated phone response contact condition, (2) a personal phone contact condition, and (3) a no contact between GVs condition. A real-time web-based research management system was used for monitoring recruitment, GV attendance and retention with reporting via mobile phone/computers. Recruitment strategies included print materials, face-to-face community networking and participant word-of-mouth. Initial screening for cardiovascular risk was done over the phone followed by a health assessment (history/physical, body composition, lipoprotein levels, blood glucose, blood pressure, resting EKG and field fitness step-in-place test) with a nurse practitioner. Selected innovative retention strategies included reminders of GVs via text, automated calls and personal calls. **Results:** Of 352 women who contacted the program, 200 (57 %) were eligible, 77 (21 %) were lost to attrition during screening, and 65 (18 %) were ineligible. The primary reason for attrition during initial screening was "not interested in the program" and during health assessment was elevated blood pressure (systolic >160 mmHg or diastolic >100 mmHg). Face-to-face community networking was the most effective recruitment strategy. Participants were all screened 1-4 weeks prior to the start of their respective cohort (12/cohort). Over 75 % attended >5 GVs and 93 % returned for 12 month assessments.

Implications: Real time web-based tracking facilitated immediate adjustments to recruitment. Minimal time between screening and first group visit contributed to reduced attrition.

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AFFECTIVE RESPONSE TO EXERCISE AND PHYSICAL ACTIVITY AMONG ADOLESCENTS: MODERATION BY CONSISTENCY AND STABILITY OF THE AFFECTIVE RESPONSE TO EXERCISE

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Introduction. Affective responses to exercise are associated with physical activity (PA) and may predict future PA behavior. Evidence suggests that an affective style may underlie the documented variation in individuals' affective responses to exercise, and may help explain variability in PA participation, yet research evaluating the affective response to exercise in terms of its "traitedness" (i.e., the degree to which the trait is expressed consistently) is scarce. The present study examined whether acute affective responses to exercise are consistent across situations and stable over time, and whether individual differences in the "traitedness" of these responses play a role in predicting future PA behavior.

Method. Adolescents (n=192; M age=14.79; 55 % male) provided Feeling Scale (FS; Hardy & Rejeski, 1989) ratings before and after a 30-minute unsupervised exercise task in a naturalistic environment and a 30-minute lab-based moderate- intensity exercise task. Participants also completed a one-week assessment of PA via accelerometry. One year later, participants repeated the unsupervised exercise task and the one-week PA assessment.

Results. Intra-class correlation coefficients revealed that affective responses to exercise were mildly consistent across tasks (ICC=.251, p=.001) and mildly stable over time (ICC=.166, p=.044). Multiple regression showed that the affective response to exercise predicted PA differently across levels of affective response consistency ($\beta = -.326, p = .026$) when controlling for baseline affect and past PA. The affective response- future PA relationship was more positive when adolescents' affective responses were strongly consistent than when they were moderately consistent. Affective response stability did not moderate the affective response- PA relationship. **Conclusions.** Among adolescents who evidence strong consistency across situations in their affective response to exercise, this response positively predicts future PA. The findings may be useful for tailoring interventions to promote adolescent PA.

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INDIVIDUAL, SOCIAL, AND PHYSICAL ENVIRONMENT CORRELATES OF LONG-TERM PHYSICAL ACTIVITY (PA) IN ADOLESCENTS

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Leverage points are factors that exert a disproportionately strong effect on health behavior. This study's aim was to identify potential leverage points for long-term PA behavior in adolescents through exploratory analyses. High school students (n=192, mean age=14.8) were recruited in the summer after their 9th grade year. At baseline, individual-level (PA behavior defined as 3-day recall of vigorous activity and self-reported sports participation, percent body fat, and perceived competence, autonomy, and relatedness), interpersonal-level (social support), and physical environment-level (neighborhood PA resources) factors were assessed. Gender, ethnicity, and socioeconomic status were evaluated as covariates. Two negative binomial regression models were built to model outcome variables (PA behavior one year after baseline) and likelihood ratio chi-square tests were performed to test improvements in model fit with consecutive addition of factors. Results demonstrated that vigorous PA and sports participation at baseline were significantly associated with long-term vigorous PA (incident rate ratio [IRR]=1.03, p<0.01) and sports participation (IRR=1.18, p<0.01), respectively. In addition, social support (IRR=1.03, p<0.01) was significantly associated with long-term sports participation. Although competence was not directly associated with PA, the relationship was moderated by both gender (IRR=1.26, p<0.05) and percent body fat (IRR=0.98, p=0.02). The association between competence and sports was reduced in girls and the association between competence and vigorous PA was attenuated in participants with high body fat. Implications for future interventions highlight social support as a potential leverage point for long-term sports participation. Moreover, interventions for long-term PA behavior may be less effective if perceived competence is targeted in adolescent girls as well as in participants with high body fat. Finally, because baseline PA was a robust predictor of long-term PA behavior, future interventions should aim to boost PA behavior early in development.

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IMPACT OF FUNCTIONAL IMPAIRMENT, BARRIERS, AND DEPRESSION ON PHYSICAL ACTIVITY IN PERSONS WITH LONGSTANDING MULTIPLE SCLEROSIS

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Research suggests that physical activity (PA) may have positive effects on symptoms experienced by persons with multiple sclerosis (MS) yet challenges exist which foster sedentary lifestyles. Little is known of the effects depression and barriers have on PA after controlling for functional impairment in persons with longstanding MS. The purpose of this study was to explore the impact of these constructs on measures of PA while controlling for functional impairment in persons MS who have been diagnosed for more than 15 years.

A sample of 369 persons with MS (85 % female, mean age 61.4+9.3; mean disease duration 24.5+6.6 years) in an ongoing longitudinal health promotion study completed the Barriers to Health Promoting Activities for Disabled Persons Scale, the CES-Depression Scale, the MS Incapacity Status Scale, the Health Promoting Lifestyle II (HPLP II) and the Human Activity Profile (HAP). Reliability coefficients for summated scales were greater than .85. The PA subscale of the HPLP II assesses how often persons report engaging in PA of varied intensity and duration. The HAP provides an adjusted activity score (AAS), which reflects current activities regardless of frequency. Descriptive statistics, Pearson correlations, and hierarchical regression were used to analyze the data. HPLP II PA and AAS scores were moderately correlated ($r = .47, p < .01$). Education, impairment, and depression explained 25 % of the variance in HPLP II PA subscale scores. Age, impairment, and depression explained 68 % of the variance in scores on the AAS.

Findings support the expected theoretical relationships between functional impairment, depression, barriers, and behavior. Depression added significant unique variance to predicting PA in both measures, while barriers did not. The variation in the relationships between predictors and outcomes is consistent with the differences in the conceptualization and operationalization of PA. **Acknowledgment:** This project was supported by Grant R01NR003195, NINR, NIH

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HOW A COMMUNITY-DESIGNED PARK IMPACTED PHYSICAL ACTIVITY OF ITS REFUGEE USERS

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Parks and open spaces have been associated with greater engagement in physical activity. We studied how residents in refugee housing used an adjacent 2-acre vacant lot before and after it was transformed into a community garden and recreational park. The park was designed using a community based participatory approach that included input from partner organizations and residents representing 8 countries and 9 languages. Two raters used the System for Observing Play and Recreation in Communities (SOPARC) to observe and evaluate changes in the demographics of park users, type and intensity of physical activity performed, and energy expended within the park and adjacent alleys, streets and parking lots. Total MET levels for observed activities were calculated by assigning a weight of 1.5 for sedentary, 3.0 for moderate and 6 for vigorous observations. Approximately 64 hours of observation were made pre- and repeated post- construction. Characteristics of users were 99 % non-white, 52 % children, 14 % teens, 29 % adults and 4 % seniors, and were similar post-construction, with a slight increase in teen and adult users. Pre-construction, 25 % of observed males were engaged in vigorous activities compared to 7 % of observed females. Post-construction, 27 % of males were engaged in vigorous activity and 8 % of females. Percent males observed in moderate activity increased from 35 % to 41 %. Percent females observed in moderate did not increase. Location of activity shifted dramatically post-construction with an average monthly decrease of 217 METS in the adjacent streets and alleys and an increase of 326 METS within the park ($p < .0001$). Development of open space shifted community activities from streets and alleys to designated recreational areas and increased activity levels for males but not females. These results suggest that programming targeting females and seniors may be necessary to extend these benefits to population segments at highest risk for inactivity.

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PHYSICAL ACTIVITY AND QUALITY OF LIFE IN A BREAST CANCER SURVIVORS: A PANEL ANALYSIS

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Physical activity (PA) is associated with reduced side effects and enhanced quality of life (QOL) in breast cancer survivors. However, the mechanisms underlying this relationship are not well understood. The purpose of this study was to longitudinally test a model examining the role of self-efficacy and health status as potential mediators of the relationship between PA and QOL in a sample of breast cancer survivors using both self-report and objective measures of physical PA. All participants ($N=1527$) completed self-report measures of PA, self-efficacy, health status and global QOL at baseline and 6 months. A subsample was randomly selected to wear an accelerometer at both time points ($n=367$). It was hypothesized that PA indirectly influences global QOL via more proximal outcomes of PA participation: exercise-related self-efficacy and health status (physical, social, emotional and physical well-being). Relationships among model constructs were examined over the 6 month period using panel analysis within a covariance modeling framework. The hypothesized model provided a good model-data fit ($\chi^2=657.73$; $df=93$, $p < .001$; CFI=0.96; RMSEA [90 % CI]=0.06 [0.06-0.07] in the full sample when controlling for covariates. At baseline, PA indirectly influenced global QOL through self-efficacy and emotional, social and functional well-being. These relationships were also supported across time. Additionally, the majority of the hypothesized relationships were supported in the subsample with accelerometer data ($\chi^2=320.96$, $df=134$, $p < .001$; CFI=0.95; RMSEA [90 % CI]=0.06 [0.05-0.7]). This study provides evidence to suggest the relationship between PA and QOL in breast cancer survivors may be mediated by more proximal, modifiable factors. Future studies should replicate this sample in other breast cancer survivor populations and determine whether relationships hold as the result of a PA intervention.

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NEUROTICS MOVE LESS: PHYSICAL ACTIVITY AND BIG FIVE PERSONALITY TRAITS IN COLOMBIA

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Over the past three decades, researchers have begun to unravel the great benefits that physical activity (PA) exerts not only on the physiological health, but on psychological wellbeing as well. The use of personality traits on PA research has begun to shed some light on the reasons why people engage or refrain from doing PA and exercise. Framed on the Five Factor Model, Neuroticism and Extraversion, are the factors most consistently related to PA levels. More specifically, extraversion has repeatedly been found as a positive predictor, while neuroticism has been consistently found as a negative one. The objective of this research was to assess if those relationships were present in a Colombian context, and if so, to see if those relationships were stable across socio-economic status (SES), gender, and age groups. This was a cross-sectional survey of 1500 participants randomly chosen, aged 18 and older, and representative of the urban area of Colombia. Instruments used were the BFI-10 and the Healthy Patients Healthy Doctors Questionnaire. Results: There was no significant difference between high and low levels of Extraversion in terms of PA levels. On the other hand, there was a significant relationship in the difference of PA levels between high and low levels of Neuroticism $F(1, 1494)=20,303$ $p < .001$. Furthermore, the interaction between neuroticism and socio-demographic variables such as SES and gender was not significant. Still, the interaction between Neuroticism and age was significant $F(2, 1494)=3,380$ $p = .034$; where differences tended to be higher in the middle age group (Mean Low Neuroticism =201,961 versus Mean High Neuroticism=108,904). In sum, this study highlights the importance of including personality and demographic characteristic in order to better understand the differences in PA levels among the population. Additionally, we found Neuroticism, and not Extroversion, to be strongly related with physical activity levels in the Colombian context. Therefore this personality trait should be included not only in exploratory investigations, but also in intervention programs

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FATALISM AND PREDICTORS OF HEALTH BEHAVIORS AMONG UNDERGRADUATE STUDENTS

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Health disparities have been targeted for over 50 years in the U.S., with little progress made to date. Fatalism is one of the cultural factors readily explored over the past 2 decades in explaining disparities in treatment compliance, health care utilization, and preventive health behaviors, in particular among racial/ethnic minority populations. Fatalism has been identified as a significant barrier to engaging in cancer screening services among middle-aged to older adults, but there is little data on fatalism and its link to health behaviors among younger populations. The current research examines the construct of fatalism, its correlates, and the role of fatalism in predicting health behaviors in a sample of 289 undergraduate students (M age=18.9 years). Similar to past findings, women in this study were more likely to endorse fatalistic beliefs, $F(3)=4.94$, $p < .01$; however, there were no differences in fatalism across Whites and racial/ethnic minorities, $F(3)=2.04$, $p = .11$, or insurance status $F(3)=1.30$, $p = .28$. In addition, scores of fatalism maintained low to moderate correlations with other constructs proposed to underlie fatalism, such as locus of control, religiosity/spirituality, and illness attributions (all $rs < .45$). Finally, fatalism was not a significant predictor of either binge drinking or physical activity in this sample. While there were racial/ethnic differences in markers of disparities (e.g. self-rated health status, body mass index, and ratings of quality of health care), racial/ethnic differences did not emerge in fatalism scores or health behaviors, or, in the case of binge drinking, was protective. This research suggests that variables other than fatalism contribute to differences in health behaviors for undergraduates.

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A-176b

THE HEADS UP STUDY: SELF-REPORT PHYSICAL ACTIVITY AS PREDICTORS OF PHYSICAL FUNCTION IN OBESE ADULTS

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Over 39 % of the U.S. population are considered obese (BMI>30 kg/m²). The obesity epidemic is driving a parallel epidemic of type 2 diabetes and other comorbidities. Obesity is associated with reduced physical activity and physical function. Few studies in extreme obesity examined the relationship between self-reported level of fitness and an objective measure, such as the 400 meter walk. The Heads Up Project is a demonstration project to observe the effects of utilizing an intensive medical intervention (IMI) or surgery program for obesity.

Participants (n=409, 81 % female, 59 % Caucasian, BMI=46.7 kg/m²+5.46) are enrollees in state-managed health insurance. All participants completed a 400 m walk as a measure of physical fitness and ability, the Demographic and Lifestyle Questionnaire (DLQ), and the Impact of Weight on Quality of Life (IWQOL) Questionnaire. Lifestyle questions on the DLQ included self-reported physical activity, work activity, and leisure time. The Physical Function (PF) subscale of the IWQOL was used for this study. Correlation analysis showed significant positive associations with walking time and age ($r=.30, <.001$), BMI ($r=.29, <.001$), and work sitting time ($r=.13, <.01$). In addition, significant negative associations were found with walking time and work standing time ($r=-.16, <.002$), leisure time physical activity ($r=-.15, <.003$), leisure time bike riding ($r=-.14, <.005$), leisure time sport playing ($r=-.28, <.001$), leisure time sweating ($r=-.11, <.02$), leisure time walking ($r=-.16, <.001$), and physical function ($r=-.22, <.005$). Significant differences were found in gender with males having faster walking times ($\chi^2=8.73, <.003$). These findings suggest that patient self-reported measures of physical activity were consistent with an objective measure of fitness. Additional analyses will be completed to assess multiple regression techniques and the relationship on other study outcomes.

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PREDICTORS OF SIZE FOR GESTATIONAL AGE IN ST. LOUIS CITY AND COUNTY

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Objective: To identify social, behavioral, and physiological risk factors that are associated with small-for-gestational-age (SGA).

Methods: We conducted a cross-sectional study of multiple fetal death and live birth cohorts (150,643) in St. Louis City and County (2000–2009). The outcome of interest was SGA, stratified by gestational age (GA) at birth (28 weeks and under, 29–32 weeks, 33–36 weeks, and 37 weeks and up). Predictors included social determinants (i.e., maternal race, age, education, and service utilization [Medicaid enrollment, inadequate prenatal care]), behavioral (smoking), and physiological (i.e., parity, diabetes, chronic hypertension, pregnancy induced hypertension, and eclampsia) variables. Crude odds ratios and 95 % confidence intervals (CI) were explored for SGA using bivariate logistic regression. Adjusted odds ratios and 95 % CI were explored with logistic regression, stratified by gestational category.

Results: Social determinants, smoking, and physiological variables (chronic hypertension, pregnancy induced hypertension, and eclampsia) were all associated with a significantly increased odds for SGA. Pregnancy-induced hypertension was associated with an increased odd of SGA within each GA category, most pronounced at 20–28 weeks (aOR: 3.75, 95 % CI 2.4, 5.8). Primiparity was associated with a 28–40 % increased odds of SGA, among those 29 weeks or more. Black race and smoking were associated with a 25 % (aOR: 1.25, 95 % CI 1.1, 1.4) and 56 % (aOR: 1.56, 95 % CI 1.37–1.76) increased risk (respectively) for SGA in the 33–36 GA category, and 120 % (aOR: 2.20, 95 % CI 2.10–2.30) and 115 % (aOR: 2.15, 95 % CI 2.04–2.26) increased risk (respectively) in the 37–39 GA category. Diabetes was associated with decreased odds of SGA among those 33–36 (aOR: 0.69, 95 % CI 0.57–0.85) and 37–49 weeks (aOR: 0.68, 95 % CI 0.61–0.76) GA.

Conclusion: Many of the behavioral risks and chronic conditions are amenable to change, but may better serve a pregnancy if ameliorated before pregnancy.

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THE IMPACT OF A LEISURE-TIME EXERCISE INTERVENTION ON PREGNANT WOMEN'S OVERALL PHYSICAL ACTIVITY: IS COMPENSATORY BEHAVIOR AN ISSUE?

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Regular exercise during pregnancy is associated with numerous maternal and fetal health benefits. To date, the majority of interventions for pregnant women have targeted leisure-time exercise, and little is known about how starting a new exercise program impacts overall physical activity (PA). This is problematic because optimum health depends not only on meeting exercise guidelines but on also an active lifestyle which minimizes sedentary behavior (i.e., sitting). In addition, some individuals who take up an exercise program appear to engage in 'compensatory' behavior by becoming more sedentary throughout the remainder of the day (Di Blasio et al., 2011). This study examined the impact of a 4-week exercise intervention based on Protection Motivation Theory (Rogers, 1975) and the Health Action Process Approach (Schwarzer, 2003) on overall PA levels of 60 previously inactive pregnant women (M age=30.65, SD=4.72; M weeks pregnant=22.36, SD=5.28). Week-long PA was assessed at baseline and at 4-weeks post-intervention via accelerometer, and data were used to determine total time spent (minutes per week) in sedentary, light, or moderate-to-vigorous (MVPA) intensity activity. In addition, leisure-time exercise at week 4 was used to classify participants as meeting (n=17) vs. not meeting (n=43) Canadian guidelines for PA during pregnancy (>30 continuous minutes per session, ≥ 4 sessions per week). ANCOVAs with baseline scores as a covariate demonstrated that participants who met guidelines for leisure-time exercise at week 4 also engaged in more minutes of MVPA ($p=.01, \eta^2=.11$) and less sedentary behavior ($p=.03, \eta^2=.08$) compared to participants who did not meet guidelines. Light intensity activity did not differ between groups ($p=.68, \eta^2=.00$). These results indicate that 'compensatory' behavior did not occur and that an intervention aimed at increasing leisure-time exercise also led to greater overall MVPA and less sedentary behavior. The implications of these findings for increasing PA during pregnancy will be discussed.

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NEGATIVE BODY IMAGE IS RELATED TO OVEREATING AMONG DIVERSE LOW-INCOME OVERWEIGHT PREGNANT WOMEN

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Background: Pre-pregnancy obesity and overeating (OE) increase risks during pregnancy. Social Cognitive Theory posits individual and environmental factors influence health behaviors. Purpose: This study determined whether social norms (SN; environmental factor) and body image (BI; individual factor) regarding pregnancy weight gain were related to OE among overweight/obese (OW/Ob) pregnant women.

Methods: Baseline survey data from a prospective study to identify predictors of excess gestational weight gain were analyzed. Pregnant women were recruited from an obstetric clinic and completed validated questionnaires on OE (EBPQ; Schlundt et al., 2007), SN (Courneya & Friedenreich, 1999), and BI (Eating Disorder Examination-Questionnaire version 6; Fairburn et al., 2009). Linear regression analyses were used to assess these associations after controlling for demographic variables.

Results: Data for 164 OW/Ob pregnant women with an average age of 25 (SD=5.8) and pre-pregnancy BMI of 33 (SD=7.1) were used in this study. 31 % (n=50) were Hispanic/Latina, 19 % (n=29) White, and 63 % (n=97) African American among others (n=29, 19 %). 52 % (n=84) had at least some college, 36 % (n=59) had a high school degree and 12 % (n=20) had no high school degree. Income was <\$25 K for 71.5 % (n=113) of the sample, \$25-\$50 K for 34 % (n=66), and >\$50 K for 8 % (n=12). The regression model was significant ($R^2=.07, p=.01$); BI was uniquely significantly related to OE (std Beta=-.23, $p<.01$); but SN were not ($p>.05$).

Conclusions: Improving BI regarding weight gain during pregnancy among diverse, low-income, OW/Ob pregnant women may reduce OE during pregnancy; thereby reducing obesity-related risks to pregnancy.

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A-180

RELIGIOUS COMMITMENT AND DEPRESSION DURING PREGNANCY

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Numerous studies have found that increased levels of religiosity are associated with lower levels of depression, possibly due to increased social support. However, few researchers have investigated religiosity's relationship to prenatal depression. It was hypothesized that pregnant women who had higher levels of religious commitment would have lower levels of depression. Religious commitment was also hypothesized to account for depression level above and beyond the degree of social support from others. Participants in the current study included 330 pregnant women (smokers and nonsmokers) participating in the Tennessee Intervention for Pregnant Smokers Program. Participants met with a case manager at their prenatal care provider and completed several questionnaires in an initial interview including the Religious Surrender and Attendance Scale (RSAS-3), the social support of others subscale from the Prenatal Psychosocial Profile, and the Centers for Epidemiologic Studies Depression Scale (CESD-10). Zero order correlations revealed that religious commitment was significantly negatively related to depression levels. Education level, the only significant covariate, was included in the hierarchical regression model in step 1, social support from others in step 2, and RSAS-3 in step 3. Results revealed that the full model explained 3.3 % of the variance in depression scores, with RSAS-3 significantly contributing to the model above and beyond social support from others after controlling for education. These findings are in contrast to previous speculations that social support is the driving force behind lower levels of depression in religious individuals, and supports the hypothesis that religiously committed individuals report lower levels of depression during pregnancy.

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AMBIGUITY AVERSION: ASSOCIATIONS WITH PATIENT DEMOGRAPHICS, SELF-EFFICACY, AND MEDICATION ADHERENCE

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Background. As the number of medication information sources continues to grow, so does the potential for patient exposure to conflicting medication information (i.e., contradictory information about medicines from two or more sources). Ambiguity aversion (AA), or the extent to which patients are averse to conflicting medication information, has received little attention in the literature and may impact patients' medication-related decisions. Our purpose is to describe AA in a sample of arthritis patients and determine whether AA is associated with patient demographics, adherence self-efficacy, medication beliefs, and medication adherence.

Methods. Data were collected as part of the Information Networks for Osteoarthritis Resources and Medications Study, which assessed the information-seeking behaviors of arthritis patients (n=328). Using an online survey, patients completed demographic questions and validated measures of AA ($\alpha=.81$, range: 1–5), adherence self-efficacy ($\alpha=.94$, range: 1–5), and medication concerns ($\alpha=.79$, range: 1–5). Patients also completed a visual analog scale for medication adherence that ranged from 0–100, with lower scores indicating poorer adherence. Patients who scored ≥ 4 on the AA measure were categorized as high AA. SPSS was used to calculate univariate statistics and bivariate associations between AA and the other variables of interest.

Results. Only 9.7% (n=31) of the sample reported high AA. Higher mean AA scores were associated with lower adherence self-efficacy ($r=-.13$, $p=.03$) and more medication concerns ($r=.30$, $p<.001$). AA was not significantly associated with medication adherence or patient demographics.

Conclusion. The majority of arthritis patients in our sample were not highly averse to conflicting medication information, although greater AA was associated with lower adherence self-efficacy and more medication concerns. Patient demographic and clinical characteristics were not associated with AA.

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ILLNESS PERCEPTIONS, MEDICATION ADHERENCE, AND HOSPITAL READMISSIONS

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Transitional care interventions prevent 30-day hospital readmissions and may improve health-related quality of life. Adults hospitalized with a chronic condition who had no primary care provider volunteered to receive daily hospital visits from a home health aide working under nurse supervision to assist in identifying barriers to regimen adherence. Following discharge telephone calls were made to assess illness representation, assist with problem-solving to overcome barriers to medication obtainment, regimen adherence, accessing healthcare resources, and identification of red flag symptoms requiring medical evaluation. Data was collected pre and post intervention by paper-and-pencil surveys and is reported on n=86 who completed the Illness Perception Questionnaire, Morisky Medication Adherence Measure, and the SF-8 Quality of Life Measure. The average age was 45, annual income below \$30,000, and n=65 having a high school education or less. The sample included n=46 Black non-Hispanic and n=31 non-Black-Hispanic. Emergency visits occurred in 36 % of participants and was associated with beliefs about treatment effectiveness ($F=5.9$, $p=.02$) and medication discontinuation due to side effects ($F=4.6$, $p=.04$). Readmission resulted in 22 % of the cases with medication discontinuation being a significant predictor ($F=4.5$, $p=.04$). Those least likely to be readmitted also believed their medications were a helpful treatment ($F=6.4$, $p=.01$). Readmissions were reduced by telephone call topics concerning symptoms ($F=11.5$, $p=.001$). Those who had more telephone call interaction had better quality of life ($R=.40$, $p=.008$). Perceptions of illness control ($p=.005$), treatment control ($p=.010$), and identity ($p=.05$) improved from pre to post intervention. Improved illness representation symptoms, especially treatment and personal control, was associated with readmission frequency ($p<.03$). Illness representation and quality of life at baseline was not significantly associated with recidivism or readmission, indicating that the intervention was beneficial at altering illness representations and preventing 30-day recidivism.

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REFUSAL AND DELAY OF RECOMMENDED VACCINES: THE ROLE OF PARENTING BEHAVIORS, CHILD HEALTH STATUS, AND SES

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Objective. Parents in the United States are increasingly likely to refuse or delay vaccines recommended for their children. To better understand this under-studied phenomenon, we assessed correlates of forgone vaccination, focusing on novel areas such as nutrition-related parenting behaviors and children's health status.

Method. We analyzed weighted data from the 2010 North Carolina Child Health Assessment and Monitoring Program which surveyed a probability sample of parents (n=1,847) of children ages 1–17.

Results. Overall, 12 % of parents reported having refused or delayed a vaccine for their child. Forgone vaccination correlated with healthier feeding practices on 4 items related to children's consumption of fruits, vegetables, sweetened beverages, and home-cooked family meals (all $p<0.05$). When we combined these items into a composite measure for multivariate analysis, we found that parents with high (versus low) healthy feeding scores had over four times the odds of reporting forgone vaccination (OR=4.11, 95 % CI, 2.00–8.44). With regard to health status, refusing or delaying vaccines was more common for children born before their due dates, but was not associated with long-term disability or poor overall health. In terms of demographics, forgone vaccination was more common among parents from more highly educated households (OR=2.45, 95 % CI, 1.30–4.63). Reasons for forgoing vaccines included concern about safety, believing the child was too young or did not need the vaccine, or that the child was sick.

Conclusion. Unlike traditional health disparities, forgone vaccination appears to be more common among socially-advantaged parents who have the resources needed to carefully attend to other aspects of their children's health. Because parents of premature or sick children may be at greater risk for refusing or delaying vaccines, primary care providers should offer reassurance that such circumstances are not typically contraindications to vaccination.

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EXERCISE IMPROVES SEXUAL SIDE EFFECTS OF ANTIDEPRESSANTS IN WOMEN

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Increasing sympathetic nervous system activity (SNS) increases genital response in sexually healthy women (Lorenz, Harte, Hamilton, & Meston, 2012). In laboratory studies, exercise immediately before sexual stimuli increased sexual arousal in women taking antidepressants (Lorenz & Meston, 2012); women with the most severe sexual side effects also had the lowest baseline SNS activity. We extended this research by testing the efficacy of an exercise intervention in women reporting sexual side effects of antidepressants. We hypothesized that insofar as sexual side effects of antidepressants are associated with low SNS activity, exercise immediately before sexual activity would improve sexual arousal in women taking antidepressants. Women reporting sexual side effects of antidepressants (N=52) were followed during a sexual activity only baseline period of 3 weeks, followed by 3 weeks of either exercise immediately before sexual activity (3x/week) or exercise at the same duration and frequency but separate from sexual activity. At the end of the first exercise arm, participants crossed over to the other. Participants rated their sexual arousal immediately after sexual activity. Endpoint assessments included validated measures of sexual functioning, sexual satisfaction, side effects, and mental health. Physical health and fitness measures were also taken before and after the intervention. On average, 20 minutes of vigorous exercise three times per week was sufficient to produce statistically and clinically significant improvements in genital arousal function, overall sexual function, and sexual satisfaction. For women taking SNRIs, and for all participants with stable depression, there was an additional benefit to exercising immediately before sexual activity. These findings have important implications for public health, as exercise is accessible, cheap, and does not add to burden of care. Acknowledgements: The 1st and 2nd authors were supported by grants F31MH085416 (NIMH) and RO1 HD051676 (NICHD), respectively.

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CULTURAL VALUES AND SEXUAL RISK ATTITUDES AND BEHAVIORS AMONG HISPANIC YOUTH

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Objective: Latino youth are disproportionately impacted by negative indicators of sexual and reproductive health. There is a dearth of research on culture as a protective factor against sexual risk behaviors. The aim of the current study was to examine the association between cultural values and sexual attitudes/behaviors among Latino youth.

Method: A convenience sample of 217 Hispanic adolescents (52.9 % female) ages 13–16 (M±SD=14.3±1.0) were recruited from programs organized at a city-based parks and recreation system in a predominately Hispanic neighborhood and other public venues. Participants completed a survey on Hispanic cultural values and sexual attitudes/behaviors. The independent variables consisted of Hispanic and American cultural orientation, familismo, cultural pride, respeto, and simpatia. The dependent variables were history of sexual intercourse, age of first intercourse, number of sexual partners, frequency of condom use, sexual self-efficacy, and belief in abstinence as a teenager. Stepwise discriminant function analysis was utilized for prediction of the dichotomous variable of abstinence and stepwise multiple regression analyses for the continuous variables.

Results: Higher levels of simpatia were associated with abstinence from sexual intercourse (p<.001). Higher levels of both Hispanic cultural orientation and simpatia were associated with greater sexual self-efficacy (p<.05) and greater belief in abstinence as a teenager (p<.05). Among sexually active youth, higher levels of simpatia were related to greater age of first intercourse (p<.05), and greater American cultural orientation was associated with less condom use (p<.05). Conclusions: Our findings indicate Hispanic cultural values may serve as protective factors against sexual risk attitudes and behaviors. Traditional Hispanic values may be incorporated into intervention programs that are aimed to promote sexual health among Hispanic adolescents.

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CHANGES IN REPORTED SEXUAL ORIENTATION AMONG WOMEN DURING MIDDLE ADULTHOOD

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Most health disparities studies model sexual orientation as static, based on measurement at a single time point, which can lead to misclassification and bias if a person's sexual orientation changes over time. Predictors of such changes are unknown, but one factor may be the degree to which one's social environment is supportive or discriminatory toward sexual minorities via institutional policies (e.g., laws banning same-sex marriage), which may impact how individuals identify or disclose their sexual orientation. The objective was to examine the relationship between legal protections for sexual minorities in one's state of residence and change in reported sexual orientation identity. Data were collected from 69,944 women in the Nurses' Health Study II, a longitudinal cohort that began in 1989 when participants were 25–44 years old and continues with biennial questionnaires. Participants reported their state of residence and sexual orientation in 1995 and 2009, and state-level legal protections were assessed in the intervening years in 2005. Logistic regression was used to estimate this association, adjusted for age, race, and socioeconomic status. In 1995, 98 % (N=68,761) of the participants identified as heterosexual, <1 % (N=233) as bisexual, 1 % (N=537) as lesbian, and <1 % (N=82) as "none of the above," while 1 % (N=331) preferred not to answer. In 2009, 2 % (N=1,115) changed their report from 1995. There were 225 fewer heterosexuals and 1 less preferred not to answer but 57 more bisexuals, 116 more lesbians, and 53 more "none of the above." Bisexuals and lesbians in states without legal protections had 2.10 times the odds (95 % CI 1.27, 3.45) of changing their self-report to heterosexual (p=0.004). This suggests women in midlife change their reported sexual orientation and using a one-time measure of sexual orientation may especially undercount women with lesbian experience in states with institutionalized discrimination. Funding R01HD057368, T71MC00009, K01DA023610, T32CA09001.

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MALE INCARCERATION AND SEXUAL HEALTH: A QUALITATIVE STUDY AMONG HETEROSEXUAL AFRICAN-AMERICAN WOMEN

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Introduction: Areas with high incarceration rates have high rates of HIV and of other sexually transmitted infections (STIs). Few studies have explored the mechanisms linking incarceration rates to HIV/STI rates. The goal of this qualitative study was to examine the processes through which male incarceration and resulting imbalanced male:female sex ratios in a neighborhood influence the formation and maintenance of romantic and sexual partnerships among heterosexual African American women.

Methods: This qualitative study consisted of semi-structured interviews with 20 heterosexual African-American women living in a neighborhood with a high rate of male incarceration and a low male:female sex ratio. Interviews covered several topics including perceptions of local male incarceration and sex ratios, and of social and sexual relationships. Interviews were transcribed verbatim and data were analyzed using grounded theory methods.

Results: Preliminary results suggest that neighborhoods rates of male incarceration influenced participants' partnerships by: reducing the availability of desirable male partners; impacting the age of available partners and the length, commitment and purpose of partnerships. Given the high neighborhood rates of male incarceration, some participants engaged in partnerships with men who had a history of incarceration, further contributing to their risk behaviors. Some participants who had recently incarcerated sexual partners: believed that because of their partner's history of incarceration that they had been tested and treated for STIs/HIV, reducing their personal risk of infection; engaged in transactional sex in order to support their single-headed households.

Conclusion: This qualitative study illuminates pathways through which neighborhood male incarceration and sex ratios produce vulnerability to STI/HIV among African American women. Risk reduction interventions targeting this group should consider the role of local incarceration rates.

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SLEEP DISTURBANCE PREDICTS LOWER CD4 COUNT INDEPENDENTLY OF VIRAL LOAD AND DISTRESS IN MINORITY WOMEN LIVING WITH HIV

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Background: Sleep disturbance is associated with neuroendocrine dysregulation, which can negatively impact immune functioning. Individuals living with HIV experience more sleep difficulties, and poor sleep may compound immune decrements associated with HIV infection. Little research has examined associations between sleep, neuroendocrine markers, and immune functioning in individuals with HIV. As minority women living with HIV (WLWH) are at heightened risk for HIV disease progression, we related sleep reports to health status (CD4 cell count) in a cohort of minority WLWH.

Methods: We recruited 139 low-income WLWH (ages 20–62; 86.8 % Afro-Caribbean). Participants reported both overall sleep quality and sleep disturbance on the Pittsburgh Sleep Quality Index (PSQI). We measured CD4 count and HIV viral load via morning peripheral venous blood samples, and measured concentrations of cortisol, norepinephrine, and dopamine via 24-hour urine collection. Covariates included HIV viral load, length of time since HIV diagnosis, HAART adherence, perceived stress (PSS), and depression (BDI).

Results: 59 % of WLWH reported a PSQI global score >5, indicating overall poor sleep quality. After controlling for all covariates, poorer overall sleep quality was marginally associated with lower CD4 count ($\beta = -.16$, $p = .09$), while greater sleep disturbance was associated with significantly lower CD4 count ($\beta = -.22$, $p < .05$) and lower levels of dopamine ($\beta = -.23$, $p < .05$). Overall sleep quality was not associated with any neuroendocrine measures.

Conclusion: Although all WLWH were on HAART and most reported good adherence, our analyses identified sleep disturbance as an independent predictor of immune status. In addition, sleep disturbance predicted lower levels of dopamine, which may indicate neuroendocrine dysregulation and impact immune functioning. Results highlight sleep disturbance rather than overall sleep quality as potentially salient to neuroendocrine and immune status in minority WLWH.

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ADOLESCENT MALES' AWARENESS OF AND INTEREST IN ELECTRONIC CIGARETTES

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Purpose: Electronic cigarettes (e-cigarettes) are devices that deliver vaporized nicotine without the tobacco combustion of regular cigarettes. We sought to understand awareness of and willingness to try e-cigarettes among adolescent males, a group that is particularly at risk for smoking initiation and may use e-cigarettes as a “gateway” to future smoking. Based on the prototype/willingness (P/W) model of adolescent risk behavior, we also evaluated the association between images of the typical smoker and interest in trying e-cigarettes.

Methods: A national sample of 11-19-year-old males ($n = 228$) completed an online survey in November 2011.

Results: Only 2 participants (<1 %) had previously tried e-cigarettes. Among those who had not tried them, most (67 %) had heard of e-cigarettes. Awareness was higher among older and non-Hispanic adolescents. Nearly 1 in 5 (18 %) participants were willing to try either a plain or flavored e-cigarette, but willingness to try plain versus flavored varieties did not differ. Smokers were more willing to try any e-cigarette than nonsmokers (74 % vs. 13 %; OR 10.25, 95 % CI 2.88, 36.46). Consistent with the P/W model, nonsmokers who had more negative smoker prototypes were less willing to try e-cigarettes (OR 0.58, 95 % CI 0.43, 0.79).

Conclusions: Most adolescent males were aware of e-cigarettes, and a substantial minority were willing to try them. Given that even occasional use of e-cigarettes could lead to nicotine dependence and subsequent use of other tobacco products, regulatory and behavioral interventions are needed to prevent “gateway” use among adolescent nonsmokers. For example, by building on the relationship between prototypes and risk behavior, campaigns promoting negative smoker images could help deter e-cigarette use.

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A-194

QUITLINE FAX REFERRALS - INCREASING ENROLLMENT AND OUTCOMES

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The Pennsylvania Free Quitline has a fax referral system, but the system has not been used to its full potential. During 2011, the PA Department of Health, Division of Tobacco Prevention and Control (DTPC) implemented a fax referral pilot initiative with the primary goal of increasing the number of successful fax referrals to the PA Free Quitline from health care providers on behalf of their patients. The fax referral pilot was designed to reach disparately impacted populations, focusing on low income and rural smokers. This initiative aimed to increase fax referrals and test a feedback system with the Quitline.

In the Northeast Health District, Rural Health Corporation agreed to participate in the pilot coordinated by Tobacco Free Northeast PA (TFNE). Rural Health is a 10 site outpatient health system in two of the highest smoking prevalence counties in Pennsylvania. Sites are located in urban and rural areas with diverse demographic patients. The sites include a homeless shelter, pediatric clinic, dental and medical clinics.

There were three key features of the Pilot fax referral:

1. Healthcare providers received tailored trainings on brief intervention based on the Clinical Practices Guideline, (US Department of Health and Human Services, 2008), and training on fax referral optimization.
2. Patients who enrolled received a free 30 day NRT kit from the Quitline.
3. Healthcare providers who used the fax referral system received outcome feedback on patients. Having a parent health system with multiple sites and a fax referral coordinator was an effective way to engage providers in using the fax referral system and resulted in more fax referrals. The Pilot had a 68 % increase in referrals to the Quitline within 6 months, thereby increasing provider brief interventions and referral to treatment. Although the amount of participants in Quitline treatment remained constant (80 vs.74), research has shown that more interventions lead to moving tobacco patients through Stages of Change behavior.

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REACHING SMOKERS VIA EMAIL BLASTS - COST EFFECTIVE BLAST TO THE FUTURE

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Reaching target audiences for smoking cessation has become increasingly challenging due to budget reductions. However, using new media outreach opportunities can be more affordable and reach desired populations with direct messaging which may motivate them to seek access to cessation services. Tobacco Free Northeast PA (TFNE) contracted with a local media firm, Klunk & Millan to purchase an email list of smokers residing in the Northeast Health District of Pennsylvania. These smokers “opted in” to the list. Out of 200,000 smokers on the list, we were able to reach 40,000 on average with each email blast reaching a different audience. The cost per blast was \$2,800 (including creative) or about 7 cents per email.

Methods

Ads were designed to appeal to young adult smokers (age 18–34) and adult smokers (35–54) and issued in rotating months. Each creative email had a different theme. The project was measured by the number in the blast, the opened emails, percent who opened, clicks to our website, www.tobaccofreene.com, percent of clicks to the site vs. opened, total of web hits that month, percent of web hits caused by clicks in the email blast, and new website visitors.

Results

As the ads created became more powerfully directed to a segment of the population, we realized increased activity in clicks and website traffic. At each blast, web hits doubled or tripled in volume and increasingly became a higher percentage of web traffic. Our cessation providers saw a 30 % increase in tobacco client enrollment in FY 2012, in part due to this low cost and direct marketing strategy.

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Citation Poster

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A LONGITUDINAL, POPULATION-BASED STUDY OF CAMEL SNUS USE IN CIGARETTE SMOKERS UNMOTIVATED TO QUIT

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Oral non-combustible smokeless tobacco (SLT) is marketed to cigarette smokers with claims of reduced harm. However, few studies have examined smokers' SLT use and most are limited by crude measurement and/or small samples. In a large, nationwide, observational study of smokers unmotivated to quit smoking, smokers are randomized to receive SLT (Camel Snus) or not. SLT is provided at no cost with instructions for ad libitum use during a 6 week (wk) sampling period. Follow-up occurred after wk 3 and 6 of the sampling period. Analyses are based on smokers randomized to receive SLT (N=354). Paired t-tests assessed change over time in SLT use. Logistic regressions identified predictors of trial (≥ 1 day of SLT use) and adoption (≥ 1 day of SLT use in the past wk at wk 3 and ≥ 3 days of SLT use in the past wk at wk 6) of SLT use. The sample was mostly female (69%), White (91%), and middle-aged (M, SD=48.3, 13.3 yrs). Seventy-eight percent and 55% met criteria for trial and adoption of SLT use, respectively. SLT use occurred almost exclusively in addition to continued smoking (99%), and was used by many to cope with smoking restrictions (50%). Overall, frequency of SLT use (days/wk) was stable across time ($p=.54$); M, SD=1.7, 1.8 at wk 3 and 2.4, 2.5 at wk 6. Among users, quantity of SLT use (pouches/day) was stable across time ($p=.20$); M, SD=2.0, 2.2 at wk 3 and 2.3, 2.0 at wk 6. Male gender predicted trial (OR=2.5, $p=.01$) and adoption (OR=2.6, $p=.01$) of SLT use. Smoking restrictions at work also predicted adoption of SLT use (OR=2.3, $p=.03$). Smoking restrictions at home, smoking-related health concern, quit intentions, quit attempts, and nicotine dependence did not predict either trial or adoption. This study approximates the real world scenario in which smokers are exposed to and sample a new tobacco product, with detailed data on patterns of use. Many smokers will try SLT, but switching from smoking to SLT use seems unlikely for most, so there is risk for dual use. Future research should explore the long-term effects of SLT use on smokers' overall tobacco use and cessation.

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PHARMACISTS' PERCEPTIONS OF TOBACCO SALES IN AN ELEVATED-RISK POPULATION

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Recent policies by the American Medical Association (AMA) and the American Pharmacists Association advocate for the discontinuation of tobacco sales in pharmacies, yet the sale of tobacco remains lucrative. The state of West Virginia (WV) has the highest smoking rate and the second highest lung cancer incidence rate in the country. Pharmacists ($n=195$) throughout WV participated in a survey utilizing the Diffusion of Innovation theory to understand tobacco sales in WV pharmacy. Most (60.5%) identified primarily as community pharmacists; although academic and other pharmacists may also practice at the community level (total 86.7%). Many practiced at independent pharmacies (39.6%). T-tests indicated that pharmacists at independent pharmacies were more likely to be aware of the policies ($p=.03-.05$), report it was/would be less difficult to stop selling products ($p<.001$), and report that tobacco products are/were less visible in the pharmacy ($p=.02$). Most pharmacists (71%) reported that their pharmacies did not sell tobacco. A logistic regression model showed that the following factors were associated with greater likelihood of not selling tobacco products (all $p's<.05$): 1) less perceived difficulty/barriers to stopping the sale of tobacco products, 2) lower perceived visibility (e.g., placement) of tobacco products in the pharmacy when sold, and 3) awareness of the 2012 AMA policy to create a recognition program for pharmacies not selling tobacco products. In addition, independent pharmacies were less likely to sell tobacco products compared to other pharmacies in community practice settings ($p<.10$). Pharmacists in national chain pharmacies noted little control over the ability to discontinue tobacco sales. Our findings indicate a strong movement among community pharmacists in WV to curtail the use of tobacco at the community level. Findings support that one potential mechanism for reducing smoking rates in an elevated-risk population may be generating support for elimination of tobacco sales and adoption of tobacco cessation wellness initiatives in community pharmacy settings.

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POLY-TOBACCO USE AMONG AFRICAN AMERICAN SMOKERS AND NON-SMOKERS

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Blacks have higher incidence of smoking-related cancers than Whites even though they smoke fewer cigarettes per day, and begin smoking later in life. One possible explanation is that Blacks might have a high prevalence of smoking highly-carcinogenic, non-cigarette products that are associated with increased risk for smoking-related cancers.

The few studies that examined poly-tobacco smoking among U.S. adults found rates to be low overall (2.5%), higher among cigarette smokers (16.3%) than non-smokers (3.2%), and higher among White (16.8%) than Black (13%) smokers. These studies did not assess marijuana smoking, or smoking of products that are popular in the Black community - i.e., blunts (marijuana-filled cigars), and the thin, flavored cigars (e.g., Philly, Black & Mild) that Blacks do not view as cigars. Hence, we explored prevalence of smoking cigarettes, cigars, Philly/Black & Mild, marijuana, blunts, bidis (thin, flavored cigarettes), and kreteks (clove-flavored cigarettes) among Black adults for the first time, and hypothesized high smoking-prevalence of the products typically not examined. A random, statewide sample of $N=2118$ African-American adult residents of California (Mean age =43.6) was sampled door-to-door, on weekends, and completed a brief, anonymous survey. Questions on Past 30-Day Smoking (Yes/No) of the 7 products noted above were asked. Results revealed these 30-day prevalence rates for smokers and non-smokers, respectively: Blunts=27.7%, 7.5%; Cigars=21.4%, 4.5%; Philly/Black & Mild Only=28.7%, 5.3%; Marijuana=33.0%, 11.4%; Kreteks/Cloves=2.7%, 0.4%; Bidis=5.0%, 0.5%; Overall rates of smoking any (1 or more) non-cigarette product = 49.3%, 14.9%. Rates were significantly higher among smokers than non-smokers and were associated with demographics.

These findings suggest that prevalence of smoking non-cigarette products may be high among African-American adult smokers and non-smokers alike, thereby increasing their risk for smoking-related cancers. Smoking of non-traditional products may need to be assessed and addressed in smoking cessation programs.

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USING REAL-TIME MONITOR FEEDBACK TO REDUCE PARTICLE LEVELS IN SMOKING HOMES

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Most children's exposure to secondhand tobacco smoke (SHS) occurs in the home. Interventions are essential to promote smoke-free homes and protect children's health. We provided real-time feedback on smoke levels to household members to shape behavior (e.g. ventilation actions, smoking outside) and protect children from SHS in the home. The intervention feedback system relied on a modified airborne particle counting device that provided audible and visual signals when levels exceeded programmable thresholds. Laboratory tests verified the particle device was sensitive to SHS with counts related to standard SHS particle mass concentrations. The measurement limit of detection was $<2 \mu\text{g}/\text{m}^3$ and the upper limit was within expected levels for smokers' homes ($>150 \mu\text{g}/\text{m}^3$). Results of focus groups indicated that in-home feedback was acceptable and feasible. We field-tested the monitor and feedback system in 3 homes with smokers using baseline and intervention periods of at least 1 week (with and without feedback). Two monitors were placed in each home: (1) in the main living area where smoking took place, and (2) in a child's room or other bedroom. Time series graphs showed on a small computer screen in the home illustrated the dynamic levels and persistence of smoke particles in both rooms. Two of the field-tested households decreased SHS levels, with one of the smokers stating their intention to quit smoking. This study established that a real-time intervention for SHS is technically feasible and is likely acceptable in the target population, and has the potential to protect children from SHS by reducing smoking in the home. Future studies are needed to determine the types of feedback that are most effective and to demonstrate child protection from SHS using randomized trial designs.

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A-200

THE MARLBORO MAN IS FROM MARS, WOMEN ARE FROM VENUS: GENDER DIFFERENCES IN REASONS FOR SMOKING, PSYCHOSOCIAL CHARACTERISTICS, AND HEALTH BEHAVIORS IN SMOKERS

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Studies on gender differences in cigarette smokers focus mostly on differences in rates of cigarette smoking and cessation. To our knowledge, very few studies examine gender differences in psychosocial characteristics of smokers and their reasons for smoking. The current study examined gender differences in resilience, mood, health behaviors, and reasons for smoking. We used daily diary methods, which have been shown to offer enhanced measurement precision but which have rarely been used in this area of study. Based on studies examining women who smoke and gender differences regarding health behaviors, we hypothesized that women would smoke less than men, and would report less resilience and positive affect, and greater negative affect, relative to men. We also hypothesized that women who smoke would report less engagement in healthful behaviors, relative to men who smoke. Young adult cigarette smokers (N=116) participated in a larger online diary study of daily cigarette smoking. Gender differences were analyzed using independent samples t-tests and logistic regression. Women who smoke (n=65) reported lower resilience, increased negative affect, and lower BMI (based on self-reported height and weight), relative to men who smoke (n=48). Women also reported fewer days per week in which they wake up feeling refreshed, and were more likely to report smoking out of habit or for contextual reasons (e.g., smoking after a meal or while drinking coffee) compared to men. Findings illustrate that women who smoke may experience poorer psychosocial and health-related conditions relative to men who smoke. It is unknown whether women who smoke were already at risk of these conditions, or if they are triggered by smoking cigarettes. That women were more likely than men to report smoking out of habit or due to the situation offers insight into why women have greater difficulty quitting smoking.

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A-201

ASSOCIATIONS BETWEEN SMOKING OUTCOME EXPECTANCIES, EXPERIENCES, SATISFACTION, AND FREQUENCY DURING SMOKING ESCALATION

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Smoking outcome expectancies, along with experienced outcomes of smoking and satisfaction with those experiences, may all contribute to smoking escalation. We examined relations between these factors and smoking frequency in a longitudinal study of smoking escalation from adolescence into young adulthood. We predicted positive relations between the factors. In addition, we predicted that smoking frequency would be mostly due to expectancies during early stage escalation but experiences and satisfaction during later stage escalation. Data came from BL, 6-, 15-, 24-mos and 5 yr assessments of participants who had ever smoked by BL and thus were at risk for escalation (N=1036; BL age M=15.7 years; 56.1 % female; 55.8 % White, 18.9 % Hispanic, 15.8 % Black, 3.4 % Asian, 5.9 % "other"). Measures included: smoking frequency (# of days smoked/mo) (BL M=4.68 d/mo, 5 yrs M=12.13 d/mo); negative affect relief expectancies (7 items, 4-pt scale; Wahl et al., 2005; assessed BL-24 mo); subjective pleasurable experiences of smoking (3 items, 4-pt scale; Pomerleau et al., 1998; all time points); and satisfaction with smoking (1 item, 4-pt scale; 5 yrs only). From BL through 24-mos, increases in expectancies and experiences were positively associated with each other ($\gamma=1.52$ and $\gamma=0.46$, $p's<.01$), and increases in smoking frequency were more strongly positively associated with increases in expectancies than increases in experiences ($\gamma=.98$ vs. $\gamma=0.82$, $p's<.01$). From 24-mos to 5 yrs, expectancies more strongly predicted smoking frequency ($\beta=0.30$, $p<.01$ vs. $\beta=0.11$, $p<.05$), but experiences more strongly predicted increases in smoking frequency ($\beta=0.10$, $p<.05$ vs. $\beta=.03$, ns), perhaps because they also more strongly predicted satisfaction ($\beta=0.12$, $p<.05$ vs. $\beta=.04$, ns). Smoking frequency and satisfaction were moderately correlated [$r(524)=.30$, $p<.05$]. For intervention, expectancies could be targeted during earlier escalation, whereas experiences and satisfaction could be targeted during later escalation.

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A QUALITATIVE ASSESSMENT OF PROVIDER PERSPECTIVES ON SMOKING CESSATION COUNSELING

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The PHS tobacco use treatment guideline encourages physicians to assist with quitting ("5A's") for smokers ready to quit and to try to motivate smokers not ready to quit ("5 R's"). Few studies have examined physicians' views regarding trying to motivate smokers not ready to quit. This qualitative study explored physicians' perceptions of: (1) useful strategies to motivate patients to quit, (2) how receptive their patients were to these strategies, and (3) the pros and cons of discussing smoking cessation with patients. Fourteen semi-structured qualitative interviews were conducted with physicians (29 %) and physicians in training (71 %; mean age=30.9, SD=6.4). Interview transcripts were coded using content analysis for conceptual categories and emergent themes. Inter-rater reliability was strong ($\alpha=.84$). Providers identified several strategies that they employed while counseling their patients who smoke: 1) educating on the health risks of smoking, 2) using "scare tactics" to highlight the harmful effects of smoking, and 3) providing advice and concrete suggestions about how to quit. Most providers (57 %) reported that most of their patients were receptive to the counseling strategies they employed, but 29 % felt that a significant minority of their patients were not interested in discussing their smoking behavior and 21 % felt they were unable to gauge how patients felt about their advice. Perceived benefits of providing counseling included improving patients' health (65 %) and decreasing the overall cost of healthcare (29 %) while cons were lack of time (36 %), concern that rapport could be damaged (43 %) and feeling uncertain about the effectiveness of their counseling efforts (14 %). Results indicate that while providers acknowledge the potential benefits of discussing smoking cessation with patients, their perceptions of patients' lack of interest and feelings of uncertainty about the effectiveness of counseling may lead to poor adherence to the PHS guideline recommendations. R01 DA025156; Pfizer provided Varenicline.

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HOW SPORTS AND EXERCISE AFFECT TOBACCO AND ALCOHOL USE RISKS AMONG MARYLAND HIGH SCHOOLERS

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Physical activity (PA) generally predicts good physical and psychological health in adolescents; however, some types of PA may not be entirely beneficial. For example, sports team participation can increase adolescents' risk for alcohol and smokeless tobacco use, while exercise outside of team sports may be protective against alcohol, smoking, and smokeless tobacco use. Considering that adolescent substance use (SU) significantly increases the risk of lifetime SU in adulthood, risk factors for SU, particularly around a seemingly healthy activity like physical exercise, are an important area of research.

Data derived from the 2010 Maryland Youth Tobacco Survey, a classroom-based survey of 86,098 youth conducted in public middle (MS) and high schools (HS), were used to conduct binary logistic regression analyses to explore predictors of current binge drinking, smoking, and smokeless tobacco use among a subsample of HS youth (n=49,183). Specifically, this study explored whether past year team sports participation, exercising for 60 minutes 3+ days/week, sex, and socioeconomic status (SES) were predictors of current substance use by each HS grade level.

Across nearly all grade levels, sports participation was associated with increased odds of binge drinking (ORs=1.2-1.4, $p's<.05$), whereas exercise was protective (ORs=0.7-0.8, $p's<.001$). The opposite was true for smoking, in that sports participation was protective for all grade levels (ORs=0.7-0.9, $p's<.05$), whereas exercise increased the risk for 9th graders (OR=1.2, $p<.05$). For smokeless tobacco use, sports participation had no effect and exercise lowered the risk for grades 11 and 12 (ORs=0.7, $p's<.01$). Sex (male) and SES (lower) were also risk factors for all substances.

As expected, sports participation is a risk factor for binge drinking, whereas exercise is protective. However, sports participation was not a risk factor for smokeless tobacco use as other studies have indicated. More research is needed to clarify the differential risk and protective aspects of PA for youth in HS.

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USING TOUCH-SCREEN TABLETS TO PROMOTE SMOKING CESSATION AT COMMUNITY PSYCHIATRIC REHABILITATION CENTERS

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Background: Mobile CComputer-assisted Education (CO-ED) system was developed on a touch-screen tablet to educate about hazards of smoking. The goal of this study was to evaluate the feasibility and acceptance of the CO-ED system in psychiatric rehabilitation centers.

Methods: For this pilot study, current smokers were recruited from three different psychiatric centers. After a brief training session, participants were asked to use the CO-ED system for about 45 minutes. An educational message accompanied by image and verbal audio was presented on each screen followed by a review question on the next screen. Participants were asked to complete a set of questionnaires about demographic information, experience with mobile devices and computers, and knowledge level before and after using the CO-ED system.

Results: A total of 51 consecutive participants were enrolled in the study. The mean age was 46 and 51 % were females. 74.5 % were African Americans and 35.3 % never used the computer before. The subjects reported that in average they smoked 14 cigarettes per day and have been smoking for 25 years. The knowledge score (perfect score, 34) improved from 26.4 points to 30.1 points with statistical significance. After using the CO-ED system, 5 subjects moved from pre-contemplation (not thinking of quitting) to the contemplation stage (thinking about quitting within the next 6 months). Another 5 subjects entered preparation stage (thinking of quitting within the next 30 days) from contemplation stage. In the attitudinal survey, 94 % reported that the CO-ED system was not complicated all, and 92 % reported that they didn't have any difficulty moving from one screen to another. 92 % reported that they would certainly advise other smokers to use the CO-ED system.

Conclusion: The CO-ED system was well accepted by the smokers attending psychiatric rehabilitation centers. The CO-ED system has a promising potential to deliver interactive educational content for various conditions in the rehabilitation center setting.

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A-205

IMPLICATIONS OF WEIGHT CONCERN ON ANTHROPOMETRIC MEASURES IN WOMEN ATTEMPTING TO QUIT SMOKING

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Smoking for weight control is common amongst smokers despite its detrimental health effects. Previous research suggests exercise combined with nicotine replacement therapy (NRT) may be an effective method to reduce post-cessation weight gain. The effect of weight concern (WC) felt at the quit-date on future anthropometric measures, post-cessation, in a population of women using the above mentioned method to aid cessation is unknown. Healthy, sedentary women (N=180, M age=44.5±12.6, M cigarettes smoked per day=17.2±6.8) who wanted to quit smoking were recruited through the Getting Physical on Cigarettes trial (NCT01305447). Participants exercised in a supervised facility where their workload progressively increased to 70–75 % of their maximum heart rate for 14 weeks. At Week 4, participants were asked to quit smoking and received NRT patches for the remaining 10 weeks. Anthropometric changes were assessed with iDXA at baseline and Week 14. 43 % had quit smoking (CO<6 ppm) after 14 weeks and were included in subsequent analyses. Weight ($\eta^2=.14$), % android fat ($\eta^2=.06$) and lean mass ($\eta^2=.21$) significantly increased for all quitters ($p<.05$), whereas % fat remained unchanged ($p>.05$, $\eta^2=.003$). At Week 4, women were considered high WC if they scored>80 % (n=39) on a single item asking, "Are you concerned about gaining weight after you quit smoking?" (M=69.37, SD=28.68). Those who scored<79 % were labelled as lower WC (n=38). ANCOVAs showed no significant differences ($p>.05$, η^2 range .001-.003) between high and lower WC groups for any of the body composition parameters at 14 weeks, after controlling for their respective baseline scores. Overall, these findings suggest that women who quit smoking during a 14 week exercise and NRT cessation program show a favorable body composition profile (i.e. increase in weight due to increase in lean mass rather than increase in fat). Findings also suggest that concerns about post-cessation weight gain are unrelated to actual weight and high quality body composition changes.

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RELIGIOSITY, DEPRESSIVE SYMPTOMS, AND GENERAL HEALTH IN SYSTEMIC SCLEROSIS

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Systemic sclerosis (SSc) is a chronic rheumatic disease that has been associated with impairment in health-related quality of life and high rates of depression. Religious coping has been generally associated with positive outcomes in rheumatic diseases. However, prior research has found that distress was not related to the use of religious coping strategies in SSc patients. The present study further examined the relationship of religiosity to general health and depressive symptoms in patients with SSc. A predominantly female sample of SSc patients (N=204) completed the Duke University Religiosity Index, a brief measure of religious involvement that yields three subscales of organizational religious activity (OR), non-organizational religious activity (NOR), and intrinsic religiosity (IR). Depressive symptoms were assessed using the CESD-10 and general health was assessed with the first item from the HRQOL-4 module of the CDC's BRFSS. Hierarchical linear regression was used to examine if different forms of religious involvement were significant statistical predictors of general health and depression. After controlling for disease severity using the modified Rodnan Skin Score, significant main effects ($p<.05$) were found for NOR and IR as predictors of depressive symptoms, and for IR as a predictor of general health. Greater NOR was associated with more depressive symptoms, whereas greater IR was associated with fewer depressive symptoms and better general health. These findings suggest that non-organizational religious activities such as prayer are related to general health and depression, and intrinsic religiosity may be related to depression. Differential relationships of dimensions of religiosity to health outcomes are an important consideration when designing spiritually-oriented interventions aimed at improving general health and depression among SSc patients.

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RELIGIOSITY AS A PROTECTIVE FACTOR FOR POST-MENOPAUSAL HOT FLASHES?

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Hot flashes, considered the hallmark of the climacteric, have several identified risk factors. To date, however, little research has been conducted to identify potential protective factors for hot flashes and corresponding functional interference. Meta-analyses suggest that religiosity/spirituality may have positive physiological impacts to health. This study evaluated religiosity as a potential protective factor for hot flash frequency, intensity, and functional interference in post-menopausal women.

Design: As part of a randomized controlled study of a mind-body intervention for treating hot flashes, participants completed the Santa Clara Strength of Religious Faith Questionnaire and the Hot Flash Related Daily Interference Scale (HFRDIS) during baseline procedures. Participants tracked hot flashes with a daily diary over the course of the 12-week study.

Results: One hundred and nine participants completed the study measures. Significant correlations were found between religiosity and hot flash score ($r=-.363$, $p<.001$), a composite of hot flash frequency x rating of severity), hot flash related mood interference ($r=-.239$, $p=.013$), hot flash related concentration interference, ($r=-.223$, $p=.020$), hot flash related relationship interference, ($r=-.302$, $p<.001$), and HFRDIS mean scores ($r=-.205$, $p=.032$). A linear regression analysis was employed to examine whether religiosity would predict hot flash score at week 12 of the study, regardless of condition. The results of this regression indicated that religiosity explained 14.7 % of the variance in hot flash scores ($R^2=.147$, $F=15.906$, $p<.001$, std. beta=-.384, $p<.001$).

Conclusion: It may be that religiosity acts as a protective factor for hot flashes in post-menopausal women, however the mechanism of action is unknown. A proposed methodology for replication involving additional self-report and physiologic measures to act as covariates is discussed.

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A-210

POLICE STRESS AND DEPRESSIVE SYMPTOMS: POTENTIAL PROTECTIVE FACTORS

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Background: High stress levels are ubiquitous in law enforcement and chronic stress may lead to depressive symptoms. Our goal was to evaluate the association between stress and depressive symptoms in police officers and whether coping and hardiness may modify this relationship.

Methods: Stress level was ascertained in the Buffalo Cardio-Metabolic Occupational Police Stress Study, 2004–2009 using the Spielberger Police Stress Survey and depressive symptoms using the Center for Epidemiologic Studies Depression Scale (CES-D). Mean CES-D scores were assessed across quartiles of stress using analyses of variance and covariance. Linear regression was used to test for linear trend. Models were adjusted for age, sex, race, alcohol, smoking, and antidepressant medication and stratified by median values for coping (passive, active, and support seeking) and hardiness (control, commitment, and challenge). **Results:** The study included 388 officers (73.2 % men) with a mean age of 41.5 years. Adjusted mean CES-D scores increased (5.53, 6.85, 7.64, 10.99; $P < 0.001$) across increasing quartiles of police stress. Diminished trends were observed for officers who reported lower passive coping (4.18, 5.46, 4.73, 7.24; $P = 0.031$) and higher active coping (3.97, 5.41, 7.27, 9.24; $P = 0.001$), compared to their counterparts. Officers higher in hardiness had a diminished trend in adjusted mean CES-D scores, particularly for commitment (4.69, 4.94, 5.29, 6.69; $P = 0.015$) and control (4.14, 4.38, 6.15, 8.69; $P < 0.001$).

Conclusion: Results are consistent with active coping and hardiness being protective factors that are associated with reduced adverse effects of occupational stress in law enforcement.

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A-211

THREAT AND CHALLENGE APPRAISALS PREDICT HEALTH-RELATED OUTCOMES IN A LARGE SAMPLE OF MUNICIPAL FIREFIGHTERS

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Research has established threat and challenge as distinct ways of appraising and responding to acute stress. Despite considerable evidence supporting the short-term advantage of challenge vs. threat appraisal for emotional equanimity, successful coping, and stress-reactivity, little research has examined how appraisal tendencies might relate to health behaviors and emotional well-being. The present study did so using a new measure of individual differences in threat and challenge appraisal and by relating scores on this measure to behavioral and psychological outcomes. Behavioral outcomes included physical activity, smoking, alcohol use, and alcohol-related problems. Psychological outcomes included post-traumatic stress symptoms, depression, and life satisfaction. Members of a large urban fire department ($N = 740$; 98 % male; 76 % Hispanic) completed an assessments as part of a larger intervention study. Measures included the Appraisal of Threat or Challenge Scale, the International Physical Activity Questionnaire, smoking status (y/n), the Daily Drinking Questionnaire, the Rutgers Alcohol Problem Index, the civilian version of the Post-traumatic Stress Checklist, the Zung Depression Scale, and the Satisfaction with Life Scale. For health behaviors, results indicated that those who make threat appraisals (vs. those who make challenge appraisals) were more likely to smoke ($r = .11^{**}$) and experience alcohol-related problems ($r = .17^{**}$), even though reporting similar patterns of alcohol consumption (r 's .04 - .06, all NS). Those making threat appraisals also reported less frequent physical activity for measures of daily vigorous ($r = -.11^{**}$), daily moderate ($r = -.09^{**}$), and daily walking for PA ($r = -.08^{**}$). For emotional well-being, those making threat appraisals were more likely to report experiencing depression ($r = .43^{**}$) and PTSD symptoms ($r = .42^{**}$). They also reported lower satisfaction with life ($r = -.28^{**}$). The results provide support for the adaptive nature of appraising daily life stressors as challenges to be met, rather than threats to be avoided.

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A-212

COPING AND MINDFULNESS: IMPLICATIONS FOR ANXIETY REDUCTION IN LGBT COMMUNITIES

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Sexual and gender minorities experience discrimination and stigmatization, increasing vulnerability to psychopathology (Mays & Cochran, 2001). Minority stress resulting from negative societal attitudes and discrimination is a psychopathology risk factor (Meyer, 2003). Sexual minorities exhibit increased psychopathology; specifically anxiety and panic (Major, Quinton & McCoy, 2002). A study of 34,000 Americans found 50 % of LGB individuals had an anxiety disorder compared to 31.3 % of heterosexuals (Bostwick, Boyd, Hughes & McCabe, 2010). Mindfulness techniques focused on acceptance are effective in symptom reduction and improved functioning post-treatment (Roemer, Orsillo & Salters-Pedneault, 2009). Acceptance-based coping is associated with anxiety reduction and may be critical to anxiety-reduction strategies (Li et al., 2012). Acceptance-based coping interventions effectively reduce anxiety (Roemer & Orsillo, 2007).

We examined the relationship between acceptance coping, acceptance without judgment and anxiety in an LGBT sample. We hypothesize acceptance coping and acceptance without judgment are negatively associated with anxiety and account for a significant proportion of variance in anxiety. We used the acceptance without judgment subscale (Kentucky Inventory of Mindfulness Skills), the acceptance subscale (Brief Cope) and the state anxiety subscale (State-Trait Anxiety Inventory) to collect data from a convenience sample of 179 LGBT participants recruited in DFW. Using a multiple hierarchical regression analysis and controlling for demographics, acceptance without judgment ($\beta = -.46$, $t(177) = -6.74$, $p < .001$) and acceptance coping ($\beta = -.22$, $t(177) = -3.5$, $p = .001$) accounted for 32 % of the total variance in state anxiety scores (adj. $R^2 = .32$, $F(12, 166) = 7.99$, $p < .001$.)

Findings suggest that acceptance-based mindfulness and coping strategies are relevant to anxiety reduction. Given our findings and the success of acceptance-based treatment approaches in reducing anxiety (Roemer, Orsillo, & Salters-Pedneault, 2008), public health researchers should consider acceptance-based interventions to reduce anxiety in LGBT samples.

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A-213

MINDFULNESS AND POSITIVE STATES OF MIND: CORRELATES OF ANXIETY IN THE LGBT COMMUNITY

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In LGBT communities, 15 % of males and 40 % of females experience anxiety (Gilman et al., 2001). Anxiety is associated with negative outcomes, including impairments in social and occupational functioning (Schonfeld et al., 1996; Ormel et al., 1994) and suicidality (Sareen et al., 2005a). Given the prevalence of anxiety disorders in LGBT communities and its attending negative outcomes, interventions targeting anxiety reduction are relevant to public health. Mindfulness, characterized by awareness of the present state without evaluating or judging its content, is associated with anxiety reduction (Kabat-Zinn et al., 1992) and enhanced positive states of mind (Chang et al., 2004). Positive states of mind are inversely related to anxiety (Adler, Horowitz, Garcia, & Moyer, 1998). Given that there is a dearth of literature on this topic in LGBT samples, we seek to further explore the relationship between these variables. We hypothesize that mindfulness and positive states of mind account for significant variability in anxiety levels among LGBT individuals.

Using the accept without judgment subscale of the Kentucky Inventory of Mindfulness Skills, Positive States of Mind scale and the trait anxiety subscale of the State-Trait Anxiety Inventory, we collected self-report data from a convenience sample of 178 LGBT participants recruited from community based organizations in Dallas/Fort Worth. Using a hierarchical multiple regression analysis and controlling for demographics, we found acceptance without judgment ($\beta = -.40$, $t(176) = -7.04$, $p < .001$) and positive states of mind ($\beta = -.46$, $t(176) = -8.53$, $p < .001$) accounted for 59 % of the total variance in trait anxiety scores (adj. $R^2 = .59$, $F(11, 166) = 24.43$, $p < .001$.) Given the fact that LGBT communities are disproportionately affected by anxiety, it is in the interest of public health researchers to explore variables associated with anxiety reduction. Our findings inform treatment design and suggest that interventions based on the promotion of positive states of mind and mindful acceptance may be of utility to the LGBT communities.

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A-215

UNRAVELING INTENTIONS: CANNABIS USE IS DIFFERENTIALLY PREDICTED BY INTENTIONS TO USE VERSUS BE EXPOSED TO CANNABIS

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The Theory of Planned Behavior (TPB) has been used to predict a host of health-related behaviors, including substance use. As availability and prevalence of cannabis increases across college campuses, the question arises whether intentions to use cannabis and intentions to be around cannabis are differentially related to cannabis use. Thus, the goal of the current work was to explore the possible multidimensional nature of intentions surrounding cannabis use, and the relationship of these dimensions to behavior longitudinally. Three hundred and seventy five University of Colorado freshmen were recruited based on self-reported cannabis use. Participants were categorized as abstainers ($n=127$; have never used cannabis), infrequent users ($n=147$; smoke < four times per month), or frequent users ($n=101$; smoke \geq five times per week). Factor analysis revealed two clusters within our TPB Intentions variable, labeled "Use Intentions" (ex: "How likely is it that you will smoke or use marijuana?") and "Proximity Intentions" (ex: "How likely is it that you will go to parties where people are smoking marijuana?"). Although Use Intentions varied significantly between cannabis use groups, results show that even among cannabis abstainers, the Proximity Intentions mean was above the midpoint of the scale, indicating anticipation of cannabis exposure. Furthermore, baseline Use Intentions significantly predicted cannabis use 12 months later when controlling for Proximity Intentions ($t(1, 236)=14.67$, $p<.001$). Proximity Intentions, however, were not related to cannabis use when controlling for Use Intentions ($t(1,236)=-.24$, $p=.81$). These results indicate an important distinction to consider when studying the relationship between intentions and cannabis use. Specifically, while mere proximity can increase the likelihood of a behavior, our data show that among college students in a context in which cannabis use occurs with high frequency, intentions to be exposed to cannabis are not necessarily associated with an increase in one's own use.

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A-216

THE IMPACT OF TEAM SPORTS ON ALCOHOL AND MARIJUANA USE TRAJECTORIES IN YOUTH

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Objectives: To evaluate the relationship between youth athletic leagues and alcohol and marijuana use in youth and adolescents.

Design: A parallel-process latent growth curve model was used to model both alcohol and marijuana use (vs. non-use) after co-varying for age. Participation in team sports and gender were considered to be time invariant covariates.

Method: The sample consisted of 1,344 youth from the National Survey of Parents and Youth (NSPY). Data were collected over four yearly rounds from November 1999 to June 2004.

Results: Analysis revealed that being part of a competitive sports team was related to a lower probability of marijuana initiation (intercept), but to increased rates of alcohol use over time (slope). Males had significantly higher levels of marijuana initiation and decreases in rates of alcohol use over time; females had significantly greater rate of increase in alcohol use over time.

Conclusions: The influence of sports appears to be quite heterogeneous. Analysis suggests that youth involved in sports are less likely to use marijuana over time. This information may help to uncover other predictors of use over time and to inform policy making as well design as effective school and community prevention efforts for today's youth.

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A-217

WEEKLY TRAJECTORIES OF ALCOHOL CONSUMPTION AND DRINKING URGES DURING COGNITIVE-BEHAVIORAL COUPLE THERAPY FOR ALCOHOL DEPENDENCE

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One goal in many cognitive-behavioral treatments for alcohol use disorders (AUDs) is to help clients understand, predict, and cope with urges to drink. Success in these treatments is indicated in part by how well clients predict and cope with these urges and how much urges decrease over time. The present study examines alcohol consumption and drinking urge trajectories during the course of a couples-based cognitive-behavioral therapy for AUDs, specifically examining treatment factors that may impact urges and consumption. Method: The present study is a secondary analysis of data from a randomized trial of alcohol behavioral couples therapy (ABCT) for AUDs (McCrady et al., 1999). Men with AUDs ($N=90$) recorded daily measures of alcohol consumption and frequency of drinking urges during the course of receiving up to 15 sessions of ABCT ($n=6834$ complete recordings). Longitudinal multilevel modeling was used to examine predictors of daily drinking urges. Results: Daily consumption and urges were higher on weekends ($\beta=0.18$ and 0.06 , $p<.01$), decreased as clients attended more treatment sessions ($\beta=-0.06$ and -0.03 , $p<.001$), and increased as more time elapsed since attending a treatment session ($\beta=0.23$ and 0.13 , $p<.001$). Reductions in weekly mean alcohol consumption from the week before predicted fewer daily urges. Discussion: Daily drinking urges are likely to be higher on weekends, earlier in treatment, and when more time has elapsed since attending a treatment session. Drinking urges and alcohol consumption tended to decrease together. Together, these findings replicate those found in a separate sample of women in AUD treatment (Hallgren et al., 2012). Clinicians should be aware of factors that contribute to drinking urges in order to help clients cope with them. Future research may evaluate whether front-loaded treatments with more frequent sessions early in therapy improve the efficacy of AUD treatments.

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A-218

CAN COPING INFORMATION ENHANCE THE EFFECTIVENESS OF A PERSONALIZED NORMATIVE FEEDBACK INTERVENTION?

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A variety of behavioral approaches have been developed specifically targeted at reducing alcohol consumption and related risks among college student populations. One popular approach, brief Personalized Normative Feedback (PNF) interventions, have been shown effective for curbing drinking in college student populations. Despite consistent support for their use, effect sizes have been small to medium at best (Carey, Scott-Sheldon, Carey & De Martini, 2007; Riper, Straten, Keuken, Smit, Schippers, & Cuijpers, 2009).

College students drink for a variety of reasons including drinking to cope which is generally considered a maladaptive way of coping (Cooper, Frone, Russell, & Mudar, 1995; Kuntsche, Knibbe, Gmel, & Engels, 2005). Given that effect sizes for PNF interventions tend to be small, the purpose of this study was to investigate if the addition of a stress and coping component to a standard PNF intervention would have a stronger impact on reducing alcohol consumption than a standard PNF intervention. Approximately 512 college students at the University of Texas at El Paso were recruited to participate during the fall 2010 and spring 2011 semester. Students received either a standard PNF intervention, a PNF intervention that included feedback and information on adaptive and maladaptive coping, or a control intervention. Follow-ups were conducted 6 weeks after receipt of the intervention. Results indicated a significant 3X2 (group by time) interaction for Alcohol Use Disorder Identification Test (AUDIT) scores, $F=3.37$, $p<.01$, such that the PNF plus stress and coping information produced larger declines in alcohol risk levels than the other conditions. Subgroup analyses indicated that this effect was particularly strong for low level drinkers. Results suggest that the addition of stress and coping information can increase the impact of PNF interventions.

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A-219

CONTINGENCY MANAGEMENT AND SELF-EFFICACY ENHANCEMENT IN MARIJUANA TREATMENT

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Objective: The purpose of the present study was to evaluate a treatment for marijuana dependence that was specifically designed to enhance self-efficacy.

Method: Participants were 215 marijuana-dependent men and women randomized to one of three 9-week outpatient treatments: MET+CBT+CMHomework reinforcing completion of treatment homework to thereby increase self-efficacy; MET+CBT+MAbstinence reinforcing drug abstinence; or a case management control condition. Interactive voice recordings during treatment were used to confirm homework completion. Patients were followed every 3 months for 14 months. The following hypotheses were tested: (1) the MET+CBT+CMHomework would yield better marijuana outcomes than the other conditions; (2) Effects of treatment would be mediated by homework completion and self-efficacy. Dependent variables were 90-day abstinence, proportion days abstinent (PDA), and marijuana problem scores.

Results: All patients showed improvements over time through 14 months, with few between-treatment effects on outcomes. Analyses of Treatment contrasts over Time indicated that MET+CBT+MAbstinence yielded higher rates of abstinence in the first months of the follow-up, but that abstinence rates were equivalent (about 25 %) at later follow-up points. Similar results were found for the PDA variable. No effects were found on marijuana problems. Contrary to expectations, self-efficacy was no higher in the MET+CBT+CMHomework condition than it was in the other conditions, though completion of coping skills homework assignments was increased. Latent Class Growth Models indicated that one subsample of patients did extremely well. This subsample was more likely to have been treated in the MAAbstinence condition. Membership in this subsample was also strongly predicted by days of continuous abstinence accrued during treatment, and by pre-post increases in self-efficacy.

Conclusions: The most effective treatments for marijuana dependence may be those that elicit abstinence while increasing self-efficacy. Contingent reinforcement of homework appears not be a successful strategy.

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A-220

EFFECTIVE INTERVENTION RECRUITMENT & RETENTION STRATEGIES: WE BUILT IT AND THEY CAME...AND RETURNED!

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People who abuse alcohol or drugs often have additional risks, such as tobacco use, poor nutrition, inactivity, and stress. Changing multiple risk behaviors improves health and reduces medical costs. Engaging and retaining clients in health interventions can be challenging, however, and potentially more so when targeting multiple risks in low-income, complex populations. The current study presents on recruitment and retention strategies for a clinical trial focused on multiple risk behaviors with veterans in addictions treatment.

With a goal of N=200, we recruited participants from the San Francisco VA Medical Center's addiction treatment programs. Recruitment and retention strategies included: a memorable project name (Total Health), presence prior to study start, onsite office space with open door policy, networking with clinicians, electronic and printed flyers, "dear patient" letters, incentives (\$150 for 5 contacts over 18-months), study branded swag (silicone bracelets, platinum cards, dog tags), and staff participation in VA campus-wide health events. Exclusion criteria were minimal for generalizability. One team member led recruitment, consenting, and assessments.

Enrollment opened October 2011. In month 1, 64 participants were enrolled (26 in week 1). By month 2, 48 % of the sample was recruited. Recruitment closed in month 11, 6 months sooner than anticipated. The sample % recruited by site was: day hospital=26 %, opioid replacement clinic=32 %, outpatient clinics=42 %. We distributed 400 bracelets (46¢ each), 470 cards (52¢ each), and 200 dog tags (85¢ each) for a total cost of \$598. Efficiency with recruitment minimized staff costs. Follow-up rates are exceeding 95 % at 3- and 6-months. Our multipronged recruitment and retention plan proved to be efficient and cost-effective. Study branded items and networking contributed to snowball referrals and sustained connections.

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A-222

NO LONGER STRANGERS HEADED TO A STRANGE LAND: UTILIZING A COORDINATOR TO IMPROVE TRANSITION

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Rationale: Transition to adulthood is recognized as a complicated process for youth. For pediatric transplant recipients particularly, transition is associated with adverse medical events such as medication non-adherence, graft loss, and mortality. The idea of a transition coordinator (TC) has been proposed as a means for achieving stability during transition. The present study aimed to examine empirically if a TC is associated with improved outcomes.

Methods: A TC position was developed in response to poor outcomes after transfer observed at our site. The TC had the following roles: preparation, liaison, care coordination, outreach and outcome assessment. Twenty liver transplant recipients (mean age=22.42, SD=1.64) who utilized the TC while in pediatrics and afterwards were enrolled in a longitudinal assessment for one year before and after transfer. Their outcomes were compared to a historical cohort of 14 patients (mean age=22.00, SD=2.22) who had transferred consecutively until the TC position was created and received standard care. The primary outcome was medication adherence, using a validated measure, standard deviations (SD) of tacrolimus blood levels. A SD above 2.5 has been associated with poor outcomes. **Results:** A repeated measures ANOVA showed that patients in the TC group displayed better adherence than the comparison group from one year before to one year after transfer, $F=6.50$, $p=0.02$. For the TC group only, mean levels of tacrolimus SD were below the established threshold associated with poor outcomes one year before (Mean=2.09, SD=1.09 vs. Mean=3.25, SD=1.19) and one year after transfer (Mean=1.95, SD=1.62 vs. Mean=4.36, SD=0.99). Patients reported high acceptability with the TC. Historically, 4 of 14 patients died after transfer versus none in the TC cohort.

Conclusions: Utilization of a TC is associated with better adherence before and after transfer and perhaps decreased mortality. A dedicated TC appears to be a promising means for improving the transfer process for liver transplant recipients.

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Thursday
March 21, 2013
8:45 AM–10:15 AM

Featured Symposium 01 8:45 AM–10:15 AM 2001

PATIENT-CENTERED OUTCOMES RESEARCH INSTITUTE AND PARTNERS: IMPROVING PATIENT OUTCOMES THROUGH BEHAVIORAL MEDICINE RESEARCH

Suzanne O'Neill, PhD,¹ Joe V. Selby, MD, MPH,⁴ Thomas K. Houston, MD, MPH,³ Mary E. Cooley, PhD, RN² and Sara J. Knight, PhD⁵

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The Patient-Centered Outcomes Research Institute (PCORI) was authorized by Congress to conduct research that provides the best available evidence to help patients and providers to make more informed health decisions. The work of behavioral medicine researchers and clinicians sits at the center of many PCORI initiatives, such as the assessment of prevention, diagnosis and treatment options, communication and dissemination research, and addressing health disparities. This symposium, a collaboration between SBM's Health Decision Making SIG and Public Policy Leadership Group and PCORI staff, is designed to stimulate thought and discussion about ways in which behavioral medicine research complements PCORI's vision. We will present an overview of PCORI's mission and its relevance to behavioral medicine research and practice as illustrated by the research of two SBM members and PCORI award recipients. Special attention will be given by all of the speakers to Stakeholder Engagement, a key aspect of PCORI-funded research. Dr. O'Neill will introduce the symposium. Dr. Selby will describe PCORI's national mandate and priorities. Dr. Houston will discuss PERSPECT, an adaptive computer system that provides personalized, persuasive communication to support lifestyle choices. Dr. Cooley will present her decision support system for improving management and outcomes of those with cancer. Dr. Knight will place the symposium in the context of behavioral medicine research, with a specific focus on health decision making and public policy, and will facilitate audience discussion.

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Featured Symposium 01A 2002

WEB 2.0 COLLABORATIVE FILTERING FOR COMPUTER TAILORED HEALTH COMMUNICATION

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Introduction: Current computer tailoring interventions collect baseline patient profiles and then use expert-written rules to target messages to subsets. Outside healthcare, machine-learning Web 2.0 Recommender Systems (RS) have been effectively used to continually learn and adapt from users' collective intelligence data (individual ; the community behavior) to best tailor content. Using a RS we can bring a collaborative filtering approach to message tailoring.

Methods: For our machine-learning algorithm, we used implicit ratings collected on our web-assisted tobacco intervention Decide2Quit.org (return web visits after receiving motivational messages). To test whether we can predict return visits using Decide2Quit.org data, we created machine-learning models using matrix factorization; taking an implicit feedback matrix and approximately factorizing it into a product of lower dimensional matrices with a specified rank K, which forces the model to extract the statistical regularities in the data, providing good predictive performance. Using area under the ROC curve (AUC) as a measure of predictive power compared two models: Model F using only smoker characteristics (age, readiness to quit) to predict return visits and MF+F adding message features codes (behavioral constructs, content codes) to the smoker characteristics.

Results: 735 smokers were recruited over 24 months, and most were over age of 45 (65 %), female (65 %), some college or college graduate (65 %), and thinking of quitting (69 %). Smokers received a mean of 73 (SD=36) motivational quit smoking messages by email, resulting in mean 1.4 (SD=3.9) return web visits. The MF+F model outperformed F alone in terms of AUC (0.85 vs. 0.77).

Conclusion: Using empiric data to feed RS, we successfully predicted return visits. We will test our machine-learning tailoring engine versus a traditional if-then multi-variable tailoring schema in a randomized trial.

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Featured Symposium 01B 2003

DECISION SUPPORT FOR SYMPTOM AND QUALITY OF LIFE MANAGEMENT

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While the vast majority of patients with cancer report that quality of life is as important as length of survival, only a minority report that changes in quality of life during treatment for cancer were discussed with their clinicians. The use of decision support for symptom and quality of life (SQL) management is an innovative way to enhance patient-engagement, facilitate patient-provider communication and improve outcomes. Decision support systems are computerized programs designed to assist clinicians in shared-decision-making at the point of care and include tools for information management, focusing attention and/or patient-specific interventions. Patient-reported assessment questionnaires are available to gather information about SQL concerns and have been found to enhance communication, promote patient-centered care and reduce symptom distress. To date, most clinical settings have not established efficient methods to collect SQL data and integrate decision support systems into the flow of care. As these types of interventions are developed and implemented, gathering input from patients and clinicians is essential to ensure that the tools will be used to enhance the process of care and influence outcomes. This project builds on the past work conducted by our team related to implementing decision support for SQL assessment and management into clinical care. We have found that these systems require further refinement and that input from patients and providers are essential. The purpose of this presentation is to 1) describe patient preferences for providing, processing and managing SQL data that can enhance communication during the clinical encounter and 2) identify preferences for the format, specific information, and components for decision support that would be most useful to clinicians. Focus groups will be conducted across a variety of cancer care settings to gather information about preferences for decision support systems. Implications for developing prototypes for decision support systems for SQL will be discussed.

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Featured Symposium 01C

2004

PATIENT CENTERED OUTCOMES RESEARCH INSTITUTE (PCORI)

Joe V. Selby, MD, MPH

PCORI, Washington, DC

The Patient Centered Outcomes Research Institute (PCORI) was established to support research that helps people make informed health care decisions and improves health care delivery and outcomes by producing and promoting high integrity, evidence based information that comes from research guided by patients, caregivers and the broader health care community. Central to the PCORI vision is providing the information that patients and the public need to make decisions consistent with their desired health outcomes. In this presentation, Dr. Selby will discuss the national priorities of PCORI that align well with the expertise in the behavioral medicine community, including evaluating options for prevention, diagnosis, and treatment, improving health care delivery systems, disseminating evidence based care in clinical and community settings, addressing disparities, and accelerating methodological innovation. Dr. Selby will review key PCORI initiatives and will highlight the unique aspects of PCORI research awards, such as the inclusion of stakeholders in the research process. This presentation will lay the groundwork for two subsequent presentations in this symposium, featuring the PCORI-funded research of two behavioral medicine investigators.

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Symposium 01 8:45 AM–10:15 AM

2005

WHY WEIGH EVERY DAY? INTERVENTIONS PROMOTING DAILY WEIGHING ACROSS THE WEIGHT MANAGEMENT SPECTRUM

Dori Steinberg, PhD,^{2,5} Jennifer Linde, PhD,³ Deborah Tate, PhD,² Michaela Kiernan, PhD¹ and Victor Stevens, PhD⁴

¹Stanford University, Palo Alto, CA; ²University of North Carolina, Chapel Hill, NC; ³University of Minnesota, Minneapolis, MN; ⁴Kaiser Permanente Center for Health Research, Portland, OR and ⁵Duke University, Durham, NC

Self-monitoring is a key component of standard behavioral weight management interventions. Although adherence to record keeping is challenging, alternative strategies such as regular weighing hold promise for better adherence and successful weight outcomes. This symposium will describe the design and delivery of four innovative interventions that promote daily weighing across the weight management spectrum including prevention, loss, and maintenance. All interventions are informed by theory, are tested in large well-controlled randomized trials, and span the age range from young to older adults. Two interventions use cellular e-scale technology that provide objective measures of self-weighing frequency in real time. The first presentation will examine how the degree of adherence to a daily self-weighing weight-loss intervention that uses e-scales affects weight loss success. The second presentation will describe the formative work of three self-weighing weight-loss interventions that differ in frequency (daily, weekly, no weighing) and use e-scales to enhance weight loss success. The third presentation will describe the formative work and baseline results of two weight-gain prevention interventions among young adults that incorporate e-reporting preferences (text, Web, mWeb, email). The fourth presentation will describe process data from a weight-maintenance intervention in which women learned a set of 'stability skills' before losing weight, i.e., learned to 'make peace with the scale' by combining daily weighing with the use of effective weight-gain 'alerts' that signal when to adjust eating and activity habits without keeping food records. This symposium is designed to stimulate vigorous discussion of whether and how daily weighing and innovative technologies for weight reporting can improve long-term weight outcomes.

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Symposium 01A

2006

WEIGHING EVERYDAY MATTERS: ADHERENCE RESULTS FROM A DAILY SELF-WEIGHING INTERVENTION

Dori M. Steinberg, PhD, RD,^{1,2} Deborah F. Tate, PhD¹ and Gary G. Bennett, PhD²

¹Nutrition, University of North Carolina at Chapel Hill, Chapel Hill, NC and ²Duke Global Health Institute, Duke University, Durham, NC

Daily self-weighing (DSW) is increasingly being recognized as an important weight control behavior. One of the reasons DSW may be effective is that it may be a more sustainable self-monitoring behavior, however evidence regarding adherence to DSW in interventions is limited. The purpose of this analysis was to examine the association between adherence to DSW and weight loss among participants enrolled in a daily self-weighing weight loss intervention. Participants were randomly assigned to a daily self-weighing intervention group or delayed control group. The intervention included daily weighing via a cellular-connected e-scale, weekly emails with tailored feedback, and lessons on behavioral weight control. The e-scales provided an objective measure of self-weighing frequency in real-time. Weight was measured in-clinic at baseline, 3, and 6 months.

Participants (n=91) were on average age 44 y±11, obese (BMI: 32.15±3.8 kg/m²), mostly female (75 %), White (74 %), and college-educated (78 %). Using intent to treat analyses, at 6 months, the intervention group lost significantly more weight (6.33 %±6.98 vs. 0.38 %±3.05; p<.0001) and self-weighed more days/week (6.1±1.1 vs. 1.1±1.5; p<.0001) compared to the control group. Within the intervention group (n=47), 94 % of participants weighed on average 5 d/wk or more. Those who weighed 7 d/wk on average (n=23; 49 %) lost significantly more weight (-9.59 %±-7.17 vs. -3.20 %±-5.22) and were more likely to achieve 5 % [OR (95%CI): 2.44 (2.84, 46.04); p=.001] and 10 % [OR (95%CI): 2.31 (1.91, 53.18); p=.001] weight loss compared to those who weighed less often (average=5.4±1.2 d/wk).

Results indicate that daily weighing was associated with achieving almost 10 % weight loss over 6 months. Adherence to weighing everyday was associated with significantly greater weight loss compared to weighing almost every day (5 days per week). More research is necessary examining the comparative effectiveness of different weighing frequencies and how this behavior helps with self-regulation.

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Symposium 01B

2007

WEIGHT TRACKING AND WEIGHT LOSS: INTERVENTION DEVELOPMENT USING SCALE TECHNOLOGY

Jennifer A. Linde, PhD

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Weight tracking frequency is a prime target for behavioral weight loss enhancement. It has been suggested that frequent weight tracking may have a negative impact on mental health and outcomes during weight loss, but there are minimal data to address this concern experimentally in the context of weight loss programs. This trial tests an enhanced instruction (daily weight tracking) against the current standard of care (weekly weight tracking) and an alternate model of care that has not been previously examined (no weight tracking) with 336 overweight and obese adults (BMI 25–40 kg/m²) recruited and randomized in three waves to one of three 12-month weight loss interventions with 12-month follow-up. Standard (weekly) weight loss materials were adapted to accommodate enhanced (daily) and comparison (no weighing) intervention delivery. Participants in weighing conditions were provided with wifi-enabled digital scales and iPods with commercial apps designed for intake and activity tracking during weight loss; participants in the no-weighing condition were provided with standard paper diaries and supporting materials for recording intake and activity during weight loss. Pilot data collected before the randomized trial suggested no adverse impact of weight tracking frequency on depression, anxiety, or body image over six months. The process of integrating novel instructions with standard weight loss materials will be discussed, including adaptations of existing material to accommodate technology and presentation of alternate methods for tracking progress during weight loss without tracking weight. To date, 115 of 336 adults were randomized to weight loss conditions and provided baseline demographics, anthropometric measures (height and weight), behavioral reports (dietary intake, physical activity, weight control behaviors) and psychosocial data (self-efficacy, self-esteem, body image, depression, anxiety, eating disorder symptoms). Trial results have great potential to enhance the standard of care for weight loss, thus directly mitigating the public health impact of the obesity epidemic.

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Symposium 01C

2008

TWO DAILY WEIGHING INTERVENTIONS FOR WEIGHT GAIN PREVENTION: THE STUDY OF NOVEL APPROACHES TO PREVENTION (SNAP)

Deborah F. Tate, PhD,¹ Jessica LaRose, PhD,² Amy Gorin, PhD,³ Leah Griffin, MS⁴ and Rena Wing, PhD⁵¹University of North Carolina, Chapel Hill, NC; ²Virginia Commonwealth University, Richmond, VA; ³University of Connecticut, Storrs, CT; ⁴Wake Forest School of Medicine, Winston Salem, NC and ⁵Miriam Hospital/Brown, Providence, RI

Daily self-weighing (DSW) has consistently been linked to better weight loss and maintenance and might be applicable to prevention of weight gain. SNAP, part of the NIH funded EARLY Consortium, is an RCT testing two novel self-regulation theory approaches to weight gain prevention compared to a newsletter control group on average weight changes over 3 years in young adults, age 18–35, with BMI 21–30. Both active interventions promote DSW but differ in the size, type and consistency of behavior changes recommended in response to DSW information (small vs. large changes). Interventions include in person sessions plus web, mobile and SMS supports. Participants (n=599) are age 27.7 years (4.4), 22 % male, 27 % minority with average BMI of 25.4 (2.6). At baseline, few participants reported daily weighing (13.2 %), with most weighing weekly (40 %) or less than weekly (47 %). DSW did not differ by normal or overweight status (12 % vs. 14 %; p=0.54). It also did not vary by minority status (p=0.63) or age (p=0.14). Men were slightly more likely to report DSW than women: 17.7 % vs 11.9 % (p=0.09). The DSW interventions, including formative work, theory and pilot study that informed their development and data describing weight reporting and utilization of different reporting methods (SMS, Web, mWeb, or email) will be presented.

Few young adults interested in weight gain prevention are weighing daily. Innovative self-regulation interventions promoting DSW including newer technologies hold great potential. Funding source: NHLBI, NIH

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Symposium 01D

2009

MAKING PEACE WITH THE SCALE: COMBINING DAILY WEIGHING WITH EFFECTIVE WEIGHT-GAIN 'ALERTS'

Michaela Kiernan, PhD¹ and Susan D. Brown, PhD²¹Stanford University, Palo Alto, CA and ²Kaiser Permanente Northern California, Oakland, CA

Daily weighing may not be enough to promote long-term weight management. Other self-regulatory constructs may also be important such as the nature of the signals or 'alerts' that people use when weighing themselves to indicate when to adjust eating or activity habits. Previously, we reported results from a randomized trial (N=267, BMI 32.1±3.5, 48.4±10.8 years, 66.3 % White) in which women who learned a novel set of Maintenance First 'stability skills' before losing weight only regained 20 % of their weight loss over a 1-year follow-up whereas women who lost weight first regained 40 %. Here, we describe the self-regulatory aspects of the Maintenance First 'stability skills' intervention and process data. Maintenance First women were asked not to lose weight during the initial 8 weeks of a 6-month behavioral weight loss program, and if they lost a few pounds, to gain it back. Experiential activities provided opportunities for exposure, practice, and mastery including weighing daily to collect 'data' about one's own weight fluctuations to inform the choice of a weight-gain 'alert' (e.g., a personalized range), making quick, small, and easy lifestyle changes without keeping food records, and navigating a 1-week simulated disruption while remaining in their personalized range (i.e., eating five high-calorie meals in a week as if on vacation). At baseline, only 37 % of Maintenance First women chose weight-gain alerts that used a scale (e.g., a 'range') whereas 63 % chose non-scale alerts (e.g., 'trying to stay within a particular clothing size or set of clothes'). In contrast, at 6 months, 86 % chose scale-related weight-gain alerts. Qualitative data collected via weekly homework revealed an array of themes including surprise that weight fluctuated so much, so little, and at all, empowerment about weight for the first time, more awareness of eating, less focus on the number on the scale, and satisfaction with staying in the range. Results suggest that sustained non-effortful use of self-regulation skills may enhance long-term weight management.

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Symposium 02

8:45 AM-10:15 AM

2010

TWEET TO TREAT: HARNESSING TWITTER FOR SMOKING CESSATION

Judith J. Prochaska, PhD, MPH

Stanford University, Stanford, CA

Tobacco use is the leading preventable cause of death in the US. Novel interventions are needed for prevention and intervention to reduce smoking among youth and adults. Social media is an increasingly popular means of communication and information dissemination used by >80 % of US adolescents and 66 % of US adults. With a focus on technology transfer for treating tobacco, this symposium examines the social media tool Twitter, a microblogging platform for posting thoughts, information, links, or personal information with the constraint of a 140-character cap. As of Fall 2012, there are 140 million users of Twitter. Its application for health, however, has received limited attention. This symposium will bring together findings from 3 studies that cover the developmental span of adolescence through adulthood and combine social network text analysis, with mixed survey methods, and piloting of a clinical trial. The first is a case study of information contagion on Twitter that centers on fans of Disney child star Miley Cyrus (aka Hannah Montana) expressing concern upon discovering her use of tobacco in the mainstream media. The volume and emotional quality of tweet communications on this event support the utility of Twitter as a tool for eliciting online conversations about health-related topics among young people. The second study combines online survey (quantitative) and interviews over online chat (qualitative) to characterize young adults' receptivity to using Twitter to quit smoking. Findings highlight utility of Twitter, given its anonymity, accessibility, and low-cost, for smoking intervention with young people. The third study piloted a Twitter-delivered group intervention for relapse prevention in smokers motivated to quit and demonstrated engagement and promising effects on 7-day point prevalence abstinence at 60-days follow-up. Taken together, these findings support the promise and initial efficacy of using social media tools like Twitter for tobacco prevention and intervention efforts. Discussion will highlight opportunities, practical applications, and challenges to using and evaluating Twitter as a tool for smoking cessation across populations.

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Symposium 02A

2011

TWEETING ON TOBACCO: A CASE STUDY OF MILEY CYRUS SMOKING ON TWITTER

Ashley Sanders-Jackson, PhD,¹ Cati Johnson, PhD¹ and Judith Prochaska, PhD, MPH^{2,1}¹UC San Francisco, San Francisco, CA and ²Stanford University, Stanford, CA

Social media is widely popular and may provide an effective tool for adolescent tobacco prevention and cessation interventions. This presentation will examine the use of Twitter to engage young people in conversations on tobacco use and its ill health effects. In this example, fans of Disney child star Miley Cyrus (a.k.a. Hannah Montana) express concern upon discovering her use of tobacco in the mainstream media. Cyrus has over 7 million followers on Twitter and a fan-base with largest representation among girls age 13–17. An online search of terms such as "Hannah Montana smoke" and "Miley Cyrus smoking" was completed during the 3-day period following her fans becoming aware of her tobacco use in Aug 2011, yielding 6934 unique tweets (messages on Twitter) and 310 unique retweets (Twitter messages repeated nearly verbatim), which occurred as many as 40 times. One thousand and four tweets (14 %) contained hashtags terms that are made searchable through the use of #. "#WeLoveMileyNoMatterWhat" was one of the most prevalent hashtags. The tweets linked to over 400 external websites, many of which had an online image of Miley smoking. Much of the messaging content was emotional – often positively valenced and/or supportive of quitting smoking. Emoticons – character strings used to represent emotional states, such as :) representing "smiley face" or "happy" – were used extensively. For example, "#mileypleasestopsmoking bad health :(." Other sub-themes included: highly critical messages of Miley's smoking status or of smoking generally as well as pro-smoking messages. For example, one user tweeted, "i don't see a problem with miley smoking i smoke too?".

Findings suggest Twitter may be a useful tool for eliciting online conversation from adolescent girls about health-related topics, particularly when a celebrity is involved. Consideration will be given as to how teen girls may be encouraged to use Twitter to support each other, peer-to-peer, with healthy lifestyle behaviors such as for the prevention and treatment of tobacco use.

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Symposium 02B

2012

TWEETING TO QUIT TOBACCO: FINDINGS FROM TWO PILOT INVESTIGATIONS

Cornelia Pechmann, PhD, MBA,² Cynthia Lakon, PhD,² Sunny Pan, PhD,³ Kevin Delucchi, PhD¹ and Judith Prochaska, PhD, MPH^{4,1}

¹UC San Francisco, San Francisco, CA; ²UC Irvine, Irvine, CA; ³Shanghai Jiao Tong University, Shanghai, China and ⁴Stanford University, Stanford, CA

Twitter is a free service that allows users to send 144 character messages to a group in real time via mobile phones, apps, or online. We describe two pilot runs of tweet2quit, a novel social media intervention for smoking cessation delivered via private Twitter groups. Recruited via Google AdWords, smokers motivated to quit were assigned to 20-member virtual quit-smoking groups and encouraged to tweet each other daily for 3 mo for relapse prevention support. All were instructed to set a quit date, referred to NCI's smokefree.gov site for guidance on quitting, and mailed 2-mo of nicotine patches. Inclusion criteria were smoking 5+ cigarettes/day, English literacy, continental US resident, age 18–59, texting/tweeting weekly, and smartphone owner with unlimited texting.

Two types of programmed messages were sent daily to encourage interaction over the 3-mo period: (1) a question tweeted to the group e.g., “Tell the group why you want to quit. Why now?” and (2) personalized feedback to individuals to thank tweeters for participating and encourage non-tweeters to do so, based on prior day tweets.

The sample (N=40) had a mean age of 36 (SD=9), was 60 % male, 95 % Caucasian, 58 % never married, and 43 % college degree. Participants averaged 20 cigarettes/day (SD=9) and 18 years of smoking (SD=10). Preliminary outcomes are promising. In group 1, 85 % set a quit date, 1073 tweets were sent, and self-reported 7-day point prevalence abstinence (PPA) was 50 %, 57 %, and 42 % at 7, 30, and 60 days post-quit date. For group 2, we made improvements to screening (required daily Facebook use), reduced the quit date window to 8 days from group formation, and improved feedback delivery. In turn, 100 % set a quit date, 1754 tweets were sent, and self-reported 7-day PPA was 21 %, 61 % and 75 % at 7, 30, and 60 days. Sept 2012 we started the randomized clinical trial. Lessons learned and future applications of Twitter for health behavior change interventions will be discussed. Funding #R34 DA030538.

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Symposium 02C

2013

YOUNG ADULTS' RECEPTIVITY TO USING SOCIAL MEDIA TO QUIT SMOKING

Danielle Ramo, PhD,¹ Howard Liu, BA¹ and Judith J. Prochaska, PhD, MPH^{2,3}

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Social media (SM), including Twitter, may be useful tools to engage young adults in smoking cessation. The specific format, process and content of SM interactions for smoking cessation, however, are largely unshaped. This study used both qualitative and quantitative methods to examine: 1) How Twitter use relates to smoking behavior and intention to quit using SM; and 2) Whether and how SM can be used to help young adults quit smoking. Young adults age 18 to 25, who reported past 30-day smoking were recruited on Facebook from 5/2010-9/2011 to complete an online survey about tobacco and SM use. A portion of those who completed the survey, stratified by stage of change, self-selected for a 1:1 online chat interview about their receptivity to using SM to quit smoking. Survey completers (N=570) averaged 10 cigarettes/day (SD=8) and 2.2 (SD=1.2) on the Heavy Smoking Index; 70 % were daily smokers; and 42 % planned to quit in the next 6 months. Few reported having a Twitter profile (16 %), ever using Twitter (21 %), or previously using the Internet as an aid to quitting smoking (2 %). Yet, 31 % expressed interest in using SM to quit smoking in the future. Having a Twitter profile was unrelated to demographic characteristics, smoking severity (past 30 day use, cigarettes/day, dependence, length of use, stage of change), previous use of the Internet to aid a quit attempt, or intention to quit smoking using SM (all $p > .05$). Qualitative interviews with 30 young adults found SM, including Twitter, to be convenient for smoking cessation with suggested strategies including using SM to “offer encouragement,” “check on progress,” and “offer alternatives to smoking.” Some raised issues about privacy, with stigma attached to smoking the main cause for concern. Twitter represents an untapped strategy to engage young adults in smoking cessation. Anonymity, accessibility, and low-cost makes Twitter particularly well-suited for smoking intervention with young people. Funding: #T32 DA007250, #P50 DA09253

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Symposium 03

8:45 AM–10:15 AM

2014

UNDERSTANDING YOUNG ADULT CANCER PATIENTS AND SURVIVORS: SYMPTOM MANAGEMENT, HEALTH-RELATED QUALITY OF LIFE, AND HEALTH BEHAVIORS

John M. Salsman, PhD,¹ Stacy D. Sanford, PhD¹ and Ashley W. Smith, PhD, MPH²

¹Northwestern University Feinberg School of Medicine, Chicago, IL and ²National Cancer Institute, Bethesda, MD

About 70,000 adolescents and young adults (ages 15–39) are diagnosed with cancer annually, and cancer remains the leading cause of disease-related deaths among this age group. Adolescents and young adults with cancer have experienced little improvement in five-year survival rates over the past two decades relative to children and older adults. This lack of improvement may be due to a number of factors including limited access to care and insurance coverage, poor continuity of care, delayed diagnosis of cancer, poor participation in cancer clinical trials, and unique psychosocial and supportive care needs. These factors have contributed to a relative lack of behavioral research and a limited understanding of the supportive care needs for young adults with cancer. Research studies incorporating sound methodology and utilizing patient-reported outcomes can improve our understanding of the unique experiences of young adults with cancer and ultimately guide patient-centered care to facilitate better health-related outcomes. The first presentation in this symposium will describe the results of a longitudinal study examining symptom burden among 133 young adults receiving treatment in academic or community practices for breast and colon cancer. The second presentation will discuss the prevalence of and clinical and symptom correlates of health-related quality of life in a population-based sample of 523 young adults receiving cancer treatment or recently post-treatment. The third presentation will report on the health behaviors and psychosocial outcomes of 335 young adult cancer survivors recruited from an online research panel. All three presentations include relevant comparison groups to provide a better understanding of the unique experiences of young adults. Finally, we will end with a discussion of similarities and differences among the presentations, describing the implications for future research and potential role of interventions aimed at reducing adverse outcomes and promoting better health among young adults with cancer.

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Symposium 03A

2015

SYMPTOM BURDEN AMONG YOUNG ADULTS WITH BREAST OR COLORECTAL CANCER (ECOG E2Z02)

Stacy Sanford, PhD,¹ F. Zhao, PhD,² J. M. Salsman, PhD,¹ V. Chang, MD,³ L. I. Wagner, PhD¹ and M. Fisch, MD⁴

¹Northwestern University, Chicago, IL; ²Dana Farber Cancer Institute, Boston, MA; ³VA New Jersey Health Care System/UMDNJ, East Orange, NJ and ⁴University of Texas MD Anderson Cancer Center, Houston, TX

Background: Cancer incidence has increased among young adults (YA) and survival rates have not improved compared to older and younger age groups. Patient-reported outcomes may enhance our understanding of this understudied population.

Methods: The ECOG SOAPP study enrolled patients (pts) from 32 community and 6 academic sites. At enrollment (T1) and 4–5 weeks later (T2), pts rated symptoms (sx) on the MDASI-ECOG. YA (≤ 39) with breast (YAB) or colorectal cancer (YAC) were compared to older adults (≥ 40) with breast (OAB) or colorectal (OAC) cancer on sx burden, interference, change over time and medical care. Logistic regression models controlled for disease and treatment variables.

Results: Data from 1544 breast cancer pts (YAB=96) and 718 colorectal pts (YAC=37) were examined. Compared to OAB, YAB were more likely to report moderate-severe fatigue, drowsiness, hair loss and sx interference in relations at T1 (OR range: 1.72-2.75; $ps < .05$). YAC were more likely to report moderate-severe pain, fatigue, nausea, disturbed sleep, distress, memory problems, drowsiness, rash and shortness of breath and interference in general activity, mood, work, relations and life enjoyment than OAC at T1 (OR range: 2.02-3.93; $ps < .05$). From T1 to T2, shortness of breath, lack of appetite, and sore mouth were more likely to improve in YAB than OAB (OR range: 1.79-2.58; $ps < .05$); vomiting was less likely to improve in YAC than OAC (OR=0.33; $p < .05$). Referrals for supportive care were few. YAB were somewhat more likely to be referred to nutrition and psychiatry services than OAB ($p < .001$). There were no referrals for YAC.

Conclusions: YAB and YAC reported sx burden, interference and time course distinct from OA. Results highlight differences in sx between YA and OA, between YAB and YAC, and enhance understanding of supportive care needs for this unique group of survivors.

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Symposium 03B

2016

HEALTH-RELATED QUALITY OF LIFE OF ADOLESCENT AND YOUNG ADULT CANCER PATIENTS IN THE UNITED STATES

Ashley W. Smith, PhD, MPH,¹ K. M. Bellizzi, PhD,² B. Zebrack, PhD, MSW, MPH,³ E. E. Kent, PhD,¹ C. Lynch, PhD,⁴ V. Chen, PhD,⁵ A. V. Neale, PhD⁶ and T. M. Keegan, PhD⁷¹National Cancer Institute, Bethesda, MD; ²University of Connecticut, Storrs, CT; ³University of Michigan, Ann Arbor, MI; ⁴University of Iowa, Iowa City, IA; ⁵Louisiana State University, New Orleans, LA; ⁶Wayne State University, Detroit, MI and ⁷Cancer Prevention Institute of California, Fremont, CA**BACKGROUND:** Individuals diagnosed with cancer in young adulthood face numerous physical, psychosocial and practical challenges, but little is known about their health-related quality of life (HRQOL). This study explores HRQOL outcomes and correlates in a cohort of adolescent and young adult (AYA) cancer patients in the United States (US).**METHODS:** Data are from a US population-based cohort of newly diagnosed AYA cancer patients (n=523), age 15–39, in the AYA HOPE Study. We present comparisons with published norms, and multiple linear regression models evaluate effects of demographic, clinical, health insurance, comorbidity and symptom variables on HRQOL across multiple domains using SF-12 and PedsQL assessment tools.**RESULTS:** AYA cancer patients reported significantly worse HRQOL on physical and mental health scales than published data on healthy US populations. The largest differences (effect sizes of 0.5–0.9) were on limitations in physical and emotional roles, physical and social functioning, and fatigue. Adjusted models showed that HRQOL across domains, was consistently worse for those with current/recent symptoms (p<0.0001), in treatment (p<0.0001), or lacking health insurance at any time since diagnosis (p<0.0001). Worse physical health was reported by sarcoma (p=0.001), Hispanic (p=0.01) and less educated (p<0.01) patients.**CONCLUSIONS:** Results suggest major decrements in physical and psychosocial HRQOL among AYA cancer patients. Vulnerable subgroups identified suggest possible health disparities based on ethnicity and socioeconomic status. Clinicians need to be aware of the compounded influence that age and cancer treatment may have on fatigue. Future research should explore ways to address poor functioning in this growing population of cancer patients.

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Symposium 03C

2017

HEALTH BEHAVIORS AND PSYCHOLOGICAL OUTCOMES AMONG YOUNG ADULT CANCER SURVIVORS: A CONTROLLED COMPARISON STUDY

John M. Salsman, PhD, David Victorson, PhD, Betina Yanez, PhD, Stacy D. Sanford, PhD, Mallory A. Snyder, MPH and Sofia F. Garcia, PhD

Northwestern University Feinberg School of Medicine, Chicago, IL

Background: The five-year survival rate of young adult cancer survivors (ages 18–39) has not improved in the past two decades relative to survivors of pediatric and older adult cancers. The “reentry” period, as patients transition from active treatment to extended survivorship, can be particularly challenging. Engaging in recommended health behaviors can decrease the risk of a recurrence or a second primary while enhancing psychological adjustment. However, few studies have examined this important group of cancer survivors during reentry and thus little is known about their experiences relative to other young adults without cancer.**Methods:** Young adult cancer survivors 0 to 5 years post-treatment (YAs: N=335, mean age=31.8, women=68%) and an age, education, gender, and partner-status matched group of healthy control participants (HCs: N=335) were recruited by an online research panel. Participants completed measures assessing demographic characteristics, health behaviors (diet, exercise, smoking), and psychological adjustment (depression, anxiety, positive affect).**Results:** Multivariate analysis of covariance found YAs reported healthier diet (p=.001, $\eta^2=.02$) and exercise (p<.001, $\eta^2=.04$) practices than HCs. While some participants were engaging in health behaviors at levels recommended by national guidelines, rates were suboptimal (YAs: 29% ≥ 5 servings of fruits and vegetables/day, 55% moderate to vigorous exercise for 30 minutes for ≥ 5 days/week, 63% abstaining from cigarettes or tobacco products daily; HCs: 20%, 39% and 70%, respectively). Health behavior frequencies were associated with positive affect in YAs (r=.21, p<.001 for diet, r=–.30, p<.001 for smoking) and in HCs (r=.12, p<.05 for diet, r=.19, p<.001 for exercise). Psychological adjustment was comparable in YAs and HCs (all ps>.05).**Conclusions:** YAs report engaging in healthier diet and exercise behaviors than their peers but additional work is needed to promote post-treatment adherence to recommended guidelines and improve health outcomes.

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Symposium 04

8:45 AM–10:15 AM

2018

THE USE OF EMERGENT TECHNOLOGY TO ASSESS AND INTERVENE WITH MULTIPLE HEALTH BEHAVIORS IN RACIAL/ETHNIC MINORITY POPULATIONS

Co-Sponsored by the Behavioral Informatics SIG, the Ethnic Minority and Multicultural Health, and the Multiple Health Behavior Change SIG

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The prevalence of multiple risk factors for chronic diseases is higher among medically underserved minority groups compared to whites and contributes to significant health disparities across race and ethnicity. In recent years, opportunities for interventions that address multiple risk factors for disease have been increased by widespread growth and development of emergent information and communication technology (ICT) such as tablet computers or mobile phones. This approach is supported by data indicating increasing rates of ICT usage among minority groups. Yet, there is limited research on how such technologies can be leveraged to target multiple risk factors in vulnerable populations. This symposium will bring to light examples of studies from speakers and a discussant with expertise in the design and evaluation of emergent technology interventions for health behavior change. Presentations will explore ways in which the evolving technological landscape of healthcare provides novel approaches to target modifiable health risk behaviors in racial/ethnic minority groups and will encourage questions and commentary from the audience.

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Symposium 04A

2019

DEVELOPMENT AND TESTING OF A MOBILE HEALTH WEBSITE FOR MOBILE CLINIC PATIENTS

Eun-Shim Nahm, PhD,¹ Susan Antol, MS,¹ Olivia Carter-Pokras, PhD,² DongSong Zhang, PhD,² Jane Kapustin, PhD,¹ Lisa Plummer, BSN,¹ Joanne Pinna, MS¹ and Rietschel Matt, MS¹¹University of Maryland School of Nursing, Baltimore, MD and ²University of Maryland, Baltimore, MD

Despite national efforts to make health information technology (HIT) available to care providers and consumers, there are still segments of underserved populations who have been left out of these efforts. The majority of them are minorities, and many have language barriers. Currently, an estimated 2,000 mobile clinics across the United States go to underserved communities and serve 7.5 million people annually. Most clinic vans, which operate in very small spaces with limited resources, are lacking support from HIT. Current mHealth technologies can be a promising solution to mitigate these gaps. The specific aims of this study are to develop a theory-based Wellmobile mobile web program for weight management in both English and Spanish and test its usability employing 20 Wellmobile patients. The content was developed in English and Spanish by two expert panels. Two types of mobile modules were developed for iPads and iPhones. Some of the design challenges experienced during development include the balancing act between limiting the amount of information and meeting learning objectives, navigation methods unique to each mobile device, and limitations in screen sizes. Usability tests were conducted using Heuristic evaluation (HE) and user testing. HE was completed using four experts yielding helpful comments on design aspects (e.g. navigation methods, color schemes). Some preliminary findings from ongoing user testing showed that adults who do not have computer experience could easily learn to use the iPad interface. Some participants who did not own iPhones experienced difficulties in clicking links and understanding the navigation methods. These difficulties were resolved by offering more time to practice. The findings from this study offer important insights into developing online learning modules for mobile devices for underserved populations. Further research is needed to identify optimal mobile platforms to deliver in-depth health information to individuals whose exposure to the online environment is limited.

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Symposium 04B

2020

WHY ETHNIC IDENTITY AND EXPERIENCES OF DISCRIMINATION MATTER TO ETHNIC MINORITY HEALTH DECISION-MAKING: A DAILY DIARY STUDY OF SUBSTANCE USE AND NUTRITION USING MTURK

Marcella H. Boynton, PhD¹ and Laura Smart Richman, PhD²

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The accumulated evidence on ethnic minority health decision-making indicates that experiences of discrimination can lead to risky health decisions, such as increased substance use. A strong racial identity has been implicated as a protective factor against the deleterious health effects of discrimination (e.g., Stock, Gibbons, Walsh, & Gerrard, 2011). This body of evidence is limited to examination of individual behaviors and largely employs college student samples. The purpose of this study is to examine in a diverse adult sample, the strength of evidence for the association between discrimination and multiple health behaviors (i.e., alcohol consumption, cigarette use, and healthy/unhealthy food consumption) using daily diary methodology. Further, we explored the potential moderating role of racial identity on the link between stressful interpersonal encounters (e.g., racial/ethnic discrimination) and resultant health decision-making processes. Participants were recruited via Amazon's Mechanical Turk and the surveys were completed using Qualtrics. Results of the research as well as a discussion of the use of internet-based and daily diary data collection methods, with a specific focus on ethnic minority populations, will be presented.

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Symposium 04C

2021

REACHING MINORITY POPULATIONS WITH RELATIONAL AGENTS

Timothy Bickmore, PhD, Daniel Schulman, MS, Langxuan Yin, MS and Lazlo Ring, MS
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Relational Agents are animated computer-controlled characters that simulate face-to-face conversations with a health provider, and have been used as a medium for several automated health behavior change interventions. Cultural and linguistic tailoring of these agents, coupled with deployment over the web, in community centers, or on mobile devices, provides an effective means for reaching racial/ethnic minority populations. We report on three studies we have conducted using tailored Relational Agents. In the first study, an exercise promotion agent was linguistically and culturally tailored for a population of older, bilingual, Latino adults to interact with them in either English or Spanish, and deployed on a touch screen computer in a community center. A four-month, two-arm, randomized, wait-list-control pilot evaluation study was completed with 40 participants, and demonstrated significant increases in reported minutes of walking/week for the intervention group vs. controls. In a second study, a walking promotion agent was designed for an urban, 72 % minority, older adult population, deployed on tablet computers from primary care clinics at an urban safety net hospital. The agent was evaluated in a randomized trial involving 263 patients, and demonstrated significant increases in walking (measured by pedometer steps) at the end of the two month intervention period. In a final study, a web-based agent was designed to promote preconception care among young African American women, providing screening and longitudinal intervention on 108 risk factors for infant mortality and low birth rate. In a pilot study (n=24), the agent identified an average of 23 risks per participant, participants agreed to take action on 64 % of these, and reportedly took some action towards addressing 83 % of these risks by the end of two months. Relational Agents can provide an effective mechanism for intervening on multiple behaviors in minority populations.

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Symposium 05

8:45 AM–10:15 AM

2022

TRANSLATION OF NON-TRADITIONAL LIFESTYLE BEHAVIOR CHANGE INTERVENTIONS INTO REAL-WORLD CLINICAL SETTINGS

Laura Damschroder, MS, MPH,¹ Bonnie Spring, PhD,² David E. Goodrich, EdD¹ and Russell E. Glasgow, PhD³

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Many behavioral interventions found to be efficacious in well-designed trials fail to produce expected outcomes in real-world settings. One reason for this is because of unforeseen local contextual factors that impede effective implementation. This symposium will describe four separate initiatives to implement lifestyle behavior change programs into local clinical settings in the VA. Two of the interventions will be described in full length presentations. The first presentation will describe the use of connective mobile technology in conjunction with standard care that resulted in greater weight loss compared to standard care alone. The second presentation will describe a home-based weight management program aided by unique technology devices ("TeleMOVE") which resulted in weight loss comparable to standard care in 9 VA sites. Facilitating and impeding contextual factors related to these two programs will be presented. The third presentation will integrate findings from the TeleMOVE study with findings from two additional implementations of behavioral programs in VA: one delivered via traditional in-person group sessions and another delivered over the phone. Patterns of contextual factors that are common across these implementations will be highlighted along with reflections about variations across the studies. The synthesis highlights a novel approach for building knowledge about what works where and why across interventions and settings. These presentations will provide the basis for a provocative discussion about the challenges and successes of implementation of different mediated/e-health behavioral programs into different routine care settings as well as the implications of current findings having applicability in non-VA settings.

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Symposium 05A

2023

INTEGRATING A MOBILE TECHNOLOGY SYSTEM INTO THE VA'S MOVE! WEIGHT MANAGEMENT PROGRAM

Bonnie Spring, PhD,¹ Jennifer Duncan, PsyD,¹ Amy Janke, PhD,² Andrea Kozak, PhD,³H. Gene McFadden, BS,¹ Andrew DeMott, BA,¹ Alex Pictor, BS,¹ Leonard Epstein, PhD⁴ and Donald Hedeker, PhD⁵

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A challenge to obesity management is the need to implement access to intensive treatment within existing systems of care. Little is known about whether the outcome of clinician-directed weight loss treatment can be improved by adding mobile technology. METHODS: We conducted a 2-arm, 12-month study (between October, 2007 and September, 2010). Seventy adults (body mass index [BMI] >25 and ≤40 kg/m²) were randomly assigned to either standard of care group (Standard) or Standard+connective mobile technology system (+Mobile). Participants attended biweekly weight loss groups held by the VA outpatient clinic. The +Mobile group was provided personal digital assistants (PDAs) to self monitor diet and physical activity; they also received biweekly coaching calls for 6 months. Weight was measured at baseline, 3, 6, 9, and 12 months follow-up. RESULTS: Sixty-nine adults received intervention (mean age 57.7 years, 85.5 % male). A longitudinal intent-to-treat analysis indicated that the +Mobile group lost on average 8.6 more pounds than the Standard group at each post-baseline time point, [p<.001]. +Mobile participants also had significantly greater odds of having lost 5 % or more of their baseline weight at each post-baseline time point [OR=6.5; 95 % CI=2.3, 18.6]. There was no difference in how often participants in the two treatment groups attended MOVE! sessions (p=.54), but +Mobile participants who attended >80 % of sessions lost more weight than less adherent +Mobile participants and either adherent or nonadherent Standard participants. CONCLUSIONS: The addition of a mobile technology system holds promise as a scalable delivery mechanism to augment the impact of clinician-delivered weight loss treatment. Research is warranted to examine how contextual factors would impact implementation of the mobile technology system across different facilities.

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Symposium 05B

2024

EVALUATION OF THE PILOT IMPLEMENTATION OF A TELEHEALTH PROGRAM SUPPORTING WEIGHT MANAGEMENT

David E. Goodrich, EdD,¹ Jennifer Davis, MPH,¹ Heather Elliott, MPH,¹ Laura Damschroder, MA, MPH,¹ Julie Lowery, PhD¹ and Caroline Richardson, MD^{1,2}¹Center for Clinical Management Research, VA Ann Arbor Healthcare System, Ann Arbor, MI and ²Department of Family Medicine, University of Michigan Medical School, Ann Arbor, MI.

Nearly 40 % of Veterans served by the Veterans Health Administration (VHA) are obese and at-risk for obesity-related comorbidities. New treatments are needed to reduce this burden. The TeleMOVE program is a home-based 82 day curriculum that utilizes in-home messaging devices to promote weight loss. We conducted a mixed-methods study to evaluate the implementation and effectiveness of TeleMOVE at 9 demonstration sites. Twenty-eight facility- and VISN-level stakeholders were recruited to participate in two rounds of semi-structured interviews, first by phone and subsequently onsite, about aspects of implementation processes, context, and daily program delivery. Interview questions were guided by the Consolidated Framework for Implementation Research (CFIR). Administrative data were used to evaluate program enrollment, adherence, and clinical outcomes. Outcomes for Veterans who enrolled in TeleMOVE were compared to Veterans enrolled in MOVE!, VHA's facility-based weight loss program. Program uptake was high at 2 sites, low at 4 sites, and 3 late-adopting sites declined interviews. At 6 months post-enrollment, mean weight loss was comparable for TeleMOVE (n=417) and MOVE! (n=1543) participants at -5.2 lbs (SD=14.4) and -5.1 lbs (SD=12.2), respectively (p=.91). High uptake sites were able to implement more quickly based on compatibility with existing telehealth programs and a measurement-based culture that encouraged innovation whereas low uptake sites reported less leadership support and communication among stakeholders. All sites reported high program complexity because TeleMOVE required more staff time/participant than MOVE! due to logistical and technical assistance issues related to the devices. Pilot results show TeleMOVE achieves short-term weight loss. Lessons learned from this study can be used to improve system design and to expand the reach of future VHA telehealth programs.

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Symposium 05C

2025

SYNTHESIS OF FINDINGS FROM 3 LIFESTYLE BEHAVIOR CHANGE PROGRAM IMPLEMENTATIONS IN VA

Laura Damschroder, MS, MPH and Julie C. Lowery, PhD

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There is urgent need to implement evidence-based lifestyle change interventions more widely in healthcare settings. However, evidence supporting multi-dimensional, complex implementation strategies (e.g., tailored strategies) and techniques (e.g., clinical reminders) consistently shows mixed results and researchers repeatedly call for further research into "context." Research on context has been dominated by single or small sample case studies without using a theoretical structure to promote comparison across studies. We used the Consolidated Framework for Implementation Research (CFIR), a theory-based taxonomy of contextual constructs, in a series of 3 implementation studies. All 3 implementations were of lifestyle behavior change programs designed to promote weight loss or other health behaviors among Veterans. Two of the programs rely on non-traditional technologies and one program is a center-based group program. Some contextual factors were influential regardless of the program, such as leadership engagement in the initiative, though specific behaviors exhibited by leadership varied by program. Other contextual factors varied; e.g., the group-based program implementation was heavily influenced by stakeholder perceptions of the relative advantage of the new program compared to other options but this construct did not influence success for the other programs. Insights into why and how these constructs manifest differently based on differences in intervention characteristics, settings, and processes will be presented. Use of a common theoretical framework allowed this synthesis to take place, demonstrating how a knowledge-base can be more readily built to help accelerate implementation of evidence-based lifestyle behavior change interventions.

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Symposium 06

8:45 AM–10:15 AM

2026

OVERCOMING CHALLENGES IN DEVELOPING AND IMPLEMENTING TECHNOLOGY-BASED TOOLS TO IMPROVE HEALTH-RELATED DECISIONS AND BEHAVIORS: LESSONS LEARNED

Erika A. Waters, PhD, MPH

Surgery (Division of Public Health Sciences), Washington University School of Medicine, St Louis, MO.

As technology becomes more integrated into the public's personal and professional lives, its promise for translating, implementing, and disseminating health decision and behavior research into public health and clinical practice becomes apparent. Consequently, increasing numbers of researchers and entrepreneurs are focusing their efforts on developing technology-based tools to assist laypeople, patients, and clinicians in making beneficial health decisions.

However, many of these efforts are stymied by complex challenges that span multiple content and logistical domains. Some challenges, such as protecting participant privacy, can be anticipated during the conceptualization and design phases of the project. Nevertheless, many unanticipated obstacles arise during the implementation phase. These obstacles can include extensive technological complications, limited availability of funding for improvements, local institutional resistance, and logistical roadblocks.

This symposium will provide specific and concrete strategies for overcoming common challenges in developing and implementing technology-based tools designed to improve health-related decisions and behaviors. It accomplishes this by focusing on the lessons learned during the development of three tools that have been implemented successfully: 1) the Your Disease Risk individualized risk assessment website (Erika A. Waters), 2) a sun protection Smartphone application (David B. Buller), and 3) the Assessment and Treatment of Hypertension: Evidence-based Automation (ATHENA) Decision Support System for clinicians (Mary K. Goldstein). The symposium discussant (William Riley) will provide insight on the current funding environment and its implications for the development and maintenance of health decision-making tools. Ample time for questions-and-answers will ensure that audience members can interact with presenters and obtain feedback on issues that may be directly relevant to their research.

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Symposium 06A

2027

"IT'S LIVE! NOW WHAT?" LESSONS FROM THE YOUR DISEASE RISK WEBSITE ABOUT MAINTAINING, UPGRADING, AND EVALUATING AN EXISTING HEALTH DECISION MAKING TOOL

Erika A. Waters, PhD, MPH, Hank Dart, MS and Graham A. Colditz, MD, DrPH

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Thirteen years ago, a large, transdisciplinary team of researchers and computer scientists launched the Your Cancer Risk individualized cancer risk assessment website. Its goal was to disseminate cutting-edge cancer prevention research to lay audiences, thereby providing the public with the information it needed to make good decisions about their health care and lifestyle behaviors.

Since then, the website has undergone numerous changes. The most visible change has been the inclusion of multiple chronic diseases, which led to changing the website's name to Your Disease Risk. However, thousands of hours of personnel time have also been devoted to "silent" changes, such as maintaining the website's epidemiological and technological foundations. Even more time has been dedicated to evaluating the site.

Your Disease Risk is used heavily, averaging approximately 1,000 visitors per day, 365 days per year. Over 13 years, this website has reached over 4.7 million visitors from around the globe.

In this talk, the processes by which Your Disease Risk has been maintained, upgraded, and evaluated will be described. Specific emphasis will be placed on techniques that worked well, and those that did not. Strategies for overcoming obstacles and identifying opportunities that are unique to maintaining a "live" website that undergoes continual use will be highlighted.

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Symposium 06B

2028

DEVELOPING A USER-CENTERED MOBILE DECISION AID FOR SUN PROTECTION

David Buller, PhD,¹ Marianne Berwick, PhD,² Ilima Kane, MA,¹ Mary Buller, MA¹ and Kathleen Lantz, PhD³¹Klein Buendel, Inc., Golden, CO; ²University of New Mexico, Albuquerque, NM and ³University of Colorado, Boulder, CO.

A smart phone mobile application, Solar Cell, was created to assist with adults' sun protection decisions. It combines NOAA's hourly UV Index (UVI) forecasts, the phone's time, date and location and user's information using research-based algorithms to display sun safety advice. User-centered design principles guided app development, using focus groups with adults under 40, over 40, and with children (n=16) and skin cancer survivors (n=9), interviews with clinicians (n=10) and four rounds of usability testing with adults (n=32). Adults in focus groups were overwhelmingly positive about the mobile app, feeling it would help sun safety decisions. Two concerns were raised by users: Location-specific features should not allow someone to find them and users wanted to control alerts; the interface addressed these concerns. Adults were willing to input personal information, preferred graphics/pictures over text and wanted sun safety hints and tips. Skin cancer survivors had been advised by medical providers to limit time in the sun and protect their skin. There was uncertainty how long it takes their skin to be burned and find it difficult to tell when they had enough protection; the app provides this feedback. Survivors said the mobile app would provide unique information and they would use it. Medical providers felt there were problems providing just the UVI, feeling it was not understood and easily misinterpreted by patients. Instead, time-based advice (before 10 am and after 3 pm) or estimates of UV exposure such as the time until sunburn should be provided in the mobile app. Providers were positive about the mobile app and willing to tell their patients about it. Usability testers wanted as much information as possible on the main screen; preferred a count-down timer of time until sunburn to graphics or text advice; and found advice on sun safety practices based on UV level useful. Challenges encountered and solutions applied in this user-centered, iterative development process for a mobile app will be discussed.

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Symposium 06C

2029

IMPLEMENTING REAL-TIME CLINICAL DECISION SUPPORT FOR HEALTH PROFESSIONALS WITHIN WORKFLOW: ATHENA-CDS

Mary K. Goldstein, MD, MS

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ATHENA-CDS is a clinical decision support system designed to provide real-time, evidence-based, patient-specific advice to health professionals caring for patients as they are being seen in primary care clinics. To reach busy clinicians, it is important to integrate information into their clinical workflow rather than expect them to launch a separate application or visit a separate website. However, integration into workflow usually means interfacing with existing IT systems, which adds complexity beyond setting up a free-standing system. ATHENA-CDS is a platform-independent knowledge-based system designed to integrate with existing electronic health record (EHR) systems. ATHENA-Hypertension (HTN), the initial clinical domain of ATHENA-CDS, has been installed at 8 VA medical centers, has been used by more than 100 primary care providers, and has provided recommendations to the providers regarding clinical management of more than 20,000 patients. Post-intervention surveys of primary care providers who had access to the system showed that they found it both usable and useful. This session will present the socio-technical approach we took to implementation, describing the following: iterative technical design in cycles responsive to organizational input; procedures for managing organizational context; approvals processes; approaches to identifying and addressing barriers to implementation. We will present lessons learned and recommendations for those preparing future implementations.

This work was supported in part by Dept of Veterans Affairs Health Services Research and Development (HSR&D) grant funding, and included many collaborators. Views expressed are those of the authors and not necessarily those of the organizations with which the authors are affiliated, including the Department of Veterans Affairs.

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Symposium 07

8:45 AM–10:15 AM

2030

SUPPORTING AND FACILITATING CHRONIC DISEASE MANAGEMENT: LESSONS LEARNED FROM DIABETES

Linda J. Herbert, PhD¹ and Korey Hood, PhD²¹Center for Translational Science, Children's National Medical Center, Washington, DC and ²Pediatrics, University of California San Francisco, San Francisco, CA.

This symposium, jointly sponsored by the Child & Family Health SIG and the Diabetes SIG, will present evidence-based and clinically relevant strategies to support and facilitate chronic disease management. The rates of chronic disease in the U.S. and around the world have skyrocketed. Over 133 million Americans have a chronic disease, and each year, 70 % of deaths in the U.S. are attributed to chronic disease. Diabetes is no exception given its increasing incidence and prevalence and its well-characterized contribution to significant morbidity and mortality. This symposium draws on diabetes, behavioral medicine, and public health findings to highlight lessons learned from individuals, families, and systems about supporting and facilitating chronic disease management.

This symposium includes a brief overview that links health behaviors to disease management and outcomes, and three individual presentations from clinical researchers. The first presentation focuses on the family with data presented on the roles of parents, partners, and other caregivers. Data will be presented on adults and children with diabetes, and the mechanisms that link support to effective management and outcomes. The second presentation illustrates how technology can be used to support and facilitate chronic disease management. Data will be presented from social media, online problem-solving programs, and text messaging on ways to optimize management in adolescent and young adult patient populations. The third presentation will focus on the broader social network for individuals with chronic disease, specifically their peers. Data will be presented on effectively engaging peers to promote knowledge, management behaviors, and health outcomes in patients and family members. The overarching goal of these presentations is to highlight the evidence base for facilitating disease management and show how this leads to optimal health outcomes.

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Symposium 07A

2031

PEER SUPPORT FOR CHRONIC DISEASE MANAGEMENT: LESSONS LEARNED FROM TYPE 1 DIABETES

Linda J. Herbert, PhD, Maureen Monaghan, PhD, Risa Sanders, PhD and Randi Streisand, PhD

Children's National Medical Center, Washington, DC.

Parents caring for children with chronic illness report increased stress, and interventions that seek to increase peer social support may facilitate psychological adjustment. This presentation will provide an overview of peer-based social support interventions across chronic illnesses and describe 2 RCTs developed by our research team for parents of young children with type 1 diabetes (T1D) in which peer parent support was one component.

In the first study, 81 of 134 recruited parents of young children with T1D (ages 2–6) were randomized to the intervention condition of an RCT to promote parental management of diabetes, and participated in 4 counselor-led individual phone calls, 1 group call with 2–3 other parents, and had access to an online interactive bulletin board. At 30 day follow up, 96 % of participants were "very much" or "extremely" satisfied with the group call. Follow-up qualitative interviews with a subset of participants revealed that they thought the group call was one of the most impactful parts of the program and unanimously expressed desire for more peer support.

Guided by preliminary findings, the intervention was modified for parents of young children newly diagnosed with T1D. In addition to the group call, intervention participants are assigned 1 of 4 peer parent consultants (PPC) recruited from the first study and trained by the research team. The PPC calls participants after each phone session to discuss T1D-related concerns. Thus far, 8 parents have completed a group call and 30 day follow up. Six parents have spoken with their PPC an average of 2 times each. Parents report that the group call and their PPC are "very much" or "extremely" helpful.

These findings provide a first look at innovative ways to incorporate peer support for parents of children with a chronic illness and provide initial support to other research that indicates parents perceive benefits from peer support. Inclusion of peer support programs in clinical settings may be one way to facilitate these connections and encourage psychological adjustment.

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Symposium 07B**2032**

UTILIZING TECHNOLOGY AND SOCIAL MEDIA TO PROVIDE SUPPORT AND FACILITATE PATIENT EDUCATION AND SELF-MANAGEMENT

Shelagh Mulvaney, PhD

Department of Biomedical Informatics, Vanderbilt University, Nashville, TN.

Health and information technology are transforming the way we provide care to individuals with chronic disease. Research on the use of technology, such as internet-based interventions and text-message based interventions, indicate it is feasible and acceptable for a variety of populations. In particular, technology gives health care providers unique access to many health users that may have been previously difficult to engage on platforms that are already familiar to them and frequently in reach. Technology also allows clinicians to guide self-management decisions in real-time and connect individual patients with each other and with significant others for support. The challenges faced by researchers seeking to create technology-facilitated systems are both familiar and new.

In this presentation, data from two studies will be presented in the context of the larger literature. The first study is a randomized controlled trial ($n=72$) in which we tested an internet-based, interactive, problem-solving intervention in adolescents with type 1 diabetes (T1D). This intervention had moderate effects on adherence (Cohen's $d=.60$) and small effects on A1C ($-.28$). Process results showed a high level of completion of online activities, but highly varied patterns of engagement with different aspects of the program and over time. In another study, we used mobile phones as an ecological momentary assessment (EMA) tool for adolescents with T1D. Participants ($n=50$) were called twice per day for 10 days, according to their time preferences, and diabetes-related behaviors were assessed. In total, 1000 calls were made, 50 % of which were answered. Fifty percent of missed calls were later returned by the adolescents. On average, adolescents reported missing 14 % of all blood glucose checks and 20 % of insulin doses, most frequently in the morning (59 % and 74 %), followed by the afternoon (28 % and 18 %), and evening (13 % and 8 %). These results, as well as the challenges and opportunities of translational research for the design, testing, and implementation of these systems will be discussed.

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Symposium 07C**2033**

LIVING WITH DIABETES IN RELATIONSHIPS: HOW PARENTS AND PARTNERS CAN SUPPORT CHRONIC DISEASE MANAGEMENT

Marilyn Ritholz, PhD

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Individuals with diabetes face challenging self-care regimens. Self-care challenges can lead to frustrations and emotional struggles and can impede achievement of optimal glucose control, which increases risk for diabetes complications. Importantly, individuals with diabetes live in relationships with others who sometimes report feeling frustrated and uncertain for how best to facilitate their loved ones' improved glycemic control and psychosocial well-being. This presentation focuses on ways that parents and partners may best support patients' coping and facilitate optimal diabetes management.

Research findings will be presented on outcomes of family support and diabetes management for children and adolescents with type 1 diabetes (T1D) and adults and partners with type 2 diabetes (T2D). This will be done with the backdrop of a larger literature on partner and parent support in diabetes. In one of our qualitative studies, we conducted 4 paired focus groups (by gender and age) with younger (30–49) and older (50–70) patients with diabetes and their partners on use of continuous glucose monitoring (CGM). Analysis of qualitative data highlighted the importance of involving spouses in CGM training with a view to enhance spousal understanding of CGM, improve couples' communication about CGM, minimize the risk for spousal conflict, and enhance collaborative diabetes management. Our findings also highlighted the importance of spousal/family involvement in overall intensive diabetes management education and follow-up. In another study, 14 parents of 11 children (diagnosed at age 3; current age 11.1 yrs) participated in an in-depth interview. Three pertinent themes were identified: diagnostic experiences: frustrations, fears, and doubts; adapting to diabetes; and negotiating developmental transitions. In conclusion, research needs to continue to explore how patients with diabetes live in relationships with partners, parents, children, and health care providers in order to facilitate the most effective coping and diabetes management.

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Symposium 08**8:45 AM–10:15 AM****2034**

SPIRITUALLY INFORMED INTERVENTIONS FOR BEHAVIORAL MEDICINE

Kevin S. Masters, PhD¹ and Timothy W. Smith, PhD²¹Psychology, University of Colorado Denver, Denver, CO and ²Psychology, University of Utah, Salt Lake City, UT.

In recent years there has been a major increase in research investigating spirituality and health. Many of these reports are cross-sectional though there is also a notable body of longitudinal studies. From this work, it can be generally concluded that there is a relationship between positive spirituality and better health though there are exceptions in the literature. In contrast to the number of observational studies that have been conducted, there are very few studies investigating the effects of spiritually informed interventions for treatment of behavioral medicine populations. Though pioneering efforts have been undertaken, many questions surround the possible use of these approaches. This symposium presents randomized controlled trials of three spiritually informed interventions developed to treat patients with congestive heart failure (CHF) and early stage breast cancer, as well as combat veterans with post-traumatic stress disorder. Previous correlational and longitudinal work in these areas has associated spirituality with improved outcomes but it is not known if inclusion of spiritually informed and relevant components of treatment will be either acceptable to patients or produce beneficial results. There are many challenges, both practical and ethical, that are important to consider when developing and implementing spiritually informed interventions. The speakers will enhance their presentation of quantitative outcome data (including measures such as cortisol, self-efficacy, quality of life, CHF symptoms, etc.) with qualitative findings from their research relevant to the development and implementation of spiritually informed interventions. There will be specific discussion of the challenges of incorporating spirituality into patient-centered treatment in a pluralistic society. These three studies demonstrate some of the diversity of possibilities for spiritually informed interventions and attendees will develop a greater appreciation for not only the results of these interventions but also the process of developing and implementing them.

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Symposium 08A**2035**

EFFECTS OF A SPIRITUALLY INFORMED STRESS MANAGEMENT INTERVENTION IN WOMEN WITH BREAST CANCER

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Eighty-six people with early stage breast cancer (90 % stage I or II) who had completed post adjuvant treatment, were randomized to either experimental (intervention) or control groups; 69 completed the first two time points (pre, post intervention) with questionnaire data (37 experimental, 32 control). The sample was predominantly white non-Hispanic (58 % or Hispanic (28 %), and middle class (median income \$50,000/yr). Of these, 55 were eligible for and collected 15 hour urine for the measurement of cortisol at both time points.

The experimental group underwent a 10 session stress management intervention administered in group format. Spiritually informed aspects of the intervention included an examination of spiritual needs, benefits of spiritual and religious beliefs, and relaxation techniques such as meditation. The control group was a one day seminar with the stress management content (without the spiritual component).

Results for the Spirituality scale (the Ironson-Woods SR Index) revealed a significant time by group interaction [$F(1,67)=5.36, p=.024$], such that there was a significant increase in the experimental group and no change in the control group. The subscales driving this interaction were Sense of Peace and Compassion for Others.

There was also a significant group by time interaction for cortisol [$F(1,55)=4.31, p=.043$], such that there was a significant decrease in cortisol in the stress management group [$F(1,55)=5.91, p=.018$], and a slight non-significant increase in the control group.

Changes in spirituality were significantly correlated with changes in Cortisol concentration (Creatinine corrected and logged) (overall $r=-.30, p=.03$) such that increase in Sense of Peace ($r=-.29, p<.05$), and increase in Faith in God ($r=-.32, p<.05$) were associated with a decrease in cortisol concentration.

Conclusion: A 10 session group administered spiritually informed stress management intervention for women with breast cancer can increase spirituality and decrease cortisol.

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Symposium 08B

2036

MANTRAM REPETITION FOSTERS SELF-EFFICACY FOR MANAGING PTSD IN VETERANS: A RANDOMIZED TRIAL

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Objective: Few spiritual practices have been empirically tested for mitigating symptoms of posttraumatic stress disorder (PTSD). We investigated the effects of a portable mantram (sacred word or prayer) intervention for enhancing self-efficacy in managing PTSD symptoms in veterans with military-related trauma. Intervention recipients self-selected a mantram (i.e., holy name or prayer word) from a spiritual or religious tradition. Examples include “Om mani padme hum,” “Lord Jesus Christ, Son of God, have mercy on us,” “Hail Mary,” “Barukh attah Adonai.” Previous randomized studies have linked mantram repetition with decreased PTSD symptom severity, anger, and distress, and improved quality of life, faith/assurance, spiritual connectedness, and spiritual well-being.

Method: A prospective, randomized trial was conducted. Outpatient veterans with PTSD (n=146) were randomly assigned to either (1) usual care with a 6-week group instruction in the Mantram Repetition Program (MRP), or (2) usual care alone, consisting of medication and case management. Repeating a mantram, silently throughout the day at any time or place, was used to slow down thoughts and interrupt unwanted behaviors while improving concentration and attention. Self-efficacy, PTSD symptoms, and other participant characteristics were assessed at baseline (Week 1). Self-efficacy was assessed weekly during the intervention (Weeks 2–5) and at post-intervention (Week 6), when PTSD symptoms were reassessed. **Results:** Self-efficacy increased approximately linearly from Week 2 to Week 6, when it showed significant treatment effects ($p < .01$). Self-efficacy changes mediated treatment effects on depression (BSI), mental health (SF-12), and PTSD symptoms as measured by PTSD checklist (PCL) ($p < .05$) and Clinician Administered PTSD Scale (CAPS) ($p < .10$). **Conclusion:** Mantram intervention increases levels of self-efficacy in managing PTSD symptom severity.

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Symposium 08C

2037

QUALITATIVE EVALUATION OF A PSYCHOSPIRITUAL INTERVENTION FOR CHRONIC HEART FAILURE (HF) PATIENTS: THE DENVER SPIRITED HEART PILOT STUDY

Stephanie A. Hooker, MS,^{1,3} Kaile Ross, BA,¹ Kevin S. Masters, PhD,¹ Crystal Park, PhD,⁴ Larry A. Allen, MD, MHS,² David B. Bekelman, MD, MPH^{2,3} and Megan Grigsby, BA¹

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Meaning and spirituality are associated with better quality of life in HF patients but little work has been done to address these needs. This pilot study evaluated the feasibility of a low-cost intervention to address HF patients' psychosocial and spiritual needs. HF patients (N=42; 88 % male, mean age 61 years, 75 % NYHA 2–3) were randomized 2:1 to the 12-week intervention or usual care. Intervention patients received a weekly phone call and mailer that included information on different psychosocial topics (e.g., stress management, social support), a spiritual component related to the topic, reflection questions, and activities to practice skills. Patients completed pre- and post-study questionnaires and research staff conducted a semi-structured interview with program completers (n = 17) and took detailed notes. Notes were coded and analyzed by four authors using grounded theory. Most (81 %) positively evaluated the intervention, noting that it served as a refresher about self-care and provided a sense of connectedness, either to others with HF, people in their social network, or research staff. Some patients believed a more general spirituality component would help them connect better to the intervention whereas some patients thought this component should be more specific (i.e., religious). Recommendations for changes to the program included the following: 1) tailor the program to fit patients' spiritual needs; 2) shorten it by 2–4 weeks; 3) include more information about managing heart failure; and 4) target newly diagnosed patients. Results indicate that the program was feasible based on greater than 50 % completion and positive feedback. Future research will test a revised program in newly diagnosed HF patients that is more engaging and inclusive in content.

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Symposium 09

8:45 AM–10:15 AM

2038

ADAPTING CBT INTERVENTIONS FOR USE WITH MARGINALIZED PATIENT GROUPS MANAGING THE CHALLENGES OF HIV, MENTAL HEALTH, AND SUBSTANCE USE

Conall O'Cleirigh, PhD,¹ Adam W. Carrico, PhD,² Wade Taylor, PhD³ and David Pantalone, PhD⁴

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People with HIV are disproportionately affected by mental health and substance use disorders that present challenges for personal and public health and adaptive HIV disease management. This symposium presents emerging data on innovative adaptations of traditional cognitive behavioral interventions designed to address the complex mental health and substance use context faced by marginalized groups of patients with HIV. Dr. Carrico will present data from an adapted CBT intervention tailored to a harm reduction approach among methamphetamine using men who have sex with men. He will present outcomes on indices of sexual risk and sex in the context of substance use. Dr. Taylor will present data from a pilot open trial of novel 7-session CBT based intervention designed to address the needs of high risk men who have sex with men who struggle with mental health, substance use and other HIV treatment barriers. This proof of concept study presents promising preliminary data on a range of health behaviors for African-American MSM. Dr. O'Cleirigh (Chair) will present on the multiple benefits of an effective 8-session CBT intervention to address depression and adherence in patients managing HIV and opiate dependence. He will present the related benefits of the intervention on clinically and statistically significant reductions in anxiety symptoms. These innovative applications of CBT address the real world context in which many patients with HIV struggle to manage their disease.

Dr. Pantalone, Assistant Professor of Psychology and the University of Massachusetts, Boston, has an expertise in HIV treatment and prevention. He will discuss the process of adapting the interventions, the challenges that lie ahead, and interpret these findings in relation to improving engagement in HIV primary care, adherence to treatment, and mental health outcomes. He will suggest priority areas for future research.

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Symposium 09A

2039

PILOT OUTCOMES FOR A CBT INTERVENTION TO ADDRESS SEXUAL RISK AND ENGAGEMENT IN CARE AMONG HIV-INFECTED AFRICAN-AMERICAN MEN WHO HAVE SEX WITH MEN

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African American MSM are severely and disproportionately affected by HIV and is less likely to be engaged in care. The purpose of this proof-of-concept study was to address engagement in care and sexual risk-taking in HIV-infected African-American MSM. Through formative work a novel 7-session CBT-based prevention was specified. The modular treatment allows for the selection of multiple health behavior targets (e.g., sexual risk reduction, medication adherence, linkage to STI testing). Participants (N=5) completed baseline, 3 and 6-month follow-up assessments and an exit interview post treatment. Participants were African American, with a mean age of 53 (SD=6), 60 % reported annual income <\$18 k, 60 % had a college degree. Positive themes from qualitative exit interviews and 100 % retention through follow-up suggests that the intervention was acceptable. All 5 participants reported a reduction in unprotected anal intercourse acts with serodiscordant partners and a decrease in number of male sexual partners, over baseline. Four participants reported higher medication adherence post treatment. A higher number of participants reported STI testing in that past 6 months post treatment. Providing treatment of differing dose and content that addresses multiple health targets may improve the reach of CBT based interventions and support optimal disease management in African-American MSM. The next programmatic step is to conduct a pilot RCT of this intervention to examine the degree to which African-American HIV-infected MSM can be recruited and retained and the potential for an effect on study outcomes.

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Symposium 09B

2040

HARM REDUCTION SUBSTANCE ABUSE TREATMENT WITH METHAMPHETAMINE-USING MSM

Adam W. Carrico, PhD,¹ Michael D. Siever, PhD,² Discepola V. Michael, MFT² and William J. Woods, PhD¹¹University of California, San Francisco School of Nursing, San Francisco, CA and ²San Francisco AIDS Foundation, San Francisco, CA.

This study examined the outcomes of a cognitive-behavioral approach to substance abuse treatment that is being implemented from a harm reduction perspective with methamphetamine-using men who have sex with men (MSM). In total, 86 methamphetamine-using MSM enrolled in an ongoing treatment outcome study to complete computer-based measures of treatment process variables (e.g., self-efficacy, affect), substance use, and sexual risk taking over a 6-month follow-up. To date, 38 participants have completed the 6-month assessment (87 % follow-up rate), and all follow-up interviews will be completed in December of 2012. Most participants were HIV-positive (66 %), middle-aged (M=43, SD=9), Caucasian (77 %), and attended at least some college (78 %). Participants report significant increases in self-efficacy for managing triggers for methamphetamine use ($F(1, 37)=10.40, p<.01$) and positive affect ($F(1, 37)=5.30, p<.05$) as well as decreases in negative affect ($F(1, 37)=11.42, p<.01$). There was a clinically interesting, 37 % reduction in the frequency of methamphetamine use, but this trend was not statistically significant ($F(1, 37)=3.06, p=.09$). Participants reported significant decreases in total anal sex partners ($F(1, 37)=7.10, p=.01$; 6.9 (SD=12.4) to 2.4 (SD=3.8)) and anal sex partners while feeling the effects of methamphetamine ($F(1, 37)=5.30, p<.05$; 5.7 (SD=12.2) to 1.4 (SD=3.4)). Finally, participants reported a clinically interesting, 85 % reduction in number of unprotected, serodiscordant anal sex partners while feeling the effects of methamphetamine ($F(1, 36)=3.67, p=.06$; 2.4 (SD=6.7) to 0.4 (SD=1.1)). Harm reduction approaches to cognitive-behavioral substance abuse treatment can assist clients with pursuing self-identified goals and may be an effective method of addressing the co-occurring epidemics of methamphetamine use and HIV/AIDS among MSM.

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Symposium 09C

2041

THE IMPACT ON ANXIETY SYMPTOMS OF A CBT INTERVENTION TO TREAT MOOD DISORDERS AMONG PATIENTS WITH HIV IN TREATMENT FOR SUBSTANCE DEPENDENCE: A SECONDARY ANALYSIS

Conall O'Cleirigh, PhD,^{1,2} Jonathan Lerner, PhD,^{1,2} Janna Gordan, BA^{1,2} and Steven Safren, PhD^{1,2}¹Massachusetts General Hospital, Boston, MA and ²Harvard Medical School, Boston, MA.

Rates of current anxiety disorders among HIV+ individuals have been estimated as high as 43 %. Our recent work established that both depression and anxiety account for significant variation in health outcomes in HIV, over and above biological markers of disease. Previously we conducted a two-arm, RCT comparing CBT for adherence and depression (CBT-AD), to enhanced treatment as usual in triply comorbid (HIV, depression, IDU) individuals who were in also substance abuse treatment. Primary analysis outcomes showed efficacy for both depression and adherence.

For the current analysis, the acute and follow up intervention impact on anxiety was examined. Both conditions received a single session adherence intervention, and the intervention condition also received 9 sessions of individual CBT. Anxiety was assessed using the Beck Anxiety Inventory total score at baseline, post treatment, and 9 month follow up. The sample (N=89) was diverse with respect to gender (61 % male) and race (48 % Caucasian) and mean age was 47 (SD=7.2). Anxiety disorders were diagnosed at the following rates at baseline: 30 % met diagnostic criteria for PD, 18 % met for GAD and 14 % for SAD. Post treatment anxiety was regressed on CD4, baseline anxiety, and the randomization variable. The intervention was associated with a significant reduction in anxiety symptoms post treatment ($\beta=.28, t(62)=2.48, p<.05$), with a trend for this reduction to maintain at follow up ($\beta=.23; t(52)=1.88, p=.07$). These results suggest that CBT treatment specifically designed to treat mood disorders in patients with HIV can also produce clinically meaningful reductions in anxiety symptoms with some evidence that these treatment effects endure over time.

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Symposium 10

8:45 AM–10:15 AM

2042

MOVING THROUGH SPACE AND TIME: USING TECHNOLOGY TO IMPROVE "ON-THE-GROUND" HEALTH ASSESSMENT AND COMMUNICATION

Mary Ann Pentz, PhD,¹ Genevieve Dunton, PhD,¹ Michael Jerrett, PhD,² Donna Spruijt-Metz, PhD,¹ Thomas Valente, PhD¹ and Kevin Patrick, PhD³¹Institute for Health Promotion & Disease Prevention Research, Univ. of Southern California, Los Angeles, CA; ²School of Public Health, University of California, Berkeley, Berkeley, CA and ³Family & Preventive Medicine, University of California, San Diego, San Diego, CA.

This symposium addresses the overall conference theme of using technology to advance health, with four presentations that address prevention of obesity (through physical activity) and/or stress and environmental exposure (through texting and peer networks). The first describes the use of programmed cell phones to gather real-time assessment of stress and perceptions as they affect immediate physical activity in asthmatic children (Dunton). The second addresses the development and application of the Calfit Body Sensor to measure cardiovascular response and environmental exposures as adults move through space (Jerrett), a study linked to an obesity prevention trial on the built environment, Healthy PLACES. The third describes the development and application of a sensor designed to immediate physiological states related to anxiety and metabolic rate (Spruijt-Metz). The fourth presentation addresses how networks influence health decisions, and transmission of health communications through these networks using social media (Valente). The discussant (Kevin Patrick) will focus on the validity and reliability of these technologies to measure physical activity and other health behaviors, and their potential to create real-time feedback as a health promoting intervention strategy in both adults and youth.

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Symposium 10A

2043

A MOBILE HEALTH SYSTEM FOR PROMOTING PHYSICAL ACTIVITY IN HISPANIC YOUTH USING A REAL-TIME, ADAPTIVE INTERVENTION

Donna Spruijt-Metz, MFA, PhD,¹ Gillian O'Reilly, MS,¹ Jimi Huh, PhD,¹ Cheng Kun Wen, MPH,¹ Shrikanth Narayanan, PhD,¹ Ming Li, MS,¹ Sangwon Lee, MS,¹ Murali Annavaram, PhD¹ and Adar Emken, PhD²¹Preventive Medicine, University of Southern California, Los Angeles, CA and ²Marymount University, Arlington, VA.

Hispanic youth are at higher risk than non-Hispanic youth for obesity and co-morbidities that are associated with lack of physical activity (PA). The KNOWME mobile application system combines on-body sensors, personalized PA algorithms, a mobile phone application, and personalized text message-based communication in a tailored PA intervention for obese Hispanic youth.

Ten Hispanic youth (mean age=16.3±1.7 years, mean BMI percentile=97.2±4.4, 50 % female) wore KNOWME plus an Actigraph accelerometer for a 2.5 day pilot study. KNOWME sent time-stamped participant activity data to a secure website, which displayed minute-to-minute participant data (PA, sensor functioning) and refreshed every 10 minutes. If a participant was sedentary for greater than two hours, the KNOWME application automatically generated a 'MOVE!' message, and a research team member initiated a text conversation by sending a text message to prompt the participant to be active. Cross-lagged mixed regression analysis was completed using a subset of data (consisting of ten-minute time intervals from a mean of 10 hours of data per day) to determine if texts sent to participants were associated with an increase in physical activity in the following ten-minute period.

A mean of 75 texts were sent back and forth between the research team and the participants over the 2.5 days. We found that when text message prompts were sent to participants during a ten-minute period, accelerometer counts were 1066 counts higher ($p<0.0001$) and moderate activity measured by KNOWME was 3 seconds higher ($p<0.05$) in the subsequent ten-minute period compared to when texts were not sent.

These results show that real-time PA interventions using a mobile health application can successfully promote PA among obese Hispanic youth. Future mobile health interventions should focus on applying mobile technologies for long-term physical activity behavior change maintenance.

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Symposium 10B

2044

VALIDATING THE CALFIT SMARTPHONE SENSOR SYSTEM FOR PHYSICAL ACTIVITY RESEARCH

Michael Jerrett, PhD,¹ Edmund Seto, PhD,¹ Estela Almanza, MPH,¹ David Donaire, MS,² Genevieve Dunton, PhD,³ Audrey de Nazelle, PhD,² Mark Nieuwenhuijsen, PhD² and Mary Ann Pentz, PhD³

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Understanding how built environment factors may shape physical activity behavior is critical for targeting obesity prevention interventions. Recently researchers have focused on objectively measuring individual's location-time specific activity by asking study participants to wear multiple personal monitoring devices such as portable GPS and accelerometers. Multiple device use may be burdensome to participants and has presented data processing challenges to researchers. To address these issues our study aims to assess the validity and usability of CalFit, a low-cost sensor system integrated into a cell phone. CalFit continually logs GPS and accelerometry and it has already undergone numerous controlled environment validation studies. In the current study randomly selected participants from two geographically diverse settings, Spain and Southern California, are asked to wear an activity belt with CalFit, an Actigraph GT2M accelerometer, and a GlobalSat BT-335 GPS for seven days to evaluate CalFit in a free-living setting. All three devices provide measures every 30 seconds and data are matched by date and time. Preliminary analyses results from a sample of 100 adults (ages 18–60, 50 % female) in Barcelona, Spain suggest CalFit provides physical activity measures comparable to the Actigraph. Findings also suggest the CalFit GPS may provide more accurate location measures compared to the GlobalSat GPS. Currently the performance of CalFit is being assessed with a sample of 100 adults (ages 23–60, 60 % female) in Southern California. The main objective for this presentation is to present analyses results on validity, usability, and compliance of the CalFit application in both cohorts. With an integrated sensor system and the ubiquity of cell phones, CalFit may offer substantial advantages for large epidemiological studies.

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Symposium 10C

2045

NETWORKED NETWORKS: CHANGING HEALTH BEHAVIORS USING A SOCIALLY-NETWORKED GAME

Thomas Valente, PhD,¹ Hua Wang, PhD,² Donna Spruijt-Metz, PhD,¹ Maryalice Jordan-Marsh, PhD¹ and Marientina Gotsis, MFA¹

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We designed a socially-networked game called Wellness Partners to promote healthy lifestyle choices within naturally occurring social networks. Socially-networked interventions are potentially more effective than interventions developed from an individualistic perspective. We conducted a field experiment with randomized crossover design. Assessments occurred at baseline and 5–8 weeks after using each of two versions of the Wellness Partners program: The intervention condition, “Diary+Game; and the comparison one, “Diary only.” Some 54 university staff (egos) 25 to 44 years old and 88 of their family and friends (alters) 17 to 69 years old participated in the study in ego-network groups. Results showed that participants with supportive social networks who participated in the game increased their self-reported physical activity at a rate higher than those lacking such social networks. We conclude that socially-networked interventions can be effective when these networks are supportive.

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Symposium 10D

2046

USING CONTEXT-SENSITIVE ECOLOGICAL MOMENTARY ASSESSMENT TO INVESTIGATE THE EFFECTS OF THE ENVIRONMENT, STRESS, AND PHYSICAL ACTIVITY ON ASTHMA SYMPTOMS

Genevieve F. Dunton, PhD, MPH,¹ Rob McConnell, PhD,¹ Michael Jerrett, PhD³ and Stephen Intille, PhD²

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Understanding the effects of stress and physical activity on childhood asthma and obesity is an area that has received growing research attention. In large epidemiological studies, these types of exposures and outcomes are typically assessed annually. Although this measurement approach can capture change over longer periods of time, the effects of day-to-day and within-daily variation in key exposures is unknown. However, advances in smartphone phone technologies have created opportunities for real-time exposure assessment. This presentation will describe the development and testing of an ambulatory real-time data capture system using mobile phone technology to investigate within-daily covariation in air pollution exposure, physical activity, stress, and asthma symptoms in children. The project uses Context-Sensitive Ecological Momentary Assessment (CS-EMA), a data collection strategy in which information obtained from internal and external sensors will trigger real-time self-report questions on the mobile phone. Sensors will assess children's (1) physical activity using the phone's internal accelerometer and (2) rescue inhaler use (using external Bluetooth-enabled electronic metered dose inhalers). A custom smart phone application will integrate data from these sensors to trigger context-sensitive self-report questions about the child's current activity type, mood, perceived stress, perceived environment, and asthma symptoms. This system will be tested in 20 children (ages 10–18 years) with chronic asthma living in Southern California. Results describe technical problems identified to date; and rates of data loss, non-wear, and survey non-response. The current presentation will discuss the strengths and challenges of CS-EMA including potential for deployment in large scale epidemiological and intervention studies.

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Symposium 11

8:45 AM–10:15 AM

2047

USING TECHNOLOGY TO DELIVER INTERVENTIONS TO IMPROVE HEALTH: HOW ‘SOFT TOUCH’ IS ‘HIGH TECH’?

Adrienne O'Neil, BA Hons,^{1,2} Brian Oldenburg, BSc MPsych PhD,² C. Barr Taylor, MD PhD³ and Edwin B. Fisher, PhD⁴

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A range of technologies can now be used to deliver effective interventions to improve health outcomes by using cellphones, internet, email, ipads and other methods. With the rapid uptake of smartphones, there is increasing convergence of technologies and internet connectivity is becoming ubiquitous. These technology can also be linked to different kinds of measuring devices - e.g. glucose monitors or accelerometers - to enhance self-management by self-monitoring and by providing regular feedback to program participants and their health professionals. Tailored, web-based tools are also being used as delivery platforms for such programs in order to enable high fidelity of program delivery, high reach and program intensity. This symposium will explore the extent to which it is possible to bring these different technology components to deliver “person-centred” programs and how such programs can be developed to maximise program exposure and reach. Most importantly, we shall consider how different approaches might enable stronger outcomes in terms of Glasgow's REAIM framework. Speakers will present a) outcomes of a RCT of an automated conversational program for self-management of diabetes, b) findings from a RCT trial of a tele-health model of program delivery for patients experiencing depression after a heart attack, and c) the evaluation of a universal, targeted/selected and indicated eating disorder prevention/treatment program for college students. Discussion will consider the extent to which the use of such technologies can emulate key features of social and interpersonal influence that have been demonstrated to be so important with more traditional, face-to-face delivery of behavioural medicine interventions.

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Symposium 11A

2048

USING TELE-HEALTH TO IMPROVE THE MANAGEMENT OF DEPRESSION AND CORONARY HEART DISEASE (CHD): RESULTS OF A RANDOMISED, FEASIBILITY TRIAL ("MOOD-CARE")

Adrienne O'Neil, BA Hons,^{1,2} Bianca Chan, BSc MPH,³ Sheila Cyril, MBBS MPH,² C. Barr Taylor, MD⁴ and Brian Oldenburg, BSc MPsych PhD²

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One in five people suffer from depression after a cardiac event, yet this condition remains under-recognised and under-treated. We developed and evaluated a state-of-the-art, telephone-delivered mood and lifestyle management program (MOOD-CARE) for Acute Coronary Syndrome (ACS) patients with depression. We report on the efficacy of the intervention using data at 6 month follow up. Over 3000 newly diagnosed ACS patients admitted to six hospitals in Australia were screened for depression using the Patient Health Questionnaire (PHQ-9). Eligible participants were those with mild to moderately severe depression at discharge. Consenting participants (n=121) were randomly assigned to a Usual Care (UC) or intervention (MOOD-CARE) group, stratified by current DSM-IV diagnosis of depression versus subthreshold depression. MOOD-CARE included up to 10 telephone counselling sessions over 6 months, delivered by specially trained psychologists using Cognitive Behaviour Therapy (CBT) and CHD risk factor management. UC participants received a general health newsletter on a biennial basis. This presentation provides the full study results at 6 month follow up for primary outcomes of depression and quality of life. The development and delivery of this innovative model of care in the real-world setting will also be described, with barriers and enablers to implementation presented. This tele-health approach to the management of this medical co-morbidity not only facilitates treatment where patients often receive inadequate care, but overcomes some of the geographical barriers to the provision of care in this population. The possibility of expanding the reach of this type of program to include the use of web-based materials and smart phone applications will be discussed.

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Symposium 11B

2049

A UNIVERSAL, TARGETED, AND INDICATED PREVENTION/TREATMENT PROGRAM TO REDUCE EATING DISORDERS IN A COLLEGE POPULATION

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Excessive weight and shape concerns, unhealthy weight regulation practices and eating disorders (EDs) are very common on college campuses. Unfortunately, many campus counseling programs do not have the resources to provide therapy for the many cases in need. The purpose of this study was to develop and evaluate a universal, targeted/selected and indicated eating disorder prevention/treatment program that could be easily disseminated to college campuses. The program uses an on-line screen to link students to appropriate evidence-based programs: (1) StayingFit for low risk (LR) for ED (2) StudentBodies (SB) for high risk for but without ED (HR), (3) SB-indicated for symptomatic/subclinical (SubClin) ED or (4) a clinical referral.

The program was implemented at two large, private universities. (SB-I was not offered in these studies.) At a university offering voluntary screening in the context of cultural activities, 281 students voluntarily completed the screen of whom 40% were LR, 44% were HR and 18% were in need of clinical referral. Most of those in need of clinical referral sought treatment. At a university that offered the screen to all students in resident halls, 241 students completed the screen of whom 80% were LR, 19% were HR and 2% were screen positive for a clinical referral. This year the screen was offered to all incoming student in the latter university. Screening rates, rates of generated categories, and program use rates will be presented.

These studies demonstrate the feasibility of providing a universal, targeted/selected (high risk students), and indicated (subclinical/clinical) to all students in a defined population. Implementation of the program could improve the reach of treatment to the large number of students at risk of, or with subclinical eating disorders who wouldn't otherwise receive care.

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Symposium 11C

2050

AUS TLC DM: AN AUTOMATED TELEPHONE SYSTEM SUPPORTING TYPE 2 DIABETES SELF-MANAGEMENT

Brian Oldenburg, PhD,¹ Dominique Bird, MBBS,¹ Emily William, PhD,^{1,3} Marlien Varnfield, BDS¹ and Robert Friedman, MD²

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We have evaluated the health outcomes and cost-effectiveness of an automated interactive telephone system, Australian Diabetes Telephone Linked Care, AUS-TLC-DM, designed to support diabetes self-management, thereby improving diabetes control. Participants (n=120) were adults from Australia, aged 18–70, with type 2 diabetes at least 3 months prior to enrolment, with sub-optimal glycaemic control (Haemoglobin A1c (HbA1c) ≥ 7.5 %). Participants (75 males, mean age=57.4 years, SD=8.3) were randomized to a usual care arm (n=60) or to the intervention arm. For 6 months, participants in the latter group uploaded their past week's blood glucose levels to the TLC database via a mobile phone link prior to calling the system weekly to "converse" on one or more of the following topics: blood glucose monitoring, nutrition, physical activity and medication taking. Primary outcomes were HbA1c and health-related quality of life at 6- and 12-month follow-up. Secondary outcomes included self-care behaviours and measures of depression and social support. The average AUS-TLC-DM call duration was 11 (SD=1.0) minutes. Participants completed on average 76 % (SD=22) of their expected calls. Satisfaction with the system was high (88.7 % satisfied with the system). Baseline HbA1c ranged from 7.5 to 15.0 % (median=8.5 [7.9–9.3]). Over the 6-month intervention period, participation in the AUS-TLC-DM program improved glycaemic control (people receiving the intervention showed a geometric mean HbA1c decrease from 8.7 % to 7.9 %, compared with 8.9 % to 8.7 % in the usual care arm, significant group difference of p=0.002). It also improved scores on SF36 mental health scale (mean increase of 1.9 in the intervention arm, while the usual care arm decreased by 0.8, significant group difference of p=0.007). This study demonstrates high acceptability, feasibility and effective outcomes in terms of diabetes control and mental health. It holds great promise in terms of scalability.

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Thursday
March 21, 2013
11:45 AM–12:45 PM

Panel Discussion 01 11:45 AM–12:45 PM 2051

OPERATIONALIZING CULTURE FOR HEALTH BEHAVIOR AND SOCIAL SCIENCE RESEARCH

Marjorie Kagawa-Singer,¹ William Dressler,² Sheba George³ and Annie Fehrenbacher, MPH¹

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Culture is frequently cited as an important social determinant of health, but the lack of consensus on a scientific definition of culture has led to erroneous connotations of culture, race, and ethnicity. This misuse of the culture concept often results in further obfuscation by measuring it as a dichotomous, individual-level variable inferred from a demographic category, rather than as a multi-level, dynamic construct embedded in overlapping social systems. More accurate operationalization of culture would likely indicate better predictors of risk and protective factors that could account for a larger percentage of the variance in statistical modeling of health outcomes than demographic categories alone.

This panel discussion describes a research effort to improve the conceptualization, measurement, and translation of culture to ensure that findings from studies of culture and health are more scientifically valid, relevant to the communities involved, and generalizable across population groups in order to reduce health disparities. A multidisciplinary expert panel of 30 NIH-funded researchers convened a Delphi consensus-building exercise in April 2012 to meet four objectives: 1) scientifically define culture for application in health research, 2) identify the domains of culture that influence health behavior, 3) specify the pathways by which these domains influence health outcomes in diverse populations, and 4) propose a set of recommendations to guide researchers and funders in the conceptualization and measurement of culture. Four members of this expert panel will present the preliminary findings and discuss areas of agreement and divergence in the application of culture across disciplines.

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Panel Discussion 02 11:45 AM–12:45 PM 2052

NOVEL APPROACHES FOR INTEGRATING RELIGION AND SPIRITUALITY INTO HEALTH TREATMENT

Amy Wachholtz, PhD, MDiv,¹ Thomas Plante² and Douglas Oman³

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Religion and spirituality (R/S) are cultural phenomena that are increasingly recognized as playing a powerful role in how individuals engage in health maintenance and cope with illness. In addition to quality scholarly articles and books, the popular media has published stories of R/S and health on multiple occasions. The medical and psychological community has responded with numerous articles and scholarly activities that have moved research and practice forward. However, there are new developments in the area of R/S and health, yet few practitioners know of these novel empirically-supported methods of utilizing this potent resource to assist with the treatment or prevention of disease. This panel will explore three novel approaches to integrating R/S into health treatment. The first talk will review the research evidence for contemplative R/S interventions that extend beyond mindfulness techniques. This talk will identify how different forms of contemplative practices may impact health outcomes and how they can be integrated into health treatments. The second talk will examine how many R/S beliefs, practices and attitudes are socially learned, through processes called spiritual modeling. We will discuss spiritual modeling and its relevance to health, including empirical evidence for the role of spiritual modeling in both the treatment and prevention of health conditions, and how future interventions may employ spiritual modeling principles. The third talk will examine the critical role that R/S play in assessing and treating pain and suffering in palliative care. While R/S in palliative care is common, the empirical literature on how R/S care affects pain management and the active role of the spiritual care provider in symptom management is less known by many health care providers. In each of the talks, presenters will identify the empirical evidence for these techniques and explore future clinical and research directions for novel approaches to integrating R/S into health interventions.

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Panel Discussion 03 11:45 AM–12:45 PM 2053

A QUALITATIVE INVESTIGATION OF HOW TO USE TECHNOLOGY TO IMPROVE PARTICIPATION IN MOVE! ® AMONG VETERANS WITH MENTAL ILLNESS

Gina Evans-Hudnall,^{1,2} Lonique Pritchett,¹ Cora Platt^{1,2} and Jessica Breeland^{1,2}

¹Micheal E. DeBakey, Houston, TX and ²Baylor College of Medicine, Houston, TX.

Despite having access to health care, approximately 73 % of men and 68 % of women Veterans are overweight. Veterans have greater prevalence of obesity in comparison with the US general population. Some Veterans who participate in the VA-developed Managing Obesity for Veterans Everywhere (MOVE! ®) program show a 5 % reduction in weight. However, the high co-existence of anxiety (25 %) and depression (34 %) act as barriers to successful engagement in weight management activities among obese Veterans in MOVE! ®. The use of Information and Communication Technology (ICT; web based, mobile phone, multimedia, etc.) improves psychological symptom management in community based participants, but isn't widely applied among Veteran populations. This panel presentation will provide a description of the process and outcomes used to develop anxiety and depression treatment modules to augment the MOVE!® program using ICT. The first presenter will detail the current state of the science and gaps in the literature regarding: (1) incorporating anxiety and depression treatment into weight management interventions and (2) the effective use of ICT to improve psychological symptom management. The second presenter will detail the systematic qualitative methodology used to develop semi-structured interview questions and analyze the data outcomes. The third presenter will discuss the data on outcomes, placing a greater focus on the Veteran preferences regarding anxiety and depression treatment and desire for using multiple ICT methods to augment MOVE! ®. The last presenter will describe the lessons learned for recruiting and interviewing Veteran participants with complex physical and mental health conditions and detail future research.

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Panel Discussion 04 11:45 AM–12:45 PM 2054

SOCIAL POLICY PANEL ON CIGARETTE GRAPHIC WARNING LABELS

Annette Kaufman, PhD, MPH,¹ Linda D. Cameron,² CTP, Food and Drug Administration Representative,⁵ Ellen Peters,³ Alex Rothman⁴ and William Klein¹

¹Division of Cancer Control and Population Sciences, National Cancer Institute, Bethesda, MD; ²Psychology, University of California, Merced, Merced, CA; ³Psychology, The Ohio State University, Columbus, OH; ⁴Psychology, University of Minnesota, Minneapolis, MN and ⁵Center for Tobacco Products, Food and Drug Administration, Rockville, MD.

The 2009 Family Smoking Prevention and Tobacco Control Act gives the Food and Drug Administration (FDA) authority to require graphic cigarette warnings labels on cigarette packages and advertisements. FDA announced its selection of the new warnings and issued the final rule in June 2011. This rule has subsequently been challenged in court by the tobacco industry, arguing that the graphic warning labels are a violation of the First Amendment right to free speech and, in particular, that the graphic warning labels do not convey information to consumers but rather provoke an emotional response. Evidence from behavioral research suggests that graphic cigarette warning labels have the potential to influence numerous important affective and cognitive processes among smokers and non-smokers, and these processes are necessary for increasing recall, providing knowledge about health consequences of smoking, and changing behavior (e.g. preventing initiation and increasing cessation). Robust research is greatly needed in this area to help inform the use of graphic warning labels. This panel will explore the complex nature of how research in this area may inform policy. The panel will discuss particular research gaps and how to convey research findings in a practical and meaningful way. After briefly providing background on the U.S. graphic warning labels and current status of court decisions, panelists will present novel research findings in this domain. The panel discussion will focus on research needs, potential challenges, and future directions for the implementation of graphic cigarette warning labels in the U.S. This panel discussion is sponsored by the Social Psychology and Health Network, a special interest group within the Society for Personality and Social Psychology.

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Panel Discussion 05 11:45 AM–12:45 PM 2055

GRADUATE STUDENT RESEARCH PANEL DISCUSSION

Barbara Stetson, PhD,¹ Katherine Stewart,² Georita Frierson³ and Patricia Lee⁴

¹Psychological & Brain Sciences, University of Louisville, Louisville, KY; ²Fay W Bozeman College of Public Health, University of Arkansas for Medical Sciences, Little Rock, AR; ³Psychology, Howard University, Washington, DC and ⁴CA Office of Women's Health, Sacramento, CA.

The Graduate Student Research Panel is a regular feature of the ETCD Council's programming during the Annual Meeting. Faculty with experience in mentoring students in research activities, theses, and dissertations will provide advice and answer questions for attendees on a variety of topics. Although the structure of the panel is deliberately flexible to allow panel attendees' questions to determine the content, panelists will make opening remarks and be prepared to discuss several aspects of conducting research and developing a research program as a graduate student or post-doctoral trainees. These topics will include but are not limited to the following: choosing a research topic and mentor; designing a project of appropriate scope for your graduate program; working productively with your mentor and committee; managing writing time effectively; balancing coursework, research, and clinical demands; dealing with disagreements within the lab or with your mentor; understanding authorship issues; and identifying funding opportunities for pre- and post-doctoral training. Other topics as raised by panel attendees will also be discussed.

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Panel Discussion 06 11:45 AM–12:45 PM 2056

INTERVENTIONS WITH OLDER LATINOS: CHALLENGES AND A CULTURAL PARADIGM TO ADDRESS THE CHALLENGES

David X. Marquez, PhD,¹ Melicia C. Whitt-Glover² and Susan Aguiñaga¹

¹Kinesiology and Nutrition, Univ of Illinois at Chicago, Chicago, IL and ²Gramercy Research Group, Winston-Salem, NC.

By 2030 the Latino population aged 65 years and older will increase by 224 % compared to a 65 % increase for the non-Latino white (NLW) population. Physical activity (PA) can influence potential declines in health outcomes of older adults. Unfortunately, Latinos aged 65–74 are 46 % less likely to engage in leisure time PA. Interventions are being developed to improve the PA of older Latinos; however, there are many cultural and logistical challenges to conducting effective intervention research in this population. The African American Collaborative Obesity Research Network (AACORN) expanded obesity paradigm calls for a broader understanding of how culture and mindset, environmental factors, and historical and social factors influence weight-related behavior. The AACORN paradigm suggests that intervention strategies must take into account the entire base knowledge about life in African American communities, and frame interventions to incorporate those factors. We will describe the AACORN paradigm and how it has been previously used among African Americans. In the context of behavioral interventions with Latinos, we will discuss how the paradigm might be used to address challenges to conducting effective behavioral intervention research. Issues stemming from culture, age, and a culture x age interaction influence successful research. Cultural issues include placing family needs ahead of individual needs and travelling back to their home country for long periods of time. Age issues interfere with the research process (e.g., poor mobility, many doctor appointments), and an interaction of cultural and age issues are prevalent (e.g., many older Latinos have caregiving duties for spouses, children, and grandchildren; older Latinos are less likely to admit a loved one to a care facility). Framing these issues in the context of the AACORN paradigm will likely lead to a better understanding of challenges faced when working with older Latinos, and may help address and overcome challenges. Funded by Alzheimer's Association

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Panel Discussion 07 11:45 AM–12:45 PM 2057

QUANTIFIED SELF - HOW THIS LARGE MOVEMENT OF SELF TRACKERS CAN HELP ADVANCE BEHAVIORAL SCIENCE

Deborah F. Tate,¹ Ernesto Ramirez,² Bob Evans,³ Eric B. Hekler, PhD⁴ and Roger Magoulas⁵

¹University of North Carolina- Chapel Hill, Chapel Hill, NC; ²University of California - San Diego, San Diego, CA; ³Google, Mountain View, CA; ⁴School of Nutrition and Health Promotion, Arizona State University, Phoenix, AZ and ⁵O'Reilly Media Group, San Francisco, CA.

There is a rapidly growing movement of individuals exploring ways to improve and optimize their lives through "living by numbers." These individuals vary from hobbyists to central members of the technology community and explore using both self-created and other "off-the-shelf" solutions for self-tracking, self-experimentation, and self-discovery with the goal of understanding, optimizing, and improving a variety of health and behavioral outcomes such as physical activity, healthful eating, weight management, sleep, cardiovascular health, time management, and even relationships. Based on their interests, these individuals and their methods have the potential to provide valuable first-person insights, technical skills, and "big data" that could be valuable for behavioral medicine. This panel cover the following topics: a) a broad overview of the movement and discuss possible connections with SBM; b) an example self-tracking and self-experimentation system developed by a Quantified Selfer; c) discussion of the development of different, theoretically-based visualizations for physical activity data tracked directly from a smartphone, and d) a discussion about the future uses of "big data," developed as part of Quantified Self within behavioral science. This panel includes a leading member of the Quantified Self Movement who is also an SBM member, a member at Google who is involved in developing Quantified Self systems, a behavioral scientist involved in developing and testing these types of tools, and a member of the O'Reilly Media Group - a visionary organization within Silicon Valley focused on describing and understanding future trends in technology - who is an expert on data analytics, big data, and the quantified self movement. This panel will be moderated by a behavioral scientists with expertise in self-tracking systems.

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Panel Discussion 08 11:45 AM–12:45 PM 2058

WHAT DID YOU CHANGE YOUR MIND ABOUT?: SCIENCE AND THE ROLE OF KNOWLEDGE, REASON AND DATA

Michael Stefanek, PhD,¹ Frank Keefe,² Abby King³ and Karen Emmons⁴

¹Research, Indiana University, Bloomington, IN; ²Psychology and Neuroscience, Duke University, Durham, NC; ³SOM, Stanford, Stanford, CA and ⁴SPH, Harvard, Cambridge, MA.

In 1997, Edge (www.edge.org) was created-intended to present intellectuals across disciplines addressing a variety of far-reaching scientific and philosophical questions. As part of this endeavor, each year Edge presents a challenging question and requests submissions from leading thinkers. In 2008, the Edge question was: "When thinking changes your mind, that's philosophy; when God changes your mind, that's faith; When facts change your mind, that is science. What have you changed your mind about. Why?"

Science is or should be about challenging hypotheses, your own "beliefs" and listening to the data. Indeed, we should construct experiments designed not to support our pet hypotheses, but to challenge them.

I thought it would be a wonderful learning process for all of SBM, but particularly our junior behavioral scientists, to hear from 3 senior SBM leaders their response to this in an interactive lunch panel session.

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Thursday
March 21, 2013
2:00 PM–3:30 PM

Symposium 12 2:00 PM–3:30 PM **2059**

USING DATA ON MECHANISMS OF BEHAVIOR CHANGE TO DEVELOP OBESITY INTERVENTIONS: FINDINGS FROM THE OBESITY-RELATED BEHAVIORAL INTERVENTION TRIALS (ORBIT)

Susan M. Czajkowski, PhD,¹ Jerry L. Grenard, PhD,² April I. Carcone, PhD³ and Bonnie J. Spring, PhD⁴

¹Clinical Applications & Prevention Branch, Division of Cardiovascular Sciences, National Heart, Lung, & Blood Institute, National Institutes of Health, Bethesda, MD; ²School of Community and Global Health, Claremont Graduate University, Claremont, CA; ³Department of Pediatrics/Prevention Research, Wayne State University, Detroit, MI and ⁴Department of Preventive Medicine, Feinberg School of Medicine, Northwestern University, Chicago, IL.

Developing effective obesity interventions depends on translating knowledge about the fundamental bases of obesity-related behaviors into well-specified and efficacious interventions. In this symposium, members of the ORBIT RFA program, a NIH initiative aimed at developing new approaches to reducing obesity based on basic behavioral and social science findings, will highlight how elucidating the psychological, social and behavioral mechanisms underlying behavior and behavior change can inform development of interventions to prevent or treat obesity. The first speaker will present an overview of the rationale and goals of ORBIT and will describe a framework developed by ORBIT researchers to guide the development of health-related behavioral interventions. The second speaker will present data from a study that uses real-time measurement strategies to identify cues to habitual dietary behavior among adolescents. Data from this study are being used to guide development of a novel family intervention based on habit formation and neurocognition. The third speaker will present data from a project that addresses weight loss in obese African American youth. In Phase 1, a system for coding interventionist procedures to enhance intrinsic motivation was developed and the data analyzed with sequential methods. The results of this work informed Phase 2, a sequential randomized assignment trial to develop an adaptive treatment for obese African American adolescents. The discussant will comment on these findings and their use in developing obesity-related interventions as well as the needs, opportunities and challenges in conducting basic and translational behavioral science research.

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Symposium 12A **2060**

OBESITY RELATED BEHAVIORAL INTERVENTION TRIALS (ORBIT): TRANSLATING BASIC BEHAVIORAL & SOCIAL SCIENCES DISCOVERIES INTO INTERVENTIONS TO REDUCE OBESITY

Susan M. Czajkowski, PhD

Clinical Applications & Prevention Branch, Division of Cardiovascular Sciences, National Heart, Lung, & Blood Institute, National Institutes of Health, Bethesda, MD.

ORBIT is a trans-NIH cooperative agreement program in which interdisciplinary teams of basic and applied behavioral and social science researchers at seven research sites are developing, testing and refining novel interventions to translate findings from basic research on human behavior into more effective clinical, community, and population interventions to reduce obesity. Investigators at each site are conducting several types of studies, including formative and experimental research, proof-of-concept studies, and feasibility pilot studies, in order to identify and test promising new approaches to reducing obesity and improving obesity-related behaviors (e.g., diet, physical activity). The interventions being developed include a wide range of strategies aimed at promoting weight loss and/or preventing weight gain. They include creative new approaches to promote awareness of specific eating behaviors, decrease the desire for high-calorie foods, reduce stress-related eating, improve sleep patterns, increase motivation to adhere to weight loss strategies, and engage an individual's social networks and communities to encourage physical activity. The program's studies focus on diverse populations who are obese/overweight or at high risk of obesity, including Latino and African-American adults, African-American adolescents, low-income populations, pregnant women, and women beginning the menopausal transition. This talk will provide the background and rationale for ORBIT, discuss the program's goals, and describe the studies being conducted at each research site. In addition, a framework for guiding the development of health-related behavioral interventions based on basic behavioral science research, being developed by ORBIT Investigators, will be described.

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Symposium 12B

2061

CUES FOR CONSUMING SWEET DRINKS AND SNACKS AMONG ADOLESCENTS

Jerry L. Grenard, PhD,¹ Alan W. Stacy, PhD,¹ Saul Shiffman, PhD,² Amanda N. Baraldi, PhD,³ David P. MacKinnon, PhD,³ Ginger Lockhart, PhD,⁴ Yasemin Kisbu-Sakarya, MA,³ Sarah Boyle, MA,¹ Yuliyana Beleva, MA,¹ Carol Koprowski, PhD,⁵ Susan Ames, PhD¹ and Kim D. Reynolds, PhD¹

¹School of Community and Global Health, Claremont Graduate University, Claremont, CA; ²Department of Psychology, University of Pittsburgh, Pittsburgh, PA; ³Department of Psychology, Arizona State University, Tempe, AZ; ⁴Department of Psychology, Utah State University, Logan, UT and ⁵Institute for Health Promotion & Disease Prevention Research, University of Southern California, Los Angeles, CA.

Unhealthy dietary habits may be spontaneously invoked by cues that are strongly linked to maladaptive eating behaviors. In a study conducted as part of the NIH Obesity-Related Behavioral Intervention Trials RFA program, we used Ecological Momentary Assessment to identify physical, social, and intrapersonal cues that were associated with the consumption of sweetened beverages and sweet and salty snacks. Adolescents (n=158) were recruited from lower SES neighborhoods and provided with PDA devices to periodically answer brief surveys. The participants carried the device with them for 7 days and answered survey questions each time they ate or drank something, when randomly prompted by the PDA, and once each evening. The surveys asked about location, social environment, mood, stress, and food cravings. Drink, snack, and meal time items consumed were marked also. Results indicated that having a sweet drink or unhealthy snack was associated with school, friends, loneliness, boredom, food cravings, exercise, and food cues. Data from this study will be discussed in terms of its use in developing a new approach to the prevention of obesity in adolescents which targets dietary behavior (consumption of sweetened beverages, high fat snacks, high sugar snacks, & total energy intake) among 14 to 17 year-old children and their parents.

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Symposium 12C

2062

NEW METHODOLOGY TO PREDICT ADOLESCENT'S MOTIVATION TO CHANGE WEIGHT-RELATED BEHAVIORS DURING MOTIVATIONAL INTERVIEWING SESSIONS

April I. Carcone, PhD, Sylvie Naar-King, PhD, Kathryn Brogan, PhD and Deborah A. Ellis, PhD

Wayne State University, Detroit, MI.

Of the few interventions that have been developed for obese African American adolescent, none have produced sustainable weight loss. Studies suggest that low motivation to enact the behavioral lifestyle changes necessary for sustained weight loss is an important barrier. Phase 1 of ORBIT intervention development for obese African American adolescents examined the therapeutic exchanges between adolescents and weight loss counselors using Motivational Interviewing (MI), an evidence-based communication approach for increasing intrinsic motivation for behavior change. The goal was to elucidate the MI mechanisms responsible for behavior change in adolescents, i.e., what counselor behaviors promote intrinsic motivation (i.e., change talk and commitment language). The MY-SCOPE, a coding system adapted from existing MI coding systems for minority adolescents, was used to code 37 MI sessions. The data generated is a sequential chain of coded communication behavior that allows questions about causality to be examined in data that are traditionally examined using correlational approaches where causality can only be hypothesized. Transitional probabilities of therapist-client communication sequences at lag 1 were estimated with GESQ. The therapist behaviors most often leading to client change talk were asking open-ended questions to elicit intrinsic motivation (49 %) and statements emphasizing personal choice, responsibility or control over behavior change (38 %). These associations were significant, $X^2(48)=822.47, p<.01$. This methodological approach to understanding therapeutic communication yields important information about how MI works that is currently being used to inform Phase 2, a sequential multiple randomized assignment trial (SMART) where the specific provider behaviors identified in Phase 1 are implemented to enhance adolescent motivation for changing their behavior.

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Symposium 13 2:00 PM–3:30 PM 2063

MOBILE AND WEB-BASED SERIOUS GAMES FOR BEHAVIOR CHANGE IN CHILD AND ADOLESCENT POPULATIONS

Bernard F. Fuemmeler, PhD, MPH¹ and Wendy Nilsen, PhD²¹Community & Family Medicine and Psychology and Neuroscience, Duke University Health System, Durham, NC and ²National Institutes of Health, Bethesda, MD.

“Serious games” are games played with a purpose rather than for entertainment only. The use of serious games and game design elements to motivate and promote health behavior has been increasing, although little is known about their acceptability and effectiveness. These innovative approaches may be particularly useful among children and adolescents, since nearly all youth play video games. Methods for incorporating serious games in health promotion interventions and evaluation of such approaches require continued study. The purpose of this symposium will be to 1) identify practical and actionable ways of using serious games and game elements in both mobile and web-based platforms for behavior change, 2) provide recent examples of the use of serious games for behavior change including the effects on behavioral outcomes, and 3) provide a vision for the future of game-based health promotion both for patients and providers. Dr. Delamater will describe development and preliminary outcomes of FITtastic Health, a highly interactive web-based platform that incorporates gaming elements to help overweight children modify their diet and physical activity behaviors. Dr. Fuemmeler will describe the development and outcomes data from a screening trial of Mila Blooms, a mobile phone app for promoting health diet and physical activity among cancer survivors that incorporates game elements to enhance self-monitoring. Dr. Spruijt-Metz will report on the development of Virtual Sprouts, a mobile-based game to promote healthy food choices and decrease obesity among minority youth. A final presentation by Dr. Nilsen will highlight the future directions and next steps necessary to advance the science of serious gaming for behavior change.

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Symposium 13A 2064

MILA CELESTIAL BLOOM: AN APP FOR PROMOTING HEALTH AMONG ADOLESCENTS CANCER SURVIVORS

Bernard F. Fuemmeler, PhD, MPH,¹ Truls Ostbye, MD, PhD, MPH, MBA,¹ Julie Blatt, MD,³ Landon Cox, PhD² and Ed Holzwarth, BS⁴¹Community & Family Medicine, Duke University Medical Center, Durham, NC; ²Computer Science, Duke University, Durham, NC; ³Pediatrics, University of North Carolina, Chapel Hill, NC and ⁴Little Green Software, Durham, NC.

Pediatric survivors of Acute Lymphoblastic Leukemia (ALL) are at risk for a number of long-term health problems including obesity. It is challenging to deliver interventions in this population due to their geographic dispersion and because they attend fewer clinic visits during adolescence. We present the development of and pilot data from a novel smartphone app, influenced by aspects of social-cognitive and game design theories and aimed at augmenting health coaching among ALL survivors.

The secure, Android-based app, allows self-monitoring of health behavior and individualized coaching while incorporating social networking aspects via engagement in cooperative gameplay. The initial app concept, along with planned features, was presented to a focus group comprised of teen ALL survivors and their parents (n=6). Participants were drawn to the gameification features (ability to earn virtual rewards for engaging in real-world physical activities or making healthier dietary choices), the social networking components, and system reminders encouraging them stay on target and engaged. Throughout the development, new concepts were presented to focus groups. Themes emerging during our discussions were incorporated into the design, resulting in the addition of an immersive “back-story” and more cooperative game play. Game design and mechanics will be presented.

Pilot data is being collected and results from our beta (n=5) and pilot screening trial (anticipated n=20) will be presented. Primary outcomes include changes in accelerometer measured physical activity and self-report of dietary intake. Secondary outcomes include self-efficacy, perceived social support, and quality of life.

Apps for self-monitoring that include game features may be needed to enhance engagement in adolescent populations.

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Symposium 13B 2065

FIT-ASTIC HEALTH: WEB-BASED FAMILY INTERVENTION FOR OVERWEIGHT CHILDREN

Alan Delamater, PhD,¹ Anna Maria Patino-Fernandez, PhD,¹ Sheah Rarback, MS,¹ Mary Buller, MS,² Andrea Dunn, PhD,² Rob Martin, BA² and Herbert Severson, PhD³¹Pediatrics, Univ Miami, Miami, FL; ²Klein Buendel, Denver, CO and ³Oregon Research Institute, Eugene, OR.

Most overweight (OW) children do not receive evidence-based family interventions for weight control. Therefore, a key issue is how to provide effective treatment to the population of OW children. We are developing a system in which pediatricians identify 8–12 year-old OW children and refer families to an internet program designed to promote healthful diet and physical activity habits. This presentation describes the web-based program, methods for its evaluation, and preliminary data on feasibility. The web site is accessed by families over time and the system generates reports on usage to be sent electronically to pediatricians. The program, FIT-astic Health (Families Interacting Together), focuses on five primary goals: eating and drinking less sugar and fat; eating more fruits & vegetables, and whole grains; and having more physical activity and less sedentary behavior. Each goal is introduced with a video model that teaches the main concepts, and there are four interactive and engaging games for each of the five goals that children play to reinforce learning. Children select specific goals related to the topics they want to work on, and track their progress weekly. Over time, with success at various goals, each of them become healthy habits. Children earn points for engaging in the web program, including log-ins, watching videos, playing games, choosing goals, and tracking progress; points accumulate to reach defined milestones indicating progress and specific rewards provided by parents. Parents access the program to monitor children's goals and are provided prompts to support them. Toolboxes for parents and children provide additional information and behavioral strategies related to each goal. During program development, a panel of OW children and their parents reviewed content and interface and provided feedback. A randomized controlled trial will be conducted in four community-based primary care pediatric offices beginning in early 2013 to test the effectiveness of FIT-astic Health over six months.

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Symposium 13C 2066

VIRTUAL SPROUTS: DEVELOPING A MOBILE GARDENING GAME TO PREVENT AND TREAT OBESITY

Donna Spruijt-Metz, MFA, PhD,¹ Mariantina Gotsis, MFA,¹ H. Chad Lane, PhD,¹ Giselle Ragusa, PhD,¹ Jamie Davis, RD, PhD,² Gillian O'Reilly, MS,¹ Yasaman Hashemian, BA,¹ David Turpin, BA,¹ Nick Farmer, BA,¹ Jie Ric Zhang, MS¹ and Daniel Auerbach, PhD¹¹University of Southern California, Los Angeles, CA and ²University of Texas at Austin, Austin, TX.

Our school gardening program, LA Sprouts, significantly reduced obesity in overweight Latino 4th-5th graders. However, we can't bring gardens to everyone. Therefore, we are developing Virtual Sprouts, a theory-based mobile, multiplatform suite of games to prevent & treat obesity in minority youth and their families. Using any time, anywhere technology (mobile/internet) to deliver engaging gardening games, Virtual Sprouts aims to improve health & nutrition related knowledge and promote healthy food choices in low income, minority populations in Los Angeles, i.e. children ages 8 to 11, their parents, family members, teachers & community, through meaningful play. In their virtual garden, children and families will learn to select what crops to plant, plant their own garden, watch it grow, tend the crops, harvest them, & prepare them as part of a healthy diet.

In phase one, we are using iterative playtesting methodologies to determine optimal game mechanics, and community based participatory research to ensure that content and form are optimized to fit community and research needs. We have conducted early phase playtesting with 10 parents, 10 children, & 2 teachers, held 2 retreats with our advisory committee (master gardeners, teachers, obesity/nutrition experts, clinical partners), and conducted a technology survey in 3 inner city schools. Advisory group members participated in idea building sessions to inform choice of characters for the virtual pedagogical agent & main content areas. The technology survey influenced choice of platform, and moved us away from computer-based games towards tablet and phone. This presentation will detail findings from the technology use survey, methods used for game development, the interim results from the playtesting and community sessions, and how these are used to inform game mechanics and development.

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Symposium 14 2:00 PM–3:30 PM 2067

INTEGRATION AND INNOVATION FOR BEHAVIORAL HEALTH INTERVENTIONS IN PRIMARY CARE

Jennifer K. Carroll, MD,¹ Frank deGruy, MD MSFM,² Amireh Ghorob, MPH RYT,³ Larry Green, MD,² Kurt Stange, MD PhD⁴ and Sara J. Knight, PhD⁵

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This symposium will address research and clinical innovations for integration of behavioral health interventions in primary care. We define behavioral health interventions as those which aim to improve diet, physical activity, chronic disease care, and mental health treatment. The symposium aims to stimulate thought and discussion about the following questions:

- What study designs, methodologies, or approaches to analyses represent innovations?
- What are the key elements of innovative behavioral health programs that have been successfully implemented in primary care health systems?
- What elements of integration are vital?
- What financial and/or reimbursement structure(s) are employed in successful integration programs?
- To what extent does the impact of integrated care programs on outcomes vary for different populations? Who is most likely to benefit?
- To what extent do successful integration programs make use of health information technology (IT)?

This symposium will be highly interactive. Using an appreciative inquiry approach, attendees will discuss their experiences with innovation and integration of behavioral health in primary care in small groups around specific topic areas. The expert panelists will then react and respond to the issues brought up in the small group discussions. Finally, we will wrap up by providing concrete examples and resources and encourage attendees to articulate their next steps for innovation and integration in their own settings.

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Symposium 14A 2068

INTEGRATION AND INNOVATION FOR BEHAVIORAL HEALTH INTERVENTIONS IN PRIMARY CARE: ROLE OF HEALTH COACHES, PRACTICE REDESIGN, AND TEAM-BASED CARE

Jennifer K. Carroll, MD,¹ Frank deGruy, MD MSFM,² Amireh Ghorob, MPH RYT,³ Larry Green, MD² and Kurt Stange, MD PhD⁴

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Team-based care is an essential building block of high performing primary care. Utilizing a team, although challenging, is the ideal way to provide continuity, access and comprehensive behavioral health that includes health coaching, panel management and complex care management. Ms. Ghorob is available to describe the building blocks of high performing practices, and share how these practices are able to integrate behavioral health professionals, utilizing a team-based approach, to provide population-based patient care. Opportunities for discussion with Ms. Ghorob include – The Treat to Target Hypertension Health Coaching Study (2008–2010), the Peers for Progress Peer-Led Diabetes Coaching Study (2009–2011), the Health Coaching in Primary Care Study (2010–2013) – conducted by the Center for Excellence in Primary Care that explore and measure effectiveness of new ways to engage patients in behavioral health interventions. Based on attendees preferences and interest, she can describe examples of innovative team-based interventions to improve behavioral health outcomes, based on her work as a practice coach mentoring clinical practices in practice transformation.

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Symposium 14B 2069

INTEGRATION AND INNOVATION FOR BEHAVIORAL HEALTH INTERVENTIONS IN PRIMARY CARE: COLLABORATIVE CARE FOR PEOPLE WITH SERIOUS AND PERSISTENT MENTAL ILLNESSES

Jennifer K. Carroll, MD,¹ Frank deGruy, MD MSFM,² Amireh Ghorob, MPH RYT,³ Larry Green, MD² and Kurt Stange, MD PhD⁴

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The integration of primary care and behavioral health is rewarding and challenging, particularly for people with serious and persistent mental illnesses (SPMI), such as schizophrenia, bipolar disorder and major depression. Based on attendees preferences and interest, Dr. deGruy will share his expertise with developing partnerships and their evolution towards overcoming organizational, operational, and financial barriers to comprehensive, integrated, whole-person care. Dr. deGruy is available to share his experiences with an academic-community partnership that was established in Colorado in 2008 to create a sustainable integrated care system for individuals with SPML. The resulting collaborative program is called “Promoting Resources for Integrated Care and Recovery” (PRICARe). PRICARe’s mission is to “develop, evaluate, and sustain a program through which persons with serious mental illness can access integrated primary care and behavioral health services in locations that are familiar and acceptable to them - the community mental health clinics where they receive care for their psychiatric disorders.”

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Symposium 14C 2070

INTEGRATION AND INNOVATION FOR BEHAVIORAL HEALTH INTERVENTIONS IN PRIMARY CARE: MEASUREMENT, IMPLEMENTATION ISSUES, AND THE PATIENT CENTERED MEDICAL HOME

Jennifer K. Carroll, MD,¹ Frank deGruy, MD MSFM,² Amireh Ghorob, MPH RYT,³ Larry Green, MD² and Kurt Stange, MD PhD⁴

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Physical inactivity, unhealthy diets and other risky health behaviors are common among primary care patients. However, there is insufficient evidence to recommend brief interventions to address these in primary care. Based on audience interest, Dr. Green will share his lessons learned as director for the Prescription for Health Study, a national program testing the feasibility of implementing innovative strategies for improving the reach and practicality of behavior change counseling in primary care practice. Opportunities for discussion with Dr. Green include the implementation and instrument challenges to using a common set of shared measures to assess health behavior change strategies for multiple health behaviors in routine primary care practice. Dr. Green has experience with the development of the Patient Centered Medical Home initiative, and its potential to achieve key policy objectives of improved quality, reduction of disparities, and affordability of health care.

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Symposium 14D

2071

INTEGRATION AND INNOVATION FOR BEHAVIORAL HEALTH INTERVENTIONS IN PRIMARY CARE: THE ROLE OF MULTI-LEVEL INTERVENTIONS

Jennifer K. Carroll, MD,¹ Frank deGruy, MD MSFM,² Amireh Ghorob, MPH RYT,³ Larry Green, MD² and Kurt Stange, MD PhD⁴

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Dr. Stange has expertise with multi-level interventions (MLIs) and their potential to improve health behaviors in primary care. Based on attendees interest, he will share knowledge about the effects of multilevel interventions (MLIs). Dr. Stange is available to describe how the idea of multilevel influences has been applied and reported in the literature and identify opportunities for MLIs to improve health behaviors and health care in primary care environments. Opportunities for discussion with Dr. Stange also include 1) dynamic, adaptive emergent interventions and research designs that evolve over time by attending to contextual factors and interactions across levels; 2) analyses that include simulation modeling, or multi-method approaches that integrate quantitative and qualitative methods; and 3) translation and intervention approaches that locally reinvent MLIs in different contexts.

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Symposium 15

2:00 PM–3:30 PM

2072

SOCIAL RELATIONSHIPS, GENDER AND PSYCHOSOCIAL ADJUSTMENT TO HEMATOLOGICAL CANCERS AND HEMATOPOIETIC CELL TRANSPLANTS: FRAMING NEW QUESTIONS

Tracey Revenson, PhD³ and Sarah Thilges, MS^{1,2}

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Patients with hematological (blood) cancer (HM) and those who undergo hematopoietic stem cell transplants (HSCT) are presented with unique psychosocial stressors. Although much has been studied about the role of distress within cancer diagnosis, treatment, and recovery, less has focused on the distinct cognitive, social and developmental impact of hematological cancer and its treatment on both patient and partner. This information is critical for future research and the design of age-appropriate and family-based interventions.

This symposium will focus on how social relationships, neuropsychological functioning, and emotional distress affect HM and HSCT patients and their partners. Each study in the symposium offers a unique perspective on how expectations afforded by age, treatment completion, and marital role may be affected by and, in turn, affect adjustment to HM and HSCT. The first presentation demonstrates that it may be necessary to assess longitudinal gender and role effects among differences in well-being and self-efficacy among HSCT patients and their partners to understand adjustment. The second examines cognitive impairments related to HSCT and how this may differ by gender, psychological distress and sleep disruption. The final study seeks to understand gender differences in emotional disclosure and fulfillment of social needs among young adult HM survivors - an understudied population.

The discussant, Annette Stanton, Ph.D., is an expert in quality of life issues among cancer patients. She will emphasize future directions for behavioral medicine within the field of hematological cancer and hematopoietic cell transplants. By focusing on age, gender, social role, well-being and change over the course of the illness and the individual's life trajectory, the symposium will pose unique questions about the adjustment process. Research and clinical questions will be posed about the future direction of gender differences in individualized oncology interventions

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Symposium 15A

2073

LONGITUDINAL GENDER DIFFERENCES OF DISTRESS AND SELF-EFFICACY AMONG HEMATOPOIETIC STEM CELL TRANSPLANT PATIENTS AND THEIR SPOUSAL CAREGIVERS

Sarah Thilges, MS,^{1,2} Lyndsey Wallace, MA,¹ Patricia Mumby, PhD¹ and Patrick Stiff, MD¹

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Background: Distress and cancer coping efficacy (CCE) among hematopoietic stem cell transplant (HSCT) patients and spousal caregivers (SpCG) may be impacted by demographics and adjustment to disease. Previous research has also revealed gender differences in distress among SCT patients and SpCG.

Purpose: The current study examines longitudinal gender differences in predictors of distress and CCE among HSCT patients and SpCG. Patients and SpCGs were administered demographics, CBI, BSI and PAIS at Baseline, prior to transplant (n=144), and 1 and 6 months (n=77) as part of a larger study of psychosocial adjustment during HSCT. Regressions were performed at each time point to predict distress and CCE for male and female patients and SpCGs.

Results: Significant results (p<.05) include: at baseline, male and female patients' CCE and distress were inversely related and for male patients, Healthcare confidence predicted higher CCE. However, female SpCGs' CCE was impacted by higher income, employment and better adjustment to vocational changes whereas male SpCGs' CCE was impacted by adjustment to social changes. At 6 months, psychological adjustment predicted distress for male and female patients; female SpCGs were distressed by struggles with vocational environment and male SpCGs' distress was negatively predicted by psychological adjustment and confidence in Healthcare.

Conclusion: The findings demonstrate gender differences among predictors of distress and CCE between HSCT patients and SpCGs. Although both male and female patients are impacted by psychological adjustment to disease; differences between male and female SpCGs were found, such that well-being among female SpCGs' is more likely to be related to finances while male SpCGs' are impacted by Healthcare confidence. Such differences suggest tailored interventions for patients and SpCG should account for gender differences. Future research should examine the role of relationship satisfaction during HSCT treatment and survivorship

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Symposium 15B

2074

PSYCHOSOCIAL ISSUES UNIQUE TO YOUNG WOMEN AND MEN WITH HEMATOLOGICAL CANCER

Tracey A. Revenson, PhD,¹ Lisa Rubin, PhD,² Ian Pervil, MA,¹ Amanda Marin-Chollom, MA¹ and Kailey Roberts, MA²

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A cancer diagnosis that is "off-time" in the normative life cycle is likely to be more stressful than one that is "on-time" (Neugarten, 1979). With off-time events, few same-age peers share their cancer experience, yet patients need both practical help and emotional support, both of which are related to increased adjustment to illness (Stanton & Revenson, 2011). Although younger people with cancer have been shown to have poorer adjustment (e.g., Komblith et al., 2007), we do not know whether unique age-related stressors create this discrepancy. Moreover, we know little about the role of gender. Using mixed methods data, we identify the unique stressors of young adult cancer survivors with a hematological malignancy (HM), an understudied population, in an effort to understand factors contributing to quality of life. Specifically, we focus on two broad domains salient to this age group: 1) obtaining adequate support from friends and family; and 2) developing and maintaining intimate relationships, including disclosure about the illness, meeting sexual needs, and impact on body image and sexuality. We will examine these domains with respect to gender. Data were obtained from 40 HM patients aged 20–49 who participated in a 1-hour interview and completed standard psychosocial measures of adjustment. Interview data were coded using the "constant comparative" method to denote patterns and identify themes within and across cases. When and how to disclose to family and friends was a salient issue to all, but was particularly problematic for men in their 20s. Almost all patients felt strongly supported by their families, particularly during the initial stages of treatment, but sometimes pushed away friends who tried to help. Discussing sexuality concerns was a stressor at all ages. Body image concerns were vocalized more by women, but were salient to men as well. These data suggest that younger people with off-time cancers have unique psychosocial needs that should be addressed in research and clinical practice.

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Symposium 15C

2075

GENDER DIFFERENCES IN NEUROPSYCHOLOGICAL AND EMOTIONAL FUNCTIONING IN HEMATOPOIETIC STEM CELL TRANSPLANT (HSCT) SURVIVORS AND THEIR SPOUSES

Bethany Gourley, BA,¹ Flora Hoodin, PhD¹ and Renee Lajiness-O'Neill, PhD²¹Psychology, Eastern Michigan University, Ypsilanti, MI and ²University of Michigan, Ann Arbor, MI.

A relatively small body of literature documents neurocognitive changes post-HSCT, some of which remit within the first year. However, even 5 years post-HSCT, 40 % of survivors have continuing deficits. This report compares neuropsychological functioning of HSCT survivors and their spouses, thereby controlling for demographics, and the emotional toll of HSCT. Seventeen dyads (11 female and 6 male survivors and spouses), completed a battery assessing cognitive difficulty frequently experienced by HSCT survivors (verbal memory and learning, attention, processing speed/motor speed, and executive function), as well as brief screens of depression, anxiety, and sleep. Findings partially supported our hypothesis that survivors' neuropsychological functioning would be worse than spouses' whereas spouses would be more emotionally distressed than survivors. On measures of verbal memory, attention, processing speed and executive function, survivors indeed performed more poorly than spouses when gender, depression, and sleep were accounted for in regression analyses. Further, male survivors performed worse than female spouses and survivors in verbal memory, executive function, and motor dexterity/speed of processing. Male survivors were more depressed and anxious than female survivors; male spouses were more depressed than female spouses. On the group level, survivors and spouses did not differ in depression and anxiety; notably, 12 % of the entire sample met criteria for clinically significant depression, 8.8 % for anxiety. Survivors' sleep was significantly more disrupted than spouses', and female survivors slept more poorly than male survivors. Contrary to our predictions that group membership alone would account for most differences, overall, gender played a substantial role in post-HSCT functioning of both spouses and survivors. Our findings underscore a need for future research into the differential impact of HSCT on these dyads, as well as into their gender-specific psycho-social needs.

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Symposium 16

2:00 PM–3:30 PM

2076

TWEET UP, MEET UP, AND LIKE IT: LEVERAGING ONLINE SOCIAL NETWORKS FOR WEIGHT LOSS

Sherry Pagoto, PhD,¹ Brie Turner-McGrievy, PhD, MS, RD,² Kristin Schneider, PhD,³ Kevin Hwang, MD, MPH⁴ and James Fowler, PhD⁵¹Medicine, University of Massachusetts Medical School, Worcester, MA; ²University of South Carolina, Columbia, SC; ³Rosalind Franklin University, North Chicago, IL; ⁴University of Texas Houston, Houston, TX and ⁵University of California San Diego, La Jolla, CA.

Social networks have a powerful influence on both healthy and unhealthy behavior. Although weight loss trials have shown that social support from family and friends is associated with better outcomes, a large proportion of people attempting to lose weight report very low levels of social support for weight loss. Online social networks may provide an opportunity to garner social support outside of in-person family and friends. Online social networks provide an opportunity to interact while overcoming geographic and logistic barriers. This symposium includes 4 studies that explore the value of Twitter, Facebook, MeetUp.com, and weight loss online for health behavior change. Dr. Brie Turner-McGrievy will present data on predictors of engagement in Twitter and Facebook in the context of a weight loss intervention. Dr. Sherry Pagoto will present data comparing the degree and quality of social support received from Twitter, Facebook, online weight loss networks, family, and friends among individuals who are active users of these online social networks. Dr. Kristin Schneider will present data on the use of Meetup.com to connect dog owners in one community to increase dog walking. Finally, Dr. Kevin Hwang will present data on the feasibility and potential impact of narratives and peer support for promoting colorectal cancer screening in an online weight loss community. Themes threaded throughout these presentations will be 1) enhancing engagement in online social networking, 2) uses including social support and message dissemination, and 3) association with health outcomes. Dr. James Fowler, author of the book *Connected: The Surprising Power of Social Networks and How They Shape Our Lives*, will be discussant.

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Symposium 16A

2077

LET'S NETWORK: ONLINE SOCIAL NETWORKING AS PART OF BEHAVIORAL WEIGHT LOSS INTERVENTIONS

Gabrielle Turner-McGrievy, PhD, MS, RD

Health Promotion, Education, and Behavior, University of South Carolina, Columbia, SC.

Few studies have examined the role online social networking sites may play with helping people achieve a healthy weight. This presentation will describe 2 different online social networks as they relate to weight loss. Study 1 was a 6-mo weight loss intervention with overweight (N=96, BMI 32.6 kg/m²) adults randomized to Podcast-only (2 podcasts/wk) or enhanced Mobile (2 podcasts/wk+daily Twitter interaction+mobile diet app) groups. Relationship of Twitter with weight loss and what predicted engagement was explored. Adjusting for demographics, analyses explored the relationship of Twitter posting with weight loss and the effect of being a Twitter user prior to study entry (n=16), actively engaging with Twitter within the first 3 wks of the study (n=13, regularly posting), and initial weight loss (first 3 wks of the study) had on overall Twitter engagement (total posts). Twitter posts significantly predicted % weight loss at 6 months, such that every 10 posts to Twitter corresponded with approximately -0.5 % weight loss ($\beta=-.48$, $t(46)=-4.9$, $p<0.001$). Neither initial engagement with Twitter nor baseline Twitter use ($p's>0.05$) predicted use of Twitter over the 6-month study. Initial reported weight loss, however, was predictive of Twitter engagement ($\beta=-18.9$, $t(31)=-2.9$, $p<0.01$). Study 2 is a 6-mo, remotely delivered randomized pilot trial among women with polycystic ovary syndrome. Participants (n=17, BMI 40.4 kg/m²) were randomized to follow a vegan or low calorie diet and received a behavioral weight loss intervention delivered via weekly lessons, tailored e-mails, and Facebook. Participation in Facebook was optional (71 %; n=12 joined). There was no difference in demographic characteristics between those who signed up for Facebook and those who did not. This 6-mo study will be completed in January 2013 and relationship of Facebook engagement and weight loss will also be presented. Overall, participation in the provided online social networks of both Studies 1 and 2 were low so ideas for ways to make social networking more engaging will also be discussed.

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Symposium 16B

2078

SOCIAL SUPPORT FOR WEIGHT LOSS: ONLINE FRIENDS VERSUS REAL FRIENDS

Sherry Pagoto, PhD,¹ Effie Olendzki, MS¹ and Kristin Schneider, PhD²¹Medicine, University of Massachusetts Medical School, Worcester, MA and ²Rosalind Franklin University, North Chicago, IL.

Social networks have a powerful influence on health behavior. Although weight loss trials have shown that social support is associated with better outcomes, many participants report very low levels of social support. Some users of online social networks use them to solicit support for their weight loss attempts, however it is unclear what type of online social network is most helpful for this purpose. Facebook is used to connect with friends and family, while Twitter is typically used to connect with people based on shared interests. Online social networks for weight loss allow people to connect specifically on weight loss. The purpose of the present study was to compare social support received from Twitter, Facebook, online weight loss networks, family, and friends among individuals who are active users of these online social networks. 90 participants were recruited from Twitter. Only those with Facebook accounts (n=79) were included. Participants reported to feel significantly more comfortable discussing weight on Twitter relative to Facebook ($p=.00$), family ($p=.00$), friends ($p=.00$), and weight loss networks ($p=.03$). Participants also reported receiving significantly more information from Twitter relative to Facebook ($p=.00$), online weight loss networks ($p=.01$), family ($p=.00$) and friends ($p=.00$), and more support from both Twitter and weight loss networks than the other 3 groups ($p's<.01$). Participants rated their Twitter and online weight loss network friends as significantly less judgmental than Facebook, family and friends ($p's<.01$). They also reported feeling the least embarrassed about their weight struggles when it comes to their Twitter and online weight loss network friends relative to Facebook, family, and friends ($p's<.01$). Findings revealed that online social networks that allow people to connect based on common interests may be better sources of social support than Facebook, perhaps because Facebook connects people to family and friends, who were rated lower in social support and higher as sources of judgment and embarrassment.

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Symposium 16C

2079

USE OF AN ONLINE SOCIAL NETWORK FOR INCREASING WALKING IN DOG OWNERS: STRATEGIES FOR SUCCESS

Kristin Schneider,¹ Deirdra Murphy, DPT,² Cynthia Ferrara, PhD,² Clara Savage, EdD,³ Jessica Oleski, MA,⁴ Emily Panza, BA⁵ and Stephenie Lemon, PhD⁴¹Psychology, Rosalind Franklin University, North Chicago, IL; ²University of Massachusetts-Lowell, Lowell, MA; ³Common Pathways, Worcester, MA; ⁴University of Massachusetts Medical School, Worcester, MA and ⁵Rutgers University, New Brunswick, NJ.

Existing online social networks may provide an inexpensive means of intervening on health behaviors, but little research exists on how to do so. We will present our experience using an existing online social network (Meetup©) to increase physical activity in sedentary adults. Meetup provides the ability to create online social networks around shared interests. To our knowledge, Meetup groups have not been tested as a vehicle for health behavior change, despite their low cost and widespread access. We created Meetup groups that connected sedentary dog owners in two Massachusetts communities. Study participants were encouraged to walk their dogs through a variety of Meetup activities, including neighborhood walks, education on the benefits of walking, dog walking strategies and dog training events. These Meetup activities provided a 'stealth' intervention to promote physical activity. In a group, randomized control trial, 8 neighborhoods were randomized to the Meetup group or a monthly email control condition (n=102). We will discuss: 1) recruitment of online social network naïve participants (24 % of the sample; 93 % of the sample who had not used Meetup) and older adults (age range=26–80; 55.5 % who were >50-years-old); 2) facilitators (e.g., strong commitment to their dog) and challenges (e.g., presence of an existing dog owner group in one community) to implementation; 3) successful (e.g. weekly newsletters with dog tips; neighborhood dog walks) and less successful (e.g., posting dog-related stories) strategies for maintaining Meetup participation as measured using Google analytics; 4) intervention sustainability (e.g., identifying and approaching routine Meetup users; inviting the entire community); and 5) unanticipated findings (e.g., the extent to which people will reach out for support; initial interest did not predict involvement).

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Symposium 16D

2080

PROMOTING COLORECTAL CANCER SCREENING IN AN ONLINE WEIGHT LOSS COMMUNITY THROUGH NARRATIVES AND PEER SUPPORT: PILOT STUDY

Kevin O. Hwang, MD, MPH,¹ Allison J. Ottenbacher, PhD,² Amanda L. Graham, PhD,³ Eric J. Thomas, MD, MPH,¹ Rick L. Street, Jr., PhD⁴ and Sally W. Vernon, PhD⁵¹Internal Medicine, The University of Texas Medical School at Houston, Houston, TX; ²The University of North Texas Health Science Center, Fort Worth, TX; ³The Schroeder Institute for Tobacco Research and Policy Studies, Washington, DC; ⁴Texas A&M University, College Station, TX and ⁵The University of Texas School of Public Health, Houston, TX.

Obesity is linked to excess colorectal cancer (CRC) mortality and lower CRC screening rates. Delivering narratives and peer support in an online weight loss community could be an efficient approach to reaching high-risk individuals. We conducted a pilot randomized trial to evaluate user engagement with and potential impact of narratives and peer support for promoting CRC screening in an online weight loss community. Members of the community who were up-to-date with CRC screening wrote narratives about their CRC screening experiences and served as peer supporters for 6 months. Members who were not up-to-date with CRC screening were randomized to BASIC or ENHANCED interventions (n=153 each). Both groups received education about screening. The ENHANCED group was also invited to read the CRC narratives and interact with narrators and other study participants in an online team. Participants were 92 % female, with age 56 yr and BMI 32. Over 90 % in both groups viewed the educational information but only 57 % in the ENHANCED group joined the online team. At 1 month, the ENHANCED group had greater improvement in stage of change than the BASIC group (p=0.03). At 6 months, there was no significant difference in CRC screening (ENHANCED 19 % vs BASIC 16 %, AOR 1.3, 95 % CI 0.72–2.39). In a per-protocol analysis of individuals who participated in their assigned intervention, fecal occult blood testing was higher in the ENHANCED (14 %) vs BASIC (7 %) group (AOR 2.5, 95 % CI 1.01–6.17). The addition of narratives and peer support to brief education improved cognitive outcomes and fecal occult blood testing, but improvement in user engagement is likely needed to affect overall CRC screening rates.

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Symposium 17

2:00 PM–3:30 PM

2081

COORDINATING CANCER CARE: WHAT HAVE WE LEARNED FROM TWENTY YEARS OF EMPIRICAL STUDIES?

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According to a landmark study by the Institute of Medicine, patients with cancer often receive poorly coordinated care in multiple settings from many providers. Lack of coordination is often associated with medical errors, higher costs, and unnecessary pain (2001). Behavioral medicine investigators and clinicians have contributed constructs, empirical findings, and clinical approaches to new models of cancer care coordination: patient navigation systems, integrated palliative care service delivery models, and health information technology structures (IT). The findings on the efficacy of these models remain mixed, however. The primary aim of this symposium is to describe the state-of-the-science in cancer care coordination based on empirical studies in this area published between 1990–2012. Implications of these findings will be examined from the clinical, healthcare system, and national policy perspectives; the contributions of measurement to quality improvement will also be addressed. In the introduction to this symposium, — will describe the contributions of the members of an NCI-led, collaborative 14-federal agency working group that is focused on the study of cancer care coordination. She will present the methods and primary findings from a systematic review of cancer care coordination. — will examine the implications of these findings for measurement development, using the AHRQ-sponsored Care Coordination Atlas (2010), as a guide. — will apply the findings to clinical practice, within the context of both integrated and discrete healthcare systems. — will highlight the implications of IT for care coordination within varied healthcare systems. — will discuss the translation of these understandings into national policy.

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Symposium 17A

2082

COORDINATING CANCER CARE: CLINICAL IMPLICATIONS

Paul Han, MD, MA, MPH and Kathleen Fairfield, MD
CORE, Maine Medical Center, Scarborough, ME.

The US health care system is currently suffering from fragmented, dispersed, and poor quality health care. In the care of cancer patients particularly, recent focus has been placed on the possibility that care coordination may be a means of improving communication at the interfaces between members of the health care team and with the patient and family, to improve overall quality across the cancer care continuum. This movement of the medical community towards better coordinating care, including the use of navigators, is belated but welcomed by providers, patients and families. In theory, if care teams are communicating with each other and with the patient, and patients can access the care they need, care coordination should result in decreased underuse, overuse, and misuse of care. It remains unclear to what extent care coordination occurs in cancer care in the US, and whether measures intended to improve care coordination result in direct improvement in quality and the patient experience with care. We will discuss the existing literature focusing on the clinical implications of poorly coordinated care, and what is known about interventions aimed at care coordination in cancer care. We will then discuss future opportunities with implementing care coordination on a broad scale across diverse health systems. Particular attention will be paid to the patient experience of care across the continuum of cancer care, including pain management. This discussion will include differences in delivery systems including the Veterans Administration Health system and other integrated health systems.

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Symposium 17B

2083

CANCER CARE COORDINATION: WHAT YOU MEASURE IS WHAT YOU GET

Kathryn McDonald, PhD
CHP/PCOR, Stanford University, Stanford, CA.

Measurement is important to improving the coordination of cancer care. Measures of cancer care coordination are few, and vary considerably, as do findings on their implementation in US clinical settings. In this presentation, we will describe a comprehensive definition of care coordination, and a multi-level measurement framework using multiple perspectives (patient/family, health care professional, and system). We will examine seven cancer care coordination measures, using the Care Coordination Atlas (Atlas) that we developed under contract with AHRQ as our guide. In developing the Atlas, we investigated currently available care coordination measurement approaches based on multiple data sources, including a systematic literature search. Measures were mapped to domains, or mechanisms for achieving coordination, including coordination activities (e.g., establish accountability or negotiate responsibility) and broad approaches (e.g., teamwork focused on coordination and medication management). Measurement perspectives include those of the patient/family (e.g., reports of experience with coordination of care), the health care professional (e.g., nurses' reports of confusion or hassle in time spent coordinating referrals), and system representatives (e.g. developing a system to post reminders to patients and providers when a follow-up examination is due). We will discuss the Atlas' seven measures specific to cancer, other broader measures potentially applicable to cancer care coordination, and implications of measurement in this area for clinical practice, quality improvement approaches, and policy.

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Symposium 17C

2084

A SYSTEMATIC REVIEW OF CANCER CARE COORDINATION: APPROACH AND PRELIMINARY FINDINGS

Sherri Sheinfeld Gorin, PhD,¹ David Haggstrom, MD, MS,² Kathleen Fairfield, MD,³ Paul Han, MD, MA, MPH,³ Suzanne Heurtin-Roberts, PhD,⁶ Bruce Finke, MD,⁵ Matthew Burke, MD,⁷ Steve Clauser, PhD⁴ and Work Group Qccc_Cci, Affiliates⁸

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To our knowledge, no systematic review of empirical papers describing cancer care coordination interventions has yet been conducted. The aim of this presentation is to describe the methods and preliminary findings from a systematic review of all empirical papers describing cancer care coordination published between 1990–2012. Of 1241 abstracts collected from a medical librarian search of PubMed and EMBASE, 108 studies were retrieved and reviewed. Each study had US or Canadian adult or child participants; each paper had comparison or control groups, measures, times, samples, and/or interventions. Two researchers independently applied a standardized search strategy, coding scheme, and on-line coding program to each study. We used the Care Coordination Atlas definition to guide the review. Findings revealed that cancer care coordination models, intervention approaches, measures, and outcomes varied considerably across the studies. Most studies are atheoretical, and RCT's are rare; those exploring patient navigation are most numerous. Health outcomes in inpatient, outpatient, and/or emergency room visits, health related quality of life, continuity of care, and stage of change are examined. The implications of the preliminary findings for model refinement, designing and implementing behavioral intervention studies, and future research in this area are highlighted.

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Symposium 17D

2085

COORDINATING CANCER CARE: HEALTH INFORMATION TECHNOLOGIES

David Haggstrom, MD, MAS

HSRD, VA HSR&D Center of Excellence on Implementing Evidence-Based Practice, Indianapolis, IN.

Health information technology has the potential to improve cancer care coordination. An Institute of Medicine workshop summary on Rapid Learning Health Systems for cancer care identified several new approaches made possible by health information technology that are important to improving cancer care quality. Conceptually, care coordination can be operationalized on at least two axes: (1) physician-physician and (2) patient-physician. Different types of health information technology facilitate different types of coordination. Physician-physician coordination may be facilitated by electronic health information exchange that shares information across health care systems, as well delivers information to clinicians at the point-of-care. Clinical decision support that builds upon shared medical records may promote real-time shared decision-making based upon the patient's medical history and preferences. Patient-physician coordination may be facilitated by electronic personal health records accessed and modified by the patient. Web-enabled mobile devices and smartphones increasingly serve as platforms for patient-centered technology approaches. Functions within such platforms may include asynchronous email communication between patients and providers, as well as automated symptom management that can both promote self-management and alert providers when patient symptoms exceed a defined threshold. In this symposium, we will review health information technology demonstration projects, along with evidence supporting their effect, upon cancer care coordination. We will use the specific example of oncology treatment summaries and survivorship care plans to illustrate the barriers and facilitators to implementing health information technology into clinical workflow to foster care coordination. We will discuss how recent meaningful use criteria for certified electronic health records (EHRs) support transitions between care settings. Throughout, we will consider how the principles of behavioral science and public health apply to these programs.

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Symposium 18

2:00 PM–3:30 PM

2086

MVH SIG PRESENTS: MOBILE APPLICATIONS TO SUPPORT PATIENT SELF-MANAGEMENT FOR MILITARY AND VETERANS: PROMISE, CHALLENGES, AND EVALUATION

Kenneth R. Jones, PhD,¹ Julia E. Hoffman, PsyD,² Julie T. Kinn, PhD,³ Deborah F. Tate, PhD⁴ and Michael A. Glotfelter, PsyD⁵

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Current military personnel make heavy use of mobile technologies, suggesting that these devices could be useful in supporting self-management of stress, symptoms of mental illness, and health problems, and as an adjunct to psychotherapy. The Department of Defense (DoD) and the Department of Veterans Affairs (DVA) partnered to produce complimentary applications to support mental health needs in Veterans and Active Duty (AD) military. A Psychologist at the VA National Center for PTSD on the frontline of mobile application development and implementation will overview the current and planned suite of applications offered through the VA National Centers for PTSD. The Deputy Director, Mobile Health Programs at the National Center for Telehealth & Technology will overview complimentary suite of tools developed and released by the DoD. The National Program Director for Weight Management/MOVE![®] of the DVA National Center for Health Promotion & Disease Prevention will present MOVE! Coach application, discuss challenges integrating this application with clinical care by incorporating a program of intervention, the ability for Veterans to share data with clinicians, and using technology so patients and staff may communicate. These applications were initially developed for Veterans and military. However, use of these applications expands beyond these populations. The benefits and challenges inherent in the use of these tools have relevance to all Behavioral Medicine populations. A national expert in remote support for health behavior change will discuss these tools in the context of her work in evaluating technical tools to support patient self-management remotely and make recommendations about steps to empirically evaluate these tools.

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Symposium 18A

2087

MENTAL HEALTH SMARTPHONE APPS PROVIDED BY THE DEPARTMENT OF VETERANS AFFAIRS (DVA)

Julia E. Hoffman, PsyD

National Center for PTSD, Department of Veterans Affairs, Menlo Park, CA.

The DVA is the nation's largest healthcare system. The system has unique elements including its mandate to provide care to Veterans regardless of location, capacity to self-monitor and assess services on a broad scale, and ability to disseminate top-down. The system faces challenges in providing care to multiple generations, including the 40 % of Veterans living in rural areas. The emergence and pervasiveness of mobile devices has led to innovations in care that may address these challenges. Smartphones, which support mobile applications (Apps), are ubiquitous (i.e., 88 % of US households have at least one mobile phone, Entner, 2010; 46 % of US mobile users have smartphones, Nielsen, 2012). Smartphones are the most commonly used web-enabled device (Canalys, 2012). The ability of smartphones to increase flexibility of intervention and assessment opportunities creates a "force multiplier" for providers. Apps have been developed for a variety of issues (relaxation, substance abuse, diet/exercise) in behavioral healthcare. Many evidence-informed resources can be delivered by apps (health tips, self-assessments, appointment reminders, treatment tools, and real-time interaction with providers and supportive others). Applications for augmentation of clinical care using mobile phones will be presented with an overview of how to create evidence-informed practices for novel technologies. Apps in development at the National Center for PTSD and National Center for Telehealth & Technology will be reviewed and demonstrated. An overview of mobile apps developed for Veterans, family members, and treatment providers will be reviewed. Considerations for planning, development, and dissemination of available apps (PTSD Coach, PFA Mobile, PE Coach) and those in development (Mindfulness Coach, ACT Coach, CPT Coach, Mood Coach, Stay Quit Coach, among others) will be presented. Data from ongoing trials and focus groups explore usability and feasibility factors will be presented. Challenges to performing this research will be covered including dosage questions, technical issues, and limitations of user self-report.

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Symposium 18B

2088

MENTAL HEALTH SMARTPHONE APPLICATIONS PROVIDED BY THE US DEPARTMENT OF DEFENSE (DOD), NATIONAL CENTER FOR TELEHEALTH & TECHNOLOGY (T2)

Julie T. Kinn, PhD

National Center for Telehealth & Technology, Department of Defense, Tacoma, WA.

To help address the health needs of the military community the Department of Defense (DoD) National Center for Telehealth & Technology (T2) has developed several mobile and web-based applications. In this presentation, the Deputy Director for T2's Mobile Health Program provides demonstrations of how the DoD is leveraging current technology to meet the emergent needs of patients and providers. Further, this presentation will describe the current limitations of mobile health application outcome research and program evaluation. The presenter will then describe four methods to implement research and evaluation into the product lifecycle: usability testing (UX), evaluation of user metrics, opt-in surveys, and experimental design. Participants will learn about upcoming technology releases and opportunities to collaborate in research that promotes and improves mobile health for military and civilians.

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Symposium 18C

2089

MOVE! COACH: TRANSLATING COMPREHENSIVE WEIGHT MANAGEMENT CARE TO A SMART DEVICE APPLICATION

Kenneth R. Jones, PhD and Lynn A. Novorska, RD

National Center for Health Promotion and Disease Prevention, Veterans Health Administration Office of Patient Care Services, Durham, NC.

Veterans enrolled in the Veterans Health Administration (VHA) are experiencing unprecedented levels of obesity. In 2006, VHA launched the MOVE! Weight Management Program. It has become the largest weight management program in the US. All VHA facilities offer MOVE! group sessions, but many Veterans reside in rural settings or cannot participate. In attempting to provide care, VHA has created remote support tools including TeleMOVE! (MOVE! care provided either over a remote-messaging device or via interactive voice response technology), MOVE! Telephone Lifestyle Coaching (care focused on a workbook and is supported by scripted telephone coaching sessions), or clinical video teleconference services (services provided at a local facility or in patient's home over a secure video teleconference system). When offered MOVE!, most overweight Veterans decline to participate. Current DoD personnel and younger Veterans make heavy use of smartphones. This suggests that a mobile applications (apps) could support MOVE! care. Prior experience in piloting MOVE! interventions has shown the importance of tying remote assistance to the electronic medical record (EMR), providing ways to interact with patients, providing self-management resources, and offering a structured program that fosters gradual health behavior change. Current available weight management apps allow for goal setting; self-monitoring calories, physical activity, and weight; and some feedback. These apps are not typically integrated with health care. MOVE! Coach is being developed to include self monitoring, structured learning sessions (11 sessions), problem-solving guidance, a secure patient-clinician two-way messaging system, and documentation of progress in the EMR. While the security, EMR, and information technology challenges are significant, VHA is attempting to bring integrated, comprehensive weight management care to Veterans via mobile devices through MOVE! Coach. Approaches to evaluating MOVE! coach during and following development will be presented.

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Symposium 19

2:00 PM–3:30 PM

2090

EHEALTH INTERVENTIONS: WHERE WE'VE BEEN AND WHERE WE'RE GOING

Seth M. Noar, PhD

School of Journalism and Mass Communication, UNC Chapel Hill, Chapel Hill, NC.

The rapid advance of computer and media technologies is providing new opportunities for health communication and health behavior change. Whereas traditional health communication efforts have tended to be interpersonal or mediated by traditional media, health communication efforts based on technology applications such as Internet websites, mobile devices, and social media are becoming increasingly popular, if not ubiquitous. The collective term for this rapidly emerging field is eHealth, which is defined as "the use of emerging information and communication technology, especially the Internet, to improve or enable health and health care" (Eng, 2001).

There is much excitement in the field surrounding eHealth interventions. Such interventions combine the best attributes of interpersonal and mass communication channels, resulting in applications that have the potential for both high reach and high efficacy. However, much science remains to be done to advance our understanding of effective eHealth interventions (versus "faux" eHealth products). In addition, implementation and dissemination issues need to be seriously considered throughout the research process, so effective products developed are disseminated into practice.

The current symposium features state-of-the-art reviews in a number of key areas of eHealth research, including: 1) Brief overview of the eHealth field; 2) Internet-based interventions and health disparities; 3) Mobile device interventions; and 4) Implementation and dissemination research. Each presenter will define the area of research, discuss advantages, summarize the literature, discuss effects of interventions to date, and pave the way toward important future directions for research.

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Symposium 19A

2091

ADDRESSING HEALTH INEQUITIES WITH INTERNET INTERVENTIONS IN THE EVOLVING ONLINE WORLD

David Buller, PhD¹ and W. Gill Woodall, PhD²¹Klein Buendel, Golden, CO and ²University of New Mexico, Albuquerque, NM.

The past decade has witnessed a seismic shift in the public information environment, with the advent of Internet. From its early days, Internet's potential to help adults reduce their health risks was recognized and research testing Internet interventions has grown. However, a persisting issue has been whether Internet interventions can reach and help populations experiencing health inequities. A decade ago, we conducted a study to test whether the Internet's ability to span barriers created by distance and disability and extend services from resource-rich to resource-poor regions could be leveraged to improve nutrition behavior in a multi-cultural adult sample in the American Southwest. Results indicated that the nutrition education website was beneficial but only to adults who used it. Unfortunately, populations associated with greater health inequities (Native Americans, lower income adults, and longer-term residents) were least likely to use the website, suggesting it may not have adequately addressed health communication disparities. Recently, we have embarked on project to use the Internet to help mothers and adolescent girls make informed decisions about the human papillomavirus (HPV) vaccine in New Mexico. Since our first project, the online landscape has changed dramatically, but minority and low income adults and rural regions still have the lowest access. The invention of mobile smart phones has further altered the online landscape, with a larger proportion of Hispanics and African Americans going online using smart phones than the non-Hispanic whites. Increased fragmentation of the Internet also may present new barriers. We will reflect on the advantages, topics, target populations, theories and results of published evaluations of Internet interventions for addressing health inequities. We will compare our early experiences using the Internet to address health inequities in light of recent evolution of the online world. We will discuss our plans for reaching underserved populations with our new HPV vaccination website.

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Symposium 19B

2092

MOBILE PHONES FOR HEALTH PROMOTION

Lorien Abrams, ScD, Doug Evans, PhD and Nalini Padmanabhan, MPH

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There is a strong body of evidence that supports the use of phones for behavior change, such as in the case of quitlines. The advent of mobile phones, and more recently smartphones, raises the question of how these new technologies can be harnessed for health promotion. Much of the appeal of mobile interventions stems from the ability to send instantaneous text messages, which can reach people throughout the day as they go about their daily life activities. Smartphones offer the possibility of not only programs that reach people with text messaging, but ones that make use of email, games, multimedia (e.g. music, video), social networking, GPS, and an assortment of other capabilities. With text messages, there is an emerging body of evidence that supports its use for health behavior change in the areas of smoking cessation, weight loss, physical activity and diabetes management. Many of these programs consist of proactive, automated texts that provide health information, offer social support, have users set goals and/or track activities, give feedback on goals met and progress made and provide reminders. Very little is known about the utility of smartphones and their associated applications for health promotion. Content analyses of commercially available iPhone applications for smoking cessation and weight loss indicate that the majority of applications do not follow evidence-based principles, especially in the case of smoking cessation. Many basic questions remain unanswered for mobile health promotion, including the identification of theoretical models that are best suited for guiding mobile program development; the types of health promotion activities that are best supported by text messages and mobile applications; the appropriate dose of text messages to promote behavior change; and the ways in which the many features of mobile phones, especially smartphones, can most effectively be utilized. Future studies are warranted across mobile platforms which include the development and testing of new theory-based programs for health promotion.

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Symposium 19C

2093

GENERALIZABILITY AND DISSEMINATION OF EHEALTH INTERVENTIONS (EHIS)

Borsika A. Rabin, PhD, MPH¹ and Russell E. Glasgow, PhD²¹Kaiser Permanente Colorado, Denver, CO and ²National Cancer Institute, Bethesda, MD.

In eHealth as with almost all areas of health and health care, there is a huge gap between the efficacy research database and what is disseminated and implemented in practice. In this presentation we will review the current status of EHIs in terms of dissemination and implementation (D&I) research characteristics and based on this summary, make recommendations for future directions for research and practice.

We conducted a systematic literature review to identify studies of EHIs in health promotion and disease management and described these studies from a D&I perspective. Electronic databases were searched to identify English-language articles published between 1980-July 2010. Studies were then classified as being T1 (efficacy and initial effectiveness studies) or "T2 or beyond" (adaptation, replication, and D&I studies). General study characteristics, external validity dimensions, and other D&I relevant characteristics were abstracted and summarized.

A total of 450 papers were included in the analysis. Less than 10 % of the papers were classified as "T2 or beyond." The majority of the studies focused on primary or secondary prevention in the areas of healthy eating and physical activity, was conducted in healthcare or community-based settings, focused on at-risk population, and used web-based or computer-tailored web modalities. The majority of the studies reported on some aspects of external validity, but these reports were often partial and studies used diverse, non-comparable outcome measures. The most frequently used study design was the randomized controlled trial. Very few studies reported on health disparities, fidelity and adaptation, participatory approach, cost-related measures, or used innovative D&I strategies.

Our review suggests that there is an acute need for (1) broader and more standardized reporting on external validity dimensions and other D&I-relevant characteristics, outcomes and factors related to outcomes for all studies of eHealth interventions, and (2) more "later stage" D&I studies of eHealth interventions.

This study was funded through NCI 1P20 CA137219.

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Symposium 19D

2094

SESSION DISCUSSANT, EHEALTH INTERVENTIONS: WHERE WE'VE BEEN AND WHERE WE'RE GOING

Gary L. Kreps, PhD

Communication, Geo Mason University, Fairfax, VA.

This presentation will provide a summary and assessment of the presentations in this symposium based upon my extensive experience with the development, application, and evaluation of ehealth communication interventions. I will reflect explore unique communication factors that can lead to effective ehealth programs, describing directions for the development of responsive ehealth programs that meet the health information and support needs of key populations. Critical issues of accessibility, usability, interactivity, adaptability, and engagement will be examined and implications will be drawn for the future development of ehealth interventions that promote health and well being.

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Symposium 20 2:00 PM–3:30 PM 2095

FINDING POWER AND SAMPLE SIZE FOR MIXED MODELS IN STUDY DESIGNS WITH REPEATED MEASURES AND CLUSTERING

Mildred Maldonado-Molina, PhD in Human Development and Family Studies,¹ Anna Baron, PhD,² Sarah Kreidler, PT, DPT, CSCS,² Aarti AMunjal, PhD,² Deborah H. Glueck, PhD,² Keith E Muller, PhD¹ and Jacinda Dariotis, PhD MAS MA MS³

¹Health Outcomes and Policy, University of Florida, Gainesville, FL; ²University of Colorado, Denver, CO and ³Johns Hopkins Bloomberg School of Public Health, Baltimore, MD.

Join us for an interactive demonstration of power and sample size calculations for longitudinal and multilevel studies. Repeated measures and clustered data permeate behavioral and social science research, with mixed models the preferred tool for analysis. Behavioral and social scientists committed to conducting studies with good statistical power have faced two gaps: 1) a convenient process for identifying the correct power analysis needed, and 2) convenient software tools that accurately account for the complex covariance structure inherent to repeated measures and longitudinal data. We fill the two gaps in the session. First, we review power and sample size concepts. Then, we describe a series of questions to guide the identification of the study design, the classification of hypotheses, and the selection of a covariance structure. Finally, we demonstrate power analysis for mixed models using GLIMMPSE, a free web-based software product (<http://glimmpse.samplesizeshop.com>). We demonstrate the methods for two published studies from the behavioral science literature. For each example, we will discuss the background of the study, summarize the design, describe inputs for the power analysis, calculate the power or sample size, and interpret the results. Session attendees will receive detailed lecture notes describing the sample size analyses. In addition, attendees will be given access to an archive of completed power and sample size analyses for a variety of behavioral medicine and social science studies.

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Symposium 20A 2096

POWER AND SAMPLE SIZE FOR THE MOST COMMON HYPOTHESES IN MIXED MODELS

Anna Baron, PhD,¹ Sarah Kreidler, PhD,¹ Aarti Munjal, PhD,¹ Deborah H. Glueck, PhD,¹ Mildred Maldonado-Molina, PhD in Human Development and Family Studies² and Keith E Muller, PhD²

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Mixed models have become the standard approach for handling correlated observations and accommodating missing data. General and accurate power methods have not been available for mixed models. We review the different types of hypotheses which can be tested with mixed models. We present power and sample size methods for behavioral scientists who use mixed models to test hypotheses about means. We show that in many cases, known power and sample size methods for the general linear multivariate model can be applied to mixed model hypotheses. We provide criteria to identify study designs for which the power methods are applicable. We show that an inflation factor for sample size can account for missing data, when the data are missing completely at random.

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Symposium 20B 2097

POWER ANALYSIS FOR MIXED MODELS: USING FREE WEB-BASED POWER SOFTWARE

Sarah Kreidler, Biostatistics PhD student,¹ Mildred Maldonado-Molina, PhD in Human Development and Family Studies,² Anna Baron, PhD,¹ Aarti Munjal, PhD,¹ Keith E Muller, PhD² and Deborah H. Glueck, PhD¹

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We demonstrate power analysis for two behavioral science studies using GLIMMPSE, a free web-based software product. GLIMMPSE is an open-source tool for calculating power and sample size for the mixed model and for the general linear multivariate model. GLIMMPSE is able to calculate power and sample size for longitudinal and multilevel designs, whether cast as a mixed or a multivariate model. We demonstrate the use of GLIMMPSE for two designs: 1) a longitudinal study of a sensory focus intervention on memories of dental pain, and 2) a multilevel and longitudinal trial of a home-based program designed to reduce alcohol use among urban adolescents. For each example, we identify study design features which induce a complex correlation structure among outcomes. We show how to account for the correlation during power analysis, and locate relevant values from the literature. We provide a step-by-step tutorial illustrating how to use the GLIMMPSE software to produce a valid power analysis for longitudinal and multilevel behavioral science studies.

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Symposium 20C 2098

SELECTING A COVARIANCE MODEL FOR LONGITUDINAL AND MULTILEVEL DESIGNS

Mildred Maldonado-Molina, PhD in Human Development and Family Studies,¹ Anna Baron, PhD,² Sarah Kreidler, DPT, MS,² Aarti Munjal, PhD,² Deborah H. Glueck, PhD² and Keith Muller, PhD¹

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An important preliminary step in power analysis for longitudinal and multilevel designs is the appropriate specification of the covariance model. We use a series of simple questions to guide the characterization of study design, the classification of hypotheses, and the selection of a covariance model. We show that even the most complicated covariance structures can be constructed as a layering of simpler patterns. The approach enables us to formulate reasonable covariance models for designs combining longitudinal and multilevel features. We demonstrate the selection of an appropriate covariance structure for two studies from the behavioral and social science literature: 1) a longitudinal study of a sensory focus intervention on memories of dental pain, and 2) a multilevel and longitudinal trial of a home-based program designed to reduce alcohol use among urban adolescents. We show how this process can guide the behavioral or social scientist to a valid power analysis.

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Symposium 21 2:00 PM–3:30 PM 2099

APPLICATION OF HEALTH BEHAVIOR THEORY TO TECHNOLOGY-DELIVERED INTERVENTIONS

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The use of technology to deliver health behavior interventions has grown exponentially in recent years. These technologies provide numerous advantages including extensive reach and scalability, improved treatment fidelity, and highly tailored and adaptive interventions. However, these tech-delivered interventions, especially commercial applications, have often failed to adequately incorporate a sound theoretical basis throughout the development process. This symposium provides exemplars of incorporating health behavior theory in the tech-based intervention development process, challenges of applying theory to these interventions, and strategies to better use theory in technology-delivered health behavior interventions.

Susan Michie and colleagues will describe the application of a taxonomy of behavior change techniques to a smoking cessation text messaging program and discuss the use of this taxonomy to analyze the extent to which tech-based interventions employ various theoretically-based intervention components. Robert West and colleagues will describe the development of a smartphone program for smoking cessation based on the PRIME Theory of motivation. Victor Stretcher and colleagues will describe their work on tailored and interactive web-based prevention programs and the integration of theory in the development and evaluation of these programs. Alex Rothman will lead a discussion of how theory was used in these tech-based interventions, the challenges of incorporating theory in tech-based interventions, and the opportunities of tech-based intervention research to advance health behavior theory.

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Symposium 21A 2100

MECHANISMS OF TAILORING IMPACT

Victor J. Stretcher, PhD,¹ Thad Polk, PhD² and Hannah Chua, PhD²

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This presentation focuses on fundamental neural responses to tailored messages, how these responses are related to our current theories of communication and behavior change, and implications for the future of tailored health communications. An overview of results of recent research identifying regions of the brain that are activated by tailored messages and how activation in these regions is associated with subsequent behavior change will be presented. This research primarily uses functional magnetic resonance imaging (fMRI) to estimate neural activity while subjects view tailored and untailored behavior change messages. In one of these studies, behavior change programming is then provided to subjects to examine subsequent behavioral outcomes. Results in multiple studies over the past three years demonstrate a consistent pattern of activity in midline brain regions (precuneus and medial prefrontal cortex) that have been associated with self-related processing, episodic memory, and decision-making. Activation in these areas is also associated with subsequent behavior change (smoking cessation). These results provide a deeper insight into mechanisms of tailored message efficacy and into theories associated with tailored messaging. Implications of these results for designing and testing future tailoring innovations will be discussed.

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Symposium 21B 2101

CHARACTERISING THE 'TXT2STOP' SMOKING CESSATION TEXT MESSAGING INTERVENTION IN TERMS OF BEHAVIOUR CHANGE TECHNIQUES

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Background: The Txt2Stop SMS messaging programme has been found to double smokers' chances of stopping. It is important to specify the content of this information in terms of specific behaviour change techniques (BCTs) for the purpose of future development. This study aimed to a) extend a proven system for coding BCTs to text messaging and b) characterise Txt2Stop using this system.

Methods: A taxonomy previously used to specify BCTs in face-to-face behavioural support for smoking cessation was adapted and inter-rater reliability assessed. The system was applied to all messages in the Txt2Stop programme to determine its profile in terms of BCTs used.

Results: The text message taxonomy comprised 34 BCTs. Inter-rater reliability was moderate, reaching a ceiling of 61 % for the core program messages with all discrepancies readily resolved. Of 899 texts delivering BCTs, 218 aimed to maintain motivation to remain abstinent, 870 to enhance self-regulatory capacity or skills, 39 to promote use of adjuvant behaviours such as using stop-smoking medication, 552 to maintain engagement with the intervention and 24 were general communication techniques.

Conclusions: The content of Txt2Stop focus on helping smokers with self-regulation and maintaining engagement with the intervention. The intervention focuses to a lesser extent on boosting motivation to remain abstinent; little attention is given to promoting effective use of adjuvant behaviours such as use of nicotine replacement therapy. As new interventions of this kind are developed it will be possible to compare their effectiveness and relate this to standardised descriptions of their content using this system.

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Symposium 21C 2102

DEVELOPMENT OF SF28: A SMARTPHONE APPLICATION TO AID SMOKING CESSATION

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Background: Smartphones provide an opportunity to deliver behaviour change techniques to aid smoking cessation in a way that is flexible and engaging. SF28 has been designed based on the PRIME Theory of motivation and evidence on effective behaviour change techniques for smoking cessation. It sets the user a goal of remaining 28 days completely smoke-free: the period over which cravings and withdrawal symptoms are at their worst, provides a roadmap towards achieving that goal, and a toolkit of evidence-based behaviour change techniques aimed and maximising resolve when required and minimising momentary urges to smoke. This presentation reports on the development process and initial evaluation of SF28.

Methods: A prototype of SF28 was designed using established principles for this kind of intervention, subjected to user testing and data collected automatically on usage patterns and quit rate from the first 100 users.

Results: The 28-day success rates of users were within the expected range for face-to-face behavioural support. Usability testing and usage data suggested a number of potential areas for improvement. Proposed enhancements included providing a simple but engaging 'distraction game', brief clips from video diaries of other smokers at the same point in the quitting journey, making a lapse less punishing, and providing a money-saving calculator.

Conclusions: The development process underpinning SF28 may lead to a version that would merit evaluation in a full scale randomised trial.

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Symposium 22 2:00 PM–3:30 PM 2103

FACING DIABETES AS A NATION: MAXIMIZING HEALTH THROUGH TECHNOLOGY AND COMMUNITY

Larry Cohen, MSW,¹ Howard Wolpert, MD,² Marilyn Ritholz, PhD³ and Francine Kaufman, MD^{4,5}

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As the prevalence of diabetes continues to take an ever-growing toll on the nation's health, health professionals—from medical providers to community health workers to public health leaders—are on the frontlines, developing new and innovative strategies to address this epidemic. According to the CDC's latest estimates, nearly 26 million Americans—or 8.3 % of the population—have diabetes, and 79 million more have pre-diabetes, a condition which raises one's risk of type 2 diabetes, heart disease, and stroke. If these trends persist, one in three adults is projected to have diabetes by 2050. The rates of type 2 diabetes are disproportionately higher among people of color. With a growing understanding of prevention approaches, along with technological advances that allow for more efficient patient treatment, the nation has an opportunity to reverse these trends and provide better care through a wide range of comprehensive strategies. In this symposium, speakers will share diverse, innovative strategies for both managing and preventing diabetes. The first presenter will discuss innovative medical technologies that allow for better patient treatment of type 1 diabetes. The second will provide a psychosocial perspective discussing whether these new technologies can be used effectively by all people with diabetes and the importance of considering how cognitive, emotional, and interpersonal factors may influence the effectiveness of technology for diabetes management. Finally, a public health perspective will be described, sharing how a range of policies, practices, and systems shape environments that can both prevent the development of type 2 diabetes and positively impact the health of those with diabetes. A discussant will address creating an integrated health system that bridges high quality medical care with comprehensive efforts to improve community environments.

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Symposium 22A 2104

CLINICAL BENEFITS AND PRACTICAL BARRIERS TO ADOPTION OF DIABETES TECHNOLOGIES

Howard Wolpert, MD

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The introduction of new insulin analogues, insulin delivery devices, and glucose-monitoring technologies has led to substantial improvements in diabetes management, thereby lessening the risks of diabetes complications. Yet almost 50 % of patients with diabetes in the United States do not obtain the ADA recommended level of HbA1c <7.0 %. Although the potential clinical benefits of continuous glucose monitoring as a tool to assist with optimization of glucose control and decrease in hypoglycemia has been demonstrated in several recent clinical trials, widespread adoption of this technology has been limited. The presentation will focus on practical barriers, both in terms of clinicians' and patients' understanding of and ability to utilize these diabetes management tools. The session will also highlight opportunities for mHealth with web-based patient education, care, and decision-support systems to facilitate the adoption of these technologies into diabetes care.

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Symposium 22B 2105

CONSIDERING THE HUMAN SIDE OF DIABETES TECHNOLOGY

Marilyn D. Ritholz, PhD

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Although the world of diabetes treatment may place great hope that technology will improve glycemic control, decrease or delay complications, as well as reduce the everyday burden of diabetes management, only a small subset of adults with diabetes use and realize the potential benefits of these technologies. Further, the factors predictive of effective use have not been clearly defined. We still do not understand which psychosocial factors may facilitate or impede effective use of insulin pumps and continuous glucose monitoring (CGM). Thus, we need to explore further how emotional, cognitive, behavioral, and interpersonal factors may influence optimal technology use and improved quality of life for patients with diabetes. This presentation will provide research findings and clinical observations for improved understanding of how patients' psychosocial factors, such as anxiety, expectations, coping styles, information processing, body image, and interpersonal support, may interact with insulin pumps and CGM. Case studies also will be used to demonstrate the interplay among psychosocial factors, diabetes technology, and optimal diabetes management. Further, clinical implications for effective everyday use of these technologies will be presented. In conclusion, the presentation highlights the following important take home message for patients, families, clinicians, government health agencies, and industry: The success or failure of diabetes technology for improved diabetes management is as dependent on the human experience as it is on the perfection of the technology.

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Symposium 22C 2106

A COMMUNITY APPROACH TO PREVENTING DIABETES AND IMPROVING HEALTH: EMERGING VISIONS AND OPPORTUNITIES

Larry Cohen, MSW

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The health of individuals, families, and communities is strongly influenced by the environments in which people live, work, and play, and a growing body of evidence suggests that policy, systems and environmental changes at the community level are effective levers for improving health. Behaviors and the environment account for 70 % of the factors influencing health, yet only 3 % of national health expenditures go toward shaping these environments and behaviors. This session will make the case for quality primary prevention efforts to address the diabetes epidemic. With the growing awareness of the role locales can play in creating environments that enhance the well-being of its residents, the presentation will share strategies and best practices that communities across the country—particularly areas most heavily impacted by poor health outcomes—are implementing to promote healthy eating and active living. These strategies, which range from increasing access to quality, affordable, nutritious foods to making streets safer for bicyclists and pedestrians, can prevent problems from occurring before the onset of symptoms, while also improving the health of those already diagnosed with diabetes. The session will also discuss a promising model of care, a “community-centered health home.” This model has the potential to integrate efficient and high-quality medical care with efforts to address and improve surrounding community conditions that impact health. By sharing examples of current innovative efforts to achieve coordinated care, the presentation will highlight the importance of a health system that not only treats sickness, but also promotes wellness, both inside and outside of health centers and hospitals.

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Thursday
March 21, 2013
3:45 PM–5:15 PM

Paper Session 01 3:45 PM–4:03 PM 2107

IMPROVING PATIENT-PROVIDER COMMUNICATION IN ADVANCED CANCER: DEVELOPMENT OF A WEB-BASED INTERVENTION TO HELP PATIENTS EXPRESS EMOTIONAL CONCERNS

Laura S. Porter, PhD,¹ Kathryn Pollak, PhD,¹ David Farrell, MPH² and James Tulsy, MD¹

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Up to 50 % of patients with advanced cancer experience significant levels of psychological distress which is associated with shortened survival, decreased quality of life, and increased healthcare utilization. Patients want their oncology providers to attend to their emotional needs; however, providers infrequently respond to their negative emotions. This is in part because patients often struggle to express emotional concerns and request support. To meet this need, we developed a web-based program designed to improve patients' expression of emotional concerns to their oncology provider. We are currently testing it in a randomized clinical trial. The intervention is designed to optimize behavioral change through its foundation in Social Cognitive Theory and the incorporation of elements of well-validated cognitive behavioral communication skills training. It is comprised of a series of highly interactive, web-based modules that include teaching segments using narration, bullet points, and exemplar videos, as well as multiple opportunities for patient participation. The core of the intervention is a four-step process to help patients effectively express their emotional concerns to their provider. Modules also address how to deal with common provider behaviors that may inhibit expression of emotions, and how to talk with family and friends. A novel feature is the insertion of audio-recorded clips from the patient's recent clinic visit with their provider along with tailored feedback. To date, 206 patients (mean age=59.8, SD=11.0; 59 % female; 20 % Caucasian) have enrolled in the trial. This presentation will focus on the development and delivery of the intervention including its theoretical basis; challenges inherent in developing a web-based program for an older patient population; and data regarding feasibility and acceptability of the intervention. If successful, this intervention could serve as a model for future web-based patient psycho-educational programs. Funded by R01 CA100387.

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Paper Session 01 4:03 PM–4:21 PM 2108

EFFECTIVE COMMUNICATION TO IMPROVE DECISION MAKING ABOUT HEALTH CARE PLANS

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Background: With the passage of the Patient Protection and Affordable Care Act (PPACA), by 2014, 52 million uninsured citizens will be eligible for health insurance through an exchange system that allows them to choose from multiple plans. Understanding information is essential for individuals to choose a plan that best suits their needs.

Methods: This study examined currently uninsured individuals' understanding of the terminology and details of health insurance plans as a first step to developing strategies to better communicate about the health insurance exchanges. We conducted semi-structured qualitative interviews with 51 participants.

Results: Participants were between the ages of 18 and 65. 71 % had an income of less than \$15,000/year. 65 % identified as Black, 28 % identified as non-Hispanic White, and 4 % identified as Hispanic. 14 % had inadequate health literacy (<7th grade reading level determined by the REALM-SF). Many had little or no past experience with important details about health insurance plans. They often confused the meaning of different terms (e.g. co-insurance vs. co-payment). They used narratives we presented, and non-health contexts to understand the terms (e.g. car insurance was used to understand deductibles). After we explained the terms, most (96 %) reported that a health insurance premium would be very important to their choice of plans, followed by specific benefits covered (92 %), followed by being responsible for fixed or known costs vs. a percentage of costs (82 %). The amount of paperwork and choice of doctors or hospitals were less important factors to individuals when thinking about choosing a health insurance plan.

Conclusions: Simple, clear information that explains plan differences across the health insurance exchanges will be important when the PPACA is implemented. Narratives and contexts familiar to individuals may help improve individuals' understanding. Tailoring communication according to details that are important to individuals may also facilitate comparisons across plans.

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Paper Session 01 4:21 PM–4:39 PM 2109

CANCER CARE COMMUNICATION WITH PHYSICIANS: PERSPECTIVES FROM CHINESE-AMERICAN AND NON-HISPANIC WHITE BREAST CANCER SURVIVORS

Judy Wang, PhD,¹ Inez Adams, PhD,² Rena Pasick, DrPH,³ Scarlett Gomez, PhD,⁴ Laura Allen, MPH,⁴ Grace Ma, PhD,⁵ Michael Lee, MD³ and Ellen Huang, BA¹

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Asian-Americans have consistently reported poorer communication with physicians than their non-Hispanic White (NHW) counterparts. This qualitative study attempted to understand the role of culture in ethnic variation in cancer care communication between the two ethnic groups. A total of 44 Chinese and 28 NHW women with early stage breast cancer (stage 0-II) from the Greater Bay Area Cancer Registry participated in focus group discussions or individual interviews. We oversampled Chinese because little is known about their cancer care experiences. Semi-structured interview guides were developed to explore patients' experiences and feelings when communicating with physicians about their cancer diagnosis, treatment, and follow-up care. Both ethnic groups expressed that when diagnosed, physician empathy was important; however, for treatment and follow-up care, physicians' medical competence in alleviating physical symptoms was more essential. NHW and US-born Chinese survivors were more likely to initiate forthright talk and press for a solution, whereas Chinese immigrants accepted physician advice even if it did not alleviate their problems (e.g., pain from side effects). Many immigrants received translation assistance, but stressed optimal communication over language concordance. Immigrant survivors were more likely to lack cancer care information, and seek cancer care from family physicians. Physician empathy and precise information about prognosis are important for cancer patients. Chinese culture does not stress patient autonomy as much as in Western culture, leading to different attitudes toward physician communication. Intervention programs that enhance cultural understanding between immigrant patients and physicians may facilitate culturally competent oncology care and patient outcomes.

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Paper Session 01 4:39 PM–4:57 PM 2110

SATISFACTION WITH CANCER CARE COMMUNICATION IN A STUDY OF A MULTIMEDIA PATIENT ASSESSMENT AND EDUCATION SYSTEM

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Background: Good patient-provider communication is a multifaceted process that can improve cancer patients' health knowledge, adherence, self-efficacy and satisfaction with care. Patient-centered care can be enhanced by identifying the patient, provider and system factors that are important indicators of patient satisfaction with communication. We used a multimedia Talking Touchscreen (TT) for patient-reported outcome (PRO) assessment, including satisfaction with communication, and patient education as part of a clinical trial. Methods: Patients with breast and colorectal cancer (n=126; mean age 53 years, 83 % women, 56 % African American, 56 % high school education or less) self-administered PRO questionnaires using a TT kiosk in clinic waiting rooms. We conducted bivariate and forward stepwise multivariable regression analyses to examine what factors were independently associated with patient satisfaction with communication. Results: Patients completed PRO assessments with minimal assistance, even those who were computer-naïve and had lower health literacy. One system factor that was significantly related to higher communication satisfaction was receiving care in a traditional cancer care clinic as compared to clinics in safety net hospitals. Patient variables that were independently related to higher communication satisfaction were greater self-efficacy about obtaining health information and speaking more with doctors for cancer-related information. Patients' preference for shared medical decision making with doctors, as compared to deciding by themselves or having doctors decide, was associated with lower satisfaction with communication. Conclusions: Our TT multimedia system is a feasible and acceptable way to collect PRO data from patients with different literacy levels in oncology clinics. Special attention should be paid to patient-provider communication in safety net hospitals that serve vulnerable populations and to patients who prefer to share medical decision making with their treating physicians.

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Paper Session 01 4:57 PM–5:15 PM 2111

EVALUATION OF A COMMUNICATIONS SKILLS TRAINING MODULE TO ENHANCE TRANSITION TO CANCER SURVIVORSHIP

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Cancer survivors are commonly left with overwhelming feelings of uncertainty, worry and a lack of understanding of how to maintain their lives post cancer. Such anxiety can be attributed to the current lack of a structured standard of care during the survivorship period. We have introduced an additional post-treatment physician-patient consultation for purposes of easing the survivorship transition. To prepare physicians for this consultation, a communication skills training (CST) module was developed. The module integrates an evidence-based standardized care plan document with standard communication skills training practices. Thirteen medical oncologists participated in a five-hour survivorship CST workshop, which included a two hour role-playing session. Physicians also participated in one 15-minute standardized patient assessment before training and one after training. The effectiveness of the training was measured using self-report. Results showed a significant increase in physicians' confidence when discussing their patient's transition to survivorship ($t = -2.739$, $p < 0.05$). Participating physicians rated the components of the training highly, and 100 % of participating physicians agreed or strongly agreed that they will use their newly acquired skills during future consultations. This study demonstrates the initial success of a survivorship communication skills training module for increasing the self-efficacy and confidence of physicians as they aid patients during their transition into their survivorship period. Future work will examine the effect of this module on the pre- and post-training standardized patient assessments and on patient outcomes. Through the utilization of a novel survivorship care-plan document and a Comskil-modeled survivorship training module, this new standard of care has the potential to increase the overall well-being and quality of life in patients newly free of cancer.

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Paper Session 02 3:45 PM–4:03 PM 2112

CANCER PAIN: AN ELECTRONIC SYSTEM TO RAPIDLY IDENTIFY, ASSESS, AND INTERVENE

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Pain incidence in cancer patients is estimated to be as high as 90 %. Behavioral strategies are efficacious for reducing pain, though not routinely implemented. Implementation barriers include problems identifying patients with ongoing pain, inefficient pain assessment, and inaccessible interventions. Electronic technology advances provide opportunities to decrease these barriers. We are testing a system to improve behavioral intervention implementation that uses: 1) electronic medical records to rapidly identify patients with pain, 2) mobile health technology (mHealth) for real-time assessment of patient symptoms, and 3) mHealth intervention delivery in the patients' home. First, electronic medical records are used to identify patients that reported a pain score of $>3/10$ at a past oncology appointment and have an upcoming appointment. An average of 73 (SD=21) breast, lung, prostate, or colorectal patients of participating oncologists (N=12) meet this criteria weekly. Second, patients who report a second clinical pain score of $>3/10$ are eligible for a study using mobile technologies for assessment and subsequent intervention. 8 patients with ongoing pain are enrolled. Patients have breast (n=5), lung (n=1), and prostate cancers (n=2); an average age of 53 (SD=13; range 27–67); and 57 % are female. Average initial clinical pain score is 4.14 (SD=1.35) and average second clinical pain score is 4.71 (SD=2.05). Assessments of pain and other symptoms are collected via iPad. Finally, patients are provided with an iPad to complete a 4-session, behavioral intervention (pain coping skills training) via video-conferencing in their home. This mHealth intervention shows initial feasibility with no attrition and high adherence with 80 % of sessions completed on time (i.e., 6 weeks for 4 sessions). Advancing technologies can improve care by rapidly identifying, assessing, and intervening in patients with cancer pain. Future directions aim to use mHealth technologies to facilitate wide-spread implementation of accessible, personalized, and efficacious behavioral interventions to patients with ongoing cancer pain.

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Paper Session 02 4:03 PM–4:21 PM 2113

IMPROVING SYMPTOM COMMUNICATION THROUGH PERSONAL DIGITAL ASSISTANTS: THE C.H.A.T. PROJECT

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Studies have indicated that communication difficulties are a major barrier to the effective management of fatigue, pain, and depression symptoms during chemotherapy treatment. A pilot RCT was conducted to assess the feasibility of a tailored patient communication intervention delivered on a PDA for breast cancer patients undergoing chemotherapy. A secondary aim was to test intervention effects on symptom severity and interference. Patients randomized to the intervention group (n=27) watched patient communication videos tailored to race and symptom severity and recorded their symptoms on the PDA. Patients in the control group (n=23) received usual care. Both groups completed symptom inventories at baseline and post-treatment. Descriptive statistics assessed feasibility and longitudinal random effects modeling determined changes in symptom measurements over time. Of those eligible, 77 % agreed to participate. The mean age was 51.0 years; forty-two (84 %) participants identified themselves as White. Adherence to protocol instructions was excellent, with 83 % of the sample completing fatigue, pain, and depression inventories once/week as instructed. Rates of viewing symptom videos were 65 % for depression, 72 % for fatigue, and 122 % for pain. Average pain severity was significantly lower for patients in the intervention group, as compared to control ($p=0.015$), and pain interference scores were marginally different between groups ($p=0.07$). Fatigue scores trended in a positive direction. Positive responses to the intervention were given in focus groups and participant surveys. The intervention indicate the potential towards improving symptom management of pain and possibly other conditions that are common, costly, and detrimental to the health of the breast cancer patient population. Large-scale research is needed to understand the longitudinal effects of this intervention in a nation-wide, racially diverse clinical sample.

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Paper Session 02 4:21 PM–4:39 PM 2114

TOPICS AND LINGUISTIC VARIABLES THAT PREDICT PEER RESPONSIVENESS IN AN ONLINE CANCER SUPPORT GROUP

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INTRODUCTION: Online support groups are an effective means of attaining psychosocial support for cancer survivors. Little is known about how communication styles relate to social engagement in users. This study aims to identify topics and linguistic variables that predict peer responsiveness among participants in an online intervention for cancer-related distress.

METHOD: Original discussion board messages posted by 116 participants in health-space.net were collected. Linguistic Inquiry and Word Count (2001) was used to identify linguistic markers of emotional expression and pronoun use. Investigators identified content-related topics within each message. Logistic regression and chi-square analyses were used to evaluate whether linguistic characteristics and message topics predicted a response from other users.

RESULTS: 525 original messages were posted to the discussion board (M=125 words). 30.7 % of messages received at least one peer reply. Messages were more likely to receive a reply if they were longer, OR=1.30 (95 % CI=1.1–1.5), p=.001, and used fewer second person pronouns, OR=.923 (95 % CI=0.8–0.9), p=.040. Higher use of positive emotion was associated with a lower likelihood of receiving a reply, OR=.94 (95 % CI=0.8–0.9), p=.03. The most common message topics related to self-disclosure (51 %), the group (38.5 %), medical experiences (30.9 %), and website experiences (30.1 %). Topics associated with greater likelihood of a reply included self-disclosure (p<.001), medical experiences (p=.01), relationship issues (p=.05), and introductory posts (p<.01).

CLINICAL AND RESEARCH IMPLICATIONS: These results can inform the design of online interventions with social-networking components. Informing participants how to introduce themselves to the group (i.e., detailed and self-focused messages discussing personal issues such as reaction to illness, and the effects of illness on relationships) could promote social-networking and enhance overall intervention engagement.

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Paper Session 02 4:39 PM–4:57 PM 2115

USING LATENT CLASS ANALYSIS TO EXPLORE HOW USER CHARACTERISTICS AFFECT PATTERNS OF USE OF A WEB-BASED ILLNESS MANAGEMENT SUPPORT SYSTEM

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eHealth applications are often comprised of multiple components, but are not always used as intended. There is a need for a better understanding of which system components are most beneficial and used by different patients.

In this study we used Latent Class Analyses (LCA) to explore user characteristics associated with the use of different components of a web-based illness management support system for cancer patients, called WebChoice (WCH), that included the following components: symptom assessment, self-management support, a discussion forum, e-messages for asking questions to health professionals, and cancer-related information.

Usage patterns of 162 breast cancer (BC) and prostate cancer (PC) patients with access to WCH for one year were extracted from the user log. Associations between the use of different system components and baseline levels of social support, symptom distress, depression, self-efficacy and quality of life were explored.

About two thirds (103/162) of patients logged on to WCH more than once, qualifying as active users. LCA showed that patients with low scores on social support combined with high levels of symptom distress and depression were more likely to use the e-message component. For PC patients, these factors were also associated with high use of self-management support. High use of all WCH components was associated with low levels of social support among BC patients only. For PC patients but not for BC patients, high use of symptom assessments, self-management support and the discussion forum were associated with high levels of symptom distress.

LCA is a useful technique to identify subgroups of users. This study provides more knowledge of user characteristics associated with different user patterns, which is crucial to better target eHealth applications to the needs of different patient groups.

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Paper Session 02 4:57 PM–5:15 PM 2116

THE EFFECTS OF PATIENT AVOIDANCE AND PARTNER SOCIAL CONSTRAINTS ON PATIENT MOMENTARY AFFECT IN METASTATIC BREAST CANCER

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Background: Metastatic breast cancer (MBC) patients experience significant distress. Although talking with close others about cancer-related concerns may help to alleviate distress, patients often avoid such discussions, and their partners can engage in social constraints (e.g., avoidance, criticism). These constraints may limit subsequent patient disclosures and exacerbate distress; however, this possibility has not been quantitatively examined.

Purpose: We examined how partner constraints unfold, how they influence patient affect, and whether they exacerbate patient avoidance of cancer-related disclosures.

Methods: 54 patients who were initiating treatment for MBC and 48 of their partners completed electronic diary assessments for 14 days.

Results: Partners' reports of social constraints carried over from one day to the next, but patients' avoidance of discussing cancer-related concerns with their partners did not. We did not find significant effects of partner constraints on same- or next-day patient avoidance. However, when partners engaged in more social constraints one day, patients reported greater negative affect the following day (p<.05).

Conclusion: Findings extend previous research by identifying a temporal link between partner constraints and patient momentary affect. They also suggest that helping partners to become aware of their constraining behaviors and teaching them skills to overcome this may facilitate patient adjustment to MBC.

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Paper Session 03 3:45 PM–4:03 PM 2117

YOUNG AFRICAN AMERICAN WOMEN'S PERCEPTIONS OF THE RISKS AND BENEFITS OF PARTICIPATING IN A TEXT MESSAGE-DELIVERED SEXUAL COMMUNICATION INTERVENTION

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The purpose of this study was to explore the perceived risks and benefits of participating in a sexual communication intervention delivered using text messages. Participants' privacy is of particular importance in technology-delivered interventions, which may concern Institutional Review Boards. Respect for persons maintains that participants should be free to make these decisions for themselves in the context of informed consent. Collecting data on perceptions of risks and benefits can ensure equitable access to the beneficial aspects of research, and address ethical concerns. 12 African American young women were recruited from the waiting room of an inner city STI clinic waiting room to participate in focus groups. Participants were guided through storyboards of a text message-based sexual communication intervention, and a traditional small-groups intervention, both based on an Evidence Based Intervention designed for young African American women. Content analysis was conducted on transcripts to explore themes of delivery medium preference, benefits and risks. Results indicated that benefits were driven by practical considerations such as travel, childcare, and convenience, while risks were driven by privacy and fear of social judgment. The texting intervention was overall seen as more preferable, mainly due to the benefit of convenience. The main benefit of the face-to-face intervention delivery was the ability to share stories and learn from the other participants' experiences. Surprisingly, participants cited more privacy concerns regarding the face-to-face, small groups intervention due to the potential for judgment by the other participants in the group and the inability to guarantee that private information would not be shared outside the group. These results suggest that participants understand the risks and benefits inherent in participating in a text message-delivered intervention and should ethically be allowed to benefit from such interventions.

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Paper Session 03 4:03 PM–4:21 PM 2118

CONTEXT OF SEXUAL CONCURRENCY AMONG AFRICAN AMERICAN YOUNG WOMEN

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INTRODUCTION: African American women aged 15 to 19 are disproportionately affected by sexually transmitted diseases (STDs), including Human Immunodeficiency Virus (HIV). African American women account for over half of new HIV diagnoses in the U.S. and in 2008 had the highest rates of Chlamydia compared to other age or sex groups, representing a 9.8 % increase from 2007. Individual-level behaviors among African American adolescents alone cannot explain the observed disparity in HIV and STDs. Broader, relational and societal-level factors, such as sexual networks and concurrent sexual partnerships may be important factors in explaining this health disparity. **METHODS:** We conducted a qualitative study to understand concurrent sexual partnerships among African American women aged 18 to 22 via semi-structured interviews with women reporting having had concurrent partnerships. **RESULTS:** Reasons young women engaged in concurrent sexual partnerships were 1) sexual satisfaction, 2) relationship break, 3) forced separation, 4) transition to a new partner, 5) reacting to a partner's concurrent sexual partnerships, 6) instrumental support, such as housing, 7) sex in exchange for money, goods, or services, and 8) as a distraction. Condom use in concurrent sexual partnerships was either 1) non-condom use with both partners, or 2) condom use with one partner and non-condom use/inconsistent condom use with another partner. Young women made decisions about condom use based on a few factors, which included: 1) perceived partner STD risk, 2) having a partner initiate condom use, 3) fear and prevention of negative outcomes, 4) uncertainty about future and status of relationship (i.e. waiting to develop trust), 5) partner status (i.e. new versus more established partners), and 6) general attitudes about condoms. **CONCLUSIONS:** HIV and STD risk-reduction interventions should incorporate messages regarding healthy sexual decision-making, specifically emphasizing condom use with concurrent sex partners.

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Paper Session 03 4:21 PM–4:39 PM 2119

PERCEPTIONS REGARDING MEDICAL MALE CIRCUMCISION AND IMPLICATIONS FOR PREVENTION

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Background. Medical male circumcision (MMC) is an effective strategy for HIV prevention in high-prevalence populations. However, MMC uptake may be limited by attitudes about MMC among men and their partners. This study examined perceptions regarding MMC and the likelihood of undergoing MMC among men in Zambia.

Methods. Participants, uncircumcised, HIV-negative men (n=236) were recruited from community health centers (CHCs; n=12) in Lusaka, Zambia. Men were also given the option to invite their female partners (n=165). Assessments included attitudes about MMC and readiness to undergo MMC using the stages of change model (pre-contemplation, contemplation, preparation, action, maintenance).

Results. Most men (137, 58 %) indicated that MMC was culturally acceptable, 75 % (178) felt it was an acceptable method to prevent HIV infection and 58 % (135) had discussed MMC with their sexual partner. Men were nearly evenly distributed across the five stages of change, most endorsed "Never thought about being circumcised" (56, 24 %) and "Thinking of being circumcised within the next 6 months" (57, 24 %). Ordinal logistic regression was used to examine the relationship between attitudes about MMC and the odds of progressing to the next stage. Discussing MMC with sexual partners was associated with nearly 4 times greater likelihood of progressing to the next stage [OR=3.84, 95 % CI(2.32, 6.36)]. Positive cultural perceptions and beliefs that MMC could protect against HIV infection were associated with nearly double the likelihood [OR=1.94, 95 % CI(1.19, 3.14); OR=2.13, 95 % CI(1.20,3.81)]. Willingness to enroll a female partner did not impact men's MMC stage of change.

Discussion. Results suggest that positive perceptions, MMC prevention knowledge, and discussion with sexual partners positively impacted participants' reported readiness to undergo MMC. Interventions designed to enhance MMC uptake should address information, perceptions, and communication with sexual partners to maximize HIV prevention outcomes. NIH grant funding: R01MH095539

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Citation Paper

Paper Session 03 4:39 PM–4:57 PM 2120

ACCULTURATION, CULTURAL VALUES AND SEXUAL RISK BEHAVIORS AMONG LATINO YOUTH: A LONGITUDINAL STUDY

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Past studies have found cultural values and acculturation to be associated with sexual risk behaviors among Latino youth, however findings have been inconsistent and most research has used cross-sectional designs. We use data from a prospective study of Latino youth in Los Angeles (78 % Mexican/Mexican-American; 9 % Central American) to examine whether cultural values (familism, respeto, machismo, fatalism) and acculturation are associated with sexual risk behaviors (early sexual initiation, condom use at last sex, number of lifetime partners, concurrent partners, alcohol/drug use at last sex). Data come from Project RED, a longitudinal study of Latino youth in Los Angeles. Participants were recruited from public high schools during 9th grade. They were followed through high school and into emerging adulthood. Our analysis is limited to sexually active youth who responded to Waves 2 and 5 (n=1001). We estimate logistic regression models to test whether cultural values and acculturation at Wave 2 are associated with sexual risk behaviors at Wave 5. Models are adjusted for age, gender and SES. In multivariable analysis, higher respeto scores were associated with lower odds of first sex at age 15 or younger (OR=0.59, p<.01), and higher odds of condom use at last sex (OR=1.52, p<.05). Higher machismo scores were associated with higher odds of concurrent sex partners (OR=1.58, p<.05). Higher American cultural orientation was associated with higher odds of four or more lifetime sexual partners (OR=1.36, p<.05), and concurrent sex partners (OR=2.05, p<.01). Higher Hispanic cultural orientation was associated with lower odds of alcohol or drug use before last sex (OR=0.76, p<.01). Our results indicate that cultural values and cultural orientations vary among Latino youth and are associated with sexual risk behaviors. Cultural factors could be incorporated into sexual risk reduction messages for Latino youth.

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Paper Session 03 4:57 PM–5:15 PM 2121

USING SMS TO STIMULATE NATIONAL CONVERSATION AROUND CONCURRENT SEXUAL PARTNERSHIPS AND HIV IN TANZANIA

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Concurrent sexual partnerships (CPs) are a driver of new HIV infections in Tanzania, where HIV prevalence is 5.7 %. In June 2012, Tanzania launched a national social behavior change communication campaign to increase knowledge of what a sexual network is, why it is risky, examine the consequences of CPs, and encourage critical thinking about one's own and one's partners' sexual behavior. "Tuko wangapi? Tulizana" (How many are we? Settle down) uses mass media and interpersonal channels to spark national dialogue challenging long-held social norms. Presenters on interactive radio programs initiate discussions and encourage listeners to SMS in comments and questions. Each station is able to view the open-ended responses generated by their listeners in a real-time database online. The platform received 24,250 SMS' from June 6-August 15, 2012, with 17 of 19 (89 %) radio stations receiving messages. The total number of messages received by station ranged from 22 to 7,278, with a mean of 1,426 and a median of 816. Challenges include an overwhelming influx of messages in need of filtering and analysis, submission of irrelevant content, and frustration and dismissal among users whose SMS' are not answered or read on air. Despite these challenges, the radio program/SMS combination allows implementers to compile frequently asked questions and ideas from the audience and monitor the level of engagement of the listeners, stations, and specific radio stations, thereby informing future programming. It can also be used to gauge the attitudes of the audience regarding concurrency, including any changes as the campaign progresses. By posing provocative questions, providing a safe, anonymous space to express opinions about sensitive issues, and facilitating the audience to generate their own solutions around issues of HIV and concurrency, the approach engages Tanzania in an ongoing conversation about sexual networks, which has the potential to shift social norms through a process of reflection and dialogue.

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Paper Session 04 3:45 PM–4:03 PM

2122

DEPRESSIVE SYMPTOMS, INFLAMMATION AND SUBCLINICAL ATHEROSCLEROSIS IN METABOLIC SYNDROME PATIENTS

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Depressive symptoms have been consistently associated with atherosclerosis risk, and recent studies support a positive association with early subclinical markers, such as carotid intima media thickness (IMT). The biological pathways involved in this relationship remain unclear, however, inflammation has been proposed as possible mechanistic link. This study aimed to determine the association between depressive symptoms and carotid IMT after controlling for inflammation. Our sample was comprised 135 participants recruited for the Community Health and Risk-reduction for the Metabolic Syndrome (CHARMS) study. Depression was measured using the Beck Depression Inventory (BDI). Carotid IMT was measured with high-resolution ultrasonography. Inflammation was assessed using C-reactive protein (CRP) and interleukin-6 (IL-6) levels. Participants with CRP levels greater than 10 mg/L were excluded from analysis. Mean depression was 10.58 (SD=9.16), and mean cIMT was 2.43 mm (SD=0.54). Depressive symptoms were associated with increased carotid IMT ($\beta=0.175$, $P=0.039$) after controlling for age, gender, smoking status, waist circumference, systolic blood pressure (SBP), low-density lipoprotein cholesterol (LDL-C) and insulin resistance, measured by the HOMA index. Further adjustment for CRP and IL-6 levels did not alter the relationship between depressive symptoms and carotid IMT ($\beta=0.171$, $P=0.045$; non-significant R2 change). Other significant predictors of carotid IMT were age ($\beta=0.243$, $P=0.003$) and gender ($\beta=0.312$, $P=0.002$). The final model accounted for 17% of the variance in carotid IMT. Depressive symptoms are significantly associated with subclinical atherosclerosis in patients with the metabolic syndrome. This association was independent of important confounding factors. Further research should elucidate whether interventions aimed at reducing depressive symptoms have an impact on atherosclerosis progression.

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Paper Session 04

4:03 PM–4:21 PM

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DEPRESSIVE SYMPTOMS, CARDIAC DISEASE SEVERITY, AND FUNCTIONAL LIMITATION IN PATIENTS WITH CORONARY HEART DISEASE: LONGITUDINAL FINDINGS FROM THE HEART AND SOUL STUDY

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OBJECTIVE: Older adults with cardiovascular disease or depression often experience difficulty performing daily activities. The purpose of our study was to compare the relative contributions of depressive symptoms and cardiac disease severity to functional status among patients with coronary heart disease.

METHODS: Older adults (N=1024) with stable coronary heart disease were recruited between September 2000 and December 2002 from 12 outpatient clinics in the San Francisco Bay Area. At baseline, all participants completed exercise treadmill testing with stress echocardiography to evaluate cardiac disease severity (left ventricular ejection fraction, diastolic dysfunction, inducible ischemia, exercise capacity, and wall motion abnormalities). Depressive symptoms were measured annually for 6 years using the 9-item Patient Health Questionnaire. We assessed difficulty performing activities of daily living (e.g., bathing, dressing, eating, walking) and difficulty performing instrumental activities of daily living (e.g., using telephone, preparing meals, managing medications, managing money) yearly for 6 years of follow-up.

RESULTS: In time-lagged multilevel models—after accounting for demographics, comorbid medical conditions, medication use, confounding biological variables, and health behaviors—depressive symptoms in a previous year were more strongly associated with difficulty performing activities of daily living ($p<.0001$) and instrumental activities of daily living ($p=.003$) in the subsequent year than were most objective measures of cardiac disease severity. Exercise capacity was the only measure of cardiac disease severity that was more strongly predictive of subsequent functional limitation than depressive symptoms.

CONCLUSION: These findings suggest that efforts to ameliorate depressive symptoms may be as important as treating objective measures of cardiac disease severity to enhance functional status in older patients.

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Citation Paper

Paper Session 04

4:21 PM–4:39 PM

2124

RECIPROCAL INFLUENCES BETWEEN PSYCHOLOGICAL DISTRESS AND PHYSICAL HEALTH FUNCTIONING IN HEART FAILURE PATIENTS

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Depression and Anxiety are highly prevalent in patients with chronic heart failure (HF). This study examined whether there was a reciprocal relationship between psychological distress and physical health functioning over 6 months in these patients. Participants were 218 patients (65% men, mean age=55) with chronic HF. Depression was assessed with the modified CES-D, with confounding somatic items removed. Anxiety was measured by the subscale from the Hospital Anxiety & Depression Scale. Physical functioning was measured with the physical subscale of the Minnesota Living with HF Questionnaire. These measures were administered at baseline and 6 months. We conducted the Actor-Partner Interdependence Modeling (APIM) under the structural equation modeling framework to test whether psychological distress at baseline predicted the decline of physical functioning at 6 months, and vice versa. Depression and anxiety were modeled separately to examine their specific roles. Age, education, and HF severity (NYHA class) were included as covariates in all models. The results showed that: (1) In the model with depression (model fit: CFI=1.00, RMSEA<.01), lower baseline physical functioning predicted increase in depression at 6 months ($\beta=.143$, $p=.032$), and baseline depression marginally predicted the decline of physical function at 6 months ($\beta=.108$, $p=.057$). The test of difference showed that these coefficients did not differ significantly ($p>.20$); (2) In the model with anxiety (CFI=1.00, RMSEA<.01), lower baseline physical functioning predicted the increase in anxiety at 6 months ($\beta=.120$, $p=.026$), and baseline anxiety predicted the decrease in physical functioning at 6 months ($\beta=.168$, $p=.029$). These effects did not differ significantly from each other ($p>.20$); (3) Physical functioning, anxiety, and depression at baseline each predicted their respective follow-ups in all models. Findings suggest that psychological distress and physical functioning appear to influence each other in a reciprocal fashion over 6 months in chronic HF patients.

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Paper Session 04

4:39 PM–4:57 PM

2125

DEPRESSION AND EXERCISE TRAINING IN PATIENTS WITH CHRONIC HEART FAILURE

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Depression is a significant risk factor for increased morbidity and mortality patients with chronic heart failure (HF). In a substudy of the HF-ACTION trial, 2,322 stable patients with NYHA class II to IV HF completed the Beck Depression Inventory-II (BDI-II) and were randomized to either aerobic exercise (AE) or Guideline-based usual care controls (UC). Participants in the AE condition underwent supervised exercise training for 36 sessions followed by home exercise training. 789 (68%) patients died or were hospitalized in the usual care (UC) arm and 759 (66%) in the aerobic exercise (AE) arm (Hazard Ratio [HR]=0.89, 95% CI=0.81, 0.99; $p=.03$) over a median follow-up period of 30 months. Compared to UC, AE resulted in lower mean BDI-II scores at 3-months (difference=-0.76, 95% CI=-1.22, -0.29, $p=.002$), and at 12-months (difference=-0.68, 95% CI=-1.20, -0.16; $p=.01$). We conclude that exercise training reduced depressive symptoms and was associated with better clinical outcomes.

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Citation Paper

Paper Session 04 4:57 PM–5:15 PM 2126

DEPRESSION AND REHOSPITALIZATION IN PATIENTS WITH HEART FAILURE

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Previous studies have found that patients who are hospitalized with heart failure (HF) and who are depressed are at higher risk for rehospitalization than otherwise similar but nondepressed patients. These studies have modeled the short-term risk of the first HF readmission. We investigated whether major depression (MD) increases the risk of multiple all-cause rehospitalizations over a one-year follow-up of 682 hospitalized patients with HF (mean age 66 years, 52 % female, 42 % African-American). There were 1,152 rehospitalizations (mean, 1.7 per year per patient). Among African-Americans, 30 % had no rehospitalizations, 40 % had 1–2, and 30 % had >3; 31 % of whites had no rehospitalizations, 46 % had 1–2, and 23 % had >3. In a Cox regression model, MD had an age- and gender-adjusted effect (HR, 1.29; 95%CI, 1.02–1.63; $p=.04$) on the time to first rehospitalization or death, but adjustment for several additional predictors of rehospitalization and mortality in HF reduced the effect to nonsignificance. Poisson regression was used to model the effect of MD on the rate of multiple rehospitalizations. After adjusting for all covariates except race, MD had a significant effect (HR, 1.29; 95 % CI, 1.04–1.61; $p=.02$). Adding race to the model strengthened the effect of MD (HR, 1.59; 95 % CI, 1.19–2.13; $p=.002$). There were trends toward interactions between race and depression (MD, $p=.11$; minor depression, $p=.07$), suggesting that depression may have stronger effects on rehospitalization in African-American than in white patients. These findings suggest that major depression may have more robust effects on the risk of multiple rehospitalizations over one year than it does on the short-term risk of an initial rehospitalization or death. They also suggest that depression may pose greater risks in African-American than in white patients.

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Meritorious Paper

Paper Session 05 3:45 PM–4:03 PM 2127

STABILITY OF PHYSIOLOGICAL REACTIVITY TO AND RECOVERY FROM STRESS IN A 3-YEAR LONGITUDINAL STUDY

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Introduction: Psychological variables have been hypothesized to contribute to cardiovascular disease risk and mortality via heightened physiological reactivity to or delayed recovery from stress. However, the long-term stability of physiological stress responses has received little attention, and it is unclear whether they are equally stable across men and women of varying age. Objective: We evaluated the 3-year stability of physiological reactivity and recovery change scores across cardiovascular and autonomic parameters, and assessed whether sex and/or age moderate the associations observed. Methodology: 134 healthy working men ($n=55$) and women ($n=79$), aged 19–63 ($M\text{ age}=43.5\pm 11.3$) underwent two laboratory sessions, 3 years apart, during which they were exposed to four interpersonal stressors, each followed by a 5-minute recuperation period. Measures of HR, SBP, DBP, and heart rate variability (HRV; specifically HF-HRV and LF/HF) were obtained. Stress reactivity and recovery were computed as the mean of all stress or recovery periods respectively, subtracted by the baseline value. Obtained changes scores were further regressed on baseline values to reduce the latter's effect. Analyses involved Spearman rank correlations and linear regressions. Results: Significant correlations were obtained for all stress reactivity measures, with Spearman rho values ranging from 0.329 for HF-HRV to 0.681 for HR (all $p<.001$). Recovery from stress also showed significant stability across time for all measures except DBP (values ranging from 0.171 for LF/HF, to 0.434 for HF). Sex moderated only the stability of LF/HF during recovery from stress ($\text{Beta}=.216$, $p<.05$). In simple slope analyses, women showed significant stability in LF/HF recovery change ($b=.42$, $p=.001$) but not men.

Conclusion: Stress reactivity and recovery measures across cardiovascular and autonomic systems represent stable individual traits that are little affected by sex and age.

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Paper Session 05

4:03 PM–4:21 PM

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CHRONIC STRESS AND COMFORT FOOD: A FORMULA FOR ELEVATED OXIDATIVE STRESS

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Background: Both chronic stress and highly palatable food (HPF or high fat/sugar) are related to elevated oxidative stress individually, and in animal models, interact synergistically. However, it is unclear whether synergistic effects replicate in humans. Objective: To test whether more frequent HPF consumption and dietary risk behaviors that indicate excessive drive to eat will be associated with elevated oxidative stress, particularly among chronically stressed caregivers. Methods: 32 post-menopausal dementia caregivers (CGs) and 28 age-matched non-caregiving (NC) control women completed the emotional eating (EE) and dietary restraint (DR) subscales from The Dutch Eating Behavior Questionnaire Restraint Scale and reported HFS consumption using the Food Frequency Questionnaire. Participants provided a fasting blood draw that was assayed for serum oxidative stress (8-hydroxyguanosine (8-oxoG), RNA damage, and 8-isoprostaglandin F₂ α (ISO), lipid peroxidation). Results: CGs and NCs did not significantly differ on self-reported eating or food intake, but CG had significantly higher 8-oxoG ($p=.001$), which was partially explained by HPF overconsumption ($p=.014$, CG*HPF interaction). Among CGs, HFS consumption was associated with significantly higher EE ($r=.36$, $p=.04$), lower DR ($r=-.32$, $p=.07$) and greater oxidative stress (8-oxoG: $r=.59$, $p<.001$; ISO: $r=.46$, $p<.01$). Lower DR was associated with higher oxidative stress (8-oxoG: $r=-.35$, $p<.05$; ISO: $r=-.49$, $p<.01$), while EE was borderline (8-oxoG: $r=.21$, ns; ISO: $r=.34$, $p=.06$). Strikingly, none of these associations for any variable were significant among low stress NCs. Conclusions: The biochemical milieu of chronically stressed individuals may be "primed" toward oxidative imbalances, such that consumption of high fat/sugar foods, particularly when driven by emotional eating and low restraint, promotes greater oxidative damage. These results, if confirmed, imply the need to conceptualize preventative treatments for metabolic syndrome and obesity in terms of the interaction between stress and eating.

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Paper Session 05

4:21 PM–4:39 PM

2129

DEFERENTIAL EFFECTS OF STRESS-SENSITIVE BIOMARKERS AND BEHAVIORAL FACTORS ON POSTOPERATIVE DEPRESSION, ANXIETY, AND HOSTILITY

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Introduction: Evidence linking psychological disorders (e.g., depression, anxiety, and hostility) with prognosis of heart diseases has been established. Few studies, however, have explored the joint influence of stress-sensitive biomarkers (cortisol, C-reactive protein/CRP, and interleukin-6/IL-6) and behavioral factors (hope, coping) on these disorders following cardiac surgery. To address the gap, the study linked their preoperative levels with symptoms one-month following cardiac surgery, controlling for known predictors.

Methods: Using standardized instruments, trained research assistants conducted sequential interviews before and after surgery in middle-aged and older cardiac patient. Medical and surgical indices were selected from a national database (the Society of Thoracic Surgeons' Database). Plasma samples were drawn in the morning before operation and restored under -80 C degree for biomarker assays. Three biomarkers and three outcome measures were log-transformed to moved skewness of these variables. Three multiple linear regression analyses were conducted to examine the predictive value of these biomarkers.

Results: IL-6 and CRP were correlated. Preoperative anxiety contributed to three postoperative outcomes. Patients with excess IL-6 used greater avoidant coping and had greater depression. Preoperatively increased levels of CRP and hope were associated with less depression. Elevated cortisol predicted hostility. Medical comorbidities predicted anxiety and hostility.

Conclusions: The differential effect of preoperative stress-sensitive biomarkers may suggest differential physiological pathways to postoperative psychological disorders, a finding necessitating the investigation of multiple biomarkers in studying the mind-body interplay. The finding on CRP is consistent with the mixed literature concerning its effect in cardiac depression. The positive role of hope may indicate its protection.

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Meritorious Paper**Paper Session 05 4:39 PM–4:57 PM 2130****MOOD STATES AND STRESS-RELATED HEMODYNAMIC REACTIVITY IN HEART FAILURE**Kristie M. Harris, MS,¹ Charles Emery, PhD,¹ Jennifer Marshall, BS,² Maria Banis, MA,³ Andrew Wawrzyniak, PhD,⁴ Stephen Gottlieb, MD² and David Krantz, PhD³¹Ohio State Univ., Columbus, OH; ²Univ. of MD, Baltimore, MD; ³USUHS, Bethesda, MD and ⁴Univ. of Miami, Miami, FL.

Background: Affective states have been shown to predict systolic (SBP) and diastolic blood pressure (DBP) response to mental stress (MS) in healthy individuals. We assessed relationships between mood states (anxiety, tension, stress, irritation, and tiredness) and hemodynamic reactivity to MS in patients with heart failure (HF). **Methods:** 30 patients (27 males; mean=61.2±9.7 years) with ischemic HF (EF≤40; mean=23.8±6.7 %) completed anger recall and mental arithmetic (MA) stress tasks. Blood pressure (BP) was measured every 2 minutes during a 15-minute rest period, and during each 4-minute stress task. Differences between the mean of hemodynamic measures during MS and corresponding resting measures were used to assess MS-induced changes in SBP, DBP, mean arterial pressure (MAP), and heart rate (HR). Using Likert-type ratings, self-reported mood was assessed at rest, and after completion of MA, to assess MS-induced changes. Data were analyzed with hierarchical multiple regression, predicting hemodynamic variables during MS. Baseline corresponding hemodynamic variables were entered in the first step, then age and smoking status, followed by mood ratings in the final step. **Results:** Changes in SBP were predicted by baseline levels of stress ($\beta=-.428, p=.010$) and tiredness ($\beta=.328, p=.043$). Change in DBP was predicted by tiredness at baseline ($\beta=.218, p=.038$). Change in MAP was predicted by baseline anxiety ($\beta=.272, p=.022$) and tension ($\beta=.257, p=.042$). Change in HR was predicted by baseline anxiety ($\beta=.200, p=.040$) and level of interest ($\beta=.227, p=.021$). **Conclusions:** Resting mood states are associated with MS-related changes in markers of hemodynamic status among patients with HF. Although higher resting levels of negative mood states were generally associated with greater hemodynamic MS-related increases, higher baseline stress was associated with reductions in SBP, suggesting a protective effect. These findings indicate a role of negative mood states in MS-related hemodynamic reactivity among patients with HF.

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Meritorious Paper**Paper Session 05 4:57 PM–5:15 PM 2131****INDIVIDUAL DIFFERENCES IN THE RELATION BETWEEN STRESS RESPONSES AND METABOLIC BURDEN MEASURED CONCURRENTLY AND PROSPECTIVELY**Christina Gentile, Bachelor of Arts^{1,2} and Bianca D'Antonio, PhD^{1,2}¹Research Center, Montreal Heart Institute, Montreal, QC, Canada and ²Psychology, Université de Montréal, Montreal, QC, Canada.

Introduction: One of 5 Canadians is affected by the metabolic syndrome (MS). Psychological factors may contribute to MS via heightened or prolonged physiological responses to stress. **Objectives:** To examine the concurrent and prospective relations between a global index of metabolic dysfunction (MB) and stress responses, as well as the moderating effect of age and/or sex on these associations.

Methods: 193 healthy working men and women (Mage=41±11.5) were exposed to four stressors while BP, HR, and heart rate variability (HRV; specifically HF and LF/HF) were obtained. 5-minute recovery periods followed each stressor. Residual change scores for stress reactivity (stress-baseline) and recovery (recovery-baseline) were used to control for baseline values. MB was defined as the number of metabolic parameters for which Ss were in the higher quartile (lower for HDL) for their sex. Three years later, MB was reassessed in 136 Ss. Hierarchical linear regressions were performed. **Results:** HR and LF/HF reactivity interacted with age to predict concurrent measures of MB ($p<.05$). Heightened HR reactivity related to significantly greater concurrent MB among older ($b=.33, p<.05$) but not younger Ss. SBP, HR, HF, and LF/HF recovery interacted with age and/or sex to predict concurrent MB ($p's<.05$). For example, HR recovery was associated with increased MB only among older Ss ($b=.25, p<.05$). Surprisingly, greater LF/HF during recovery was associated with lower concurrent MB among younger and middle-aged Ss ($b=-.39$ and $-.19$ respectively; $p<.05$). Sex interacted with HF and LF/HF reactivity and recovery to predict MB at follow-up. For example, in men, decreased HF during stress predicted greater MB ($b=-0.04, p<.01$) independently of baseline MB and other covariates. Opposite results were obtained in women ($b=0.03, p=0.001$).

Conclusion: Physiological stress responses contribute to metabolic abnormalities though the direction of effect depends on age and/or sex. Prospectively, autonomic measures were most predictive of MB.

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Paper Session 06 3:45 PM–4:03 PM 2132**EFFICACY OF AN INTERNET RCT FOR LONG-TERM CANCER SURVIVORS AFTER HEMATOPOIETIC CELL TRANSPLANTATION (HCT)**Karen Syrjala, PhD,¹ Jean Yi, PhD,¹ Samantha Artherholt, PhD,² Joan Romano, PhD,² Allison Stover, MPH,¹ Mary Flowers, MD,¹ Mark Hegel, PhD³ and Wendy Leisenring, ScD¹¹Fred Hutchinson Cancer Research Center, Seattle, WA; ²University of Washington, Seattle, WA and ³Dartmouth-Hitchcock, Hanover, NH.

Health information technology (HIT) offers opportunities to reach cancer survivors with long-term needs. The 'INSPIRE' internet-based program for HCT cancer survivors was developed using Problem-Solving Treatment (PST) and psycho-educational models. Eligibility for HCT survivors required no cancer treatment in the previous 2 years, age >17, English literacy, no severe depression, and internet and email access. Participants with elevated scores on pre-defined criteria for distress, depression and fatigue were randomized to receive INSPIRE access, INSPIRE access plus PST phone calls, or delayed INSPIRE access (control). Primary outcomes after 6 mo. were Cancer & Treatment Distress, SCL-90-R depression, Fatigue Symptom Inventory, and SF-36 Physical Function. Of 748 eligible participants, 337 (45 %) met criteria. These participants had a mean age of 50.8 (SD 11.9); 53 % were male, 94 % were white, non-Hispanic; mean time since first HCT was 8.6 years (SD 4.5). We found no aggregated outcomes efficacy for the intervention ($p>.3$) or indication that the addition of PST phone calls improved upon INSPIRE access alone ($p=.60$); nor did we find efficacy for improved fatigue. In subset analyses for those with at least moderate depression or distress at baseline, and who viewed >2 pages of the site, INSPIRE alone vs. control improved depression at 6 mo. [62 % vs. 36 % improved, RR=1.73 (CI 1.04, 2.87)] and marginally improved distress [40 % vs. 20 %, RR=2.00 (CI 0.86, 4.62)]. Distress improved in those over age 39 [47 % vs. 12 %, RR=3.9 (CI 1.3, 12.0)]. For those <15 years after HCT, distress improved [43 % vs. 15 %, RR=2.9 (CI 1.10, 7.75)], and depression marginally improved [54 % vs. 35 %, RR=1.53 (CI 0.89, 2.66)]. HIT offers opportunities for enhancing survivorship outcomes after HCT, but requires improved strategies for targeting fatigue, younger adults and increasing utilization of the program. The addition of social media and mobile methods may be beneficial.

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Paper Session 06 4:03 PM–4:21 PM 2133**COGNITIVE FUNCTION PRIOR TO ALLOGENEIC HEMATOPOIETIC CELL TRANSPLANT**Heather Jim, PhD,¹ Anna Barata, MA,² Charissa Hicks, BA,¹ Joseph Pidala, MD,¹ Brian Gonzalez, MA,³ Brent Small, PhD³ and Paul Jacobsen, PhD¹¹Moffitt Cancer Center, Tampa, FL; ²Hospital Sant Pau, Barcelona, Spain and ³University of South Florida, Tampa, FL.

Background: Available data suggest that patients' cognitive function may be impaired prior to hematopoietic cell transplant (HCT), but samples have typically been small and heterogeneous. In addition, few studies have examined clinical and psychological correlates of pre-transplant cognitive function.

Methods: Neuropsychological tests were administered to patients prior to allogeneic HCT for hematologic disease. Domains of cognitive functioning assessed included verbal and visual memory, attention, complex cognition, and total neuropsychological performance (TNP). Raw scores were transformed into T scores based on published normative data.

Results: The sample consisted of 138 patients [40 % female, mean age 52 (range 20–75)]. Despite above-average premorbid IQ (mean 104.23, SD 9.58), patients demonstrated deficits in verbal memory, visual memory, and TNP compared to normative values ($ps<.05$). Effect sizes ranged from .29 SD (delayed visual recall) to .98 SD (delayed verbal recall). A total of 54 % of patients demonstrated clinically significant cognitive impairment. Older and less educated patients displayed significantly worse performance on tests of attention and complex cognition ($ps<.05$). Cognitive performance was not associated with depression, anxiety, perceived stress, or perceived general health ($ps>.05$). Cognitive performance was also not associated with previous radiation, intrathecal chemotherapy, or number of previous chemotherapy regimens ($ps>.05$).

Conclusions: Data from the current study suggest that clinically significant cognitive impairment is present in the majority of hematologic patients prior to allogeneic HCT. Verbal and visual memory were the cognitive domains most likely to be affected. Impairments were associated with older age and less education but not psychological factors or previous treatment, suggesting that sociodemographic factors may put HCT patients at risk for cognitive impairment.

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Paper Session 06 4:21 PM–4:39 PM 2134

IMPACT OF TOBACCO USE ON HEALTH RELATED QUALITY OF LIFE (HRQOL) AMONG 1-YEAR SURVIVORS OF HEMATOPOIETIC STEM CELL TRANSPLANTATION (HSCT)

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Among hematologic cancer survivors treated with HSCT, tobacco use has been linked to more hospitalization days and worse survival. Tobacco has not been examined in association with HSCT HRQOL. Utilizing a prospective cohort design, this study examined the association between pre-HSCT tobacco use and cancer-specific HRQOL 1-year post-HSCT. Secondary analyses examined HRQOL subscales (physical, functional, social, emotional), HSCT-specific concerns, and benefit finding. Tobacco use was biochemically validated with serum cotinine ≥ 2 ng/mL. Analyses controlled for age, gender, and transplant type (autologous vs. allogeneic). Of the enrollment sample (541, 90 % consent rate), 380 survived 1-year, had a valid pre-transplant cotinine assay, and completed the 1-year follow-up survey (90 %). This sample was an average of 56-years old and predominantly male (58 %), Caucasian (95 %), partnered/married (86 %), college educated (45 % ≥ 4 -year degree), received an autologous HSCT (79 %), and 37 had a positive pre-HSCT cotinine assay (10 %). HRQOL comparisons by tobacco status revealed more adverse scores among tobacco users across all outcome measures. Thresholds of clinical significance (Minimally Important Difference, \geq small effect) revealed significant associations between tobacco use and worse total HRQOL, emotional HRQOL, and HSCT-specific concerns, with a similar magnitude of lower benefit finding. A significant effect of tobacco use on worse HSCT-specific concerns ($p=.05$) was found after adjustment for age, gender, and transplant type. Total, functional and physical HRQOL trended toward significance ($p=0.08-0.09$). Even with the limitation of small cell size (37 tobacco users) and likely bias toward attrition for tobacco users (worse survival and health status), tobacco use was associated with worse HRQOL in terms of both clinical and statistical significance among 1-year HSCT survivors. Replication is needed in larger, more diverse samples.

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Paper Session 06 4:39 PM–4:57 PM 2135

ROLE OF HEALTH BEHAVIORS IN SEXUAL QUALITY OF LIFE AMONG HEMATOPOIETIC STEM CELL TRANSPLANT CANCER SURVIVORS

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Sexual quality of life (SQOL) is known to be reduced among hematopoietic stem cell transplantation (HSCT) cancer survivors. However few researchers have examined prognostic factors of SQOL post-transplant. Health behaviors and demographic factors are implicated in SQOL for the general population, but little is known about their effect on SQOL in HSCT survivors.

A prospective cohort of HSCT survivors was given surveys assessing potentially prognostic health behaviors (tobacco use, physical activity, alcohol use, and nutrition) pre-transplant. SQOL was assessed 1 year post-transplant using an item from the FACT-G, "I am satisfied with my sex life." Respondents (N=467) were 58 % male, 41 % partnered, 97 % Caucasian, and 19 to 76 years of age (M=55.87; SD=11.41). Of 356 participants who indicated SQOL, 66 % indicated low SQOL (defined as "not at all," "a little bit," or, "somewhat satisfied"). A total of 29 % indicated they were not at all satisfied with their sex life (44 % of those included in the category of low SQOL). Females reported significantly lower SQOL ($\beta=-.19$, $p<.001$) than males. Increased post-diagnosis exercise significantly predicted higher SQOL ($\beta=.12$, $p<.05$). Survivors who received pre-transplant instruction to quit tobacco experienced lower post-transplant SQOL ($\beta=-.1$, $p=.063$). No other pre-transplant, post-diagnosis health behaviors were associated with SQOL.

Because we used pre-transplant variables to predict post-transplant SQOL, further research is needed to understand the course of these relationships over time among HSCT survivors. The effect for tobacco cessation advice may reflect preexisting medical problems with tobacco use. Actual tobacco use was not significantly associated with SQOL. Findings may have implications for development of effective interventions to enhance HSCT survivors' sexual and overall quality of life.

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Paper Session 06 4:57 PM–5:15 PM 2136

THE RELATIONSHIP BETWEEN EMOTIONAL SUPPORT AND EMOTIONAL WELL-BEING AMONG PATIENTS UNDERGOING STEM CELL TRANSPLANTATION

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Stem cell transplantation (SCT) is a common treatment for blood or bone marrow cancers. Although it is often effective, several negative side effects are associated with SCT. Frequently, patients experience both physical and psychological problems during treatment (e.g., nausea, fatigue, emotional distress, cognitive problems). Patients may benefit from increased emotional support during SCT. However, patients' relationships with others may be disrupted due to the intensive nature of the treatment, including limitations to normal daily activities (e.g., avoiding group contact or crowds). This study aimed to examine the relationship between emotional support and well-being in patients undergoing SCT (N=52; 76.9 % White, 19.2 % African American; 61.5 % Male). We hypothesized that higher pre-transplant emotional support would be associated with greater emotional well-being and less emotional distress at both discharge and at 3-months post-transplant. Correlational analyses revealed that patients who reported higher levels of emotional support pre-transplant had higher levels of emotional well-being at discharge ($r=0.39$) and at 3-months ($r=0.48$), lower levels of anxiety at discharge ($r=-0.32$) and at 3-months ($r=-0.45$), and lower levels of depression at discharge ($r=-0.43$) and at 3-months ($r=-0.51$, all p 's <0.05). These results indicate the potential benefits of emotional support on patients' well-being during and post-SCT. Ensuring that patients have strong emotional support may help to ease the burden of this treatment. Potential psychosocial interventions that target social support among cancer patients receiving SCT could be an important area of future research. The application of mHealth technologies to implement interventions that increase emotional support may be particularly useful in this patient population.

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Paper Session 07 3:45 PM–4:03 PM 2137

EATING BEHAVIORS INFLUENCE BMI CHANGE IN SISTERTALK

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Better understanding of behavioral risk factors of obesity among black women may support more targeted interventions. This analysis assesses the longitudinal associations of stress and eating when depressed or sad (EWD) or eating to manage stress (ETMS), with weight and waist circumference (WC) among participants of "Sister Talk," a weight loss intervention program for Black women in Boston, MA (n=256).

Data include measured height, weight (BMI calculated) and WC and questionnaires (demographics, stress, EWD, ETMS). Baseline EWD and ETMS assessed using Chi-square by demographics and stress, and ANOVA with BMI and WC. ANOVA models across all time points were constructed for dependent variables of BMI and WC at 3, 8 and 12 months with EWD and ETMS at the immediately preceding time point as independent variables adjusting for potential demographic confounders. Generalized Estimating Equation (GEE) models were then constructed including all time points with dependent variables of BMI and WC, with EWD and ETMS and time as independent variables both with and without further adjustment for potential demographic confounders.

Demographics were not associated with EWD or ETMS. Stress was positively associated with EWD ($p=.01$) and ETMS ($p=.01$), as were BMI and WC (EWD ($p=.01$, $p=.001$) and ETMS ($p=.02$, $.07$)). Lower BMI loss or BMI gain was found at 8 and 12 months for women who reported always/often EWD or ETMS. Higher WC was found among women reporting always/often ETMS, compared with smaller waist circumference among other women. Models with and without adjustment showed a linear increase in BMI with ETMS at each level ($p=.06$, $.01$), and an increase in BMI and WC for EWD always/often responders compared with the rarely/never responders ($p=.01$ for each).

The eating behaviors EWD and ETMS were associated with stress, and with differences in weight and WC. During the intervention, higher reporting of these behaviors did not allow for weight loss or maintenance to the degree experienced by other women in the program.

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Meritorious Paper**Paper Session 07 4:03 PM–4:21 PM 2138**

EXAMINING A RIPPLE EFFECT: DO SPOUSES' BEHAVIOR CHANGES AFFECT EACH OTHERS' WEIGHT LOSS?

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Background: Including spouses in obesity treatment and changing their shared home environment have been found to promote weight loss. Behavioral theory suggests that diet and activity changes made by couples enrolled in a weight loss intervention should have reciprocal impact on one another's behaviors and ultimate weight loss. We assessed whether participants' and partners' behavior changes impacted each others' weight loss by comparing couples in which both members were randomly assigned to an active weight loss program (Together) to those in which only the primary participant attended treatment (Alone). **Methods:** A subsample of heterosexual couples (N=132 couples; 93 % Caucasian; 51.3±9.1 years; 34.2±5.9 kg/m²) were drawn from individuals enrolled in an 18-month weight loss trial. All participants and partners were weighed and completed measures of dietary intake and physical activity at study entry and at 6 months. We conducted dyadic data analyses using the Actor-Partner Interdependence Model. **Results:** Overall, participants' weight loss was not affected by their partners' behavior changes. However, partners' weight loss was influenced by their participants' changes in calorie intake and percentage of fat in their diet. A significant interaction between behavior change and treatment group revealed that in the Together group, partners had higher percent weight loss when the participant decreased their calorie intake more, $\beta=.19$, $p<.05$, and decreased the percentage of fat in their diets more, $\beta=.20$, $p<.05$. Partners in the Together group had higher percent weight loss than those in the Alone group, but partners in the Alone group were more influenced by their participants' behavior changes. There were no reciprocal effects found with physical activity changes. **Conclusions:** Direct weight loss treatment had the greatest impact on participants and partners who were treated. Untreated partners' weight losses were positively impacted by their spouses' dietary changes, suggesting a ripple effect from treated spouses to their untreated partners.

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Paper Session 07 4:21 PM–4:39 PM 2139

DO PROGRAM DOSE, FIDELITY, AND QUALITY PREDICT PHYSICAL ACTIVITY AND WAIST CIRCUMFERENCE OUTCOMES? PROCESS EVALUATION OF THE PROACTIVE TRIAL

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The systematic evaluation of effective health behavior interventions is critical for addressing overweight and obesity. Outcome evaluations assess whether intervention objectives have been met, but provide limited insight into the underlying processes of change. Process evaluation assesses whether critical intervention components are delivered as intended and can enhance our understanding of program effects by linking participant program exposure to outcomes. The purpose of this study was to conduct a process evaluation of PROACTIVE, an intervention to prevent and reduce obesity in clinical settings, and explore associations between measures of dose (% of sessions attended), fidelity (% of session objectives implemented as planned), and session quality (degree of session success estimated on a 1–5 point scale) with participant outcomes. Overweight and obese men (n=74) and women (n=175) were randomized into the 24-month health behavior counseling intervention. Outcomes of physical activity (PA) involvement (7-Day PA Recall) and waist circumference (WC) were measured at 12 and 24 months. Process outcomes were distilled from Session Summary Forms completed by Health Educators after each session. Regression analyses were conducted. Dose was a significant predictor of WC at 24 months ($\beta=-.12$, $p<.01$) only. Fidelity predicted 12 month WC ($\beta=-.11$, $p<.05$), and PA ($\beta=.21$, $p<.05$). Quality was significantly associated with 12 month WC ($\beta=.07$, $p<.05$; PA: $\beta=-.18$, $p<.01$) and 24 month outcomes (WC: $\beta=.10$, $p<.01$; PA: $\beta=-.15$, $p<.05$). Overall, when participants attended more sessions and Health Educators adhered to the PROACTIVE program plan with a greater degree of fidelity and quality, participants were more likely to experience a decrease in WC and an increase in overall PA. Insight yielded into the relationship between program exposure and participant outcomes via this process evaluation can help guide and refine future program implementation.

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Paper Session 07 4:39 PM–4:57 PM 2140

LIFESTYLE PATTERNS RELATED TO WEIGHT-LOSS MAINTENANCE

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In order to identify phenotypical behavioral patterns related to obesity, Fuglestad et al. (2012) factor analyzed an array of weight control and lifestyle behaviors in a sample of people who had lost weight on their own initiative (≥ 10 % loss in the past year). Four behavioral factors were identified—regularity of meals, TV related viewing and eating (e.g., eating meals in front of the TV), intentional weight control strategies (e.g., calorie counting, self-weighing), and eating away from home. Utilizing the same sample, the present investigation examined the stability of these factors over time and the associations of these factors with weight change. Participants in a weight maintenance intervention completed behavioral measures and were weighed at baseline, 6, 12, 18, and 24 months (N=419; 82 % female; 87 % white; age M=47). The four behavioral factors emerged at each time point, although the eating away from home factor was narrower—only fast food and convenience stores. Linear mixed models tested the independent associations of these factors with weight change and weight maintenance (i.e., gaining < 25 % of lost weight). Increases in TV related eating and viewing were related to increases in weight ($\gamma=1.99$, $t=4.30$, $p<.0001$) and decreases in weight maintenance ($\gamma=-.31$, $t=-2.74$, $p=.006$). Increases in fast/convenience food were related to increases in weight ($\gamma=1.30$, $t=4.30$, $p=.013$). Increases in weight control strategies were related to decreases in weight ($\gamma=-2.97$, $t=6.80$, $p<.0001$) and increases in weight maintenance ($\gamma=.43$, $t=2.95$, $p=.003$). Counter to expectation, meal regularity was not related to weight outcomes, suggesting that this may be an overemphasized behavior. Overall, results suggest that a regulated and ordered lifestyle—consisting of intentional weight control strategies and limited fast food and TV related eating and viewing—is important for maintaining weight loss. In future research, it will be crucial to link these behavioral patterns to environmental, biological, and psychological influences on obesity.

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Paper Session 07 4:57 PM–5:15 PM 2141

MODEST FINANCIAL INCENTIVES AND OPTIONAL GROUP SESSIONS ENHANCE OUTCOMES IN AN INTERNET BEHAVIORAL WEIGHT LOSS DISSEMINATION INITIATIVE

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Given their reach, statewide campaigns provide an excellent platform for disseminating behavioral weight loss treatment. We previously reported that adding an Internet behavioral weight loss program (IBWL; video lessons, self-monitoring/feedback) increased weight losses in Shape Up Rhode Island (SURI), a state-wide wellness campaign. In this study, we tested whether adding financial incentives or optional group meetings further improves outcomes. SURI 2012 was a 12-week Internet program to promote weight loss and physical activity in Rhode Island. We recruited 268 individuals from the weight loss division (83 % Female; 88 % White; age=46.3±10.6; BMI=33.6±6.3) and randomized them to SURI+IBWL (N=91), SURI+IBWL+Incentives (N=89), or SURI+IBWL+Group (N=88). Incentive participants could earn up to \$45 during the program (\$1–10/wk) for submitting self-monitoring data, and those who lost 5–10 % of initial body weight or ≥ 10 % were entered into a \$50 or \$100 raffle, respectively. Group participants had the option of attending weekly meetings that involved private weigh-ins and interactive sessions to supplement the Internet program. Objective weights were obtained at pre- and post-treatment. Retention was 94 %. Both enhanced conditions yielded significantly greater weight losses than SURI+IBWL (SURI+IBWL+Incentives: -5.8 ± 5.2 kg; SURI+IBWL+Group: -5.1 ± 5.1 kg; SURI+IBWL: -3.6 ± 4.7 kg; p 's $<.05$), but were not different from one another ($p=.33$). More participants in SURI+IBWL+Incentives achieved a ≥ 5 % weight loss compared to SURI+IBWL (57 % v. 40 %, $p=.02$); SURI+IBWL+Group was not significantly different from the other two conditions (48 %; p 's $>.20$). Adding a modest financial incentive or optional group sessions to an Internet weight loss program substantially improves outcomes in a statewide campaign. Financial incentives may be particularly effective at motivating participants to achieve a clinically significant weight loss. Cost data will be presented at the meeting.

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Paper Session 08 3:45 PM–4:03 PM 2142

DO FRIENDS OR PARENTS MATTER MORE TO YOUTH EATING, PHYSICAL ACTIVITY, AND SEDENTARY BEHAVIORS?

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OBJECTIVE: Studies of social influences often use youth report of others' behaviors, which are likely clouded by adolescents' own attitudes. The purpose of this study was to examine the role of friends and parents on adolescents' weight-related behaviors using direct measures. **METHODS:** EAT-2010 is a large cross-sectional study, examining weight-related outcomes among diverse youth from Minneapolis/St. Paul. In 2009–2010, classroom-administered social network, nutrition, and physical activity surveys were obtained from youth (n=1743; mean age=14.2±1.9; 80% non-white) in 20 schools. Data from up to 6 nominated friends were linked to participants. Project F-EAT studied the home environment of EAT-2010 participants, in which parents completed mailed/phone surveys. Multivariate logistic regressions were used to assess associations between friends' and parents' behaviors with youths' fast food restaurant use, breakfast consumption, physical activity, and screen-time behaviors. Statistical differences were tested in simultaneous effects models. **RESULTS:** Among girls, friends' and parents' fast food restaurant use and breakfast eating were associated with higher odds of fast food restaurant use (Friend-OR=1.2, p<0.01; Parent-OR=1.5, p<0.01) and breakfast eating (Friend-OR=1.5, p<.01; Parent-OR =1.7, p<0.01). Parents' screen-time behavior was associated with girls' screen-time behavior (OR=1.6, p<0.01). Among boys, only one association was found to be statistically significant: parental breakfast eating was associated with boys' breakfast eating (OR=1.8, p<.01). For both genders, the relationships between parents and youth behaviors were generally larger than those between friends, but were not statistically significant. **CONCLUSION:** Results suggest that in the development of obesity interventions, strategies for engaging both parents and friends should be explored, particularly for female youth.

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Paper Session 08 4:03 PM–4:21 PM 2143

USE OF APPRECIATIVE INQUIRY TO ENGAGE PARENTS AS CO-DESIGNERS OF A HEALTHY LIVING/WEIGHT MANAGEMENT PROGRAM FOR ADOLESCENTS

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Effective family interventions for the treatment of obesity in economically-disadvantaged youth remain elusive. It may be because these weight management programs are not aligned with family value systems. We used Appreciative Inquiry methods to conduct a series of focus groups with parents/guardians of overweight/obese adolescents to engage them as co-designers of a weight management program. The sample consisted of 44 adult parents/guardians of adolescents in the 6th- 8th grades of the Cleveland Municipal School District who had a BMI in the 85th percentile or higher. Appreciative Inquiry involves the art and practice of asking questions that elucidate a person's capacity to heighten positive potential. In four focus groups of 8–15 participants, a structured interview guide was used to ask parents to describe their personal, interpersonal and environmental positive experiences relevant to maintaining and improving their children's weight. Results indicate that parents recognize the potentially great influence they have to be positive role models for their children regarding healthy living/weight management. This power to grow healthy children is a joy and source of pride in their life. Parents describe their personal roles in maintaining healthy children as that of a healer, caregiver, village mother, activist, and ambassador. They describe several positive health-promoting processes within their family daily routines, such as eating together, sharing sports together, rooting for children when they compete in sports, gardening, and preparing food together. Parents also experience positive community resources to support their children's healthy living, including access to recreation centers, organized school programs, youth YMCA programs, summer camps, and church programs. The family positive experiences from this study were used in the design of an innovative family weight management program currently being tested in a randomized trial.

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Citation Paper

Paper Session 08 4:21 PM–4:39 PM 2144

A LONGITUDINAL STUDY OF THE EFFECTS OF SOCIAL SUPPORT ON PHYSICAL ACTIVITY IN UNDERSERVED ADOLESCENTS

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To reduce disparities in the prevalence of overweight and obesity, it is important to identify factors that may promote physical activity (PA) in underserved (low-income, minority) adolescents. Although social support for PA has been identified as an important social environmental correlate of PA in youth, less is understood about what types of social support may be important for PA in African American adolescents. Tangible social support that provides opportunities for PA (transportation) may be particularly important for promoting PA in underserved youth. Measures of overall social support that represent both tangible and emotional social support (encouragement) may mask the importance of tangible social support. The purpose of this longitudinal study was to examine the relative importance of tangible social support and overall social support provided by family and peers in promoting increases in PA. Participants were students in 6th grade (N=1422, Mage=11 years) from 24 middle schools who were part of the Active by Choice Today (ACT) trial. The ACT trial was a motivational and behavioral skills intervention (delivered during 1 school year) aimed at increasing PA in underserved adolescents. The sample in this randomized school-based trial was predominantly African American (73%), with 54% female and 51% overweight or obese. Moderate-to-vigorous PA (MVPA) was assessed using 7-day accelerometry estimates (min/day). Tangible social support and overall family and peer social support were measured with previously validated surveys. As predicted, mixed models analysis of covariance indicated that, after controlling for intervention effects, baseline (95% CI=0.31, 4.25) and change in tangible social support (95% CI=0.79, 4.80) predicted change in MVPA, above and beyond overall family or peer social support. The effects associated with change in overall peer social support approached significance (95% CI=-0.26, 3.92). Interventions in underserved adolescents may benefit from integrating opportunities for tangible social support for PA.

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Paper Session 08 4:39 PM–4:57 PM 2145

PORTRAYALS OF SPORTS PARTICIPATION IN POPULAR CHILDREN'S TELEVISION SHOWS: THE ROLES OF GENDER AND ETHNICITY

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Positive social modeling of physical activity through media has the potential to impact personal exercise attitudes and behaviors among youth. Television (TV) remains the dominant source of media exposure among youth, with an average exposure of 4.5 hours per day. Surprisingly, we currently lack data on the portrayals of participation in physical activity within popular children's TV shows despite a national effort to combat childhood obesity and the known influence of media on youth behavior. In addition, very little is known about the representations of gender and ethnicity in portrayals of physical activity, despite lower rates of sports participation among female, Latino, and African American youth. To answer these questions, quantitative content analysis of the most popular TV shows among Latina and Caucasian girls, aged 6–11, was conducted. Episodes from the ten most popular children's shows were coded for number of portrayals of participation in sports, gender of participants, age, and ethnicity. Results indicate that participation in sports was present in 56% of children's shows analyzed, and males were the majority participants (65%). The overwhelming majority of participants in sports were Caucasian (83%) even though Caucasians represented only 67% of the total characters. African American characters represented 13% of sports participants, followed by multiethnic characters (2%), and Latinos and Asian American characters (both 1%). Female and Latino characters were less likely to be portrayed as engaging in sports in popular children's TV shows, which could help explain, in part, significantly lower numbers of female and Latino youth who participate in sports. By quantifying sports participation in children's media, the current research contributes to a growing body of knowledge that seeks to understand and positively impact media effects on child health.

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Paper Session 08 4:57 PM–5:15 PM 2146

CHILDREN'S OPPORTUNITIES FOR PHYSICAL ACTIVITY AT SCHOOL: RECESS MATTERS

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BACKGROUND: Schools are important locations for children to accrue health-related physical activity (PA), but few studies have examined district and school policies and practices related specifically to recess.

METHODS: We recruited 65 elementary schools from 27 school districts across 7 US states. Key informants completed the School Physical Activity Policy Assessment (S-PAPA), a validated tool that provides information on district- and school-level PA policies; 130 representative classroom teachers completed a daily log of students' PE and recess time.

RESULTS: Many districts (63 %) and schools (62.7 %) had policies specifying the number of recess minutes per day, but few required: (a) organized activities be provided during recess (districts 6 %; schools 11 %), (b) supervisors receive specialized training (districts 29 %; schools 31 %), or (c) a maximum student-to-supervisor limitation (districts 21 %; schools 22 %). Most schools (89 %) reported providing recess daily, for an average of 29.2 minutes (SD=5.1). Recess accounted for 70 % of all scheduled PA time; PE accounted for 30 %. Schools with more students receiving free/reduced meals were allocated less PA time ($P=.021$). Students were allowed to stay indoors during favorable weather in 20 % of schools and in 43 % there was no place for them to be active during inclement weather. Most schools permitted teachers to withhold recess from students for academic (84 %) and disciplinary (77 %) reasons. Schools (21 %) reported that teachers "often" or "very often" withheld recess for academic reasons. Only 21 % of schools had a separate budget for recess equipment; if they did, the median was \$0.50 per student.

CONCLUSIONS: There were few written policies for the conduct of recess at either the district or school levels. Schools allocated time for recess that approximated national recommendations (e.g., 30 min/day by NASPE), but numerous site-level factors reduced the actual time students had to engage in PA (e.g., limited space, recess being withheld, untrained supervisors).

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Paper Session 09 3:45 PM–4:03 PM 2147

DELIVERING CHRONIC ILLNESS SELF-CARE BEHAVIORAL AND CLINICAL SUPPORT ON A MOBILE HEALTH TECHNOLOGY PLATFORM

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Mobile integrated therapy (MIT), a mHealth technology solution driven by integrated clinical-behavioral algorithms, is designed to support patients in all aspects of self-care, while providing clinicians with longitudinal data to make more informed decisions for their patients. **Methods:** A retrospective analysis of the design of the MIT mobile phone and web-based systems implemented in three diverse health care delivery settings was conducted to develop behavior design heuristics and a systems-level behavior design framework that could be used to the guide automation of MIT behavioral support. The models and outcomes included: 1) a year-long clinical trial ($n=163$) with community-based primary care physicians and their type 2 patients that demonstrated a 1.9 % reduction in A1C ($P<0.001$) over 12 months; 2) a model integrating MIT into a Medicaid setting ($n=32$) with a demonstrated measurable reduction in hospital admissions and emergency room visits; and 3) a model integrating MIT into a disease management program ($n=500$), and demonstrated patient engagement and satisfaction. **Results:** The analysis yielded a guide for defining the scope of behavioral support at a platform level, a mHealth behavior design framework, and a message content taxonomy. The Scope Definition Guide highlights the four key considerations to determine the focus of the behavioral support to be provided including the ecological approach, type of behavioral guidance, level of dynamic and adaptive intervention delivery, and level of message content tailoring. The mHealth Behavior Design Framework, guides decisions that affect system technology architecture design by linking behavioral support concepts to intervention design. The Message Content Taxonomy guides content development including message types; triggers, features and modes of message delivery; and timing, frequency and cycles of message delivery. **Discussion:** The application of these behavioral elements in each healthcare context and potential implications of the findings for designing mHealth platform solutions for chronic illness self-care will be discussed.

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Paper Session 09 4:03 PM–4:21 PM 2148

MOBILE APPS FOR PEDIATRIC OBESITY PREVENTION: JUST FUN AND GAMES?

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BACKGROUND: Pediatric obesity is one of the most pressing public health issues facing the US today, with estimates indicating that 16.9 % of children in the United States are obese, putting them at greater risk for health complications and future weight gain. Mobile applications (apps) offer a novel way to engage children in changing their health behavior, but little is known about the content of commercially available apps for pediatric weight loss, healthy eating, and physical activity (PA).

PURPOSE: The present study analyzed the content and inclusion of expert recommendations of commercially available apps for iPhone/iPad for pediatric weight loss, healthy eating, and PA.

METHODS: Fifty-seven apps were downloaded and tested by two independent raters. Apps were coded for: inclusion of expert recommendations for 7 strategies (e.g., set goals and limits) and 8 behavioral targets (e.g., do at least 1 hour of PA daily) based on recommendations from the Expert Committee for Pediatric Obesity Prevention; utilization of gaming elements; and general characteristics (e.g., average price, user ratings).

RESULTS: The majority of apps did not include any expert-recommended strategies or behavioral targets ($n=35$, 61.4 %). The mean number of recommendations among the apps that did include strategies and targets ($n=22$) was 3.7+2.3 out of 15; 56.1 % ($n=32$) of apps were classified as games; half the apps ($n=28$, 49.1 %) focused on diet only, 35.1 % ($n=20$) on PA only; mean price/app was \$1.05+1.66.

DISCUSSION: Most of the apps reviewed lacked any expert-recommended strategies, and could be strengthened by adding more comprehensive information about health change and more opportunities for goal setting. App developers and behavioral health experts should work collaboratively to incorporate evidence-based practices and expert recommendations in apps so that technologies marketed as health-promoting tools can promote substantive behavior changes.

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Paper Session 09 4:21 PM–4:39 PM 2149

HOW EVIDENCE-BASED ARE WEIGHT LOSS MOBILE APPS?

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Lifestyle interventions, while effective, are expensive and involve multiple in-person visits which has made widespread implementation difficult. Mobile technology may be a means to reduce intervention intensity while preserving outcomes, but it is unclear whether the development of weight loss mobile applications available on the market today has been based on evidence-based strategies. The aims of the present study were to 1) determine the degree to which commercial weight loss mobile application ("apps") reflect evidence-based weight loss strategies, 2) identify which evidence-based weight loss strategies have yet to be adapted onto a mobile app, and 3) identify technology-enhanced features that reduce burden of behavioral strategies or provide context-sensitive cues (e.g., bar code scanners for nutrition information, automatic reminders to record food intake). We employed a systematic app selection process to review 30 weight loss mobile apps on both iPhone and Android platforms. Each app was reviewed for the presence of 20 evidence-based behavioral weight loss strategies derived from the Diabetes Prevention Program. The apps included on average 19 % ($sd=13$; $range=0-65$ %) of the potential weight loss strategies. Seven of the 20 behavioral strategies were not found in any apps. The most common technology-enhanced features were bar code scanners (56.7 %) and a social network (46.7 %). Weight loss mobile apps typically included only a minority of the available evidence-based strategies but many include technology-enhanced features that reduce user burden. Behavioral strategies that help improve motivation, reduce stress, and assist with problem solving were missing across apps. Inclusion of missing strategies could make apps more helpful to users who have motivational challenges. Further research is needed to determine the efficacy of weight loss mobile apps when used independently as well as in combination with behavioral counseling.

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Paper Session 09 4:39 PM–4:57 PM 2150

A KNOWLEDGE MOBILIZATION NETWORK ANALYSIS IN A COMMUNITY-BASED ORGANIZATION

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Community-based organizations (CBOs) that provide services and programs to marginalized communities can play a strategic role in knowledge mobilization (KM). Few studies have empirically examined the complex process of KM in CBOs and the important role of interpersonal communication for ensuring dissemination of health-based research evidence by CBOs. Network analysis is an approach that can be used to understand how structural complexities and interpersonal communication influence the process of KM in CBOs. In the present study we conducted the first KM network analysis of a CBO that aimed to disseminate evidence-based physical activity guidelines for people with spinal cord injuries. We examined if and how interpersonal communication was associated with CBO staff's and volunteers' dissemination of the guidelines. Participants (N=81; 70 % staff; 30 % volunteers) completed an online network survey and measures of guideline dissemination. Using the network instrument, participants reported 238 people or organizations and 409 connections in which they communicated about the guidelines. The network analysis was performed using UCINET v6 and NETDRAW software. Network-level measures revealed that the network had a density score of 3 % and reciprocity score of 10 %. The patterns of densities observed within the network were indicative of a core-periphery structure revealing that interpersonal communication was greater within the core than between the core and periphery and within the periphery (Test Fitness=.28). Results of Chi Square tests revealed that individuals in the core were more likely to have engaged in behaviours that were indicative of guideline dissemination than individuals in the periphery (ps<.05). Findings suggest that interpersonal communication may be associated with guideline dissemination and highlight areas in the CBO's network where interpersonal communication can be improved to further facilitate KM.

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Paper Session 09 4:57 PM–5:15 PM 2151

FACTORS THAT INFLUENCE IMPLEMENTATION OF SCHOOL POLICIES: INTEGRATING CONCEPTS FROM THE DIFFUSION OF INNOVATIONS

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Public policies targeting the school environment are widely used to address childhood obesity, although little is known about the factors that can influence their implementation. This study explored the factors that impeded/facilitated the implementation of mandated school-based physical activity (PA) and nutrition guidelines in the province of British Columbia, Canada. Semi-structured interviews were conducted with 50 school informants (17 principals - 33 teachers/school personnel). A constructivist grounded theory approach was used to code the interviews. Every fifth transcript was double-coded, with discrepancies triangulated. Data was processed using NVivo 9 software. Concept maps were developed with current theoretical perspectives integrated in the later stages of analysis. The Diffusion of Innovations model provided a sound theoretical framework to understand and structure emergent themes: adoption was facilitated by having mandated guidelines and access to provincial/district resources (triability); informant opinion of both guidelines was positive (relative advantages); lack of structure and specificity impeded implementation (complexity); the guidelines were perceived to fit within the school/teaching philosophy (compatibility) although some disconnect were noted, and observing or expecting positive and negative impacts was perceived to influence implementation (observability). Although similar themes emerged for the PA and nutrition guidelines, key differences were found (eg lack of resources and time to implement PA guidelines and perceived impact of nutrition guidelines on school revenues). The results of this case study can inform policy implementation strategies.

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Paper Session 10 3:45 PM–4:03 PM 2152

RELATIONSHIP BETWEEN CHANGES IN IMPLICIT ATTITUDES TOWARD SMOKING AND SMOKING CESSATION

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Studies have shown that implicit attitudes toward smoking are associated with smoking status and level of smoking independent of explicit attitudes. Implicit attitudes may therefore be a valuable target for understanding current smoking interventions, but research is needed on whether implicit attitudes relate to changes in smoking behavior. This study examined the relationships between changes in implicit attitudes toward smoking and quit attempts and cessation. Daily smokers (N=183; 57 % male; 63 % African American) recruited from the community for a clinical trial to encourage quit attempts completed measures of demographics, explicit attitudes toward smoking (Pros and Cons of Smoking), and the Implicit Association Test (IAT) at baseline, month 3 (during intervention sessions) and month 6 (follow-up). Smoking behaviors (occurrence of at least one quit attempt and 7-day point-prevalence abstinence) were also assessed at months 3 and 6. Logistic regression analyses revealed more negative baseline IAT D scores were associated with a greater likelihood of making a quit attempt at month 3 and month 6 (OR=1.48 and 1.47, respectively, ps=.05), and the effect was enhanced when controlling for baseline explicit attitude scores (OR=1.58 and 1.58, respectively, ps<.05). More negative month 6 IAT D scores were associated with smoking abstinence at month 6 after adjusting for baseline levels (OR=.15, p<.05), but month 3 IAT D scores were not (OR=1.15, ns). Results suggest that more negative baseline implicit attitudes and more negative changes in implicit attitudes are related to quit attempts and cessation maintenance, respectively. This provides encouragement for developing and testing interventions that change implicit attitudes in order to enhance quit attempts and cessation. Supported by grant R01 CA 133068 from the National Cancer Institute, and Pfizer provided Varenicline.

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Paper Session 10 4:03 PM–4:21 PM 2153

COMBINED EMA AND GPS FOR ASSESSING THE SPATIAL DISTRIBUTION OF SMOKING BEHAVIOR: A PROOF OF CONCEPT STUDY

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Ecological momentary assessment (EMA) is a research method by which participants complete self-report electronic surveys on mobile electronic devices in their natural environment. Despite a rich database of EMA research, which includes information regarding the temporal distribution of behaviors (i.e. smoking) and the generic contexts in which they occur (e.g. at a bar), this information has not been linked to specific locations in space. Such location information, which can now be easily acquired from global positioning satellite (GPS) tracking devices and linked to EMA data, could provide unique information regarding the space-time distribution of behaviors and new insights into their determinants. In a proof of concept study, we assessed the feasibility of acquiring and combining EMA and GPS data from adult smokers during a 7 day assessment period. Participants were amenable to GPS tracking with 10 out of 11 agreeing to carry a GPS logger in addition to a personal digital assistant (PDA) used for acquiring EMA data. In addition, participants were highly compliant with instructions to carry and charge the GPS logger—80 % carried the device for at least 6 of the 7 days. A total of 804 smoking entries were recorded on the EMA device. GPS and EMA data were merged and then processed and analyzed using geographical information system (GIS) software (ArcGIS). Visual inspection suggested that the spatial distribution of smoking behavior and self-reported urges to smoke varied widely across individual smokers. Quantitative metrics (e.g. centrality of smoking) derived from network analyses were also used to characterize smoking behavior. In sum, the results of this proof of concept study suggest that EMA+GPS assessment is feasible and can provide novel insights into smoking behavior. We conclude by discussing how EMA+GPS might be used to study the ecology of smoking and other risk behaviors and make recommendations for future research and analysis.

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Paper Session 10 4:21 PM–4:39 PM 2154

RANDOM WALK NETWORK ANALYSIS FOR SMOKING CESSATION BEFORE CANCER SURGERY

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Smokers trying to quit often move between discrete smoking states—behavioral patterns that may be described as, e.g., cutting down, smoking under specific circumstances, brief abstinence followed by relapse, and total abstinence. Transient changes in smoking states may be particularly common and rapid when a smoker is in an unstable, stressful context, such as after a cancer diagnosis and anticipating surgery. Random walk network analysis is ideally suited for tracking trajectories of behavior change, yet it is not widely applied in behavioral medicine. This study applies random walk on a finite network in the context of a randomized trial of smoking cessation prior to cancer surgery. Patients (N=74) received NRT, cessation counseling, and a hand-held device providing scheduled reduced smoking (SRS), a behavioral treatment that gradually lengthens time between scheduled cigarettes with a quit date before surgery pre-set by the patient. The device tracked daily scheduled and unscheduled cigarettes. A total of 899 person days were collected. N=35 were abstinent 24 hours prior to surgery ('abstainers') and n=39 were not ('smokers'). We fitted a network with 10 nodes representing abstinence and 3 states of adherence to the SRS schedule (more than, exactly as, or less than scheduled) across 3 states of actual consumption (1–10, 11–20, or 20+ cigarettes), and modeled day-to-day transitions. Smokers smoked more than the SRS-prescribed cigarettes at almost twice the rate of abstainers (59 % vs. 31 %). Smokers were also more likely than abstainers to linger within states of higher consumption, as seen in days smoked 20+ cigarettes (13 % vs. 2 % in smokers vs abstainers) compared to lower consumption, (1–10 cigarettes, 48 % vs 36 %). Smokers were less likely to have non-smoking days (18 %) than abstainers (48 %). Patients who fail to abstain may cut down before surgery, but they rarely go without a daily cigarette, smoke more than prescribed, and linger within states of non-adherence. Random walk network analysis is a promising statistical technique to model stochastic processes of cessation behavior.

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Meritorious Paper

Paper Session 10 4:39 PM–4:57 PM 2155

FACTORIAL INVARIANCE OF SITUATIONAL TEMPTATIONS FOR SMOKING IN ADULT SMOKERS INCLUDING A WEIGHT CONCERNS SUBSCALE

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The situational temptations for smoking scale assesses the degree of temptation a person feels to smoke across different situations. This Temptations measure included three previously validated subscales, Positive/Social (PS), Habit Strength (HS), Negative/Affective (NA), as well as one additional subscale, Weight Concerns (WC), that was validated in adolescent smokers only. Weight concerns have been shown to be salient to adults who smoke and negatively associated with cessation. This study examined psychometric properties of the temptations measure with the added WC subscale, including invariance of the measurement model, using a population-based sample of adult current smokers (N=2921, age range 18–82 years, 68 % white, 55 % female). Confirmatory factor analyses (CFA) showed that theoretically based models with four correlated factors (PS, HS, PS, WC) fit the measure well, with moderate to high internal consistencies (mean scale $\alpha = .70$). Multisample CFA established that this factor pattern was invariant across stage of change, racial identity, age, and gender subgroups. Measurement invariance models based on the covariance matrices fit well; factor loadings and item residuals were similar across stage [CFI: .96, RMSEA: .06], racial identity [CFI: .95, RMSEA: .06], and age [CFI: .95, RMSEA: .06] subgroups. Metric invariance was confirmed for gender [CFI: .94, RMSEA: .07]. Although gender differences in factor loadings were revealed for several WC and NA items, the magnitude of these differences was generally small. These results indicate a consistent relationship between the four factors (PS, HS, NA, WC) of situational temptations for smoking, and the twelve indicator items, demonstrating the internal validity of the measure in adult smokers. Future research is needed to evaluate the factorial invariance of the measure over time.

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Meritorious Paper

Paper Session 10 4:57 PM–5:15 PM 2156

RATINGS OF PUFF LIKING DURING CIGARETTE SMOKING ARE ASSOCIATED WITH NICOTINE DEPENDENCE AND SUBSEQUENT RELAPSE TO SMOKING

Chantal E. Meloscia, BA,¹ David W. Wetter, PhD,² Paul M. Cinciripini, PhD,² Jason D. Robinson, PhD,² Yisheng Li, PhD² and Andrew J. Waters, PhD¹¹Uniformed Services University of the Health Sciences, Bethesda, MD and ²The University of Texas MD Anderson Cancer Center, Houston, TX.

Cigarette smoking remains the leading preventable cause of death in the United States. It is important to understand the psychological processes that underlie nicotine dependence in order that more effective interventions can be developed. Much research has focused on the role of craving and cue reactivity in relapse (drug "wanting"). Here we examined the clinical relevance of acute hedonic effects (drug "liking") of cigarette smoking. Smokers (N=268) enrolled in a smoking cessation study were followed from 2 weeks pre-quit through 4 weeks post-quit. Participants attended one pre-quit laboratory session before which they abstained from smoking. They also attended another pre-quit session before which they smoked normally. At the pre-quit sessions, they smoked a cigarette. After each of the first 7 puffs they rated puff "liking" on a 7-pt (1–7) scale. The outcome variable was continuous abstinence (biochemically verified) for one week post quit day. Mean puff liking ratings at the non-abstinent and abstinent sessions were 5.01 and 5.26 respectively. Puff liking ratings decreased over the 7 puffs ($p < .001$). Puff liking ratings were higher at the abstinent session ($p < .05$), but the effect of abstinence was moderated by puff number ($p < .01$). Puff liking ratings were higher at the abstinent (vs. non-abstinent) session at early but not later puffs. Participants who had higher scores on the Fagerstrom Test for Nicotine Dependence reported higher puff liking ratings ($p < .01$). Using logistic regression, participants who reported higher puff liking ratings were more likely to relapse during the first week of a quit attempt ($p = .01$). In sum, a simple measure of drug liking may be clinically useful, and interventions that attenuate the acute subjective pleasurable effects of cigarette smoking may facilitate smoking cessation.

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Citation Paper

Paper Session 11 3:45 PM–4:03 PM 2157

RELATIONSHIPS BETWEEN SPOUSE CRITICISM/HOSTILITY AND PAIN AMONG PATIENTS WITH CHRONIC PAIN: A WITHIN-COUPLE DAILY DIARY STUDY

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For people with chronic pain, spouse criticism/hostility may be related to pain severity. By an Expressed Emotion (EE) model, spouse criticism/hostility may aggravate patients' chronic pain, whereas by an interpersonal model, observations by spouses of patient pain behavior may elicit critical/hostile reactions from spouses. We tested the degree to which EE and interpersonal models explain links between spouse criticism/hostility and patient pain behaviors and intensity using longitudinal daily diary method. Chronic Low Back Pain patients (n=103) and their spouses (n=103) were given Personal Data Assistants (PDAs) for 14 days, and were prompted 5x/day to respond about their own behavior and the behavior of their spouse. Concurrent effects showed that (a) higher patient-perceived spousal criticism and hostility were significantly related to greater pain severity controlling for prior pain severity, and (b) greater spouse-observed pain behaviors were related to greater patient-perceived spousal criticism and hostility controlling for prior perceptions. Lagged effects showed that higher patient-perceived spousal hostility, but not greater spouse-observed pain behaviors, predicted increased pain severity 3 hours later. Greater spouse-observed pain behaviors predicted higher patient-perceived spousal hostility 3 hours later. Results support both the EE and interpersonal models, suggesting that spouse criticism/hostility may lead to increased patient pain, and that spouses observing pain behaviors may become more critical of patients later in the day. Taken together, results hint that a vicious cycle may obtain where spouse criticism/hostility leads to increased pain and observed pain behavior and then vice versa.

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Citation Paper

Paper Session 11 4:03 PM–4:21 PM 2158

ECOLOGICAL MOMENTARY ASSESSMENT OF SMOKING BEHAVIOR IN PERSISTENT PAIN PATIENTS

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Smoking is associated with chronic pain and pain-related disability. Some studies suggest that pain activates smoking urges and others suggest that smoking is analgesic. However, there has been a dearth of research on whether smoking is analgesic and if daily changes in pain intensity leads to smoking behavior. We evaluated these associations using ecological momentary assessment (EMA), a method for real-time measurement of health-related phenomena. Eligible outpatients were diagnosed with chronic pain, smoked >3 cigarettes daily, and completed daily random assessments (M=44; SD=24) on a handheld computer that evaluated pain, smoking, and other variables. For one week, 36 chronic pain patients who smoked a M of 17.5 (SD=9.4) cigarettes/day completed multiple daily assessments on a handheld computer. The sample was 67 % women and 39 % Caucasian; 67 % had back pain, with an average worst pain severity during the past week of 8.6 (SD=1.5) on a 0–10 numeric scale. Findings showed patients who were about to smoke had more pain than at other times (M [SD]=6.5 [2.3] versus 5.2 [2.4]; $p=0.01$), but pain before and after smoking was not different (M [SD]=6.1 [2.2] vs 5.9 [2.3]; $p=0.18$). In addition, patients with low baseline average pain levels had higher EMA pain ratings before smoking in the past 30 minutes than those who were not “about to smoke”. Patients with high baseline average pain levels had no such association, suggesting they had consistently high levels of pain. These results suggest that smoking behavior is triggered by pain, but smoking is not analgesic. The extent to which pain promotes smoking and is a barrier to cessation requires further investigation. Future studies should clarify potential modifiers of the relationship between pain intensity and smoking behavior in real-time, and develop tailored interventional strategies for smoking cessation in pain populations.

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Meritorious Paper

Paper Session 11 4:21 PM–4:39 PM 2159

PAIN AND EATING IN OVERWEIGHT AND OBESE INDIVIDUALS WITH OSTEOARTHRITIS: AN ECOLOGICAL MOMENTARY STUDY

Karmel Wong, BA,¹ Tamara J. Somers, PhD,² Michael Babyak, PhD,² Kathleen J. Sikkema, PhD¹ and Frank J. Keefe, PhD²¹Psychology and Neuroscience, Duke University, Durham, NC and ²Duke University Medical Center, Durham, NC.

Pain and obesity are often comorbid health problems. Evidence suggests that overweight/obese individuals with persistent pain may eat in response to their pain, thus maintaining a cycle of weight and pain - yet the link between pain and eating behavior is not well understood. This study aimed to investigate the moment-to-moment relationship between pain and food intake among overweight/obese osteoarthritis (OA) patients. 54 patients (83.7 % female; 64.2 % Caucasian) from a larger OA intervention trial participated in a two-day diary study, completing random entries on pain and mood levels throughout the day as well as meal-based records of food intake, pain and mood. Data were analyzed using generalized estimating equations that modeled pain as a predictor of calorie, fat and sugar levels that were extracted from the food intake records using nutrition analysis software. When controlling for BMI, gender, treatment, time, and concurrent levels of negative mood, momentary levels of pain significantly predicted calorie intake ($Z=2.52$, $p=0.012$), and showed a strong trend towards predicting fat intake ($Z=1.85$, $p=0.064$). Employing ecological momentary assessments as a novel approach, this study observed a relationship between pain and caloric intake in an overweight/obese arthritis pain population. The link between pain and eating may be a barrier to success in traditional pain treatment and/or weight loss interventions, and a better understanding of this relationship may help to focus intervention strategies for patients who experience persistent pain and are overweight or obese.

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Paper Session 11

4:39 PM–4:57 PM

2160

ON-LINE TRAINING OF MINDFULNESS-BASED EMOTION REGULATION FOR FIBROMYALGIA: RESULTS OF A SMALL RANDOMIZED TRIAL

Mary Davis, PhD and Zautra Alex, PhD

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This randomized trial compared the health benefits of an on-line self-administered mindfulness-based intervention program targeting emotion regulation (MA) versus a placebo condition that consisted of informational tips to a healthy lifestyle (HT) for individuals with fibromyalgia. Ninety-two adults (98 % female) who reported receiving a diagnosis of fibromyalgia from their physicians were enrolled in the study. Participants were randomly assigned to complete 12 on-line modules of either MA or HT across a 6-week period. Each evening during the 6 weeks, participants completed an on-line daily diary that included measures of physical symptoms, functional and affective health, social relations, and pain and stress coping efficacy. Multi-level analyses of diary data revealed significantly greater improvements across the 6 weeks in positive affect, social functioning, and coping efficacy for both pain and stress in the MA relative to the HT group (all $ps<.05$). The groups showed comparable improvements in fatigue and negative affect ($ps<.05$), but neither group reported changes in pain levels over time ($p=.12$). These findings suggest that the everyday lives of individuals with fibromyalgia were improved by an on-line intervention designed to enhance emotion regulation through training in mindfulness and acceptance. They encourage further development and testing of innovative and accessible intervention methods to improve quality of life among individuals with widespread pain in the community.

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Paper Session 11

4:57 PM–5:15 PM

2161

COMPUTER-DELIVERED SOCIAL NORMATIVE MESSAGE INCREASES PAIN TOLERANCE

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The biopsychosocial model is a popular approach to understanding pain response, yet relatively few experimental studies have evaluated social determinants of pain tolerance compared to their biological and psychological counterparts. This is the first known study to test a brief, computer-delivered message containing an artificially elevated norm for increasing pain tolerance in a physical task. A 2 (social norm: control) x 2 (challenge frame; no challenge frame) design, stratified by gender, was used. Participants consisted of 260 college students who were randomly assigned into a cold pressor study (69 % female; Mage=21, 44 % Caucasian; 27 % Hispanic). Two-way ANCOVA's with hand size as a covariate, condition and gender as fixed factors, and pain tolerance and perception as separate outcome variables were conducted. Given comparability in results between the challenge conditions, the four conditions were collapsed into two. Those receiving a social norm message displayed significantly higher pain tolerance (M=122.08, SD=103.16) compared to the control group (M=76.96, SD=84.54), $F(1, 255)=26.95$, $p<.001$. Men displayed significantly higher pain tolerance (M=156.03, SD=115.20) than women (M=74.41, SD=75.10), $F(1, 255)=13.69$, $p<.001$. There were no significant differences based on experimental group or gender for verbal (0–100 scale) or measured (McGill Pain Questionnaire-Short Form) pain perception, $p>.05$. There were no interactions between condition and gender on any outcome variables, $p>.05$. The present study extends previous literature about the effects of social modeling on pain response to the discovery of similar effects using a brief computer-delivered normative message. Furthermore, current normative message-based approaches to health behavior change were extended to a previously untested target issue, physical distress tolerance. Implications for the treatment of pain and addictive behaviors, such as smoking cessation, are discussed.

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Paper Session 12 3:45 PM–4:03 PM 2162

A PILOT STUDY OF A SELF-ADMINISTERED, SMARTPHONE-BASED TREATMENT SYSTEM FOR ALCOHOL USE DISORDERS

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This presentation addresses results from a brief trial of a smartphone-based, mobile-health intervention for alcohol use disorders, the Location-Based Monitoring and Intervention System for Alcohol Dependence (LBMI-A). The LBMI-A delivered seven different treatment modules; 1) assessment of alcohol use patterns and consequences with accompanying feedback, 2) high risk location monitoring and alerts using GPS technology, 3) supportive person selection and connectivity, 4) managing cravings, 5) managing life problems, 6) pleasurable activity selection and scheduling, and 7) productive communication strategies. It also assessed alcohol use and cravings in vivo, providing immediately accessible tools to manage drinking-related issues such as craving or feeling anxious and on-going, weekly feedback reports on alcohol use and related triggers. Twenty eight participants, ranging in age from 22 to 45 who met criteria for alcohol dependence and were at least minimally motivated to change their drinking used an LBMI-A enabled HTC Tilt 2 smartphone for 6 weeks. Results from time line follow back assessments from 90 days before entry into the study and during the last 30 days of using the LBMI-A indicated that participants reduced their mean daily alcohol consumption by 52 % ($t=5.5$, $p<.01$) and their days of heavy drinking dropped from 56 % of days pre-LBMI-A to 14 % of days during the last 30 days using the system ($t=7.1$, $p<.01$). Data were also gathered by the LBMI-A system related to participant usage of the immediately accessible tools and steps. Results indicated that the most frequently used tools were related to recording drinks, coping with cravings, reminder photos and interactivity surrounding supportive people. Results also indicated that utilization of LBMI-A modules and steps decreased markedly after the first week of using the system. Implications for system improvement and for designing smartphone-based intervention systems for alcohol dependence will be discussed.

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Paper Session 12 4:03 PM–4:21 PM 2163

INTERACTIVE VOICE RESPONSE (IVR) FOR PROBLEMATIC ALCOHOL USE: A THREE-ARMED RANDOMIZED CONTROLLED TRIAL

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Introduction: About one in five problematic alcohol users in Sweden seeks professional help. A health care challenge is to offer effective interventions that are easily accessible. Interactive Voice Response (IVR) systems using automated telephony have been successfully used and been well received in different health settings.

Objective: The efficacy of two IVR systems for reducing problematic alcohol use is investigated in an ongoing randomized controlled trial.

Methods: Participants are recruited in three settings: Internet help-seekers, outpatient psychiatric patients, and addiction care patients. Individuals with problematic alcohol use (scores of ≥ 8 for men and ≥ 6 for women on the Alcohol Use Disorders Identification Test; AUDIT) are randomized to one of three groups: 1. A simple IVR intervention screening for consumption delivering weekly feedback; 2. A complex IVR intervention offering change-oriented conversations based on the user's target behavior of reducing use or eliminating it; 3. An assessment-only control group. Baseline and 6-month follow-up data are collected for all groups.

Results: At this writing, 168 users were registered in the trial. 38 had been followed up, with an additional 20 expected by March 2013. Analyses indicate large within-group reductions in mean AUDIT scores for all groups: simple IVR ($n=9$, $d=1.7$; baseline $m=24.4$, $SD=5.7$; 6-month: $m=17.6$, $SD=10.7$); complex IVR for reducing drinking ($n=10$, $d=1.6$; baseline $m=22.3$, $SD=8.1$; 6-month: $m=10.3$, $SD=7.7$), or eliminating it ($n=7$; $d=1.2$; baseline $m=23.9$, $SD=4.7$; 6-month: $m=17.4$, $SD=6.9$); control ($n=11$, $d=1.1$; baseline $m=23.4$, $SD=5.5$; 6-month: $m=13.1$, $SD=12.7$).

Discussion: Preliminary results indicate larger within-group effect sizes for simple IVR and complex IVR for reducing drinking, compared to complex IVR for eliminating drinking and controls. Issues concerning participant recruitment to this type of technology, and implementing the intervention will be discussed.

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Paper Session 12 4:21 PM–4:39 PM 2164

EFFECTS OF SOCIAL AND HEALTH CONSEQUENCES ON ADOLESCENT DRINKING COGNITIONS

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Much research has investigated how emphasizing the social and health consequences of risk behavior influences decision-making, but little is known about the conditions under which social vs health consequences are most effective. Two studies examined this question within the context of the prototype/willingness model, which posits a reasoned and a reactive path to behavior (through intentions and willingness, respectively; Gibbons et al., 2003). The reasoned path is more influenced by analytic thought, whereas the reactive path is guided by heuristics (eg, affect, images) and is better at predicting unplanned behavior. Study 1 tested the prediction that social and health consequences would have independent effects on willingness and intentions. High school students ($N=178$) read vignettes that featured a peer who drank heavily and suffered either social consequences (vomiting at a party) or health consequences (alcohol poisoning). Results revealed null effects for those with no drinking experience, whereas for those with drinking experience, results were as predicted: Social consequences were associated with lower willingness than intentions to drink, and health consequences were associated with lower intentions than willingness, $F(1, 154)=8.49$, $p=.004$.

Building on these findings, study 2 tested whether effects on drinking cognitions differ as a function of how the consequences are framed. Participants (undergraduates; $N=124$) again read vignettes in which a peer experienced social or health consequences of drinking, but the consequences were framed as either a loss (negative effects of drinking), or a gain (positive effects of not drinking). Results indicated that social consequences framed as a loss, and health consequences framed as a gain were associated with lower intentions to drink, with stronger effects for those with more vs less drinking experience, $\beta=-.24$, $t(116)=-2.94$, $p=.004$.

These studies suggest that social and health consequences have independent effects on willingness and intentions, and that their relative influence depends on drinking experience and how the consequences are framed.

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Paper Session 12 4:39 PM–4:57 PM 2165

EFFECTS OF SELF-DECEPTION AND IMPRESSION MANAGEMENT ON SELF-REPORTS OF ALCOHOL USE AND ALCOHOL-RELATED PROBLEMS

Kristen E. Hernandez, BS,^{1,2} Angelee G. Shamaley, BBA, MS, ABD, CHES,¹ Joe Tomaka, PhD¹ and Holly J. Mata, CHES, PhD²¹Department of Public Health, University of Texas at El Paso, El Paso, TX and ²Hispanic Health Disparities Research Center, University of Texas at El Paso, El Paso, TX.

Although it is common for researchers to assess alcohol use through self-report questionnaires, this practice has been criticized because of concerns about validity of such reports due to people's desires to maintain a good impression. The main concern is that self-report measures may severely underestimate how much alcohol is actually consumed (Zaldívar, Molina, López Ríos, & García Montes, 2009; Davis, Thake, & Vilhena, 2010). Prevalence rates based on self-reports have been regarded with skepticism on assumption that some respondents are unwilling to share personal information about behaviors, cannot recall correctly, or do not answer honestly (Davis, Thake, & Vilhena, 2010). This study assessed the extent to which self-reported drinking behavior correlates with a tendency to respond in a socially desirable way in a large sample of predominantly Hispanic college students ($N=511$). Students attending a public university completed a battery of self-report measures prior to participating in an alcohol risk reduction program. Students completed the Balanced Inventory of Desirable Responding, the Alcohol Use Disorders Identification Test, the Rutgers Alcohol Problem Index, and the Daily Drinking Questionnaire. Results indicated that whereas Impression Management correlated significantly and negatively with all five outcomes ($r=-.18^{**}$ to $r=-.27^{**}$), Self-Deception correlated significantly only with Alcohol Related Problems ($r=-.16^{**}$). Results suggest that people scoring high in impression management report substantially less alcohol consumption and related problems than people scoring low in impression management. Self-Deception, although inversely correlated with alcohol-related problems, does not substantially affect measures of consumption. Overall, results suggest researchers may need to take into account social desirability bias in research and when implementing alcohol intervention programs in college student populations.

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Paper Session 12 4:57 PM–5:15 PM 2166

THE "PREDICTION OF ALCOHOL WITHDRAWAL SEVERITY SCALE" (PAWSS): A NEW SCALE FOR THE PREDICTION OF MODERATE TO SEVERE ALCOHOL WITHDRAWAL SYNDROME

Jose R. Maldonado, MD, FAPM, FAFCE, Yelizaveta Sher, MD, Sermsak Lolak, MD and Lauren Kissner, MD

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Background: Alcohol use disorder is the most serious substance abuse problem in the US, especially in hospitalized patients (e.g., 20-50 % suffers from alcoholism; 30 % of them develop alcohol withdrawal symptoms [AWS], requiring pharmacological treatment). Several tools quantify the severity of clinical AWS (e.g., CIWA, AWSS), but none predict it. We developed a tool to identify those at risk for moderate to severe AWS.

Methods: We identified factors associated with AW severity through a comprehensive literature review and developed a 10-item scale to predict alcohol dependent patients at risk for developing moderate to severe AWS (i.e., seizures, hallucinosis, and delirium tremens). A pilot study (n=67) showed 100 % sensitivity and specificity. We then designed a large prospective trial of 400 consecutive inpatients to test the PAWSS. Each patient was assessed with the PAWSS to determine the risk for developing AWS, and with CIWA-Ar by a nurse up to 72 hours post admission to assess for the presence and severity of AWS.

Results: We have results for 177 patients, grouped by PAWSS score (Group A: PAWSS <2; low risk for AWS (n=155 (87.5 %)), and Group B: PAWSS >2; high risk for moderate to severe AWS (n=22 (12.4 %)). 14 of 22 patients (63.6 %) in Group B had either elevated CIWA scores of >14, or were treated for AWS. None of the patients in Group A had elevated CIWA scores or were treated for AWS. Thus, so far sensitivity of the tool is 100 %, specificity is 95.1 %, positive predictive value is 63.6 %, and negative predictive value is 100 %.

Conclusions: Preliminary data show that PAWSS appears to have excellent predictive characteristics. Using PAWSS will help clinicians identify those at risk, and prevent and treat patients in the moderate to severe AWS range. By prophylaxing those at high risk we seek to minimize the potential detrimental consequences of AW (e.g., sedation, delirium, respiratory depression, intubation) and even minimize recidivism of alcohol abuse.

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Thursday
March 21, 2013
7:00 PM–8:30 PM

Poster Session B

B-001

PSYCHOLOGICAL FACTORS ARE RELATED TO PAIN AND FUNCTION IN HEAD AND NECK CANCER PATIENTS

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Approximately 30,000 people are diagnosed with head and neck cancer (HNC) annually, the majority developing painful, radiation-induced symptoms (ulcers, bleeding). These symptoms impair critical daily function abilities, often leading to feeding tubes, hospitalization, treatment delays, and death. Some patients develop such severe pain that they refuse to eat, drink, or take medications. Although psychological characteristics have explained individual differences in pain severity in other patient groups, no studies to date have examined this association in HNC patients. Therefore, the goal of this study was to examine the role of psychological characteristics in HNC pain and function. 41 patients (35 M; 57.1±8.9 yrs) prescribed radiation therapy completed measures of: psychological factors (Positive and Negative Affect Schedule Negative Affect scale, Beck Depression Inventory, Trait Anxiety Inventory, Pain Catastrophizing Scale, Fear of Pain Questionnaire, Somatosensory Amplification Scale); pain and hyperalgesia (McGill Pain Questionnaire [MPQ], 10 cm Visual Analog Scale [VAS], pressure pain thresholds [PPT]); and oral function (swallowing, speaking, mouth opening, tongue movement). Function pain was assessed after each task (VAS). Negative affect was significantly correlated with VAS and MPQ resting pain, and function pain (r=0.43-0.52). There were also significant correlations between somatosensory amplification and VAS resting and function pain, (r=0.45-0.47), and fear of pain and depression were related to resting pain VAS and MPQ scores, respectively (r=0.33-0.39). No measures were related to hyperalgesia (PPT). Pain catastrophizing was the only scale related to function (r=0.34; tongue movement). Thus, psychological characteristics (particularly negative affect) are related to pain associated with HNC and its treatment, and may be assessed to identify patients at risk for increased radiation-induced pain and side effects. These findings have the potential benefits of improving future pain management and quality of life in HNC patients.

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B-002

EXAMINING THE IMPACT OF PUBLIC FIGURE PANCREATIC CANCER DIAGNOSES AND DEATHS USING SEARCH QUERY DATA

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Background: Announcements of cancer diagnoses from public figures as well as their deaths can have a major impact on the public. This study sought to quantify the effects of pancreatic cancer public figure announcements on media coverage and cancer information seeking.

Methods: We compiled a list of 25 public figures that had been diagnosed with or died from pancreatic cancer between 2006–2011. We specified interrupted time series models using data from Google Insights for Search® to examine search query shifts for pancreatic cancer and other cancers. Weekly media coverage archived on Google News® were also analyzed. **Results:** Most public figures' pancreatic cancer announcements corresponded with no appreciable increase in pancreatic cancer media coverage or search queries. In contrast, Patrick Swayze's diagnosis was associated with a 285 % (95 % CI, 212 to 360) increase in pancreatic cancer search queries, though it was only weakly associated with increases in pancreatic cancer news coverage. Steve Jobs' death was associated with a 197 % (95 % CI, 131 to 266) increase in pancreatic cancer queries and a 3,517 % (95 % CI, 2882 to 4492) increase in pancreatic cancer news coverage. A doubling in pancreatic cancer-specific media coverage corresponded with about a 325 % increase in pancreatic cancer queries.

Conclusions: Some major public figures' cancer announcements have had significant impacts on media coverage of and information seeking for those cancers. News coverage of such events is one driver of search query activity. Digital surveillance is an important tool for future cancer information seeking research and practice.

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B-003

PROJECT HEAL: DEVELOPMENT OF AN ONLINE TRAINING TO PROMOTE CANCER EARLY DETECTION IN AFRICAN AMERICAN CHURCHES

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African Americans suffer a disproportionate burden from breast, prostate, and colorectal cancer. Faith-based approaches have been increasing in the effort to raise awareness and early detection for these cancers in African American communities. However, significant gaps exist between research and sustainable practice. Utilizing novel health communication efforts in today's fast-changing technological environment, the potential to close the gap between research discovery and program delivery can help eliminate disparities in cancer early detection.

The objective of the Health through Early Awareness and Learning (HEAL) Project is to identify an optimal implementation strategy in the context of behavioral translational research. HEAL utilizes a set of evidence-based interventions (EBI) that aims to increase early detection of breast, prostate, and colorectal cancer among African Americans. Informed by an advisory panel of community leaders and a multidisciplinary project team, the three EBIs were interwoven into a single branded package with two delivery methods for training Community Health Advisors (CHAs): 1) traditional live training sessions, or 2) utilization of technological resources. An online delivery system mirrors each aspect of the live training to provide CHAs a curriculum consisting of: informed consent, 13 content-specific presentation videos, and CHA certification after passing a knowledge exam. Once certified using one of these two approaches, all CHAs will lead a 3-part cancer education workshop series in his/her church.

Pilot test findings from the CHA training and church-based workshops are discussed here. The overall Project HEAL intervention will be evaluated using the RE-AIM framework to assess implementation and sustainability.

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B-004

MEN'S PROSTATE AWARENESS CHURCH TRAINING (M-PACT) PROJECT: PROCESS EVALUATION AND TECHNOLOGY INTEGRATION

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African American men are more likely to develop prostate cancer and are twice as likely to die from this disease than are White men. Due to limited evidence of the impact of screening on mortality, educational interventions focus on informed decision making (IDM), where men assess their personal risk, and become aware of the pros and cons of screening. The M-PACT Project aimed to develop and evaluate a spiritually-based educational intervention to increase IDM for prostate cancer screening. Community health advisors were trained and certified by the M-PACT research team in 20 churches to deliver a 4-part workshop series to African American men in church settings. M-PACT uses a community based participatory research approach that led to the inclusion of a health information technology (HIT) component in which participants receive a series of text messages that serve as 1) reminders about upcoming workshops; 2) post-workshop content reinforcement; 3) spiritual uplifting health content; and 4) between-workshop retention strategies. The text message strategy is being tested for feasibility and acceptability with this population which has generally been overlooked by HIT approaches due to the digital divide. The second major component identified by the CBPR process was the inclusion of women Health Partners. A randomized design was employed where half of the churches were assigned to receive the Health Partner condition and the other half were assigned to male-only workshops. Impact on the primary outcome of IDM will be assessed. Baseline data, text message feasibility/acceptability, and process evaluation from workshop 1 showed positive effects and will be discussed.

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B-005

TESTING OF A COMPLEMENTARY AND ALTERNATIVE MEDICINE (CAM) KNOWLEDGE INSTRUMENT FOR INFORMED DECISION MAKING

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Many cancer patients use complementary and alternative medicine (CAM) therapies without essential knowledge to inform their decisions. Adequate information is a key component of appropriate patient decision making about CAM use. Assessing the information component of patient decision making requires a valid and reliable CAM knowledge instrument. The purpose of this research was to develop a CAM knowledge instrument and test it for reliability and validity. Twenty items were developed and refined via cognitive interviewing. Items contained either correct or incorrect statements about CAM therapies from five categories created by the National Center for Complementary and Alternative Medicine (NCCAM). Items were scored on a 0–3 partial credit scale, with ratings as follows: (0) not correct; (1) not sure, probably not correct; (2) not sure, probably correct; and (3) correct. The instrument was mailed to 800 breast cancer survivors, and mailed again two weeks later to assess test-retest reliability.

Thirteen of twenty items were retained in the final instrument and formed a unidimensional scale as assessed by exploratory factor analysis. A two-factor solution was also plausible. One factor consisted of 7 items on knowledge about specific features of CAM, and a second 6-item factor included knowledge of regulatory issues related to CAM. Test-retest reliability was high ($r=0.75$). Based on factor-analytic validity considerations, a single score for the 13-item instrument can be used, or the two subscale scores can be used if a more detailed examination of knowledge is desired. This instrument can be used to assess the extent to which patient decision making about CAM therapies is adequately informed. Further, providers can use this instrument to focus specific educational needs for individual patients as they consider CAM use.

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B-006

PRE-TRANSPLANT INSOMNIA IN HEMATOLOGIC CANCER PATIENTS: PREVALENCE AND PSYCHOSOCIAL CORRELATES

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Background: A growing body of research has documented the prevalence of sleep problems in cancer patients and associated adverse impact on quality of life (QoL). However, these studies have focused mainly on patients with solid tumors. Little is known about sleep problems in hematologic cancer patients undergoing hematopoietic stem cell transplant (HSCT). This study examined the prevalence of sleep problems in a sample of hematologic patients prior to HSCT and explored associations between sleep problems, mood, and QoL. Method: Patients completed self-report measures prior to HSCT for hematologic disease. Measures included the Insomnia Severity Index (ISI), Medical Outcomes Study Short Form (SF-36), Center for Epidemiological Studies - Depression Scale, State-Trait Anxiety Inventory, and Perceived Stress Scale (PSS).

Results: Participants were 39 HSCT patients [59 % male; mean age 55.28 (range 24–75)]. Of these, 16 (41 %) exceeded the ISI cutoff score for clinically significant sleep difficulties. Higher ISI scores were associated with worse outcomes on several SF-36 subscales including bodily pain ($p=.01$), general health perceptions ($p<.01$), vitality ($p<.01$), and emotional role functioning ($p=.03$) as well as the physical ($p=.02$) and mental ($p=.05$) component summary scores, indicating that increasingly severe insomnia is associated with lower QoL. Furthermore, higher ISI scores were associated with greater depression ($p=.01$) and anxiety ($p=.01$). Finally, ISI and PSS scores were positively correlated at borderline significance ($p=.06$), suggesting that patients who experience more insomnia symptoms also perceive more life stress.

Conclusion: These data demonstrate that insomnia is prevalent in patients prior to undergoing HSCT and is associated with poor physical and psychological well-being. Future research should determine whether behavioral interventions to reduce insomnia are effective in this population and whether they enhance mood and QoL.

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B-007**DEPRESSIVE SYMPTOMS AND INTRUSIVE THOUGHTS PREDICT POORER SELF-REPORTED SLEEP QUALITY AMONG BLACK BREAST CANCER SURVIVORS**

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Having breast cancer and identifying as Black have both been associated with higher rates of sleep disorders. As part of a larger, ongoing study, we collected baseline assessments for 91 Black breast cancer patients within 0–12 months of the end of active treatment and measured demographics (mean age=50.81 [SD=8.34] years; mean education=14.17 [SD=9.45] years), cancer treatment, sleep quality (Pittsburgh Sleep Quality Index), depression (Center for Epidemiologic Studies Depression Scale with sleep item removed from the total score for this analysis), intrusive thoughts (Impact of Event Scale - Revised), stress, pain, and general health. Women reported a high level of sleep disturbance on the PSQI (mean PSQI global score=9.13 [SD=4.48]), which is well above the standard cut-off score of >5 for sleep disturbances and the adjusted cut-off of >8 for cancer populations. In fact, 80 % of participants had scores >5 and 48 % had scores >8. Specifically, 37 % of the women reported average sleep onset latencies of >30 minutes over the past month and 43 % reported averaging <6 hours of sleep/night in the past month. In a linear regression model, depressive symptoms ($\beta=0.29$, $p<.04$) and intrusive thoughts ($\beta=0.31$, $p<.01$) were both significant predictors of sleep quality even after controlling for age, income, subjective SES, perceived stress, pain, general health rating, use of anti-depressant medication, cancer stage, and whether or not the women reported having received chemotherapy, radiation, or hormonal therapy. Mediation analysis was not statistically significant. Sleep disturbances were highly prevalent in this sample of Black breast cancer survivors, and depressive symptoms and intrusive thoughts were independently associated with poorer reported sleep quality. Culturally-relevant depression and sleep interventions may be particularly beneficial in this population.

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B-008**FUNCTIONAL IMPAIRMENT AND PHYSICAL ACTIVITY ADHERENCE IN A POPULATION-BASED SAMPLE OF GYNECOLOGICAL CANCER SURVIVORS**

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Introduction: Studies indicate that physical activity (PA) lowers the risk of chronic disease and improves quality of life. The present study sought to 1) estimate the prevalence of PA in a population-based sample of gynecological cancer survivors (GCS) and 2) examine the association between functional impairment and adherence to PA guidelines.

Methods: The study included 5592 GCS age ≥ 20 years who were ≥ 1 year post-diagnosis. Data were drawn from the 2009 Behavioral Risk Factor Surveillance System survey. Functional impairment was defined as a limitation in carrying out any activity that was due to a physical, mental, or emotional problem or required the assistance of special equipment. Multivariable logistic regression with survey weighting was used to examine the association between functional impairment and adherence to PA after adjusting for age, education, race/ethnicity, time since diagnosis, BMI, and comorbidity burden. **Results:** We found that 56 % of GCS did not adhere to PA guidelines and that 38 % indicated having functional impairment. GCS with functional impairment were significantly more likely to not adhere to PA recommendations (OR 1.66, 95 % CI 1.32–2.09; $p<0.001$). Other factors, such as education beyond high school (OR=0.68; $p=0.005$), having >2 comorbidities (OR=1.54; $p=0.017$), and being overweight (OR=1.31; $p=0.044$) or obese (OR=2.13; $p<0.001$), were significantly associated with non-adherence to PA guidelines.

Conclusions: The GCS population faces a significant burden of functional impairment and their rates of adherence to PA guidelines are low. Functional impairment is a potential barrier to PA adherence. There is considerable room to improve adherence to PA through targeted interventions and tailoring PA regimens to suit the individual functional challenges of these patients.

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B-009**THE CHANGING LANDSCAPE IN COMMUNICATION TECHNOLOGIES: EXPERIENCES OF UNDERSERVED MINORITY PATIENTS AND FAMILIES IN CANCER INFORMATION SEEKING**

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The goal of this study was to examine experiences in Internet-based cancer prevention and control information seeking of Hispanic, American Indian, and Non Hispanic White patients and family members who receive care at a Minority-Serving University Cancer Center. **BACKGROUND.** Diverse inequalities in access to online cancer information negatively affect minority cancer patients and their families. Diagnosis with cancer creates strong information needs among patients and their families, but it is unknown how the changing landscape in communication technologies are experienced by underserved individuals who feel cancer-related information needs. **METHODS.** Some 249 patients and family members (66 % Hispanics, 22 % Non Hispanics White, and 8 % American Indians) were surveyed and 64 were interviewed in-depth. **FINDINGS** revealed ethnic and socio-economic status (SES) differences in use of the Internet for cancer information seeking. Hispanics, and particularly Spanish speakers, indicated the highest need in cancer prevention information, were the least likely to seek information and reported the most difficulties. The qualitative data indicated intricate individual and familial processes of cancer information seeking, with ethnic and SES differences in type of information sought and sources and channels used. Most English-speaking Hispanic families had a proxy-agent, a family member who sought information online and often received input from interpersonal communication with health professionals in their social networks. In American-Indian families, using the Internet when available involved different processes. Participants with higher education and income levels reported using the Internet to seek information about treatment options for patients and prevention information, whereas participants with lower SES depended on their physicians for this information.

The implications of these findings on future interventions to address the digital divide are discussed.

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B-010**HEALTH BEHAVIORS AND SELF-REPORTED HEALTH AMONG CANCER SURVIVORS WHO IDENTIFY AS SEXUAL MINORITIES**

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Background: Health behaviors and self-reported health status are important for understanding cancer survivors' health. However we do not yet fully know how health behaviors and self-reported health status are patterned among subgroups of cancer survivors. In particular there is a paucity of published research concerning health behaviors and self-reported health status among cancer survivors who identify as sexual minorities.

Methods: The current study compared health behaviors including physical activity, history of drug use, history of binge drinking, smoking history, and self-reported health status among cancer survivors who participated in the National Health and Nutrition Examination Survey (NHANES) from 2001–2010. Propensity score adjustment was used to determine if differences were accounted for by the effects of age, race, education, gender and health insurance status.

Results: There were 2608 self-identified cancer survivors who participated in the NHANES from 2001–10. Of these survivors, 602 were both eligible for and provided a response for sexual orientation. 4.3 % (N=26) of the eligible survivors identified as sexual minorities and 95.7 % (N=576) identified as heterosexual. Sexual minorities were significantly ($p<0.05$) more likely to report a history of illicit drug use (42.3 % vs. 22 %), and less likely to report their current health status as good (53.8 % vs. 73.1 %). There was a marginally ($p=0.058$) significant difference for current smoking status (46.2 % vs. 28.8 %). Disparities in history of drug use and current health status persisted even after adjustment.

Conclusion: This work is a first step toward understanding health behaviors and health status among sexual minority cancer survivors. This study is useful in that it has identified behavioral pathways that may elevate risk for poorer health outcomes among sexual minority cancer survivors as compared to heterosexual cancer survivors. Future research is needed to elucidate these pathways.

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B-011

PHYSICIAN-PATIENT DISCUSSION OF BARRIERS TO COLONOSCOPY

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A physician recommendation is necessary but often not sufficient for adherence to screening colonoscopy. The quality of the communication surrounding the recommendation appears to play an important role in patient adherence. Recent qualitative research found that patients speak with their physicians about barriers they have to completing colon cancer screening. The aim of this study was to describe physician-patient communication about barriers to screening colonoscopy use. We content analyzed 413 transcripts of primary care provider interactions with patients due for colorectal cancer screening, and identified the presence of barrier talk, the number of barriers discussed, the content of the barriers, and how each barrier was raised in the discussion. Barrier talk was present in 37 % (n=151) of the consultations, with about 30 % of those (n=45) containing talk about more than one barrier. When barrier talk was present, a mean of 1.4 barriers were discussed. The most frequent barriers discussed were: systems failure (17 %), preparation for the screening (16 %), and patient not seeing a need for screening (9 %). Just 6 % of barriers were raised by patients before the doctor brought up the topic of colorectal cancer screening. 45 % of the barriers were raised by patients during a conversation about colonoscopy, 28 % of barriers were stated in response to a doctor's question about if colonoscopy had been done or would be done, and 20 % of barriers were stated by the patient in response to a physician's open-ended question about barriers. In 71 % of the interactions where more than one barrier was discussed, the first barrier was elicited by a question from the physician; while subsequent barriers were most likely (80 %) to be initiated by the patient during the conversation. This research suggests that patients may have multiple barriers to completing colonoscopy, and that many barriers are only raised by patients after some discussion with their physician. Future work will examine how physicians' responses to patient barriers is related to colonoscopy adherence.

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B-012

PATIENT NAVIGATORS' EMPATHIC COMMUNICATION DURING COLONOSCOPY DISCUSSIONS

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There is growing evidence that patient navigators are effective in increasing cancer screening rates. However, there is a dearth of research providing insight into the factors that make patient navigators effective interventionists. Specifically warranted is a better understanding about how navigators' communication with patients can improve outcomes. Such data could be used to enhance the training of patient navigators who conduct cancer screening interventions and health behavior-focused interventions in general. The aim of this study was to examine the use of empathic communication by patient navigators. We chose empathic communication as a measure of quality communication as it is considered central to health-care communication and the improvement of patient outcomes. We used a modified version of the Empathic Communication Coding System (ECCS), which was developed for use in physician-patient interactions. The ECCS is based on a two-step analysis: 1) the identification of empathic opportunities and 2) the coding of provider responses to those opportunities. The coding system was applied to 166 telephone conversations between patient navigators and participants considering screening colonoscopy. 63 % of these phone conversations (n=104) had at least one empathic opportunity, with a mean of 2.8 empathic opportunities per conversation. Empathic opportunities were coded when 1) patients agreed that a barrier stated by the navigator existed for them (60 %); 2) patients made a statement of emotion (20 %); and 3) patients stated a challenge they were facing (20 %). The majority of empathic opportunities were elicited by the navigators (74 %). Navigators generally responded using high levels of empathy, by acknowledging the issue and following up (44 %), validating the issue (29 %), or by sharing their own feelings or experience (9 %). High levels of empathic responses were used more often when navigators elicited the empathic opportunity rather than the patient initiating the empathic opportunity.

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B-013

PATIENT-CLINICIAN DISCORDANCE (PCD), DISTRESS, AND QUALITY OF LIFE (QOL) IN CANCER

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Background: PCD is related to unfavorable health outcomes. However, studies linking PCD with cancer patients' distress and QOL are lacking. This study examined PCD in reporting cancer-related bother as a predictor of distress and QOL.

Methods: Patients (pts) with cancer and their clinicians in Symptom Outcomes and Practice Patterns/SOAPP study rated their bother due to difficulties related to cancer, treatment, side effects, and comorbidities (scale:0=Not at all to 4=Extremely). Discordance (difference between pts' and clinicians' responses) was coded: 0=concordant, 1=patient reported less bother, and 2=patient reported more bother. Patients also rated their overall QOL (scale: 1=Excellent to 5=Very Poor; coded: fair/poor/very poor=1 and good/excellent=0) and "feelings of being distressed", a question in M. D. Anderson Symptoms Inventory, "at its worst", scale: 0 to 10, coded: no/mild (0-4) and moderate/severe (5-10). Logistic regression analysis was conducted.

Results: Mean age of the pts (N=3106) was 61.2, SD 12.4 years; majority were Caucasian (86 %) females (70 %); 87 % had ECOG performance of 0. Concordance was observed in 17 % while 57 % pts reported greater bother than their clinicians. Significant greater odds of moderate/severe patient distress and poor QOL (p<.05) were seen when pts reported greater bother compared to the concordant group adjusting for age, race/ethnicity, gender, help to answer questions, and clinical factors. Those who got help had greater odds of increased distress and poor QOL (p<.05). Conclusions: Greater odds of increased distress and poor QOL were seen when pts reported greater bother than the clinicians. Further study of PCD in reporting cancer-related bother is needed to confirm its relation with pts' distress and QOL and help design tailored interventions to improve pts' QOL.

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B-014

SARCOPENIA AND PHYSICAL PERFORMANCE IN OLDER CANCER PATIENTS WHO HAVE AND HAVE NOT FALLEN IN THE PAST YEAR

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Background: As many as 35 % of adults over age 65 fall annually. Falls can cause severe soft tissue damage and/or fractures. Muscle weakness and poor balance are associated with falling. The objective of this retrospective study was to compare scores on a validated measure of sarcopenia in patients with cancer who have or have not fallen in the past 12 months.

Methods: Cancer patients over age 65 (n=184) were referred for comprehensive evaluation with geriatric assessment in the SOCARE clinics of the Universities of Rochester and Chicago. Patients reported if they had fallen in the last 12 months. They completed a recently developed 13-item patient-reported outcome (PRO) measure for sarcopenia, including items on difficulty (0-10 scale) with "walking at your usual speed", "getting up from a seated position", or "opening jars that have never been opened." Physical performance was measured using the Short Physical Performance Battery (SPPB), which tests balance, walking, and chair stands. T-tests compared mean sarcopenia PRO and SPPB scores between patients who had or had not fallen. Pearson's correlation coefficient assessed the association between SPPB and sarcopenia PRO scores.

Results: Patients were on average 81 years of age (range 66-95) and 45 % reported falling in the past year. Those who fell had significantly worse mean sarcopenia PRO and SPPB scores than those who did not fall (sarcopenia PRO: 67.4 vs. 32.3, p<0.003) (SPPB: 5.1 vs. 6.8, p=0.004). Sarcopenia PRO and SPPB scores were significantly correlated (r²=-0.62, p<0.0001).

Conclusions: Convenient and inexpensive geriatric assessment tools that predict which cancer patients are at highest risk of falling could help target falls prevention resources. The difference in sarcopenia PRO scores between fallers and non-fallers suggests that this tool may be used to predict falls. A prospective study should be performed to determine the efficacy of this measure for predicting future falls in older cancer patients.

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B-015

NONADHERENCE, DELAYS AND INTERRUPTION IN CANCER TREATMENT AMONG IMMIGRANT PATIENTS

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Background: This study describes the rates of self-reported missed appointments, delays and interruptions in cancer treatment of a sample of immigrant cancer patients, and their barriers to adherence with their medical treatment.

Methods: The study used a nested cohort from the "Cancer Portal Project", which addresses the socioeconomic determinants of cancer treatment adherence. Patients were born in Latin America (n=349), West Indies (Anglo & French) (n=176), Central Asia (n=41), and other countries (n=61). Participants answered questions about missed appointments, delays, interruptions in cancer treatment, and reasons for nonadherence, delays or interruptions.

Results: Patients born in Latin America were less likely to report missing appointments than patients born in other countries, but the groups did not differ in treatment delays or interruptions. Ten percent (n=58) of patients reported that their cancer treatment has been delayed or interrupted. The most common reasons for delaying or interrupting treatment were: feeling sick, being away (travelling), and physical symptoms of cancer. Eight percent (n=52) patients reported ever missing appointments for their cancer treatment. The most frequent reasons were: feeling sick, forgetfulness, conflicting appointments, and inclement weather.

Conclusions: One out of ten immigrant patients reported ever missing appointments or having a clinical delay or treatment interruption. Studies have shown that ethnic minorities are more likely to experience early discontinuation or delays of treatment^{1,2}, mostly because of an increase of missed appointments³. Although these rates seem low, previous studies have found a significant gap between patients' self-reported adherence (100 %) and their actual adherence to anticancer treatment (69 % to 80 %), showing that patients tend to overestimate their adherence⁴. More research is necessary, including reviews of medical records, to establish a more accurate rate of nonadherence and barriers among medically underserved populations.

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B-016

SOCIOECONOMIC AND SOCIODEMOGRAPHIC PREDICTORS OF SOURCES OF CANCER-RELATED INFORMATION USED BY CANCER SURVIVORS

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With the number of cancer survivors in the US estimated at just under 14 million, identifying their use of information sources across a variety of cancer-related topics is vital for creating effective communication strategies for this growing population. Recognizing socioeconomic and sociodemographic differences in use of cancer-related information sources and targeting efforts based on these differences is a potential strategy for reducing health disparities in survivorship. Fifteen sources of information reported to be used by post-treatment cancer patients and survivors (N=519) for cancer-related information were factor analyzed to create a source taxonomy. Social determinants of use of these source types, and the number of information sources in general and for specific cancer-related topics, were analyzed in regression models. On average, respondents sought cancer-related information from approximately 5 distinct information sources. Those with more education were more likely to seek general health information from the greatest number of sources. Respondents used fewer information sources for work or finance information. Asian respondents were less likely to use a greater number of information sources. The information sources factor analyzed into five categories (1. Mass Media, 2. Internet and Print, 3. Support Organizations, 4. Family and Friends, and 5. Health Care Providers) and use varied based on sociodemographic and socioeconomic characteristics. Higher education predicted increased use of all categories of sources except mass media. African American and mixed race cancer survivors were less likely than white survivors to turn to their healthcare provider as a source of cancer-related information. Providers and health communicators should target communication platforms based on the cancer-related topic and survivors' demographic profile.

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B-017

CANCER SURVIVORS' USE OF MULTIPLE INFORMATION SOURCES FOR CANCER-RELATED INFORMATION: THE MORE THE MERRIER?

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On average cancer survivors seek cancer-related information from 5 different sources and certain groups, including female and white patients, are more likely to seek information from a greater number of sources. However, little research has examined why individuals seek cancer-related information from multiple sources. With a greater potential for encountering conflicting information, we also sought to examine consequences of multiple information source use for physician-patient communication and reactions to conflicting information. Randomly selected post-treatment cancer patients and survivors (N=519) responded to a mailed questionnaire about health information seeking behavior, indicating which of 15 sources they used for cancer-related information. Participants reported their confidence in information seeking and barriers encountered during information seeking. In addition, they reported whether they discussed obtained information with their physicians and how they responded to conflicting information. Controlling for socioeconomic and sociodemographic characteristics, patients who used a greater number of information sources reported more confidence in finding information when needed and fewer information-seeking barriers, suggesting that patients may not seek multiple sources due to a lack of confidence in information-seeking ability. Patients who sought a greater number of information sources were less likely to ignore conflicting information and listen only to their physician's advice. However, these patients were no more likely to discuss the information with their physicians or bring conflicting information to their physician to assess its accuracy. Patients who seek a greater number of sources for cancer-related information may be more confident and less willing to discuss their information seeking behavior with physicians than patients who seek fewer sources.

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B-018

EXAMINING THE PSYCHOMETRIC PROPERTIES OF THE PROMIS FATIGUE SCALE AMONG CANCER PATIENTS

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Fatigue is common among cancer patients and adversely impacts quality of life. As such, it is important to develop a valid and reliable measure of fatigue for use in clinical research with this population. Little work has been done validating the 7-item Patient Reported Outcome Measurement Information System (PROMIS) instrument in cancer patients. The objective of this study is to validate the 7-item PROMIS fatigue scale in two studies of cancer patients. Study 1 included 48 men with prostate cancer scheduled to begin androgen deprivation therapy for prostate cancer (ADT+), 73 men previously treated with surgery for prostate cancer (ADT-), and 88 men without cancer (CA-) matched on age and education (mean age=67, range 47-92). Study 2 included 129 patients (mean age=51, range 20-75) scheduled to undergo hematopoietic cell transplantation (HCT). All participants completed the 7-item PROMIS fatigue scale as well as validated measures of fatigue (FSI), vitality (SF-36), and depression (CES-D). In addition, HCT patients completed measures of anxiety (STAI), perceived stress (PSS), and a clinical interview to diagnose cancer-related fatigue (CRF). The PROMIS fatigue items loaded on a single factor (CFI=0.972) and demonstrated good internal consistency reliability ($\alpha=0.89$). Relationships between PROMIS fatigue scale and all other psychosocial measures were significant ($p<.05$) and in the expected direction, offering evidence for convergent and concurrent validity. Those in the ADT+ group reported higher PROMIS fatigue scores than ADT- or CA- groups, providing support for discriminative validity. PROMIS fatigue scores were significantly higher in patients with CRF ($p<.0001$), demonstrating criterion validity. Overall, the analyses indicate that the PROMIS fatigue scale is a reliable and valid measure of fatigue in cancer patients.

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B-019

CHANGE IN MENOPAUSAL SYMPTOMS OVER TIME IN EARLY-STAGE BREAST CANCER PATIENTS AND SAME-AGED CONTROLS

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We examined changes in menopausal symptoms in a cohort of early-stage breast cancer patients compared with same-aged controls without breast cancer. We interviewed 1096 women (549 patients [184 stage 0, 365 stage I/IIA], 547 controls; mean age 58, range 40–89 years; 24 % non-white) a mean 7 weeks (T1), and 6 (T2), 12 (T3), and 24 months (T4) after surgery (patients) or screening mammogram (controls). We asked about the severity of four menopausal symptoms (hot flashes, cold sweats, night sweats, and vaginal dryness) “in the last month,” using a 5-pt. scale (1=not at all to 5=very much); Cronbach’s alpha varied from .70 to .72 at each interview. A Generalized Estimating Equation model tested the effects of hormone (e.g., tamoxifen or aromatase inhibitors) treatment (yes/no vs. control) and time (T1–T4) on menopausal-symptom scores, adjusting for demographic, clinical, and psychosocial factors associated with this outcome. Treatments were confirmed by medical record. Patients receiving chemotherapy had initiated or completed treatment by T2. Adjusting for covariates, the interaction between use of hormone therapy and time was significant ($p < .0001$). Although menopausal-symptom severity was on average < 2.5 for all three groups over time, it increased for both patient groups from T1 to T2, but not for controls, and patients using hormone therapy reported more severe menopausal symptoms at each of the T2–T4 interviews compared with patients not using hormone therapy and controls. After T2, menopausal-symptom severity in patients using hormone therapy continued to increase, but in patients not using hormone therapy, symptom severity began to decline and was comparable to levels reported by controls at T4. Greater menopausal-symptom severity in patients using hormone therapy than in controls and patients not using hormone therapy has implications for long-term adherence. Declines in menopausal-symptom severity for patients not using hormone therapy after T2 may be due to diminishing effects of chemotherapy over time or discontinuation of hormone therapy.

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B-020

A NOVEL INTERVENTION USING NARRATIVES TO REDUCE CANCER DISPARITIES: AFRICAN AMERICAN BREAST CANCER SURVIVOR STORIES

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We describe the development of a novel cancer-communication intervention using a video library of survivors’ stories and results of a pilot study prior to its use in a randomized controlled trial (RCT). Study-team members rated 917 videos for likability, clarity and length, and emotional impact and coded each video as fitting six themes (Coping, Support and Relationships, Healthcare Experiences, Follow-up Care, Quality of Life, and Treatment Side Effects). After consensus, we selected 207 highly rated story clips told by 35 African American breast cancer survivors to include in the video program. Each story can be viewed searching either by storyteller or by one of 12 story topics. We ranked the emotional impact of videos within each story topic and within each storyteller. Stories with the strongest emotional impact were ranked highest, determining the order in which stories were displayed in the interactive video program loaded onto a touch-screen computer. We pilot tested the video program with 10 African American breast cancer patients (mean age, 54.3; range 39–68 years). After training, each participant spent 30 minutes choosing and watching videos. We asked about their identification with storytellers, emotional reactions to stories, usability and utility of the program, and their sources of cancer information. Survivor stories were found to be “interesting and informative,” and video-program usability was rated highly. Participants identified with storytellers (e.g., they “think a lot like me” and “have values like mine”) and agreed that the stories convinced them to receive follow-up mammograms as recommended. Participants reported obtaining cancer information primarily from doctors and/or nurses (90 %) and from family members and/or friends (80 %); only five women reported using the internet to obtain cancer information. This intervention may be particularly beneficial for cancer-patient populations with low health literacy. The RCT testing the program’s impact on clinical outcomes is ongoing.

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B-021

THE EFFECT OF SURGERY TYPE AND CHEMOTHERAPY ON EARLY-STAGE BREAST CANCER PATIENTS’ EXPERIENCE OF QUALITY OF LIFE OVER TIME

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We sought to examine the effect of surgery type and adjuvant chemotherapy on the change in early-stage breast cancer patients’ quality of life (QOL) over time, after controlling for demographic, psychosocial, and clinical factors associated with QOL. We analyzed data from a cohort of 549 patients (184 in situ, 365 stage I/IIA; mean age = 58.3 [SD = 10.59]; 60 % married; 20 % non-white), who completed telephone interviews a mean 6 weeks (T1) and 6, 12, and 24 months (T2–T4) following definitive breast-conserving surgery (BCS) or mastectomy. Higher scores on the Functional Assessment of Cancer Therapy–Breast (FACT-B) indicated better QOL. We confirmed self-reported receipt of surgical and adjuvant treatments by chart review. All patients had initiated or completed chemotherapy by T2. Multiple linear regression models estimated the associations between QOL and each treatment at each interview, adjusting for factors associated with QOL in univariate tests. At T2, chemotherapy ($p = .0013$) and BCS ($p < .0001$) were each associated with worse QOL, and the adverse effect of chemotherapy was more striking among patients who received BCS compared with those who received mastectomy (p interaction = .0309). A Generalized Estimating Equation model, adjusting for all covariates, tested change in QOL from T1–T4. QOL significantly improved over time among patients with chemotherapy ($p < .001$) while the trend was not significant among patients without chemotherapy. This change pattern in QOL was not influenced by the type of surgery that patients received. Although patients experienced declines in QOL following surgery and during chemotherapy, QOL rebounded rather quickly after completion of treatment and regardless of surgery type. Future research into the long-term effects of both surgical and adjuvant treatments on QOL are warranted, since late effects of treatment are known to exist and could adversely affect QOL over time.

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B-022

PHYSICAL ACTIVITY AND WEIGHT CHANGES PRE- AND POST- BREAST CANCER DIAGNOSIS: IMPACT ON HEALTH OUTCOMES

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Changes in physical activity (PA) and body weight following a breast cancer diagnosis have been associated with health and disease outcomes in breast cancer survivors (BCS). However, less is known regarding how these factors interact. The present study examined the effects of changes in PA and weight on health outcomes in BCS across the survival continuum. BCS (N = 1348) completed measures of current and pre-diagnosis PA and reported changes in pre- to post-diagnosis weight (decrease, maintain, increase). Change in PA was calculated and categorized as: decreased, maintained or increased. Participants also completed measures of fatigue, self-esteem, affect, quality of life, mood, memory and recurrence concerns. Analyses were conducted using two-way univariate analyses of variance. The majority of BCS decreased (40.1 %) or increased (41.7 %) PA and increased (43.3 %) or maintained (36.8 %) body weight post-diagnosis. After adjusting for covariates, change in PA was significantly ($p < .05$) independently associated with fatigue, depression, physical self-worth, health-related quality of life and physical and functional well-being. Individuals who maintained or increased PA reported significantly higher scores on all outcomes compared to those with decreased PA excluding functional well-being where only increased PA was associated with higher scores compared to decreased PA. Change in weight was only significantly independently associated with breast cancer-specific concerns with those who reported decreased or maintained weight reporting fewer concerns compared to those who gained weight. There were no significant interaction effects for overall change in PA or weight. Maintaining or increasing PA independent of changes in body weight may be particularly important for psychosocial and physical well-being in BCS. Future research should examine optimal interventions for preventing PA declines post-diagnosis and identify individuals at high risk for reducing PA post-diagnosis.

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B-023

MELANOMA SURVIVORS' SELF-EFFICACY, OUTCOME EXPECTATIONS AND INTENTIONS MEDIATE A SUN PROTECTION INTERVENTION'S EFFECTS ON CHILDREN'S WIDE-BRIMMED HAT BEHAVIOR

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Few interventions designed for parents have been successful in increasing children's sun protection. There have not been any studies of mediating mechanisms to inform effective parent interventions. In this study, we examined theoretical mediators of a parent sun protection intervention on children's wide-brimmed hat behavior at 4-months post-intervention. In an RCT, 340 melanoma survivors who had children ≤ 12 years of age were assigned to receive a sun protection intervention or standard education. Mean age of survivors was 41 years ($SD=6.5$). Most (62 %) were female. Almost all (99.7 %) were White. Mean time since diagnosis was 4.5 years ($SD=3.6$). The intervention, based on Social Cognitive Theory (SCT), included a DVD and booklets. We assessed survivors at baseline and 1-month and 4-months post-intervention. Potential mediators from SCT included parents' hat/clothing self-efficacy, hat outcome expectations and hat/clothing behavioral intentions. A series of mediational analyses were performed using generalized estimating equations and bootstrapped 95 % confidence intervals to assess the indirect paths by which the intervention increased children's wide-brimmed hat behavior. Examined individually, parents' self-efficacy (41 % of indirect effects), outcome expectations (63 %) and behavioral intentions (35 %) were significant mediators. A more complex model containing all mediating variables in a combination of serial and parallel paths revealed the effects of parents' self-efficacy on children's wide-brimmed hat behavior operated entirely through three pathways involving outcome expectations and behavioral intentions, accounting for 54 % of the total effect and completely mediating the intervention effect. Results highlight the importance of intervening on parents' socio-cognitive factors to increase children's wide-brimmed hat behavior. Furthermore, findings support the validity of SCT as the basis for sun protection interventions.

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B-024

BENEFIT FINDING ASSOCIATED WITH LESS LEUKOCYTE PRO-METASTATIC GENE EXPRESSION AFTER SURGERY FOR BREAST CANCER

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Objective: Poorer adaptation (negative affect) to treatment for breast cancer (BCa) has been associated with greater expression of pro-metastatic genes in circulating leukocytes. Less is known about leukocyte genomic correlates of psychological factors associated with better adaptation, such as benefit finding (BF). The present study explores differential pro-metastatic gene expression associated with women's BF levels after surgery for non-metastatic BCa. Methods: Peripheral blood mononuclear cells (PBMCs) from 79 women with stage 0-III BCa 2-10 weeks post surgery were subjected to genome-wide transcriptional profiling to determine expression of pro-metastatic genes, such as the G0→G1 switch gene [G0S2]. Levels of BF measured on the Benefit Finding Scale were entered with relevant sociodemographic and medical covariates into a multiple regression to predict leukocyte gene expression. Results: Overall BF was associated with less expression of G0S2 ($p=.002$), so specific subscales of BF were investigated to determine their association with down-regulation of G0S2. Lower expression of G0S2 was associated with greater BF Acceptance ($p=.022$), BF Personal Growth ($p=.021$), and BF Worldview ($p=.007$). Conclusions: Women who reported greater BF in the weeks after surgery for BCa showed less gene expression for pro-metastatic processes that have previously been associated with stress, negative affect, and social adversity in BCa patients and other populations. Thus, women's initial ability to find benefit after surgery for BCa may have implications for how these women fare in treatment and could have health implications over the longer term.

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B-025

DECREASED MARITAL QUALITY: CANCER-RELATED INTRUSIVE THOUGHTS AS A LONGITUDINAL RISK FACTOR

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Marital satisfaction contributes to overall quality of life. Chronic illness may affect the marital relationship, and prior research suggests that patient distress may be related to marital quality. However, little longitudinal evidence exists to describe changes in marital quality over the course of illness, and healthy control groups are rarely included for comparison. This study investigated longitudinal changes in marital quality after a breast cancer diagnostic procedure in 79 married women. Benign controls ($n=29$) were recruited while awaiting the results of a second diagnostic procedure following an initial abnormal test result. Cancer patients ($n=50$) were recruited shortly after diagnosis. At baseline and one-year follow-up (approximately 6 months post-treatment for cancer survivors), women reported cancer-related intrusive and avoidant thoughts using the Impact of Events Scale (IES) and completed the Couples Satisfaction Index. Changes in marital quality did not differ between benign controls and cancer patients, $p=.38$. Higher levels of cancer-related intrusive thoughts at baseline predicted decreases in marital quality over the next year, $\beta=-.21$, $t(73)=-2.23$, $p=.03$, even after controlling for cancer group and stage. Baseline IES Avoidance scores did not predict marital quality changes. Baseline marital quality did not predict changes in intrusions or avoidance. These results suggest that cancer-related intrusive thoughts may negatively impact marital quality over time, but not vice versa. Accordingly, this study helps to describe one way in which the stress of chronic illness can affect marital relationships.

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B-026

REDUCING UV EXPOSURE: PSYCHOMETRIC ASSESSMENT OF THE SELF-EFFICACY SCALE FOR SUN PROTECTION

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Exposure to ultraviolet (UV) radiation from the sun is a major cause of skin cancers. Excessive sun exposure can be avoided, and sun protection behaviors to reduce cancer risk are a focus of interventions. The Self-Efficacy Scale for Sun Protection was developed for research and interventions based on the Transtheoretical Model of Behavior Change (TTM). The measure is a 2-factor correlated model with 3 items for Sunscreen Use and 3 items for Avoidance. This study evaluated two crucial psychometric assumptions, factorial invariance and scale reliability, with a large baseline sample of adults ($N=1364$, 88 % white, 63 % female) participating in an ongoing, TTM-based, computer tailored intervention study. A measure has factorial invariance when the model is the same across subgroups. Three levels of invariance were tested, from least to most restrictive: 1) Configural Invariance (nonzero factor loadings unconstrained); 2) Pattern Identity Invariance (equal factor loadings); and 3) Strong Factorial Invariance (equal factor loadings and measurement errors). Multisample structural equation modeling was utilized to test invariance across 7 grouping variables. The highest level of invariance, Strong Factorial Invariance, was a good fit for the model across all subgroups for all variables: age (5 subgroups; CFI: .97, RMSEA: .07); education (3 subgroups; CFI: .97, RMSEA: .06); ethnicity (2 subgroups; CFI: .98, RMSEA: .06); gender (2 subgroups; CFI: .97, RMSEA: .07); race (2 subgroups; CFI: .97, RMSEA: .06); skin tone (3 subgroups; CFI: .94, RMSEA: .09); and Stage of Change for Sun Protection (3 subgroups; CFI: .94, RMSEA: .07). Coefficient Alpha was used to assess reliability and was .84 for Sunscreen Use and .68 for Avoidance, in the total sample. The Avoidance scale could be strengthened by adding additional items. Overall, the psychometric evidence demonstrates strong empirical support that the measurement model is consistent and has construct validity.

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B-027

CAREGIVING BURDEN, ALCOHOL USE, SMOKING, AND DISTRESS AMONG FAMILY CAREGIVERS OF LUNG CANCER PATIENTS

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Family caregivers of cancer patients show poorer health outcomes and more risky health behaviors than non-caregivers. Smoking and perceived caregiving burden have been related to distress in cancer caregivers. This longitudinal study aimed to extend prior cross-sectional work by examining whether caregiving burden predicted distress, alcohol use, and smoking status among distressed caregivers of lung cancer patients.

Lung cancer patients' family caregivers with elevated distress on the Hospital Anxiety and Depression Scale (HADS) at the time of enrollment (N=83) were recruited from three medical centers within 12 weeks of the patient's new oncology visit. Caregivers were primarily female (77 %) and Caucasian (82 %) with a mean age of 55 years. The majority (63 %) cared for patients with late stage disease. At baseline, caregivers completed measures of caregiving burden, smoking status, and alcohol dependence (Alcohol Use Disorders Identification Test; AUDIT). Caregivers (N=74) also completed the HADS, AUDIT, and a smoking status measure 3 months later.

At baseline, 23 % of caregivers reported current smoking. None of the caregivers quit smoking at follow-up, and 2 former smokers resumed smoking. Caregivers reported minimal alcohol use, with 6 % meeting the cutoff for harmful alcohol use at baseline and 4.1 % at follow-up. Fifty-three percent met clinical criteria for caregiving burden. Greater caregiving burden predicted increases in anxiety and depressive symptoms over the 3-month study period ($\beta=.28$, $p<.01$), controlling for gender and income. Caregiving burden also predicted decreases in alcohol use over the study period ($\beta=-.13$, $p<.05$), controlling for age and gender. Caregiving burden did not significantly predict smoking status at follow-up. Results suggest that distressed lung cancer caregivers experience high levels of burden, which predict change in distress and alcohol use.

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B-028

LIVING IN THE LONG SHADOW OF BREAST CANCER

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Historically, cancer survivorship has been reserved as a term for those who lived five years or longer after being deemed without signs of cancer. Now the term survivor is used from diagnosis through the balance of a person's life. The dominant cultural representation of a breast cancer survivor is one of a triumphant, happy, healthy and feminine woman holding a place of honor in the cancer world. Women are expected to share their experience and present an optimistic picture of the outcome of treatment. The literature is replete with information about the various aspects of being a breast cancer survivor. The cultural expectations related to breast cancer survivorship may or may not be congruent with a woman's perceptions or needs, especially when disease and its treatment may involve late and long-term effects that are unexpected and often under estimated. Few studies have explored the long-term effects of breast cancer on women's self-understanding and even fewer have focused on the experiences of rural women.

This interpretive phenomenological study explored the long shadow of living with breast cancer and meanings ascribed to the experience of breast cancer, and described the impact of the long-term effects on those meanings. Fifteen rural women who had been diagnosed and treated for breast cancer five or more years ago were recruited via purposive sampling. Three interviews conducted two to four weeks apart revealed that women respond to the survivorship persona in different ways and to varying degrees. The post-treatment phase of breast cancer is a process involving corporeal concerns, relationships, and uncertainty. Previous experiences and co-morbidities affected the meanings ascribed to the breast cancer experience and the degree women took up the survivor image. The women felt the illness revealed the fragility of life and they desired to live a purposeful life that was more than being a breast cancer survivor.

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B-029

SEXUAL SELF-SCHEMA COVARIES WITH SEXUAL DYSFUNCTION IN MALE COLORECTAL AND ANAL CANCER PATIENTS

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Background: Colorectal and anal cancer patients show high rates of sexual dysfunction following treatment. However, the majority of sexuality research in cancer focuses on female patients. Sexual self-schema, or sexual self-view, is a social-cognitive construct known to relate to sexual behaviors, responses, and attitudes in female cancer patients and prostate cancer patients. Even so, these relationships remain unstudied in male colorectal and anal cancer patients. Method: Men (N=55) diagnosed with colorectal/colon/rectal cancer (91 %) or anal cancer (9 %) at a major cancer center completed the Men's Sexual Self-Schema questionnaire (Andersen et al., 1999) derived from its 45 development items, the International Index of Erectile Function, and the Self-Esteem and Relationship Questionnaire. Measures were completed at the baseline assessment of a sexual-health education intervention pilot study for colorectal and anal cancer patients. Two-tailed Pearson product-moment correlations examined relations between variables. Results: The average patient was middle-aged (mean=57.5; SD=9.0), Caucasian (89 %), and married (87 %). The majority had Stage III (46 %; vs. Stage I or II) cancer and had received surgical (95 %), chemotherapy (91 %), and radiation treatment (86 %). A view of the sexual self as more powerful and aggressive covaried with worse erectile and orgasmic functioning ($r=-.320$ and $-.304$ respectively, $p<.025$) and lower intercourse satisfaction ($r=-.309$, $p=.022$). A view of the sexual self as open-minded and liberal, however, was associated with higher self-esteem and a better sexual relationship ($r=.310$ and $.295$ respectively, $p<.030$). Conclusions: Data suggest the potential utility of addressing sexual self view in the context of sexual-health interventions for male colorectal and anal cancer patients.

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B-030

SURVIVAL DISPARITIES IN FEMALE BREAST CANCER PATIENTS BY RACE, ETHNICITY, AND SES

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Introduction: Breast cancer is one of the leading causes of cancer death in all U.S. women. In 2008, 210,203 women in the U.S. were diagnosed and 40,589 died from breast cancer. However, survival disparities by race, ethnicity, and socioeconomic status (SES) still exist. Methods: Data were obtained from the Florida Cancer Data System, a census block population-based cancer registry in the State of Florida. Survival time by race/ethnicity/SES was our primary endpoint. Survival was time from date of diagnosis to date of death. Race was categorized into 7 groups: 1) White, 2) Black, 3) Native American 4) Asian, 5) Pacific Islander, 6) Asian Indian or Pakistani, or 7) Other. Ethnicity was defined as Non-Hispanic or Hispanic. Categories of SES were based on percent of the population living in poverty: 1) lowest (<5 %), 2) middle-low (≥ 5 % and <10 %), 3) middle-high (≥ 10 % and <20 %), and 4) highest (>20 %). Multivariate models were adjusted for age, insurance, hospital volume and type, tumor grade and stage, treatment type, and comorbidities.

Results: The majority of patients (n=127,754) were White (90.4 %) and non-Hispanic (90.4 %). Median age at diagnosis was 64 years. The overall median survival at 1 and 5 years was 93.8 % and 73.7 %, respectively. At 5 years Blacks had the lowest median survival (63.3 %) while Pacific Islanders had the highest (86.4 %). Independent predictor of worse survival in the unadjusted model was Black (hazard ratio [HR] 1.44; $P<.001$) and for better survival were Asian (HR .71; $P<.001$), Asian Indian or Pakistani (HR .65; $P=.013$), and Hispanic (HR .92; $P<.001$). Adjusting for all covariates, Black (HR 1.28; $P<.001$), Asian (HR 0.77; $P<.05$) and Hispanic (HR .88; $P<.001$) remained significant. For SES there was a monotonic improvement in survival for each higher SES category ($P<.001$) in the unadjusted model which remained significant when controlling for all covariates ($P<.001$).

Conclusion: A large diverse dataset linkage of female breast cancer patients confirmed racial, ethnic, and SES disparities in survival outcomes.

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B-031

INFORMATION-SEEKING AMONG CANCER SURVIVORS AND RELATIONSHIP TO SURVIVOR CHARACTERISTICS

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The ability to easily obtain trusted information about cancer is a vital part of post-treatment survivorship. The objective of this work is to explore survivors' experiences seeking cancer-related information and determine whether these experiences vary with different levels of physical and emotional problems. 4,286 post-treatment cancer survivors participated in an online study conducted by LIVESTRONG. Nearly half (48 %) of survey participants reported that it took a lot of effort to get information and about forty-four percent reported frustration with their information search. Many participants were concerned about the quality of information they found (50 %), but also felt the information they found was easy to understand (77 %). The number of emotional and physical concerns was positively correlated with difficulties in finding, trusting, and understanding information about cancer; further analyses indicated that specific physical (e.g., pain, fatigue) and emotional concerns (e.g., worry, grief) were each associated with increased difficulty in obtaining, understanding, and trusting information. Those who used the Internet as their most recent source of information (about 75 % of the sample) were more likely to report feeling frustrated in their search for information. These data suggest that utilization of the Internet as a source of information, though most convenient, does not alleviate frustration with information seeking. Information needs are likely to be highest among those experiencing greater physical and emotional concerns during survivorship. To ensure that survivors have the information they need, health care providers may need to help direct survivors to reputable and useful resources.

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B-032

CAREGIVER SEXUAL AND HPV COMMUNICATION AMONG FEMALE SURVIVORS OF CHILDHOOD CANCER

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Human papillomavirus (HPV) is a sexually transmitted infection and primary cause of cervical cancer. As such, HPV vaccination is recommended for all adolescent females, including survivors of childhood cancer. However, HPV vaccination is underutilized in this group. Maternal communications and physician recommendation for HPV vaccination have been implicated in contributing to familial vaccination decisions. This study compared mothers of daughters with/without a childhood cancer history on measures of sexual and HPV-specific communication and physician recommendation for HPV vaccination. The effects of sociodemographic and cancer-specific factors on these measures were also assessed. Mothers (N=305, M_{age}=41.7 years, SD=8.59) completed the Mother-Adolescent Sexual Communication Questionnaire (MASC), a HPV-specific communication scale, and a measure of physician recommendation for vaccination. There were no differences between mothers of daughters with/without a history of childhood cancer on any of the outcomes ($p>.05$). Among all mothers, divorced marital status and daughters' age were associated with increased sexual communication, while household income and daughters' age were associated with physician recommendation for vaccination ($p<.05$). Among mothers of survivors, daughters' age at diagnosis was associated with sexual and HPV-specific communication and physician recommendation for vaccination ($p<.05$). Interventions that target sexual communication as a means to increase HPV vaccination across groups should be directed toward married/never-married mothers with younger daughters. HPV vaccination efforts among childhood cancer survivors should focus on fostering sexual and HPV-specific communication among mothers whose daughters were younger at diagnosis. Generally, physicians should target vaccine recommendations to mothers of younger girls across income levels. When advising childhood cancer survivors, they should target those diagnosed at an early age.

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B-033

PHYSICAL AND MENTAL HEALTH QUALITY OF LIFE OF LONG-TERM CANCER SURVIVORS IN RURAL COMMUNITIES

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Background: Cancer survivorship is increasing worldwide as a result of advances in cancer screening, diagnosis, and treatment. The population of the United States is becoming more culturally diverse and is aging. As a result, there is growing concern about the quality of life (QOL) of long-term cancer survivors from diverse cultural groups and issues that emerge long after cancer treatment has ended. Studies have found disparities in health outcomes between those who live in urban and rural communities. This poster reports the results of a study that assessed factors that most influence the physical and mental health quality of life of long-term cancer survivors from diverse cultural groups in rural communities.

Methods: Long-term cancer survivors were recruited from rural communities of the Island of Hawaii. Participants included Asian Americans (n=26), Caucasians (n=40), Native Hawaiians (n=8), and others (n=4) who were long-term survivors of breast (n=37), gynecological (n=8), colo-rectal (n=7), prostate (n=3), and other cancers (n=23). Mean age of participants was 65 and range from 22-87. Mean years since cancer diagnosis was 14.5

Results: Hierarchical regression analyses were performed. Criterion variables were physical health and mental health QOL. Predictor variables included age, years since diagnosis, income, ethnicity, number of comorbidities, and life stress. The most important factors influencing physical health QOL were Asian ethnicity (positive influence), years since diagnosis (negative influence), and number of comorbidities (negative influence). Life stress was the most important factor influencing mental health QOL (negative influence).

Conclusions: Study results suggest that different factors contribute to the physical and mental health QOL of long-term cancer survivors in rural communities. Interventions which aim to improve the physical health and mental health QOL of these cancer survivors should be tailored to address the unique factors that contribute to each category of QOL.

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B-034

PROSPECTIVE ASSESSMENT OF ACCELEROMETER-DETERMINED PHYSICAL ACTIVITY AND SEDENTARY TIME AMONG BREAST CANCER SURVIVORS FOLLOWING SYSTEMIC TREATMENT

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Objectives: The primary aim of this study was to describe natural change in moderate-to-vigorous physical activity (MVPA) and sedentary time among breast cancer survivors (BCS) following systemic treatment, and to examine differences based on body mass index (BMI). Methods: Physical activity and sedentary time were measured using Actigraph GT3X+accelerometers for one week at three-month intervals during the first year after the completion of systemic treatment for breast cancer. BCS were recruited from three clinics in Montreal, Quebec, Canada. Results: Valid data for all behaviors was available for 159 women (M_{age}=55 years; SD=11). Using repeated measures analysis of variance (RM ANOVA), the main effect for time for MVPA was significant with observation of quadratic effects [$F(1,157)=4.99, p=.03$]. BCS engaged in MVPA 1.75 % (time 1), 1.89 % (time 2), 1.91 % (time 3) and 1.59 % (time 4) of their daily time awake. The main effect for weight status was also significant [$F(1,157)=4.81, p=.03$], with no interaction effect. Overweight BCS (BMI>25) consistently engaged in less MVPA per day at each time point compared to healthy weight BCS (BMI<25), with significant differences between groups observed at 6, 9, and 12 months post-treatment (all $p's<.05$). The model for sedentary time was not significant. At each of the four time points, BCS spent the majority of waking hours engaged in sedentary behaviour (79.32 %, 78.63 %, 77.98 %, and 79.10 % of time per day for time 1 through 4, respectively). BCS engaged in significantly more sedentary time than healthy weight BCS at the 12-month post treatment time point ($p=.02$). Conclusions: Accelerometer-determined estimates indicate that BCS are not accumulating enough MVPA after systemic treatment to confer health benefits. Further, BCS are spending the majority of waking hours in sedentary activities. All BCS should be trying to engage in more physical activity and less sedentary time for both weight-related (i.e., comorbidities) and cancer-related (i.e., recurrence and survival) reasons.

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B-035

SYMPTOMS OF PELVIC FLOOR DYSFUNCTION AFTER GYNECOLOGIC CANCER

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Clinical reports suggest many gynecologic cancer survivors experience symptoms of pelvic floor dysfunction, including bothersome bowel and bladder symptoms, as long term or late treatment effects. The extent and severity of these symptoms have not been systematically examined. We sought to determine the prevalence of specific bowel and bladder symptoms in survivors and examine the relationship of survivor characteristics to symptom severity. Women (N=104) who had completed gynecologic cancer treatment 1 year previously completed the International Consultation on Incontinence Questionnaire Female Lower Urinary Tract Symptoms (FLUTS) and the Memorial Symptom Assessment Scale (MSAS). The experience of bladder symptoms was nearly universal; 96 % reported at least 1 storage symptom on the FLUTS. Nearly three quarters reported stress or urge incontinence and 64 % reported mixed incontinence. Forty-one percent reported urinary leakage at least 2–3 times a week while 22 % reported leakage several times a day. Voiding symptoms were reported by 59 %. On the MSAS, 30 % reported diarrhea, 37 % reported constipation, and 22 % reported both diarrhea and constipation in the past week; 36 % reported pelvic pain. Cervical cancer and radiation were significantly ($p < .05$) associated with more severe bladder symptoms and greater pelvic pain but not more severe bowel symptoms; surgery was associated with more severe constipation. Body mass index (BMI), but not age, race or ethnicity, was significantly ($p < .05$) associated with bladder symptom severity, including more severe storage symptoms and greater daytime frequency. Finally, less education and lower incomes were significantly ($p < .05$) associated with more severe bladder symptoms, including more severe enuresis. Study findings suggest symptoms of pelvic floor dysfunction are prevalent in gynecologic cancer survivors; cervical cancer survivors and women with higher BMI are especially at risk for more severe symptoms. Future research should examine whether these symptoms are more prevalent or severe in survivors than in the general population.

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B-036

SEXUAL PROBLEMS AND MINDFULNESS IN BREAST CANCER SURVIVORS

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Background: Sexual problems are frequently experienced by breast cancer (BC) survivors and may last for months to years following treatment. Treatment is not systematically offered, and reliable treatment methods tailored to this population have not been developed. Training in mindfulness (i.e., state of heightened awareness/acceptance of the present moment) has been used to treat sexual dysfunction in other patient populations. This study aimed to describe sexual problems in a sample of BC survivors and to evaluate mindfulness as a correlate. Method: Participants (N=48) completed an online survey of sexual function (FSFI), sexual distress (FSDS-R), body change stress (BITS) and mindfulness (FFMQ). Eligible survivors were age 18 to 75, had completed treatment for BC, had no recent history of other cancers, and were cancer-free or living with stable BC. Two-tailed t-tests, Pearson's correlations, and logistic regressions were performed to examine the associations between measures of sexual problems and mindfulness. Results: Participants (N=48) were an average age of 56.3 years (SD=9.3). Over three-quarters (76 %) of survivors qualified for sexual dysfunction based on FSFI score, and about half (52 %) met criteria for female sexual dysfunction (FSD) based on FSDS-R score. Scores on the BITS were mid-range and comparable to previous studies of BC patients. Total FFMQ scores were significantly and negatively associated with FSD ($p = .035$). Of the FFMQ subscales, Nonjudgement was significantly correlated with the greatest number of subscales on the FSFI, including arousal, lubrication, orgasm, satisfaction, and overall sexual function ($r > .295$, $p < .05$). Greater overall mindfulness was also significantly correlated with less sexual distress on the FSDS-R ($r = -.463$, $p = .001$) and less body change stress on the BITS ($r = -.486$, $p < .001$). Conclusions: Mindfulness, particularly nonjudgement of one's internal experience, appears to be a significant factor in sexual function, sexual distress, and body image in this sample of BC survivors and warrants further exploration.

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B-038

THE RELATION BETWEEN HOSTILITY AND CONCURRENT LEVELS OF INFLAMMATION IS SEX AND AGE MEASURE DEPENDENT

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Background: Hostility may be associated with greater systemic inflammation. However, contradictory evidence exists and it is unclear whether certain individuals or dimensions of hostility may be more susceptible to these effects.

Objective: We evaluated the main and interactive effects of hostility with sex and/or age on markers of inflammation, independently of traditional risk factors for CAD.

Methods: Subjects were 169 healthy working adults (75 men, 94 women), age 19–64 (M age=41.3±SD=11.4). Hostility was assessed using The Cook-Medley Hostility Inventory and via intensive repeated measures of quarrelsome behavior and anger in daily living. Blood samples were drawn to measure inflammation (hsCRP, IL-6, TNF- α , IL-8, IL-18, and MCP-1) and lipid oxidation (Myeloperoxidase). Analyses included correlations and hierarchical regression analyses controlling for behavioral, psychological, and socio-demographic, and medical factors.

Results: Significant associations emerged between cynical hostility and hsCRP, IL-6, and TNF- α ($p < .05$). Hierarchical regressions showed that these relations were dependent on sex (hsCRP, TNF- α ; $p < .05$) and/or age (IL-6, TNF- α ; $p < .05$). For example, in simple slope analyses, hostility was positively related to TNF- α and hsCRP among women ($b = .015$ and $b = .013$ respectively, $p < .005$) but not men. It was also associated with higher TNF- α values among younger individuals ($b = .018$, $p < .005$) but not among the older participants. No associations were found for other markers and findings were limited for the daily measures of hostility. Conclusions: The impact of hostility on inflammatory processes may be particularly detrimental to women. The TNF- α , IL-6, CRP triad appears particularly vulnerable to the impact of psychological and behavioral factors, and may be one mechanism by which hostility, particularly cynical hostility, contributes to increased cardiovascular risk in women. Prospective research is needed to verify this.

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B-039

CARDIOVASCULAR DISEASE PREVALENCE IN CANCER CAREGIVERS

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Caregivers of chronic illness patients have been shown to be more vulnerable to disease development compared with non-caregivers, but little is known whether this generalizes to cancer caregivers. This study compared prevalence rates of cardiovascular disease (CVD)-related conditions reported in cancer caregivers to those in the US population.

A nationwide sample of cancer caregivers completed surveys at 2 (T1; N=896, age M=54.42) and 5 years (T2, N=607) after their care recipients' cancer diagnosis. At T1, demographics including age, ethnicity, and gender were self-reported. At both T1 and T2, 7 CVD-related conditions were assessed using the Morbidity Index for Caregivers of Chronic Illness: hypertension, high cholesterol, diabetes, obesity, angina/CHD, cardiac arrest/CHF/heart attack, and stroke. For the US population, NHANES data were used from the same year as the caregiver surveys.

Prevalence rates of the CVD conditions for both caregivers and the US population were standardized according to age, ethnicity, and gender using SUDAAN. Comparisons using standardized rate ratios revealed that at both T1 and T2, caregivers had cardiovascular health comparable to the US population (95 % Clupper>1.561, Clower<.876), and that caregivers reported less high cholesterol at T1 (95 % CI: .830-.383) and obesity at T1 and T2 (95 % CI: .493-.228; .768-.369, respectively). However, caregivers had higher prevalence at T2 than T1 for all the CVD conditions ($t_s > 2.46$, $p_s < .014$), and incidence rates between T1 and T2 per 1000 person years were substantial, ranging from 4.07 for cardiac arrest/CHF/heart attack to 54.31 for high cholesterol.

These findings are among the first documenting notably high incidence rates in the CVD conditions among caregivers 5 years after their relative's cancer diagnosis. Findings highlight the needs for educating cancer caregivers about maintaining routine cardiovascular check-ups, which has significant public health implication.

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B-040

CARDIAC-SPECIFIC ACCEPTANCE PREDICTS IMPROVEMENT AMONG PATIENTS IN CARDIAC REHABILITATION

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Mindfulness and acceptance are thought to be particularly relevant in behavioral medicine interventions among patients with chronic disease. No prior study has evaluated mindfulness and acceptance as mediators of change among patients participating in cardiac rehabilitation (CR). This study evaluated the degree to which acceptance and awareness predicted cardiovascular improvement and adherence in a phase-II CR program. Acceptance was conceptualized as willingness to experience internal and external events, and awareness was conceptualized as noticing internal and external events. Twenty-six patients (mean age=59; 33 men) were recruited from an outpatient CR program and completed the following questionnaires prior to beginning the program: Physical Activity Acceptance and Action Questionnaire, Cardiac Acceptance and Action Questionnaire, Philadelphia Mindfulness Scale (acceptance and awareness subscales), and the Acceptance and Action Questionnaire. Additionally, participant entry and exit VO2max (via exercise stress test) and number of exercise and educational classes attended were recorded.

Results indicated that cardiac-specific acceptance predicted change in VO2max [$F(1,23)=7.32$ $p=.01$; $r^2=.06$]. General acceptance and physical activity-specific acceptance did not predict change in VO2max. Results suggest that cardiac-specific acceptance may be more relevant to cardiorespiratory improvement than general or physical activity acceptance. To the degree that changes in VO2max reflect successful behavior change, disease-specific measures may be more useful in predicting behavior change in this population. General measures of acceptance may not provide an accurate assessment of the impact of acceptance-based interventions in disease-specific groups. Future research should further address the utility of disease-specific acceptance in behavioral medicine intervention settings.

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B-041

WITHIN-PERSON VARIABILITY IN THE EXTENT OF AND REASONS FOR ANTIHYPERTENSIVE MEDICATION NONADHERENCE

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Objective: Medication nonadherence is typically analyzed in a cross-sectional fashion, which assumes that it is stable over time. However, nonadherence may fluctuate circumstantially and over short time periods, which would have implications for dosing and tailoring of interventions aimed at reducing nonadherence. The goal of this study was to characterize within-person variability in medication nonadherence.

Method: 269 veterans (mean age 64 years, 93 % male) with a diagnosis of hypertension and prescribed at least one antihypertensive medication completed four telephone assessments, each approximately 2 weeks apart (range 11–17 days), for a total of 1076 occasions. Extent of nonadherence was measured with a valid, reliable three-item scale, and 22 possible reasons for missing medications were measured. The response distributions were generally bimodal, so we dichotomized the extent scale as adherent vs. nonadherent and each reason as endorsed vs. not endorsed. Logistic multilevel models were then fitted to provide estimates of within- and between-person variability across the four occasions.

Results: Nonadherence was reported on 18 % of occasions. The proportion of total variance attributable to within-person variation was 49 %, indicating substantial within-subject variability in the extent of nonadherence across the two months in which four occasions were assessed. No single reason was endorsed on more than 10 % of occasions. Reasons with the lowest within-person variability were “not having any symptoms,” “taking medication between meals,” and “possible interactions with other medications.” Reasons with the highest within-person variability were “forgetting,” “cost,” and “being busy.”

Conclusion: There is both within- and between-patient variability in the extent of nonadherence and reasons for nonadherence. To improve medication adherence, interventions may need to be tailored to time-varying reasons for nonadherence and address forgetting doses, medication costs, and busy schedules.

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B-042

THE ROLE OF HEART-FOCUSED ANXIETY IN HEALTH CARE UTILIZATION AND PAIN-RELATED INTERFERENCE IN PATIENTS WITH NONCARDIAC CHEST PAIN

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Medical evaluations of patients with chest pain regularly find no evidence of abnormal cardiac functioning and often result in a diagnosis of noncardiac chest pain (NCCP). This condition is prevalent, impairing, and frequently associated with anxiety. Patients with NCCP have demonstrated elevated levels of heart-focused anxiety (HFA) - a fear of heart-related sensations fueled by catastrophic beliefs of serious disease. HFA is thought to be comprised of three underlying factors: fear of heart sensations, avoidance of cardiac arousal, and heart-focused attention. This study utilized the Cardiac Anxiety Questionnaire to examine the relation of lower-order HFA factors to health care utilization (HCU) and pain-related life interference in a sample of adult patients diagnosed with NCCP.

Data were collected as part of a larger study. The sample consisted of 194 NCCP patients (56 % female, 82 % White, mean age 50.5). Hierarchical linear regressions were conducted to examine the relation of HFA factors to HCU and pain-related interference over and above the effects of demographic and pain-related clinical variables. HFA factors accounted for a significant proportion of variance in pain-related interference (F -change(170,3)=12.64, p -change<.001, R^2 -change=.16) as well as HCU (F -change(169,3)=3.37, p -change<.05, R^2 -change=.051). CAQ-fear ($t=3.77$, $p<.001$, $\beta=.3$) and CAQ-avoidance ($t=2.5$, $p<.05$, $\beta=.181$) as well as chest pain intensity ($t=2.317$, $p<.05$, $\beta=.156$) and frequency ($t=-3.42$, $p<.01$, $\beta=-.232$) were significantly associated with pain-related interference. In regards to HCU, gender ($t=3.09$, $p<.01$, $\beta=.228$) and ethnicity ($t=2.00$, $p<.05$, $\beta=.151$) were the only significant IVs; there was a non-significant trend for CAQ-avoidance ($t=1.89$, $p=.061$, $\beta=.149$). These findings indicate that HFA plays a substantial role in health-related behaviors and highlights the importance of lower-order HFA factors in the experience of NCCP.

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B-043

DIFFERENTIAL HEART-FOCUSED ANXIETY ACROSS TWO SAMPLES OF PATIENTS WITH NONCARDIAC CHEST PAIN

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Chest pain with no detectable cardiac source has been termed noncardiac chest pain (NCCP). This condition is prevalent, costly, impairing and associated with anxiety. In particular, patients with NCCP demonstrate high levels of heart-focused anxiety (HFA), a fear of cardiac-related sensations associated with perceptions of health catastrophe. Because NCCP is an exclusion-based diagnosis, the patient population is somewhat heterogeneous. This study investigated how HFA varied between two groups of patients with NCCP: a group evaluated with a standard cardiac evaluation plus an exercise stress test (Group EST) and a group evaluated with a standard cardiac evaluation plus cardiac catheterization (Group CATH). It was hypothesized that patients in Group CATH would report higher levels of HFA than those in Group EST.

Data were collected as part of two parent studies on NCCP. Group EST (N=193) was 56 % female and 82 % White with a mean age of 51. Group CATH (N=22) was 59 % female and 68 % White with mean age 55. A series of independent sample t-tests were conducted to compare HFA, as measured by the Cardiac Anxiety Questionnaire (CAQ), between groups. The CAQ yields a total score and subscale scores for heart-related fear, avoidance, and attention. Groups differed by CAQ total score ($t=-3.33$, $p<.01$, $d=.75$) as well as by CAQ subscale scores of heart-related avoidance ($t=-3.04$, $p<.01$, $d=.68$) and attention ($t=3.32$, $p<.01$, $d=.75$), indicating that patients in Group CATH reported more HFA compared to those in Group EST. Compared to NCCP patients who participate in an EST, those who undergo cardiac catheterization may be at an elevated cardiac risk and consequently experience more anxiety. It may also be that only patients with impairing and persistent NCCP undergo cardiac catheterization, as it is a costly and somewhat invasive procedure. Our findings show that HFA may be related to NCCP severity, and although preliminary, suggest that HFA may be associated with health care utilization in this patient population.

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B-044

DEPRESSION AS A MEDIATOR OF SYMPTOMS IN HEART FAILURE PATIENTS

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Background. Decreased sleep is related to depression, and sleep dysfunction predicts symptoms in heart failure (HF) patients. We hypothesized that sleep duration (SD) would predict both depression and HF symptoms, and that depression mediates relationships between SD and HF symptoms. **Methods.** 30 systolic HF patients completed the Beck Depression Inventory II (BDI) and Kansas City Cardiomyopathy Questionnaire (KCCQ); the Pittsburgh Sleep Quality Index (PSQI) was used to assess SD. All analyses controlled for age, gender, and NYHA class using multiple regression. **Results.** Reduced SD was associated with higher KCCQ Symptom Frequency (SF) scores ($\beta=.438$, $p<.05$), higher KCCQ Physical Limitations (PL) ($\beta=.381$, $p<.05$), and reduced KCCQ Clinical Summary (CS) scores ($\beta=.359$, $p=.052$). SD was marginally related to total BDI scores ($\beta=-.361$, $p=.071$) and significantly to BDI Cognitive ($\beta=-.414$, $p<.05$) but not Somatic ($\beta=-.200$, $p=.335$) subscales. Total BDI predicted SF ($\beta=-.319$, $p<.01$), PL ($\beta=-.355$, $p<.01$), and CS ($\beta=-.332$, $p<.01$). The BDI Cognitive scale predicted SF ($\beta=-.251$, $p<.01$), PL ($\beta=-.291$, $p<.01$), and CS scores ($\beta=-.281$, $p<.01$); the Somatic subscale predicted SF ($\beta=-.353$, $p<.01$), PL ($\beta=-.328$, $p<.01$), and CS ($\beta=-.336$, $p<.01$). Using Baron and Kenny's (1986) approach to assess whether relationships between SD and KCCQ were mediated by depression, after controlling for depression, SD no longer predicted PL ($\beta=.146$, $p=.297$), and CS ($\beta=.143$, $p=.336$). Depression was a weak mediator for KCCQ SF ($\beta=.286$, $p=.097$). Additionally, Cognitive but not Somatic depression accounted for relationships between SD and SF, PL, and CS scores. **Conclusions.** In HF patients, reduced sleep duration is related to depression symptoms and to HF symptoms and reported physical limitations. Depression is associated with HF symptoms. Effects of reduced sleep on HF symptoms appear to be mediated by the cognitive, but not somatic depression symptoms.

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B-045

RACIAL DIFFERENCES IN ILLNESS REPRESENTATIONS

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Introduction

The Common Sense Model (CSM) suggests that individuals use mental representations of illness and treatment to respond to health threats. Illness representations are associated with and predictive of a variety of chronic illness health behaviors and outcomes. Further, CSM-based interventions have improved self-management in patients with chronic illnesses by tailoring treatment to patients' representations. Using group differences as heuristics during the assessment of illness representations may be one way for clinicians to improve the efficiency of this tailoring. Given the high rates of chronic illness in minority populations, race could be one such factor. However, few studies have investigated racial differences in illness representations with a validated measure of illness beliefs. The aim of this study was to investigate racial differences in illness representations of diabetes, hypertension and heart disease.

Methods

Secondary data analysis was conducted on an existing database from a study on end of life planning. Differences between African-American and Caucasian participants' responses to the brief Illness Perception Questionnaire in relation to diabetes, hypertension and heart disease were compared using the non-parametric Mann-Whitney U and Kolmogorov-Smirnov Z statistics.

Results

African American participants were significantly more likely to report hypertension symptoms, concern about heart disease and a greater understanding of diabetes.

Conclusion

The findings provide preliminary quantitative evidence of racial differences in illness representations. These differences could serve as a starting point for the assessment of illness representations in clinical settings. Clinicians may be able to maximize clinical time by focusing on symptoms and medication adherence during visits with African-Americans with hypertension and worry and action plans during visits with African-Americans with heart disease.

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B-046

SOCIOCULTURAL AND ETHNIC EFFECTS ON CARDIOVASCULAR REACTIVITY AND RECOVERY TO LABORATORY INDUCED STRESS

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Chronic diseases are disproportionately common among ethnic minorities, which may be attributed to their elevated chronic stress and lack of social support. Unknown is the degree to which ethnicity plays a unique role in health outcomes independent of the effects of sociocultural factors that are closely related to ethnicity. This study tested the independent effects of Hispanics vs. Non-Hispanics from the effects of sociocultural characteristics that are known to describe Hispanics, such as chronic stress, social support, and familism on cardiovascular recovery and reactivity (CRR) to a laboratory induced stressor.

A total of 18 couples (N=36) in a romantic heterosexual relationship participated in this study and provided valid data (mean age=21; 36 % Hispanic). SBP, DBP, and HR were taken during 3 study phases: baseline, stress task, and recovery. General perceived stress (PSS), perceived social support availability (ISEL), and familism were measured as sociocultural factors.

T-test showed Hispanics were higher on social support and comparable on other sociocultural factors compared with non-Hispanics. General lineal modeling revealed that sociocultural factors and ethnicity played different roles in CRR. Participants high on general stress showed greater SBP increase to lab-induced stressor; those high on familism showed greater DBP increase in response to the stressor ($p<.08$). In addition, Hispanics showed greater increase in HR during the stress task ($p<.08$), which group differences became nonsignificant at recovery. These effects were independent of between subject effects.

Findings suggest that individual differences in sociocultural orientations are attributable to cardiovascular reactivity to an acute stressor as much as ethnicity per se is. Future studies need to replicate these preliminary findings with larger and ethnically diverse samples. Identifying psychological factors that are protecting minorities from blunted cardiovascular reactivity and recovery to an acute stress is warranted to help minorities improve their long-term cardiovascular health.

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B-047

MEDICATION ALARMS FOR MEDICATION REMINDING IN HEART FAILURE: OVERDOSE OR SNOOZE?

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For adults with heart failure (HF), adherence to medication regimens remains a complex problem. Although reminder systems offer a potential means of improving adherence, systems with audible alarms may increase apparent overdosing. We explored the rate of apparent overdosing using an alarmed pillbox as part of a pilot randomized clinical trial. Participants were 30 adults (63 % male) predominately Caucasian (83 %) HF patients (69±11 years) recruited from outpatient cardiology. They were randomized to alarmed or silent conditions and given an automated pillbox equipped with auditory and visual alarms on each medication bin. Opening the bin recorded a medication taking event and silenced the applicable alarm. 4 HF medications were monitored for 28 days. An overdose percentage for each medication was averaged to create an overall overdose rate for each individual (outcome measure). Most patients were able to use the system (N=29). Controlling for gender, completer analyses indicated a trend toward more apparent overdoses in the alarm condition (13.9 %) compared to the silent condition (6.5 %), $F(1,25)=3.93$, $p=.059$. Observed power (48 %) was low in this pilot trial. When medication taking is defined as bin openings, some patients may have incorrectly taken extra pills. However, when alarms are used for reminding, patients may open the bin to silence the alarm without taking a pill. We cannot differentiate between true overdoses and bin openings to silence the alarm followed by medication taking at a later time ("snooze"). Future studies should account for this possibility when using devices with audible alarms for reminding purposes.

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B-048

CHECK IT! PILOT STUDY OF A POSITIVE PSYCHOLOGY INTERVENTION TO IMPROVE ADHERENCE IN ADOLESCENTS WITH TYPE 1 DIABETES

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Problems with adherence in adolescents with type 1 diabetes (T1D) are common - occurring at rates as high as 93 % - and have serious health consequences, including suboptimal glycemic control. Increasing positive affect (e.g., feeling happy, proud) has been shown to promote adherence in adult populations. We tested the feasibility and preliminary efficacy of a positive psychology intervention to improve adherence in adolescents with T1D. Forty adolescents (mean age=15.1±1.6, 50 % female; 65 % White; 13 % Hispanic, 8 % Black; 14 % Other; mean A1C=8.4±1.1 %) were randomized to positive affect or education interventions. Adolescents and their caregivers completed measures of mood and adherence, and information on A1C and blood glucose monitoring was collected from medical records at baseline and 3 months. Adolescents in the positive affect condition received small biweekly gifts, and their caregivers received weekly reminders to provide written or verbal affirmations to the adolescents. Adolescents in the education condition received biweekly informational pamphlets about diabetes care. All participants received telephone calls every 2 weeks for 8 weeks, during which they completed brief measures of mood and adherence. Feasibility was excellent; 88 % of participants completed all 4 calls, and 95 % completed 3 month data. There was a group x time interaction for positive affect ($F=5.44, p=.026$), with a significant increase in the positive affect group, and adolescents in both groups reported a significant improvement in adherence ($F=3.94, p=.05$). A1C did not change over time. Further, positive affect during the intervention was significantly associated with more frequent blood glucose monitoring ($r=.35$) and better A1C ($r=-.35$) at 3 months (both $p<.05$). These results suggest the potential benefits of a positive psychology intervention for adolescents with T1D. Longer follow-up is needed to determine whether this short-term, low-cost intervention will have lasting effects on adherence and glycemic control.

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B-050

A LONGITUDINAL EXAMINATION OF GENERAL AND DIABETES-SPECIFIC PARENTING IN RELATION TO DIABETES OUTCOMES AND QUALITY OF LIFE

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This study examines the relation of general parenting style and diabetes-specific parenting behaviors with health outcomes in 189 children age 9–15 with type 1 diabetes in the control arm of a multi-site 2-year family-based behavioral intervention efficacy trial (49.2 % female, age 12.4±1.7, A1c 8.3±1.1, 32.8 % pump). At each clinic visit, glycated hemoglobin (A1c) was assayed by central lab; blood glucose monitoring (BGM) frequency was assessed by meter download. Children completed measures of general authoritative parenting style at baseline, and collaborative parent involvement in diabetes management, diabetes responsibility-sharing, and psychosocial quality of life (QOL) every 6 months. Mixed effects longitudinal models evaluated the associations of authoritative parenting style, collaborative parent involvement, and diabetes responsibility-sharing with A1c, BGM frequency, and QOL. Adjusted models included all parenting variables, regimen, diabetes duration, age, sex, Tanner stage, and family income. In unadjusted models, parenting style and collaborative parent involvement were associated with A1c ($\beta=-.24, p=.004$ and $\beta=-.18, p=.002$, respectively), BGM frequency ($\beta=.58, p=.02$ and $\beta=.28, p=.001$), and QOL ($\beta=4.00, p<.001$ and $\beta=5.50, p<.001$). Diabetes responsibility sharing was not associated with any outcome. In adjusted models, collaborative parent involvement was associated with A1c ($\beta=-.20, p=.003$), BGM frequency ($\beta=.20, p=.04$), and QOL ($\beta=5.31, p<.001$). Responsibility-sharing was inversely related to QOL ($\beta=-.57, p=.05$). Parenting style was not independently associated with any outcome. Diabetes-specific parenting behaviors defined as collaborative parent involvement-e.g., responsiveness to day-to-day needs, assisting with planning and problem-solving-are associated with more optimal diabetes and psychosocial outcomes independent of parenting style and parent involvement in diabetes management tasks. Future research will investigate whether these associations are moderated by the behavioral intervention.

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B-051

SOCIAL COGNITIVE AND EXECUTIVE FUNCTION CORRELATES OF DIABETES

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Self-efficacy (SE) and self-regulatory strategy use (SR) are associated with positive health behaviors, and improved health status. Health behavior is key for controlling disease, such as type 2 diabetes (T2D). Two perspectives useful for understanding determinants of health and health behavior are: 1) social cognitive (SCT) paradigm including self-regulatory techniques and 2) biological perspective involving individual cognitive abilities such as working memory. The purpose of this analysis was to examine how these SCT and executive function factors were associated with T2D status. Older adults ($n=60$, Mage=61±7.9) with ($n=29$) and without ($n=31$) T2D (DV) completed assessments of SE, outcome expectations, and SR, and a computer serial NBack working memory task (IVs). A logistic regression analysis indicated that T2D status was significantly classified by the independent variables ($\chi^2=18.7, df=4, p<.001$). Overall, 79.6 % of the predictions were accurate with 86.2 % of T2D and 72 % without T2D correctly classified. All SCT variables were significant ($p<.05$) contributors to the model, accounting for 29 %–39 % of the variance. SE ($\beta=.97$) and specifically self-evaluative outcome expectations ($\beta=.76$) were associated with decreased odds of T2D. NBack cost ($\beta=1.06$) and SR ($\beta=1.11$) were associated with higher likelihood of change to T2D status. Examining SCT and executive control correlates of T2D provides opportunity for intervention development. Impairments in executive control processes, such as working memory, may affect individual ability to successfully function in ADLs and even adopt new health behaviors. Surprisingly, SR was positively associated with T2D, which may reflect increased self-regulatory demands associated with disease control post-diagnosis. Self-evaluative outcome expectations, related to SE in nature, and SE together were the strongest determinants of T2D status. These data suggest developing interventions that target SCT constructs, especially those related to personal agency beliefs, while enhancing executive function, may decrease odds of T2D diagnosis.

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B-052

"SMART" GOALS AND OUTCOMES IN A PEER-DELIVERED COMMUNITY-BASED DIABETES INTERVENTION TRIAL IN THE RURAL SOUTH

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Setting realistic goals is a common strategy in behavior change interventions. Community members can be trained to deliver behavior change interventions, but training time is often limited. Thus, it is important to identify which training elements are most effective. A "SMART" goal is Specific, Measurable, Achievable, Realistic, and Time-bound. Its simplicity has appeal for community-based programs, but it is unknown whether SMART goals result in better outcomes. Encourage is a peer-delivered diabetes self-care improvement intervention being conducted in rural Alabama with 424 participants and 25 peer volunteers. Peers received 2 days of training emphasizing SMART goals. Peers worked with clients weekly or biweekly for 12 weeks and monthly thereafter for a year. Baseline and follow-up A1c, blood pressure, and low-density lipoprotein cholesterol were assessed, and the first goal set by each peer-client dyad was independently scored for presence of each S-M-A-R-T element (0–4 score) by 2 investigators, with disagreements adjudicated by consensus. ANCOVA examined associations between change in outcomes and 0–2 or 3–4 SMART goal elements, adjusted for patient factors. We analyzed 185 intervention arm participants with mean age 59.7±12.0 years, 79.5 % women, 38.61 % on insulin; 61 % of goals were "SMARTer" (score 3–4). "SMARTer" goals were not associated with greater improvements in A1c ($p=0.56$), BP ($p=0.38$), or LDL-C ($p=0.67$). Although the majority of goals set by peer-client dyads was "SMARTer", suggesting training effectiveness, "SMARTer" goals were not associated with better outcomes. Examining the effectiveness of training elements can help refine training to emphasize the most potent aspects relative to outcomes.

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B-053

HIGH QUALITY PARENT-ADOLESCENT RELATIONSHIP FACILITATES SELF-REGULATION AND PATIENT CENTERED CARE WITH HEALTH CARE PROVIDER

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A warm and sensitive family context is important for facilitating adherence and diabetes management during adolescence. High quality parent-child relationships may also lay the foundation for self-regulatory skills and the development of high quality relationships with health care providers that support good adherence. We examined whether the high quality relationships adolescents have with their mothers and fathers and their regulatory skills predicted changes in patient-centered care with physicians across adolescence. Two hundred fifty-two adolescents (M age=12.49 years, SD=1.53; 53.6 % females) completed assessments at time 1 regarding the quality of their relationship with the mother and father and their behavioral self-control (ability to regulate emotions, cognitions, and behavior). At three subsequent assessments (each spaced 6-months apart) they completed assessments of the patient-centered care they had with their physician (e.g., physician listens to what I say before setting treatment goals, physician encourages me to ask questions about my care). Longitudinal growth modeling revealed no significant change across time in adolescents' perceptions of patient centered care, but significant variation in the change over time. A high quality relationship with mother (but not father) at time 1 predicted greater patient centered care at baseline ($p < .01$), but not change across subsequent time points. Behavioral self-control predicted better initial patient centered care and changes across time in patient-centered care. Those with poorer self-control reported the greatest decline in patient-centered care across time. The results point to the importance of a foundation of high quality parent-child relationships in regulating how adolescents establish a good relationship with their health care provider and the regulatory skills that may facilitate changes in the health care provider relationship across time. Funding R01 DK063044

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B-054

PARENTS, FRIENDS, AND HEALTH IN EMERGING ADULTS WITH AND WITHOUT TYPE 1 DIABETES

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Emerging adulthood (ages 18–25) typically coincides with relational exploration. Adults this age continue to experience the increasing levels of independence from parents and intensifying peer relationships that commence in adolescence. Changing social environments during this time may have strong implications for health, particularly in the context of chronic disease. This study examined relations of parent and friend relationships to the health behaviors and psychological well-being of emerging adults with ($n=117$) and without ($n=122$) type 1 diabetes over the year following high school graduation. Parent support was associated with less likelihood of smoking, fewer depressive symptoms, lower perceived stress, and, for those with diabetes, better self-care, whereas parent control was linked to an increased likelihood of smoking (controls only) and more depressive symptoms. While there were no main effects of friend support on any outcomes, conflict with friends was related to greater likelihood of smoking and alcohol use, and higher levels of depressive symptoms, perceived stress, bulimic symptoms and drive for thinness. Several significant buffering effects also were found. Parent control was linked to increased alcohol use, but only when friend support was low. High friend conflict was associated with greater bulimic symptoms, but only in the presence of low parent support. For those with diabetes, friend conflict was associated with worse glycemic control when parent support was low, but better glycemic control when coupled with high parent support. When friend support was high, parent control did not predict diabetes self-care behavior, but in the context of low friend support, parent control was linked to better self-care behavior. The lowest self-care behavior was found in the context of low parent control and low friend support (all p 's $< .05$). Overall, results support the presence of cross-domain buffering of the quality of parent and friend relationships during emerging adulthood in predicting health and well-being outcomes for those with and without diabetes.

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B-055

"MA, I'M CALLING AN AMBULANCE": THE ROLE OF SOCIAL SUPPORT FOR PATIENTS WITH DIABETIC FOOT ULCERS IN AN INNER CITY

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Diabetic foot ulcers (DFUs), a complication of diabetes, often affect medically and socially vulnerable patients. Ulcers lead to disability, and patients undergoing treatment have complex, demanding care needs. Furthermore, delayed initial presentation for DFU can lead to wound progression and limb amputation. Social support has been found to have a beneficial effect on wound healing processes and overall stress levels, but little is known about how social support impacts patient decisions to present for treatment when a DFU occurs.

A diverse sample ($n=16$) of adult inpatients and outpatients from low-income urban neighborhoods undergoing treatment for DFU (M age 59.1; 62.5 % Black; 31.3 % Latino; 6.3 % Asian) was interviewed to explore psychosocial barriers to initial presentation and treatment. Results from qualitative analysis show family members as instrumental in shortening delay in seeking DFU care, and encouraging or insisting on participants' presentation for medical care. Participants received pragmatic support, including transportation, financial, and cooking/grocery shopping. Some relied on family to recount medical history and serve as advocates. Participants received emotional support from family, neighbors and church. However, others described not having anyone to rely on for support; not wanting to burden family members; experiencing isolation during the treatment period; or not being understood by those without personal DFU experience.

Given the complex care needs of DFU patients and importance of early presentation, interventions leveraging social support networks to promote presentation and treatment adherence could potentially reduce amputation rates. Interventions educating communities about foot self-care and the need for immediate presentation for DFU should consider targeting both patients and their support networks.

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B-056

HOW DO PATIENTS TALK ABOUT DIABETES DURING DEPRESSION INTERVIEWS?: QUALITATIVE COMPARISONS BY MEDICATION REGIMEN

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Type 2 diabetes patients on insulin are more likely to screen positive for depression compared to those on pills. This qualitative study analyzed clinical interview data (Montgomery-Asberg Depression Rating Scale; MADRS) from 56 adults with type 2 diabetes to explore the role of treatment regimen in diabetes distress. Transcripts were coded for diabetes content and rated for frequency of diabetes mentions. Participants were also asked directly if they felt that diabetes contributed to depressive symptoms.

Participants (M age=55.29, SD=5.54; 73.2 % female; 64.3 % Black; 23.2 % Latino; 44.6 % on insulin) scored a mean of 10.57 (SD=9.34) on the MADRS, indicating mild depression. Half of those endorsing at least one MADRS symptom described diabetes as a contributing factor. When questioned directly, 61 % reported that diabetes contributed to depressive symptoms. Participants on insulin endorsed diabetes as a causal context for depressive symptoms on the MADRS significantly more (M=1.52, SD=1.89) than those on pills (M=.52, SD=.96); $t(54)=2.57$, $p=.01$ (Cohen's $d=.67$, medium effect size).

Participants discussed diabetes regimen- and weight-related distress; fear of complications; and feelings of falling short in self-care. Overall, 38.8 % of participants endorsed diabetes distress, about 2/3rds of whom were on insulin. Overlap between depression and diabetes symptoms (appetite and sleep), was endorsed by 26.5 % of participants, nearly 2/3rds of whom were on insulin. Lastly, 16.3 % of participants described a perceived interconnectedness between depression and diabetes, and 3/4's of those participants took insulin.

While patients on insulin comprised under half of the sample, it is notable that they outnumbered non-insulin patients in frequency of endorsing diabetes as a causal factor for distress during a depression interview. Interventions should consider addressing this distress, particularly related to appetite disturbance and weight gain.

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B-057

CHRONIC STRESS, SELF-REPORTED/BIOMARKER DIABETIC CONTROL, AND KIDNEY DYSFUNCTION

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Objective: To examine the relationship between chronic stress, diabetic control and diabetic complications using the 2006 Health and Retirement Study (HRS) data. It was predicted that greater chronic stress (present for a year or more) would be associated with: higher HbA1c level, increased occurrence of kidney dysfunction (reporting being told had kidney disease/protein in urine, as a diabetic complication) and poorer self-report diabetic control/diabetes gotten worse in the last 2 years. **Method:** HRS is a U.S. population-probability longitudinal study, which surveys community-dwelling Americans age 50+ using interviews and limited biometric data. The present analyzed the 2006 HRS core and leave-behind survey and HbA1c biomarker data. The 753 diabetic participants with complete data were included. These individuals were not recruited from medical-clinics, but community-dwelling population-probability selected. **Results:** There were significant correlations between and Kidney Dysfunction (being told had kidney disease or protein in urine) and the following: Chronic Stress ($r=.15, p<.01$), rating diabetes as not under control ($r=.20, p<.01$), rating diabetes as having gotten worse since last interview ($r=.12, p<.01$), and higher measured HbA1c ($r=.14, p<.01$). Other predicted relationships between Chronic Stress and HbA1c level, and between Chronic Stress and self-reported diabetic control were not found. **Conclusion:** As a longer-term outcome of diabetes, Kidney Dysfunction (a serious long-term complication) may be a better measure of the influence of chronic stress, as these HRS participants, who happen to be diabetic, reported chronic stressors that lasted 12 months or longer and kidney dysfunction/disease often takes years to develop. The significant relationship found between kidney dysfunction and the report that diabetes was not under control or had gotten worse, as well as the relationship between kidney dysfunction and higher HbA1c readings indicates that the self-reports of chronic stress may have a serious impact on maintaining long-term health for diabetics.

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B-059

ATTITUDES OF RESIDENT PHYSICIANS TOWARD A PRIMARY CARE PSYCHOLOGY TRAINING PROGRAM

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Primary care psychology training programs (PCPTPs) foster a team orientation toward healthcare wherein psychology doctoral students provide consultation and brief treatment to patients referred by medical residents. Student therapists interact with physician trainees to coordinate patient care and develop treatment plans. The main goal of this approach is to maximize patient outcomes in terms of physical and mental health via an integrative framework. A secondary aim of PCPTPs is to enhance physician training and improve their ability to effectively respond to patients' psychological concerns. However, little is known about physician perceptions of PCPTPs and the extent to which this goal is achieved. The current study aimed to assess residents' attitudes toward PCPTPs, patterns of referrals to and consultations with primary care psychologists, and the impact of the PCPTP on their overall medical training. Consenting medical residents ($N=60$) anonymously surveyed regarding the PCPTP housed in their ambulatory care clinic. In this sample, residents as a whole reported satisfaction with the PCPTP and perceived that it positively impacted their training. Of the residents surveyed, 58.3 % reported patient referral to primary care psychology within the past 30 days. A majority of residents (88.1 %) reported that they would recommend a PCPTP to other clinics. A hierarchical multiple regression revealed that residents further along in their training perceived a greater positive impact of PCPTPs, even after controlling for age, $F(2, 38)=9.01, p=.001; R^2=.322$. Higher reported satisfaction with the PCPTP was associated with a greater number of patients referred in the past 30 days, $\beta=.378, t(38)=2.52, p=.02$. In addition, female residents reported significantly higher referral rates than male residents, $F(1, 38)=6.33, p=.02, R^2=.143$. The survey also provided qualitative feedback regarding medical residents' attitudes toward PCPTPs, which can be used to guide PCPTP development so that they better serve the needs of physician trainees.

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B-060

EFFECTS OF INTER-PROFESSIONAL EDUCATION IN CLINICAL BEHAVIORAL MEDICINE ON ATTITUDES TO ONE'S OWN AND OTHER PROFESSIONS

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Patients seeking help in primary care often exhibit problems with both somatic and psychological symptoms; these can be addressed viably using tools of behavioral medicine. An inter-professional elective course in applied behavioral medicine with a clinical practicum targets medical, psychology and physiotherapy students. Data were collected on attitudes towards one's own and other professions using nine bipolar adjectives based on the Osgood semantic differential (1956) with a response scale from 1 to 7. Participants were course students (psychology, $n=63$; physiotherapy, $n=53$ and medicine, $n=28$) from 2006–2012. Principal component analysis of the semantic differential generated a 2-factor solution, with 5 adjectival pairs loading on a social competence factor, and the remaining 4 pairs loading on a professional strengths factor. Inter-professional attitudes towards psychology and physiotherapy students improved on the strengths factor with psychologists perceived as more active, Pre-M=4.52 (SD 1.50), Post-M=3.45 (SD 1.50), $p<0.001$; and physiotherapists perceived as bigger, Pre-M=4.13 (SD 1.14), Post-M=4.57 (SD 0.79), $p<0.05$. Attitudes towards medical students improved on the social competence factor (rounder, softer, warmer, more relaxed and wet; $p<0.02$) as well as the strengths factor (bigger; $p<0.02$). Attitudes towards one's own profession, in a smaller sample ($N=98$), changed somewhat negatively overall on the professional strengths factor, further from "good", Pre-M=1.64 (SD .88), post-M=2.01 (SD 1.14), $p<0.02$; and further from "active", pre-M=1.89 (SD 1.09), post-M=2.39 (SD 1.16), $p<0.01$. Inter-professional clinical courses in behavioral medicine offer an opportunity for students from different professions to collaborate and learn from each other and about themselves.

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B-062

THE ASSOCIATION BETWEEN DEPRESSIVE SYMPTOMS AND ANTIRETROVIRAL THERAPY (ART) UPTAKE AMONG HIV-INFECTED RUSSIAN RISKY DRINKERS

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The effect of depressive symptom severity on ART uptake among HIV-infected Russian patients was examined.

Participants ($n=700$) in a secondary prevention trial for HIV-infected risky drinkers (HERMITAGE) were included in analyses if they met criteria for ART uptake (i.e., CD4 count <350 cells/ μ l) but were not on ART at baseline ($n=133$). We assessed depressive symptoms (BDI-II) & ART use at baseline, 6- & 12-month follow-up. The effect of depressive symptom severity on subsequent ART uptake was estimated by GEE logistic regression analyses, adjusting for gender, past ART use, time between assessments of BDI-II & ART status, & the time-varying covariates of injection drug use & risky drinking. Uptake of ART was reported by 46 % (61/133) at follow-up. Subjects reporting depressive symptoms appeared to have lower odds of ART uptake compared to those without symptoms, but the differences were not statistically significant (mild [AOR 0.86 (95%CI 0.32, 2.32)], moderate [AOR 0.55 (95%CI 0.21, 1.45)], & severe depressive symptoms [AOR 0.59 (95%CI 0.21, 1.67)], $p=0.58$). Similar findings were observed in comparing moderate/severe vs. mild/none [AOR 0.59 (95%CI 0.27, 1.26), $p=0.17$]. A number of covariates were statistically significant: males [AOR 2.51 (95%CI 1.19, 5.29)] & those previously on ART [AOR 4.40 (95%CI 1.60, 12.11)] had higher odds of ART uptake. Injection drug users [(AOR 0.26 (95%CI 0.10, 0.68)] & risky drinkers [AOR 0.52 (95%CI 0.26, 1.04)] had lower odds of ART uptake.

Among HIV-infected Russian risky drinkers, statistically significant effects of depressive symptom severity on ART uptake were not observed. Depressive symptoms did not appear as important as other barriers to ART receipt.

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B-063

SUBSTANCE USE AND SEXUAL RISK IN A STI PATIENT POPULATION: THE UTILITY OF DIAGNOSTIC SUBSTANCE USE MEASURES

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Background: Past research indicates that co-morbid conditions such as alcohol and drug use and sexually transmitted infections contribute to HIV-related disparities. The purpose of this study was: 1) to investigate the patterns and correlates of alcohol and drug use and sexual behaviors, and 2) to understand whether context-related substance use, negative experiences of alcohol use, perceived problematic drinking, and a measure that differentiates individuals with alcohol abuse disorders would explain additional variation in sexual risk outcomes above and beyond the most frequently used measures in alcohol-related research (e.g., frequency and quantity of alcohol and drug use).

Methods: We surveyed 3,893 clinic patients seeking Sexually Transmitted Infection (STI) clinic services; a population at heightened risk of acquiring HIV.

Results: context-related substance use such as alcohol and drug use during sex accounted for almost one third of the variance in unprotected sex. Diagnosis of an alcohol use disorder and perceived problematic drinking explained additional variability above and beyond frequency and quantity of substance use.

Conclusions: Our results point to the potential added utility of administering measures beyond frequency and quantity of alcohol consumption to better characterize individuals engaging in harmful alcohol use and at risk of contracting HIV.

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B-064

LIFE SATISFACTION, ALCOHOL USE AND CONSEQUENCES IN A STI CLINIC SERVING AN INNER CITY POPULATION: A GENDER COMPARISON

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The relationship between alcohol use and negative consequences such as engagement in unsafe sex has been well-established (Weinhardt & Carey, 2001; Maisto, et al., 2004). Recently, researchers have given more attention to potential relationship moderators (Abbey, Parkhill, Buck, & Saenz, 2007) such as gender and affect. Regarding gender, alcohol consumption patterns and its association with negative consequences vary across gender with men reporting heavier drinking and more negative consequences than women (Rahav, Wilsnack, Bloomfield, K., Gmel, G., & Kuntsche, 2006). Regarding affect, researchers have turned their attention to Subjective Well-Being (SWB), which refers to the overall sense of wellness and happiness (Diener, 2000). However, regarding the association of SWB with substance use and ensuing consequences, inconsistent associations have emerged. The purpose of our study was two-fold. Our first goal was to test a hypothesized model predicting that SWB would precede alcohol consumption, negative consequences of alcohol use, and sexual risk. Second, our goal was to test whether gender moderated relationships. To accomplish our first aim, we tested hypothesized model fit indices using SEM. To accomplish our second aim, we tested measurement invariance across gender. Participants were 3,893 individuals (68 % male) attending a health department clinic to receive patient STI services. Estimates of direct effects indicated that SWB was directly related to reduced alcohol consumption, reduced negative consequences of use, and reduced instances of unprotected vaginal sex. Tests of measurement invariance revealed that the model was gender variant. Implications for behavioral risk reduction interventions targeting STI clinic patients will be discussed.

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B-065

FACTOR STRUCTURE OF AN ALCOHOL EXPECTANCY SCALE FOR USE WITH HIV+ADULTS IN SUB-SAHARAN AFRICA

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The association between alcohol use and HIV among adults in sub-Saharan Africa (SSA) is a major public health concern. Studies in SSA have shown that alcohol expectancies may moderate the association between alcohol use and unprotected sex; however no research has been published on the validation of an alcohol expectancies scale (AES) for routine use with adults in SSA. We describe here the development and factor structure of a new AES (AES-Africa) with a sample of HIV+Ugandan adults.

A total of 159 HIV+Ugandan adults contributed data for these analyses. Two existing alcohol expectancy scales were used to create a 17-item scale to measure a variety of alcohol expectancies. The scale was forward/backward translated into Runyankole (the local language) and face validity was established via cognitive interviewing. The factor structure was assessed using maximum likelihood exploratory factor analysis (EFA) and the number of factors retained for rotation was determined by examination of scree plots and eigenvalues >1.00. An oblique rotation method was used, individual item loadings were at least .32 or higher, and issues of cross-loading were resolved on an as-needed basis.

The EFA with the full 17-item scale revealed a 4-factor solution and after oblique rotation 4 items were dropped due to low factor loadings and/or issues of cross-loading. The final rotated EFA on the resulting 13-item scale accounted for 70 % of the variance and had good internal consistency (Chronbach's alpha=.86). The 4 derived factors were labeled as: sexual enhancement (alpha=.90), physical consequences (alpha=.72), emotional consequences (alpha=.61), and behavioral disinhibition (alpha=.63).

Our results indicate that the AES-Africa can be used with samples of HIV+adults from SSA with good internal consistency. This may be a useful tool for researchers interested in investigating the influence of alcohol expectancies on HIV-related outcomes among similar samples in SSA.

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B-066

HIV DISEASE IS INDEPENDENTLY ASSOCIATED WITH GAIT DYSFUNCTION

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Objective: Gait dysfunction is frequently observed in older patients with HIV, but whether this is due to the disease process or aging remains unknown. Our objective is to report gait performance in older HIV participants compared to age- and sex-matched non-HIV controls to examine differential effects of aging versus disease on gait.

Methods: We conducted quantitative gait assessments (GAITrite system) in a clinic-based sample of 125 HIV-positive patients (66.67 % women), ages 22 to 74. We examined performance on eight quantitative gait parameters: velocity (cm/sec), cadence (steps/minute), stride length (cm), swing time (sec), stance time (sec), and double support phase (%), as well as standard deviation (SD) of stride length and swing time. To assess aging versus disease effects, we compared the 8 gait variables in a subgroup of 23 HIV patients, age 65 and older, to 50 age- and sex-matched controls. We also classified patients into 3 stages of HIV dementia: asymptomatic neurocognitive impairment (ANI), HIV-associated mild neurocognitive disorder (MND), and HIV dementia (HAD), and compared them on the same gait parameters.

Results: Stride length (100.5 vs. 122.9 cm, p=0.002), double support time (0.56 vs. 0.35 sec, p=0.006), and stride length variability (5.0 vs. 2.5, p=0.006) were worse in older HIV patients compared to the age- and sex-matched controls. There were 34 patients with ANI, 42 with MND, and 7 with dementia. A significant decline in gait with increasing severity of dementia stage was noted between patients with ANI and HAD in velocity (98.8 vs. 77.3 cm/s, p=0.030) and stride length (118.3 vs. 97.1 cm, p=0.020).

Discussion: Our findings suggest an independent role of HIV on gait dysfunction in older patients, which given gait's known association with functional disability and falls, has significant clinical implications.

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B-067

PATIENT AND PROVIDER ASSESSMENTS OF CHALLENGES AND OPPORTUNITIES FOR ADHERENCE, ENGAGEMENT AND RETENTION IN HIV CARE IN ARGENTINA

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Background. Despite effective treatment for HIV, engagement, retention and adherence to care are suboptimal for approximately 25 % of patient populations. Challenges and solutions associated with optimal adherence and retention may differ between health care facilities as a function of patient, provider and health care setting characteristics. This study presents determinants of adherence, engagement and retention in care among HIV providers and patients in Buenos Aires, Argentina. **Methods.** Qualitative data from key informants (n=12) and focus groups (n=4 groups) of patients and providers from private and public HIV treatment facilities were collected and reviewed using videos. Transcriptions were coded to distinguish pre-determined and arising themes related to adherence, engagement and retention in care.

Results. Reasons for lack of adherence or engagement in care differed between patients and providers; patients attributed limitations to low self efficacy, fear and concerns about HIV and a lack of provider involvement in treatment. In contrast, providers viewed themselves as decision makers in patient care and patients as responsible for non-adherence due to low commitment to their own health or ARV side effects. Patients reported that health system limitations and HIV concerns contributed to a lack of engagement; providers identified limited HIV literacy and stigma as additional problems. Both agreed that chronic illness and addiction impacted adherence and retention, and on the importance of trust, honesty and mutual communication in the patient-provider relationship.

Discussion. Results support the incorporation of system, patient-provider and patient-focused components into a comprehensive intervention to facilitate patient engagement and adherence in public and private clinics.

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B-068

THE ROLES OF STRESS AND BEHAVIORAL DISENGAGEMENT: PERCEIVED STIGMA IN HIV-POSITIVE INDIVIDUALS

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Living with human immunodeficiency virus (HIV) comes with a host of complex psychological and physical stressors (Fisher & Fisher, 2000). Although HIV antiviral treatments can be physically demanding on patients (Herek, Capitano, & Widaman, 2002; Block, 2009), the stigma associated with HIV disease can produce profound effects on their quality of life. (Leary, 1998). Using the Lazarus and Folkman model of Stress and Coping (Lazaurs & Folkman, 1984) as a conceptual framework, we hypothesize that when presented with the stressors (Perceived Stress Scale, Cohen et al., 1983; $\alpha=.85$) of living with HIV, maladaptive coping mechanisms such as behavioral disengagement ($\alpha=.65$) and self-distraction ($\alpha=.71$) (Brief Cope Scale, Carver, 1997) are positively associated with stigma (HIV Stigma Scale, Berger, Ferrens & Lashley, 2001; $\alpha=.92$). After receiving IRB approval we recruited participants from community based organizations throughout Dallas/Fort Worth and obtained informed consent from participants. Our diverse, gender-balanced convenience subsample of 117 participants (56.8 % African American, .8 % European American, 30.8 % Latino) reported a mean age of 41.8 years (SD=8.5). A hierarchical regression analysis revealed our model to be significant ($F(102, 117), p<.01$), accounting for 24.3 % of the variance in negative self-image stigma. Stress ($\beta=.28, t=2.95, p<.01$) and behavioral disengagement ($\beta=.19, t=2.02, p<.05$) were significantly associated with perceived stigma, however self-distraction was not. Our findings suggest that public health programs should assess stress and maladaptive coping strategies when addressing stigma in HIV+individuals. Since social stigma for people living with HIV/AIDS is likely to continue to exist into the near future, interventions that improve individual skills to manage such stigma are important for wellbeing. Stress reduction skills and learning not to use avoidance coping may play significant roles in stigma management for people living with HIV/AIDS.

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B-069

HIV-RELATED STIGMATIZATION IN TREATMENT SETTINGS: EFFECTS ON PATIENT COMFORT, RISK DISCLOSURE, AND TREATMENT DECISIONS

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Despite biomedical advances, HIV+individuals still face many challenges, prominent among which is the widespread social stigma associated with HIV. Stigmatization in health care settings may be particularly detrimental to the health and well being of HIV+individuals, as provider stigmatization may inhibit the formation of positive working relationships with HIV+patients. Using an experimental paradigm and a mediational framework, we sought to test the hypothesis that HIV+patients who felt stigmatized would be less willing to remain in care and disclose health-related information to a physician. HIV+participants (n=90, 34 % women; 52 % African-American) were randomly assigned to view either a highly stigmatizing or non-stigmatizing treatment vignette and asked to imagine how they would respond to the physician depicted in a "typical" medical appointment. Provider behaviors were manipulated using audio and visual stimuli presented on a computer that included varying levels of judgmental language, patient avoidance, physical distance between patient and provider, and use of unnecessary medical precautions. Compared to patients in the non-stigma condition, findings confirmed that patients assigned to the highly stigmatizing condition were less willing to engage in HIV care as demonstrated by lower intentions to remain in care ($p<.001$), disclose sexual and substance use risk behaviors ($ps<.001$), and discuss medication adherence difficulties ($p<.001$). As hypothesized, the effect of the experimental stigma condition on patients' willingness to engage in care was mediated by patients' feelings of comfort and their perceptions of stigma within the patient-provider interaction (all $ps<.001$). Findings demonstrate that stigmatization in health care settings can reduce patients' willingness to remain in care and disclose sensitive health related information. Interventions to assist healthcare providers in creating more positive treatment experiences for their HIV+patients may improve patient outcomes by increasing patient comfort and their engagement in care.

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B-070

PARENTAL HIV DISCLOSURE TO CHILDREN IN CHINA: CONSIDERING CULTURE AND CONTEXT

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Parents living with HIV/AIDS universally face the challenge of deciding whether, when, and how to disclose their HIV status to their children. This decision-making process can have significant impact on both their own and their children's mental health, as well as family dynamics and relationships. Furthermore, parents in China face the additional psychosocial obstacle of severe HIV-related stigma and shame. To better understand difficulties encountered during the decision-making process, we conducted a mixed methods study with HIV+ parents in China. In-depth individual qualitative interviews were conducted with N=24 HIV+parents, who were queried about parental HIV disclosure to children. Additionally, N=81 HIV+parents completed a disclosure questionnaire, created based on the qualitative interviews. Iterative content analysis by a trained team of bilingual coders revealed that parents reported various barriers to and perceived risks and negative consequences of disclosure, including general lack of knowledge and misconceptions regarding HIV and its transmission, societal stigma, fear of potential psychological harm and emotional burden to children, and rupture of parent-child relationship. Furthermore, parents living with HIV experienced high levels of psychological distress. Given these findings, we re-examined the primary theoretical models of parental HIV disclosure (see Qiao, Li, & Stanton, 2012 for a review): Four-Phase Model, Disclosure Decision Making Model, and Disclosure Process Model. Similar to Qiao et al.'s (2012) conclusions, we found the models to be critically lacking in accounting for cultural contexts and values. We then apply our data to the models and propose theoretical extensions that incorporate consideration of culture and context in order to increase their universal applicability. In conclusion, we discuss implications for future work, highlighting the need for intervention development to address the significant need for support surrounding HIV- and disclosure-related distress.

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B-071

CONSTELLATIONS OF HEALTH BEHAVIORS AS PREDICTORS FOR MEDICATION ADHERENCE AMONG LOW LITERACY PEOPLE LIVING WITH HIV/AIDS

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In randomized control trials of HIV medication adherence interventions control conditions often focus on general health behaviors such as diet, exercise and stress management to provide unrelated time-matched contact. However, the associations of constellations of health behaviors in relation to medication adherence in vulnerable populations have not received attention in research. A cohort of 476 men and women living with HIV/AIDS determined to have poor health literacy skills was followed prospectively over three months. Adherence was measured monthly by unannounced pill counts and several factors known to be associated with adherence were included as predictors of adherence. A hierarchical multiple logistic regression was performed using a cut-off of less than 80 % indicating sub-optimal adherence. Demographic characteristics, literacy scores, HIV symptoms, shame, depression, social support, stress and alcohol use measures were inputted into the model. Following these known predictors, health behaviors of interest were added to the model. The diet and exercise composite significantly predicted better adherence (OR=1.224, $p=.011$) and the vitamins and supplements composite significantly predicted worse adherence (OR=.784, $p=.020$) over and above the established adherence predictors. Researchers should remain cognizant of the differential impact multiple health behaviors have on adherence both in the design and implementation of medication adherence interventions.

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B-072

SOCIAL MEDIA USE AND SEXUAL RISK BEHAVIOR AMONG BLACK MSM IN THREE CITIES

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Black MSM account for 25 % of new HIV infections in the U.S., despite constituting a very small proportion of the overall population (CDC, 2009). BMSM who use the Internet to meet partners may have low knowledge of HIV/STI risks (Rhodes et al., 2011), and engage in more risky sexual behavior (White et al., 2012). Yet little is known about specific social media use and its links with risky sexual behavior. The purpose of this research was to describe the use of various types of social media and its associations with risky sexual behavior among BMSM. Survey data were collected as part of a pilot study for a larger social network intervention study. 205 BMSM were recruited in three cities, were asked about their use of Social Network Sites (SNSs), and their most recent 5 sexual partners. Only 17 % did not use any SNSs; 23 % exclusively used "generic" SNSs (e.g., Facebook); and 60 % of the sample used both generic and "hookup"-focused SNSs (e.g., Manhunt, Adam4Adam). Participants spent an average of 34 hours on SNSs in a typical week. Non-users of SNSs had fewer instances of unprotected anal intercourse (UAI) with casual partners than SNS users. Over 53 % of participants used SNSs to arrange sexual hookups in the 3 months prior to assessment, and reported a mean of 10 hookups in the past 3 months. Those who had arranged a hookup online were more likely to have had an instance of UAI with a casual partner, and had more instances of UAI with casual partners than those who did not. Greater numbers of sexual hookups arranged in the past 3 months were positively correlated with higher numbers of UAI occasions with casual sex partners. On the other hand, participants reported fewer occasions of UAI and higher rates of condom use for anal intercourse with partners that were met online compared to partners met at other venues. Social media and Internet users therefore may engage in more risky behavior overall, but show more caution specifically with partners actually met online.

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B-074

SURVIVORS OF CHILDHOOD SEXUAL ABUSE EXPERIENCE SUDDEN GAINS IN DEPRESSION SYMPTOM REDUCTION DURING A CLIENT-DIRECTED EXPRESSIVE WRITING TREATMENT

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Sudden gains are defined as significant reductions in symptoms measured in a single between-session interval and are positively associated with long-term psychological improvement. Previously sudden gains have primarily been observed with therapist-directed psychotherapies. The exact mechanisms underlying sudden gains are still unclear, with some support for a cognitive mechanism and some support for therapist characteristics such as the therapeutic alliance. Seventy-seven female survivors of childhood sexual abuse completed a randomized clinical trial of a patient-directed expressive writing treatment. Sudden gains in depression symptoms were observed ($F(1,74)=6.53$, $p=.01$, $d=.465$). Survivors in the active treatment condition (focused on beliefs related to trauma or sexuality) who showed sudden gains had larger improvements than those in the control treatment condition (focused on their daily schedule). The identification of sudden gains in a client-directed treatment refines our understanding of the mechanisms underlying these gains, and lends support to the idea that cognitive change is a candidate mechanism underlying sudden gains.

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B-075

PHYSICAL AND MENTAL HEALTH INDICATORS IN VETERANS WITH COMBAT EXPOSURE AND MILITARY SEXUAL TRAUMA

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Exposure to traumatic experiences has been associated with negative health outcomes in Veterans. Many Veterans report military sexual trauma (MST) in addition to combat exposure (CE). Growing research supports the link between MST and negative mental and physical health outcomes. This cross-sectional study examined physical and mental health indicators in 3 groups of Iraq and Afghanistan Veterans with increasing levels of trauma exposure (no CE, CE only, CE plus MST). Previously deployed Veterans enrolling in services at the VA San Diego Healthcare System (N=1362) completed standardized self-report measures to assess trauma exposure, post traumatic stress disorder (PTSD) symptoms (PCL-C), depression symptoms (PHQ-9), alcohol use (AUDIT-C), pain intensity, somatic symptoms (PHQ-15), health functioning (SF-8), and body mass index (BMI). About 6 % of the total sample reported experiencing MST. To compare groups with increasing levels of trauma exposure, 46 veterans with CE and MST were matched to 46 veterans with only CE and to 46 veterans without CE or MST. Matching occurred across gender and age within two years. The matched sample of 138 had a mean age of 30 years old and was 48 % female. ANOVA analyses were run on all mental and physical health measures with pairwise contrasts. Veterans with only CE had higher PTSD ($p=.020$) and depression ($p=.017$) symptoms, pain intensity ($p=.008$), and somatic symptoms ($p=.017$) compared to Veterans without CE. Veterans with CE and MST had higher PTSD ($p=.009$) and depression ($p=.032$) symptoms and significantly lower mental health functioning ($p=.011$) and BMI ($p=.002$) compared to veterans with only CE. These findings suggest that CE is associated with both poor physical and mental health while MST in addition to CE is mainly associated with poor mental health.

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B-076

MINDFULNESS AS A PREDICTOR OF BODY IMAGE, DISORDERED EATING AND DEPRESSION FOLLOWING MEDITATION INTERVENTION

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Body image dissatisfaction is the greatest predictor of disordered eating among women (Rosen, 1990) and research has found that over half of women report some form of discontent regarding their appearance (Cash & Henry, 1995). Mindfulness involves the intentional awareness of the present experience and emphasizes non-judgment and acceptance of what is (Kabat-Zinn, 2002). Mindfulness meditation may improve body image through emphasis on non-reactivity and compassion, and may be used to specifically target body image (Stewart, 2004). The current project examined the construct of mindfulness as a predictor of body image, disordered eating, and depression following a mindfulness intervention. Undergraduate women (N=54; Age M=19.51; 61 % Caucasian; BMI M=23.1) completed two in-person meetings during which they first completed questionnaires, then listened to a mindfulness recording and finally either listened to a mindfulness meditation within the following week or participated in a brief mindful body image exposure. All participants returned after one week to complete follow-up questionnaires. Questionnaires included a demographics form, the Body Checking Questionnaire (BCQ), Eating Disorder Examination Questionnaire (EDE-Q), Five Factor Mindfulness Questionnaire (FFMQ), and Center for Epidemiologic Studies Depression Scale (CES-D). A series of hierarchical multiple regression analyses were conducted to test the impact of mindfulness in predicting body image, global disordered eating and depression following intervention. FFMQ scores significantly predicted inverse relationships with BCQ ($r_2 \Delta = .36, p = .001$), Global EDE ($r_2 \Delta = .21, p = .03$), and CES-D ($r_2 \Delta = .36, p = .001$). Self-reported mindfulness ratings significantly predicted body checking, broad disordered eating, and depression when controlling for age and BMI following a mindfulness intervention. These results suggest that mindfulness interventions may be useful to women in helping cope with body image stress, disordered eating and depressive symptoms. Clinical implications will be discussed.

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B-077

DEPRESSION TREATMENT IN TYPE 2 DIABETES: EXPLORING THE EFFECTS OF RACE AND ETHNICITY

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Major depressive disorder (MD) and Type 2 Diabetes Mellitus (T2DM) often co-occur. When depression and a medical condition co-occur, depression treatment may be improved (through increasing exposure to healthcare system) or hindered (through deprioritizing mental health to manage the medical condition). Comorbid MD-T2DM is particularly relevant to the mental health of Black Americans due to increased risk for T2DM and decreased access to mental health services. In this study, data from the National Survey of American Life (N=3,673) was used to examine how race and ethnicity influence the effect of co-morbid T2DM and depression on depression treatment. Depression care was defined according to American Psychiatric Association (APA) guidelines and included psychotherapy, pharmacotherapy, and satisfaction with mental health services. Nested logistic regression models examined the effect of T2DM on depression care, as well as potential moderators. Analyses were repeated for hypertension (HT) to examine specificity of the impact of T2DM on depression care. Only 19.2 % of Black Americans with MD and 23.0 % with comorbid depression and T2DM reported receiving APA guideline-concordant psychotherapy or anti-depressant treatment. Insurance status explained more variance in depression care than age, sex, and ethnicity. Compared to respondents with MD alone, respondents with MD+T2DM were no more or less likely to receive depression care. However, respondents with MD+HT were more likely to report any guideline-concordant treatment (OR=2.09 95 % CI[1.20, 3.64]) and anti-depressant use for ≥ 60 days (OR=2.14 95 % CI[1.15, 4.02]) relative to respondents with MD only. Ethnicity, education and insurance status moderated the relationship between HT and depression care. Although depressed participants with HT were more likely to receive depression care (primarily anti-depressant treatment), guideline-concordant depression care is low among depressed Black Americans, including those with comorbid T2DM.

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Citation Poster

B-078

TWO-YEAR OUTCOMES FROM THE SMAHRT TRIAL TO REDUCE CVD RISK IN VETERANS WITH BIPOLAR DISORDER

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Cardiovascular disease (CVD) is the leading cause of premature mortality in persons with bipolar disorder. This disparity may be attributed to unhealthy lifestyle behaviors exacerbated by psychiatric symptoms, medication side effects, and fragmented mental and physical healthcare. This study sought to determine whether an integrated chronic care model (Life Goals Collaborative Care- LGCC) compared to enhanced usual care (UC), reduced CVD risk factors and improved mental and physical health outcomes in Veterans diagnosed with bipolar disorder. Patients with bipolar disorder and ≥ 1 CVD risk factors were enrolled in the Self-Management Addressing Heart Risk Trial (SMAHRT) and randomized to LGCC or UC for 12 months. LGCC received a self-management program (four 2-hr psychosocial wellness sessions plus regular phone contacts on behavior change in the context of symptom management), medical care management, and provider guideline dissemination. UC received quarterly wellness newsletters in addition to standard treatment. Primary outcomes included CVD risk factors (Framingham Risk Score), bipolar symptoms (Internal State Scale-ISS), and health-related quality of life (SF-12). Out of 180 eligible patients, 134 enrolled (74 %) and 118 completed outcomes assessments (mean age=53, 17 % female, 5 % African American). Mixed effects analyses comparing changes in 24-month outcomes among patients in LGCC (N=57) vs. UC (N=59) groups revealed that patients receiving LGCC had reduced systolic (Beta=-3.1, P=.04) and diastolic blood pressure (Beta=-2.1, P=.04) as well as reduced manic symptoms (Beta=-23.9, P=.01). LGCC had no significant impact on other primary outcomes (total cholesterol, physical health-related quality of life). Findings suggest that LGCC is a promising behavioral medicine model to reduce CVD risk in patients with bipolar disorder that merits replication in other medical settings.

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B-079

TELEPHONE SUPPORT FOR ADHERENCE TO PTSD TREATMENT: FEASIBILITY, ACCEPTABILITY, AND CLINICAL ISSUES

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Background: Only 54 % of VA PTSD patients starting SSRIs/SNRIs get a 120-day trial (Spont et al., 2010), and only 24 % to 33 % of PTSD patients who start psychotherapy complete 8-9 sessions (Spont et al., 2010). Telephone care management interventions have been used to improve mental health engagement and outcomes in primary care, but have not been tested with PTSD patients treated in mental health clinics.

Method: As part of a continuing randomized multi-site controlled trial, 314 veterans initiating PTSD treatment in VA clinics were assigned to usual PTSD treatment (n=145) or usual treatment plus biweekly telephone support (n=169) during the first three months of treatment. Preliminary results from call records, participant satisfaction surveys, and chart review of subjects in the phone support condition are presented here

Findings: Case monitors successfully reached 97 % of intervention subjects and completed an average of 5.1 (SD=1.4) of 6 planned calls. Roughly one third (31 %) of calls identified emergent problems which required brief intervention by case monitors or provider notification. These included increased symptoms (29 %), missed appointments (11 %), substance cravings (12 %), heavy drinking (6 %), drug use (7 %), aggressive ideation (10 %), and suicidal ideation (8 %). 42 % of respondents to a satisfaction survey rated telephone support as "very helpful", especially for encouragement between clinic sessions, individual attention, tracking progress, practicing new skills, and gaining additional perspective. Moreover, PTSD symptoms declined significantly (pre-post $d=0.48$) between the first and final phone calls.

Conclusions: Augmenting PTSD treatment with telephone care is feasible and acceptable to patients and providers. When the full study is completed, we will test whether receipt of supplemental telephone support results in better treatment attendance, medication compliance, and clinical outcomes than usual care alone

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B-080

HYPNOSIS: THERE'S AN APP FOR THAT

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Background: Mobile phone and tablet apps are increasingly used to deliver psychosocial interventions. In particular, there has been a recent proliferation of hypnosis apps. However, there has been no review of the quality or content of these hypnosis apps.

Objective: Our objective in this study was to systematically review hypnosis apps available via iTunes that were compatible with iPhone or iPad.

Methods: A list of apps was collected in June, 2012, using the Power Search function of iTunes version 10.6. Each app description was reviewed by two independent raters to determine whether the app met inclusion criteria: 1) mentioned hypnosis, hypnotherapy or hypnotized; 2) hypnosis targets a symptom/problem/quality of life and is not solely for entertainment; and, 3) hypnosis has a verbal component.

Results: Of 1455 identified apps, 575 were duplicates, and 407 met inclusion criteria. Most common hypnosis app targets were: weight loss (23 %); boosting self-esteem (20 %); and, relaxation/stress reduction (19 %). 83 % of apps delivered hypnosis via audio track, allowing purchasers to listen to hypnosis on demand. 37.3 % of apps allowed users to tailor hypnosis by: 1) combining hypnosis audio tracks with other stimuli [24 % (e.g., soothing music or relaxing landscapes)]; 2) choosing the ending of the hypnosis session [18 % (falling asleep or alertness)]; and, 3) choosing session length (10 %). Less than 6 % of apps reported being produced by licensed professionals, less than 14 % of apps reported disclaimers. None of the apps reported having been tested for efficacy, and none reported being evidence-based.

Conclusion: Although apps have the potential to enhance hypnosis delivery, it seems as though technology has raced ahead of the supporting science. Recommendations from clinical researchers and policy makers are needed to inform responsible hypnosis app development and use.

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B-081

THE INFLUENCE OF MOOD, QUALITY OF LIFE, AND COPING STYLE ON CEREBRAL METABOLISM FOLLOWING MILD TRAUMATIC BRAIN INJURY

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Traumatic brain injury (TBI) can result in cognitive, emotional, behavioral and neurological deficits that can persist more than a year after injury. Studies utilizing Magnetic Resonance Imaging (MRI) often fail to demonstrate differences in pathology between mild TBI (mTBI) patients with and without persistent neurocognitive deficits. The current preliminary study aimed to use 3D magnetic resonance spectroscopic imaging (MRSI) to determine if prolonged cerebral metabolic alterations occur in individuals with post-concussion syndrome following mTBI and if regions of altered cerebral metabolism are associated with changes in psychological functioning, including mood, perceived quality of life, and coping style. Understanding the possible relationship between cerebral metabolic and psychological changes may provide a better understanding of why some individuals experience chronic post-concussive symptoms following mTBI and others do not.

This preliminary study included 13 mTBI subjects and 6 control subjects. Psychological tests administered measured domains including mood, perceived quality of life (QOL), and coping style. It was found that mTBI was predictive of increased anxiety and depression and poorer QOL. However, mood and QOL did not influence cerebral metabolic rates. Moreover, it was found that coping style was predictive of alterations in cerebral metabolism. Specifically, significance tests suggested that coping style had an influence on the N-acetylaspartate (NAA) to creatine (Cr) ratio within the corpus callosum for mTBI subjects, with little impact for controls. The findings from the current study suggest that mTBI contributes to increased depression and anxiety and decreased QOL. There is growing evidence for the use of MRS in the mTBI population, as decreases in NAA-based metabolic ratios have been identified in the mTBI population. This knowledge may potentially guide future research to explore possible ways to alter cerebral metabolism following mTBI.

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B-082

GENDER- AND ETHNIC SPECIFIC INFORMATION ON ASIAN AMERICANS' PHYSICAL AND BEHAVIORAL HEALTH: A NATIONAL SAMPLE

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Objectives: Asian Americans (AAs; the fastest growing minority group in the U.S.) belong to a heterogamous ethnic groups with different cultural heritages, socioeconomic status, and belief systems. This study investigates the subgroup information concerning AAs' physical and behavioral health, using the National Latino and Asian American Study (NLAAS), the first national representative AA sample.

Methods: All participants were interviewed by trained bilingual interviewers. The total sample size was 4,649, including 2,095 AAs (998 men: 284 Chinese, 235 Filipino, 243 Vietnamese and 236 others; and 1,097 women: 316 Chinese, 273 Filipino, 277 Vietnamese and 231 others). Chi-square tests were used to compare differences in categorical variables among subgroups.

Results: Regarding men, Chinese had the highest rates for allergies/hay fever. Filipinos had the highest rate of hypertension and asthma. Regarding women, Chinese reported the highest rate of hypertension (23.5 %), headache (22.8 %), arthritis (20.7 %), chronic lung diseases (1.3 %), and asthma (9.2 %). Filipinos had the highest rates of cancer (2.5 %), while Vietnamese had higher prevalence of stroke (1.7 %) and ulcer (6.9 %). Both Filipino men and women had the highest rates of obesity and overweight. Vietnamese had the highest rate of smokers (29.4 %), whereas Filipinos topped rates of four drug abuse types. Among women, Filipinos reported the highest rates of smoking and drug abuses. Filipino men and Chinese and Filipino women saw mental health professionals most frequently.

Conclusions: Our findings suggest considerable variations among subgroup Asian-American men and women concerning their chronic conditions. More investigation is warranted on how acculturation and socioeconomic factors contribute to these subgroup differences.

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B-083

THE LINK BETWEEN MINDFULNESS AND DISORDERED EATING AMONG WHITE AND HISPANIC COLLEGE STUDENTS

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Anorexia and bulimia are negatively related to mindfulness, and binge eating therapies are using mindfulness practices, suggesting a greater awareness and acceptance of thoughts and feelings is protective against certain eating disorders. The purpose of this study was to examine how mindfulness related to specific aspects of eating pathology among White and Hispanic, male and female college students. The Mindfulness Attention Awareness Scale (MAAS) and the Eating Disorder Examination Questionnaire (EDEQ-16) were taken by 119 undergraduate students (50 % males, 44 % Caucasian, 26 % Hispanic). The EDEQ included four subscales: restraint, eating concern, weight concern, and shape concern, as well as a global score of eating pathology reflecting an average of the four subscales. The link between these different aspects of eating pathologies and mindfulness was tested using Pearson correlations separately for men (n=60) vs. women (n=59) and Whites (n=52) vs. Hispanics (n=31). Mindfulness was more strongly negatively correlated with eating pathology among Hispanics ($r=-.37$ to $-.62$ range) than Caucasians ($r=-.28$ to $-.30$ range), and these relationships were present among women but not men. Among Caucasian women, mindfulness was negatively associated with global eating pathology ($r=-.47$, $p<.05$) and two specific aspects of eating pathology, Shape Concern ($r=-.55$, $p<.05$) and Weight Concern ($r=-.54$, $p<.05$). Among Latina women, mindfulness was more strongly negatively associated with global eating pathology ($r=-.68$, $p<.01$) and three factors: Shape Concern ($r=-.68$, $p<.01$), Weight Concern ($r=-.59$, $p<.01$), and Eating Concern ($r=-.67$, $p<.001$). The link between mindfulness and eating behaviors, which was particularly strong among Latina women, indicates that higher awareness and attention may be protective against unhealthy eating issues. Future research could examine why these relationships exist, aiding mindfulness therapies for disordered eating. Additionally mindfulness philosophy and practices could be taught in a college environment to help prevent eating disorders.

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B-084

PARTNERSHIP STATUS AND HEALTH AMONG GAY AND BISEXUAL MEN

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Among heterosexuals primary partnership is protective of health. Partnered heterosexuals report better psychological health (e.g. less depression), health behaviors (e.g. less substance use), and physiological health (e.g. faster illness recovery rates illness) than singletons. However, the extent to which partnership is protective of health among gay and bisexual men (GBM) is unknown. This study used regression and ANCOVA analyses to compare single and partnered GBM cross-sectionally, and Generalized Estimating Equations (GEE) to test whether the health of GBM changed over time as a function of their partnership status. Data came from Project MIX - a four city, longitudinal behavioral intervention aiming to reduce sexual risk and increase HIV treatment adherence among men who have sex with men (N=1,542). We hypothesized that at baseline, compared to single GBM, partnered GBM would report better psychological (less depression, anxiety), behavioral (less drug and alcohol use), and physiological (lower self-reported HIV viral load, higher T-cell counts) health. Further, we speculated that GBM who became partnered over time would be healthier across indices compared to GBM who remained or became single over time. Results indicated that 56.2% (848) of the final baseline sample was partnered. In baseline regression analyses, being partnered related to increased likelihood of engaging in unprotected sex. ANCOVA results comparing partnered and single men indicated single GBM used more hard drugs than partnered GBM, but partnered GBM reported higher anxiety and more unprotected sex than singletons. GEE results indicated that as GBM became partnered, they became less depressed, but more anxious. These men also engaged in unprotected sex more often. Taken together, results indicate partnership status among GBM relates to both positive and negative health outcomes, cross-sectionally and longitudinally.

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B-085

STIGMA AND QUALITY OF LIFE IN THE UNINSURED: MEDIATING ROLE OF VITALITY

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Aims: Uninsured status increases risk for depression and poor quality of life (QOL). Lack of insurance and use of charity-based medical services may result in self-stigma or receipt of external stigma; yet, the mechanism of action whereby stigma affects QOL is unknown. One potential link may be through subjective vitality, conceptualized as energy, aliveness and well-being.

Method: Our sample of 101 primary care patients (71% female; mean age=42.19 [SD=12.83]) completed the Perceived Stigma Scale, Subjective Vitality Scale, SF-36v2 Mental and Physical Composite Subscales (MCS/PCS), and CESD Depression Scale. We conducted non-parametric bootstrapping mediation analyses, covarying age, sex and income; no 95% Bias Corrected Confidence Intervals contained a zero value.

Results: Total effect of internalized stigma on PCS (TE=-7.33, SE=1.87, p<.001; DE=-2.51, SE=1.71, p=.15), and CESD (TE=4.88, SE=1.24, p<.001; DE=.99, SE=.96, p=.30) were significant; direct effects fell out of significance, indicating full mediation. Total effect of internalized stigma on MCS (TE=-9.49, SE=1.91, p<.001; DE=-3.08, SE=1.42, p<.05) was significant; direct effect decreased in magnitude, indicating partial mediation. Total effect of experienced stigma on MCS (TE=-8.91, SE=1.84, p<.001; DE=-2.79, SE=1.36, p<.05), PCS (TE=-7.96, SE=1.76, p<.001; DE=-3.59, SE=1.62, p<.05), and CESD (TE=5.19, SE=1.14, p<.001; DE=1.95, SE=.87, p<.05) were also significant; direct effects decreased in magnitude, indicating partial mediation.

Conclusion: Stigma, whether internalized or experienced, may reduce subjective vitality which, in turn, may increase risk for poor physical and mental health, including depression. Therapeutic strategies to ameliorate stigma, and clinical promotion of vitality, perhaps through Cognitive-Behavioral or Motivational Interviewing strategies, may contribute to improvements in quality of life.

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B-086

FREQUENT MENTAL DISTRESS AMONG SINGLE MOTHERS IN THE UNITED STATES: RESULTS FROM THE 2009 BRFFSS SURVEY

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Objectives: The purpose of this study is to examine the prevalence and risk factors for frequent mental distress (FMD) among single mothers in the United States.

Methods: This study is a secondary data analysis using a nationally representative sample in the US from the Behavioral Risk Factor Surveillance System (BRFSS) survey in 2009. Descriptive statistics and logistic regression based on complex survey data are used to estimate the prevalence of FMD among single mothers and examine the association of FMD and single motherhood with and without social and emotional support while controlling for other socioeconomic factors.

Results: Single mothers had a higher rate of FMD (18.81%) compared to nonsingle mothers (10.90%) (p<0.0001, OR=1.894, 95% CI 1.515-2.374). This association remained statistically significant even after controlling for age, income, education, employment status and general health (p=0.0422). However, single motherhood was no longer significantly associated with FMD after further adjusting for social and emotional support (p=0.9981)

Conclusions: The current study confirmed that single mothers in the US are a vulnerable population suffering poor mental health. Providing social and emotional support to single mothers may be a good intervention and prevention strategy to alleviate their mental stress.

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B-087

TREATMENT EFFECTS OF ACUPUNCTURE AND CALLIGRAPHY FOR PATIENTS WITH SENILE DEMENTIA

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Chinese calligraphy entails integration of mind, body and written character in a dynamic process, where visual perception, spatial structuring, cognitive planning, and brush maneuvering are done following the character configurations. Acupuncture has been studied by academics and clinicians globally for alleviating muscular skeletal pains as well as yielding psycho-behavioral benefits for depression, anxiety disorder, insomnia and mental stress.

Method: Mild to moderate senile dementia subjects were selected using the MMSE criteria. 17 patients, average age 77.29, were divided into calligraphy (n=9) and acupuncture (n=8) groups. Calligraphy subjects received training for 45 minutes twice daily; writing 100-200 characters each day. Acupuncture subjects received three rounds of 30 minute treatments. Each round lasted 7 consecutive days with 3 day rest in between. Needling protocol was selected basing on modern-classical prescriptions. Changes in MMSE scores before and after the treatments for both groups were compared.

Results & Discussion: Post-treatment MMSE scores (orientation to time and place, calculation, behavioral operations): calculation scores in post-treatment test significantly increased in calligraphy group (p<.05) as well as for the acupuncture group (p<.01). The post-treatment memory scores increased significantly in calligraphy group (p<.05), but not in acupuncture group (p>.05). Significant post-treatment changes in clinical symptom were found in both calligraphy group and acupuncture group (p<.05).

Results offer preliminary evidence to effectiveness of both acupuncture and calligraphy in enhancing certain cognitive abilities i.e., time and spatial orientation, calculation and behavioral operation, as well as significant improvement in memory in the calligraphy treatment. Overall these findings have added a new chapter of acupuncture and calligraphy application for senile dementia.

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B-087a

SPIRITUALITY IN SCHIZOPHRENIA: INTEGRATIVE PERSPECTIVES OF PATIENTS, FAMILY MEMBERS AND PSYCHIATRISTS

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BACKGROUND: Being a core component of holistic health, spirituality remains poorly conceptualized and adopted in the treatment for schizophrenia. This study offers a multi-perspective understanding of the meaning and role of spirituality in schizophrenia.

METHODS: 10 participants (4 patients, 2 family members and 4 psychiatrists) were recruited from the department of psychiatry at a Hong Kong hospital. Spirituality includes but is not confound to religion. Interview prompted for its meaning, how it emerges in the illness and its impact. Interviews were transcribed verbatim and analyzed for themes based on grounded theory. **RESULTS:** Spirituality plays a prominent role in 3 stages of the illness trajectory. In the acute psychotic stage when patients are coping with a changing world due to the emergence of symptoms, sense-making of such changes, particularly the hallucination and delusional symptoms, calls upon patients' belief systems, values, religion and culture. This shapes their reactions to psychotic symptoms and help-seeking behaviors. When symptoms are attributed to religious callings or when patients rely overly on religious practices, this hampers clinical assessment and lead to medical non-compliance. Progression to remission stage calls for sense-making of the whole illness experience. Against mainstream psychiatry, some patients tend not to attribute their illness to bodily dysfunction but as spiritual punishment or answers to prayers. In the recovery stage, spirituality centers on seeking personal history continuation, illness identity and stigma.

CONCLUSION: Conceptualization of spirituality in schizophrenia deviates from common definitions and is not limited to illness rehabilitation. Findings provide a roadmap to develop spiritual assessments and interventions.

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B-088

LATENT CLASS ANALYSIS OF STAGE-BASED PROGRESSION ON MULTIPLE BEHAVIORS IN AT-RISK ADULTS AND EARLY ADOLESCENTS

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Simultaneously investigating relationships across multiple behaviors is critically important for the development of multiple health behavior theory and research. New methodological approaches that are able to simultaneously analyze multiple behavior outcomes are required. The purpose of this study was to demonstrate the applicability of Latent Class Analysis (LCA) to multiple health behavior research (MHBR). Underlying profiles on progression through the stages of change for multiple behaviors were examined by LCA using data from two randomized trials with individuals at risk for three behaviors. The first study (N=716 adults) examined stage progression from baseline to 12 months for three cancer-related behaviors: smoking cessation, dietary fat reduction, and sun protection. The second study (N=679 early adolescents) examined stage progression from baseline to 12 months for three energy balance behaviors: physical activity, TV viewing time, and fruit and vegetable consumption. Participant characteristics, including gender, age, and ethnicity, and intervention condition were included as predictors of latent class membership for multiple behavior change. Two-class solutions appeared to provide the best fit: Progression Group and Stable Group. The number and interpretation of the latent classes and class membership probabilities were generally similar for both samples. Differences in the latent class profiles suggest possible differences between adults and adolescents or between energy balance behaviors and cancer prevention behaviors. Significant intervention effects were found in both samples, with larger multiple behavior intervention effects in the set of energy balance behaviors. These results demonstrate the potential LCA has as a new analytical framework for MHBR. The utility of LCA for multiple behavior research is also discussed.

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B-089

MEASUREMENT INVARIANCE OF DECISIONAL BALANCE AND SELF-EFFICACY ACROSS THREE HEALTH BEHAVIORS IN AT-RISK ADULTS

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In recent years there has been a substantial increase in interest in measuring and intervening on multiple health behaviors simultaneously. An important aspect of such research is to compare the results of analyses across behaviors. A critical assumption underlying such comparisons is measurement invariance. Without some degree of invariance, comparisons across behaviors might not be meaningful. The purpose of this study was to investigate the measurement invariance of two important theoretical constructs that often serve as mediators and as intermediate outcome variables in multiple behavior change research: decisional balance (the pros and cons of behavior change) and self-efficacy (situational confidence to change behavior or situational temptations to relapse) across three health behaviors (dietary fat reduction, smoking cessation, and physical activity). The sample included 784 adults who were at risk for all three behaviors. Two different approaches to assessing invariance were tested and compared. One approach employed standard multiple group invariance modeling procedures. In this approach, measurement models are fit to each behavior separately and then tested for invariance. The second approach fit a more comprehensive model that allows for cross-behavior covariance. The results of both approaches were consistent and generally supported the measurement invariance of decisional balance and self-efficacy across all three behaviors (including factor loadings and correlations) for both pairwise behavior comparisons and for simultaneous comparison of all three behaviors. As expected, item means invariance was not obtained. These results suggest that multiple health behavior research, at least involving these constructs and behaviors, can be based on a solid measurement foundation that permits meaningful comparisons of theoretical constructs across behaviors.

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B-090

EFFECTS OF WEIGHT CUE REACTIVITY ON SELF-REPORT MEASURES OF BODY DISSATISFACTION

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Research has shown that self-report measures can be influenced or altered by the participant's awareness of information regarding the study or other external forces (i.e., "reactivity"). There is a gap in the current literature addressing the issue of reactivity on self-report of body dissatisfaction (BD), specifically regarding how detrimental these effects are, and to what extent they alter the validity of self-report questionnaires. Ninety-Nine late adolescents (45.5% female, mean age=20.17, SD=3.08) were randomly assigned to one of three conditions: specific weight cue (i.e., actual weight) given before self-report measures; general weight cue (i.e., knowledge of impending weight measurement) given before self-report measures; and no weight cues given before self-report measures of BD (control condition). Body dissatisfaction was measured using the Stunkard Figure Rating Scale (1983), a scale consisting of nine gender-specific silhouettes ranging from thin to obese. A univariate ANOVA revealed a significant main effect for condition on current body size/shape ($F [2,96]=3.29, p=0.042, \eta^2=0.06$), as well as on BD, ($F [2,96]=8.61, p<0.001, \eta^2=0.15$). Post-hoc analyses indicated that both specific and general cues elicited elevated body image (current size) and specific cues elicited elevated BD as compared to the no-cue (control) condition. These results quantify the effect of taking height and weight measurements before self-report measures. Results underscore the importance of valid and reliable measurement of BD, and of the importance of order effects in future research involving measures of BD and anthropometric variables. Results have implications for community- and clinic-based research, and may impact youths in earlier developmental periods. Replication in early and middle adolescence is needed.

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B-091

TREATMENT ENHANCED PAIRED ACTION CONTRIBUTES SUBSTANTIALLY TO CHANGE ACROSS MULTIPLE HEALTH BEHAVIORS: SECONDARY ANALYSES OF FIVE RANDOMIZED CONTROLLED TRIALS

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The dominant paradigm of changing multiple health behaviors (MHBs) is based on treating, assessing, and studying each behavior separately. This study focused on individuals with co-occurring pairs of health-risk behaviors at baseline and described whether they changed over time on both or only one of the behaviors within each pair. Data from five randomized trials of computer-tailored interventions (CTIs) that simultaneously treated MHBs were analyzed. Behavioral outcomes were assessed at 24 months follow-up for each of the 12 pairs of health behaviors (including energy balance, addictive, and appearance-related behaviors). The differences between treatment and control proportions that changed both behaviors (paired action) or only one behavior (singular action) in the pair, and the proportional contribution of paired action to overall change on each behavior were assessed. Using standard meta-analytic techniques, pooled effect sizes (Cohen's *h*) for the magnitude of the differences between treatment and control proportions that achieved paired action, singular action, and proportional contribution of paired action to overall change on each behavior were computed across 12 behavior pairs. CTIs consistently produced significantly more paired action (pooled $h=0.28$) and singular action (pooled $h=0.13$) across behavior pairs. The aggregate contribution of paired action to change on each behavior was 39.5% in treatment groups compared to 22.4% in control groups. Paired action contributed substantially more to the treatment-related outcomes than singular action (pooled $h=0.37$) in individuals with pairs of co-occurring health-risk behaviors. Studying concurrent changes on MHBs using outcomes combined across multiple behaviors allows the effect of simultaneously treating MHBs to be assessed.

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B-092

USING MOBILE PHONES TO CAPTURE ADOLESCENT RISKY COMMUNICATIONS ACROSS MULTIPLE CHANNELS

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Teen communication about risk behaviors occurs through multiple channels (e.g., face-to-face conversations, text messaging), but little is known about whether communication differs across channels, and if so how these differences relate to behavior. To address this need, we developed a novel assessment tool to capture and characterize teen risk communications across multiple channels. The tool combines Ecological Momentary Assessment (EMA) and two types of real-world, real-time naturalistic observations—Electronically Activated Recording (EAR; brief snippets of participant speech) and Random Sampling of Text-Messages (RSTM; text messages sampled at random)—that operate simultaneously on a single smartphone device. This is a report of our first experiences and lessons learned integrating these methods, including how hardware were selected (Smartphone and microphone apparatus), the software operating system (Android vs. Apple), and how we met Institutional Review Board requirements to prevent recordings of non-participant texts and speech and maintain confidentiality. Ultimately, all three software applications were recreated for the Android operating system (vs. Apple), which offers maximum programming flexibility. Flexibility was needed to access the lower level functions necessary to capture audio and text messaging data. Combining the three applications ensures consistency between common elements of software systems (EMA, EAR and RSTM) and eases the implementation of multiple layers of data security. The study apparatus consisted of an HTC-Wildfire-S mobile phone and a wearable microphone/earbud device. This apparatus was selected for ease of use, reliable interface with the mobile phone, quality of sound files, and its ability to minimize the likelihood that voices of non-participant speakers would be recorded (permutations of EAR software settings, including sound filtering and recording quality, also reduced this human subjects risk). This research lays a foundation for future studies of teen risk communications across traditional and new media channels.

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B-093

INSTRUMENT DEVELOPMENT TO ASSESS ORGANIZATIONAL FACTORS IN FAITH-BASED SETTINGS PARTNERING IN HEALTH INTERVENTIONS

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Faith-based organizations (FBOs), such as the African American church, have become popular health promotion venues. To date, there has been an increased focus on the use of evidence-based health promotion interventions, intervention dissemination and implementation, and sustainability, both within and outside of FBOs. However, the success of these intervention components can be influenced by the organizational factors within an organization.

The organizational literature is informative, however FBOs have unique factors that may influence program success relative to other types of settings (e.g. secular). As FBOs are sought-after locations for implementation of health promotion interventions, specific instruments are needed to assess the organizational characteristics of these venues. Such an instrument will enable researchers and health ministry leaders to identify the characteristics that help or hinder intervention adoption, implementation, and sustainability.

The conceptual model developed by Greenhalgh et al. (2004) features various traits that describe organizational factors that influence intervention dissemination, implementation, and sustainability. Guided by this model, previous literature in organizational factors, and previous assessments relevant to FBOs, an instrument was developed. This work was conducted in the context of Project HEAL (Health through Early Awareness and Learning), an implementation study of an evidence-based cancer control intervention in African American churches. This presentation focuses on instrument development, implementation with Pastors and FBO leaders, and data from the HEAL pilot.

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B-095

ENVIRONMENTAL FACTORS ASSOCIATED WITH DISORDERED WEIGHT CONTROL BEHAVIORS AMONG YOUTH: A SYSTEMATIC REVIEW

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Objective: Environmental factors may be important in the development of disordered weight control behaviors (DWCB) among youth, yet no study to date has conducted a review that synthesizes these findings. The purpose of this study was to systematically review existing literature on environmental influences on DWCB among youth and to identify conceptual and methodological gaps in the literature.

Methods: Using PubMed and PsycINFO, a search was conducted for observational, epidemiologic studies published in peer-reviewed journals from 1994 to 2011 that examined environmental exposure associated with DWCB among youth.

Results: Eighty-nine studies met the inclusion and exclusion criteria. Parental, peer and media influences have been extensively studied as factors associated with DWCB among youth. Few studies have examined organizational level influences on DWCB (i.e., school environment, built environment, industry) or utilized multilevel methods to parse out environmental influences on DWCB, and most studies are not guided by an explicit theory or model.

Conclusion: Findings indicate that exploring a wider range of environmental influences on DWCB, specifically organizational factors, using diverse study samples and multilevel methodology is needed to advance the field and to inform the design of comprehensive, evidence-based prevention programs that target DWCB and other weight-related behaviors.

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B-096

OH BABY! THEORY OF PLANNED BEHAVIOR MOTIVATION FOR HEALTHY EATING DURING PARENTHOOD TRANSITIONS

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Transitioning to parenthood is a major life event that may impact parents' health behaviors and attitudes. There is an absence of theory-based research examining the impact of parenthood on dietary behavior. We are unaware of the psychosocial variables that predict dietary behavior during parenthood transitions. This study examined eating behavior across time within the framework of the theory of planned behavior (TPB) and compared dietary behavior motives within a group of parents and non-parents. Non-parents (n=92), new parents (n=135), and established parents (n=71) completed TPB questionnaires and three day food records at baseline, 6- and 12-months. Among men, new- and established-parents had greater intentions compared to non-parents ($F(2)=3.59, p=.03$). Among women, established parents had greater intentions than new- and non-parents ($F(2)=5.33, p=.01$). New-parents (men and women) experienced decreased perceived behavioral control (PBC), whereas established parents experienced increased PBC, during the first 6-months post-partum. Affective attitudes were the strongest predictor of intentions for men ($\beta=0.55, p<.001$) and women ($\beta=0.38, p<.01$). PBC predicted changes fruit and vegetable consumption for men ($\beta=0.45, p=.02$), and changes in fat consumption for men ($\beta=-0.25, p=.03$) and women ($\beta=-.24, p<.05$). Parenthood transitions may impact dietary behavior motives. New and established parents may experience changes in motivation, especially PBC. Regardless of parent status, affective attitudes and PBC are critical antecedents of intentions and dietary behavior. TPB interventions should target affective attitudes and PBC, and may need to be intensified during parenthood transitions but not necessarily changed in terms of content.

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B-097

THE IMPACT OF SOCIAL CAPITAL ON HOUSEHOLD FOOD INSECURITY AND DIETARY BEHAVIOR IN A LOW-INCOME MULTI-ETHNIC COMMUNITY

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Background: Social capital has been hypothesized to affect food insecurity in low-income households, but definitions of social capital vary, and research assessing this connection has found inconsistent results. An exploratory study was conducted to identify how caregivers in the low-income, multiethnic community of Kalihi, Hawai'i, used social capital to manage household resources and mitigate food insecurity. Methods: Eight focus groups were conducted, involving 78 individuals from 4 Pacific Islander or Asian ethnic groups. Household structure, perceived community social norms about food and resource-sharing, and caregivers' strategies for managing household food resources were assessed. Results: Families relied on their social networks to avoid hunger and increase household food, labor and transportation resources; this affected dietary behavior in positive and negative ways. Cultural norms promoting resource-sharing were prevalent; and these normative structures differed between ethnic groups, and between kin and non-kin. Community participation, a core element of social capital, was high but involved behaviors not commonly assessed in health-behavior studies involving social capital. Geographic 'neighborhood' was a poor proxy for assessing household access to social capital resources; most linkages occurring within extended-family, ethnic group, and faith community ties rather than neighborhood. While ethnic populations were geographically intermixed, social networks and connections to community agencies were primarily ethnically-bound. Conclusion: Social capital affects low-income households' food insecurity levels and dietary behavior, but its operation is community-specific. Current measures do not adequately capture the complex operation of social capital in low-income and multi-ethnic communities.

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B-098

DELIVERING MESSAGES FOR IMPROVING DIET: A CHANNEL COMPARISON STUDY IN A CHANGING TECHNOLOGICAL ERA

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Increasingly, health behavior change interventions are delivered using computer-based technologies. While studies have begun to investigate aspects that make these interventions more or less effective (e.g., websites with or without discussions boards), fewer have compared different computer-based channels. We conducted an RCT to determine the effect of a 6-month diet behavior change intervention delivered through automated telephone (i.e., IVR) or Web compared to an assessment only control group. Channels used the same theoretical structure (Transtheoretical Model) and similar content to improve healthy eating (more fruits and vegetables/less saturated fat) through periodic website or IVR interactions. Analyses of main trial results are ongoing; here, we report baseline results. Through national list-assisted recruitment from 2008–2009, 1224 adults were eligible (e.g., computer use with high speed access, use of Internet/email, pre-action stage of change for reducing fat intake) and randomized to control (n=422), IVR (n=392), or Web (n=410). The majority were male (69%), college graduates (57%), white (89%), employed (63%), Internet users ≥ 5 years (89%), and had a mean age 52 (SD=13) years. Mean %kcal from fat was 34%. Although not an inclusion criterion, many were in the pre-action stages of change for eating 5+ servings of fruits and vegetables/day (25% preparation, 8% contemplation, 41% precontemplation). There were no between group differences for demographic or diet-related variables at baseline. The preponderance of males is likely related to our recruitment methods, which required an address and head-of-household name (which in our list was typically male). At a time in which Internet usage was rapidly growing (Pew data: 74% at recruitment start vs. 85% currently), we successfully recruited and randomized adults who could be considered 'early technology adopters' into a computer channel comparison study.

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B-099

RESULTS OF A PEER COUNSELING INTERVENTION AMONG UNDERSERVED NONTRADITIONAL COLLEGE STUDENTS

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Nontraditional (NT) college students (older, part-time, working) may have less healthful nutrition and physical activity behaviors compared to traditional students, yet health promotion efforts tend to focus on traditional students. Similar to their application in other underserved populations (e.g., racial/ethnic minorities), peers may optimally promote behavior change among NT students due to their unique insights into the social and environmental contexts in which behavior occurs. This 8-week feasibility study evaluated a randomized trial in which NT students received brief printed tailored feedback and 3 telephone calls from trained peer counselors following a semi-structured motivational interviewing guide (intervention; n=40) vs. brief printed tailored feedback only (control; n=20). Undergraduate NT students were from a large urban public university. Participants had a mean age of 32y (SD=10), were female (58%), racial/ethnic minority (47%), employed (70%), had children to support financially (18%), and ¼ recently used Medicaid and/or food stamps. There were no significant demographic differences between groups. Most (78%) intervention group participants completed at least 2 peer counseling calls. At follow-up, those in the intervention vs. control group self-reported beneficial, but non-statistically significant changes in fruits & vegetables (+0.7 servings/day), sugary drinks (-6.2 ounces/day), and fast food visits (-0.2 visits/week). The % meeting ≥ 150 minutes moderate-vigorous physical activity/week at follow-up was similar in both groups (71% and 69%). Beneficial changes were reported for stages of change and goal commitment, with varying effects on self-efficacy. This is one of the first behavioral interventions targeted to NT college students, a large and growing group of underserved adults. Findings indicate the intervention was feasible with promising effects on nutrition behaviors and the need to better target physical activity behaviors. Future work will entail implementation in a larger group of NT students with objectively measured behaviors.

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B-101

PHYSICAL ACTIVITY AND QUALITY OF LIFE IN CHILDREN WITH PRADER-WILLI SYNDROME

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Prader-Willi Syndrome (PWS) is a rare genetic disorder resulting in poor muscle tone, growth hormone deficiency, hyperphagia, obesity, behavioral and cognitive impairment, and less spontaneous physical activity (PA). PA is positively associated with quality of life in children and adults. This study examined the association between PA and physical (PHY) and psychosocial (PSO) aspects of quality of life in youth with PWS when compared to youth without disability who were obese (OB). Methods: 48 Parents (43 F/5 M) of youth with PWS (n=18, 9 F/9 M, mean age=11.0 yrs, body fat=46.2 %) and OB without PWS (n=30, 14 F/16 M, mean age=9.7 yrs, body fat=43.5 %) completed the Pediatric Quality of Life Inventory, version 4.0 for children ages 8–12 years. All youth wore accelerometers for eight consecutive days to assess moderate to vigorous PA. Separate hierarchical multiple regression models were used to predict each of the quality of life subscales Results: For PHY, the model accounted for 14.6 % of the variance: youth with PWS exhibited lower PHY than OB (p=.03) with no association between PHY and PA (p=.82). For PSO, the association between PSO and PA appeared to be moderated by the classification of youth (Fchange=4.03, p=.05, R2=.25). For PWS, the positive relationship between PA and PSO approached significance (p=.07); for OB, PA was not related to PSO (p=.42). For those individuals who participated in higher levels of PA, PWS or OB classification were not significant (p=.85). However, when PA was low, youth with PWS had lower PSO than OB (p=.01). Discussion: this preliminary study shows that youth with PWS have a lower quality of life than those who present with obesity but no other identified comorbidities. In PWS, levels of PA are related positively to their psychosocial quality of life including ability to interact socially with their peers, manage their emotions and function at school. Physical activity should be encouraged in this group because of its physiological and psychosocial benefits. Supported by USAMRAA Award W81XWH-09-1-0682

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B-102

BMI-BASED NORMS FOR A CULTURALLY RELEVANT BODY IMAGE SCALE AMONG AFRICAN AMERICANS

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A disproportionate number of African Americans are classified as overweight or obese. Perception of body size is an important factor linked with weight related activities and clinical health issues. There is a need for a valid, reliable, and culturally relevant tool to measure perceived body size among African Americans. The present study provides age-based BMI norms for a figural scale among African Americans. In addition, concordance between participants' and independent raters' figure selection is evaluated and the sensitivity and specificity of the figures for predicting overweight status is reported. African American adults (n=498, 71 % female) selected the figure most closely resembling them currently, and had their height and weight measured to calculate BMI. Three independent raters selected the figure that most closely resembled a subset of the participants (n=277, 75 % female). The average BMI associated with each figure is provided. Correlations between participant-selected figures and BMI are high (rs=0.81), and correlations between rater-selected figures with BMI are higher (rs=0.93). Probability that overweight status was correctly identified (positive predictive value) was 85 % for participants and 98 % for raters. ROC analysis showed that figures selected by raters and participants were equally sensitive (86 % and 83 %, respectively) in predicting overweight status using the gold standard, BMI. Figures selected by raters were more specific in predicting overweight status than when selected by participants (98 % and 75 %, respectively). Considerations in using participant- or rater-based norms for interpreting figure scores are discussed.

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B-103

BINGE EATING, EATING DISORDER FEATURES, AND DEPRESSIVE SYMPTOMS IN OBESE AND MORBIDLY OBESE ADULTS

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Previous research has examined disordered eating behaviors and poor body image and psychological functioning in obese individuals; however, less is known about differences in such symptoms among specific classifications of obesity. The current study compared binge eating, eating disorder features, and depressive symptoms in obese and morbidly obese adults. Participants were 78 obese and morbidly obese adults enrolled in a randomized placebo controlled trial examining genetic factors that regulate responsiveness to either a low-glycemic diet or a low-glycemic diet plus phentermine. As part of the baseline assessment, participants completed a battery of self-report questionnaires. Participants were categorized into obese and morbidly obese groups based on body mass index. There were no significant group differences in frequency of disordered eating behaviors. Approximately 11 % of each group reported binge eating and 9 % reported self-induced vomiting on two or more occasions per week in the past month. No significant group differences were found in dietary restraint, eating concerns, shape concerns, and depressive symptoms. There were also no significant correlations among eating disorder features and depressive symptoms across both groups. However, greater dietary restraint was associated with greater eating and shape concerns. Greater eating concerns were also correlated with greater shape concerns. The findings indicate that obese and morbidly obese adults are experiencing similar levels of eating disorder features and depressive symptoms. Although only a small percentage reported binge eating and self-induced vomiting, these behaviors warrant clinical attention. Additionally, given the importance of the relationship between eating disorders and body image concerns, future research should examine this relationship within specific categories of obesity in order to develop more effective obesity interventions.

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B-104

ASSESSING DEPRESSION IN OBESE WOMEN: DOES THE MEASURE MATTER?

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The Beck Depression Inventory (BDI) and the Hamilton Rating Scale for Depression (HRSD) are frequently used to assess depression in individuals with comorbid physical health conditions. Though the interviewer-administered HRSD is well-validated, it may not be an ideal measure for assessing depression in those with physical health problems because it includes somatic symptom items that may stem from the physical illness rather than depression. This study examined the 1) internal reliability of the BDI and HRSD among obese women who varied in depressive symptomatology at screening and 2) item-level change in BDI and HRSD among depression treatment remitters. Data was analyzed from a RCT of obese women with major depression who received either behavioral activation for depression followed by a lifestyle intervention (BA) or a lifestyle intervention with health education attention control (LI). At screening (n=368), reliability was strong for the BDI (α=.89), but considerably weaker for the HRSD (α=.67). Among randomized participants whose depression remitted according to the SCID (n=118), t-tests from baseline to 6 months revealed significant item-level change for every BDI item for both conditions. For the HRSD, items assessing somatic anxiety (p=.75), somatic gastrointestinal symptoms (p=.32) and weight loss (p=.57) did not change in the LI condition and somatic gastrointestinal symptoms (p=.78) and weight loss (p=.32) did not change in the BA condition. Removing somatic gastrointestinal symptoms and weight loss items did not worsen reliability (α if item deleted=.67 and .67). Results suggest that the BDI may be more reliable and sensitive to change than the HRSD in obese women with comorbid depression. Research should examine whether other interview-administered depression measures may be more valid for obese samples.

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B-105

EXECUTIVE FUNCTIONING AFFECTS WEIGHT LOSS AMONG AFRICAN AMERICAN ADOLESCENTS WITH OBESITY

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Executive functioning (EF) is the ability to plan, demonstrate impulse control, and engage in problem-solving. The EF of overweight adolescents may contribute to their weight loss success. Impulse control affects engagement in activities that have immediate reward value but cause health risks. Planning and organization skills can affect both meal content and regularity. However, while associations between adolescent obesity and EF have been found cross-sectionally, such relationships have not been shown in pediatric weight loss trials. The present study evaluated associations between EF and weight loss in a clinical trial enrolling African American (AA) adolescents with obesity and their caregivers. A sequential multiple assignment randomized trial (SMART) was used to test a six-month long adaptive treatment intervention including 1) skills-building components to optimize acquisition and mastery of weight loss skills and 2) intrinsic and extrinsic motivation-building components to maximize use of weight loss skills. Participants were 47 AA adolescents (ages 12 to 16) with obesity (BMI > 95th percentile or BMI > 30) and their primary caregivers. EF was evaluated at baseline via parent and adolescent-report questionnaire using the Behavior Rating Inventory of Executive Function (BRIEF). The BRIEF provides two indices of EF [Behavioral Regulation Scale (BRS) and Metacognition Scale (MCS)] as well as a Global Executive Functioning Composite (GEC). Adolescent BMI was measured at baseline and intervention completion. BMI change scores were significantly associated with baseline parent ratings on the BRS ($r = -.30, p < .05$), marginally related to baseline parental ratings on the MCS ($r = -.27, p < .10$) and significantly associated with baseline ratings on the GEC ($r = -.30, p < .05$). Adolescent EF ratings were not significantly related to BMI change. Results suggest that effective behavioral weight loss interventions for adolescents with obesity may need to include an increased focus on impulse control and planning skills.

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B-106

TEEN ATTITUDES TOWARD TECHNOLOGY-BASED SUPPORT FOR WEIGHT MANAGEMENT

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Introduction: Social support has been shown to enhance outcomes in adult weight management (WM). It is thus reasonable to assume that teens attempting WM would also benefit from support. Given technology's centrality in teen support-seeking (72 % of teens regularly use text messaging and 73 % use social networking sites to connect with supports), these electronic avenues may have a role in facilitating adolescent WM. This study used focus groups to gather preliminary data regarding adolescents' view on the role of technology in accessing support for WM.

Methods: Participants were teens (age 13–18) with a recent BMI in the 85th percentile or higher. 28 teens (female $n = 14$, male $n = 14$, mean age 15.5) were stratified into 4 groups by gender and age. Teens participated in semi-structured focus groups, answering questions about the use of technology in accessing support for WM. Questions focused on 3 sources of support: family, peer, and professional. Major themes were summarized using content analysis.

Results: Teens had mixed responses to the concept of receiving support for WM via text messages, social networking or email. Benefits of electronic support were raised including: access to a wider range of information/perspective and increased opportunity for motivation or reinforcement. Teens also, however, cited numerous negative aspects of electronic support for WM. Negatives included: feelings of incongruity, potential for negative comparison, distraction, feelings of vulnerability and fear of judgment, questioning the validity of online information or the sincerity of online-based support, and feelings that electronic support was more impersonal as compared to face-to-face support.

Discussion: Though there appears to be a role for technology in facilitating teens' access to support around WM, the specific type of electronic support teens would find acceptable and helpful is not straightforward. Further study is needed to clarify what types of electronic support from family, peers or professionals would be well-received by teens, and would facilitate their attempts to make healthy lifestyle changes.

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B-107

THE EFFECTS OF TEACHER FIDELITY OF IMPLEMENTATION OF PATHWAYS TO HEALTH ON STUDENT OUTCOMES

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Previous research has demonstrated the importance of ensuring that programs are implemented as intended by program developers in order to achieve desired program effects. The current study examined implementation fidelity of Pathways to Health a newly developed obesity prevention program for 4th through 6th grade youth.

We applied the components operationalized by Linnan and Steckler (2000) to our measures of program implementation, and generated a multidimensional implementation fidelity: dose received (the extent of engagement of participants within the intervention), and fidelity (as measured through enthusiasm, integrity and quality). We also assessed dose delivered (the number of intervention components delivered). We assessed implementation fidelity through observations by trained program staff and teachers' self-reports.

First we ran correlations to examine associations between self-report and observed implementation fidelity scores. Next, we utilized t-test models to explore differences in implementation fidelity between the 4th and 5th grade. Generalized mixed-linear modeling was conducted to examine associations between implementation fidelity measures and program outcomes. Lastly, we ran correlations to explore associations between contextual factors and implementation fidelity and utilized t-test models to explore differences in teachers' beliefs between the 4th and 5th grade.

Our findings suggest that the program was better received and implementation fidelity had more effects on program outcomes in 5th grade compared to 4th grade. Findings suggest that implementation in school-based obesity programs may affect junk food and sedentary behavior of students. Our findings also show that school support is associated with implementation fidelity, suggesting that prevention programs may benefit from including a component that boosts school-wide support.

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HEALTH BEHAVIORS AND WEIGHT STATUS IN URBAN YOUTH

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Introduction: Although leading public health organizations recommend healthy behaviors for adolescents such as low sedentary behavior (SB), high physical activity (PA), and adequate fruit and vegetable consumption (FV), it is unclear how weight status is related to these recommendations. We assessed differences in obesity-related health behaviors between normal weight and overweight/obese diverse urban youth.

Methods: A secondary analysis of baseline data from a study evaluating the effect of an internet obesity prevention program was undertaken to examine overall and gender differences in SB (screen time), PA (weekly moderate to vigorous exercise) and FV consumption by normal weight (BMI < 85th percentile) and overweight/obese (BMI ≥ 85th percentile) status. We also investigated the proportion of normal weight and overweight/obese adolescents who met the recommendations. We performed *t*-tests to assess differences in the overall sample and by gender, and chi-squared tests to inform prevalence ratio calculations.

Results: The sample ($n = 384$) was diverse in race/ethnicity (35 % White; 22 % Black; 22 % Latino; 14 % multi-race), majority female (62 %), mean age of 15.3 ± 0.69 years, mean BMI of 24.7 ± 5.6 kg/m², and 46 % overweight. There were no significant differences in SB, PA, or FV between normal weight and overweight/obese adolescents for the overall sample or when stratified by gender. Overall, most adolescents exceeded recommended levels of SB (70.5 %) and did not meet the recommendations for PA (87.2 %), and FV (72.6 %). Only 3.5 % of the sample met all 3 recommendations. There were no significant differences in the percent of adolescents who met recommendations for SB, PA, or FV based on weight status ($p = 0.58, 0.45, 0.07$, respectively).

Conclusions: We observed alarmingly low levels of healthy behaviors in normal weight and overweight/obese adolescents, and few met the recommended levels of SB, PA, and FV. Interventions for adolescents should adopt a comprehensive approach to target *both* normal weight and overweight adolescents. Further investigation is necessary to fully characterize the BMI-behavioral risk factor relationship.

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B-109

DEVELOPMENT OF TECHNOLOGY INFRASTRUCTURE TO SUPPORT REAL-TIME DATA COLLECTION IN BEHAVIORAL RESEARCH

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The EMPOWER Study uses Ecological Momentary Assessment (EMA) to query participants several times each day via a smartphone regarding their mood, environment and coping responses aimed at achieving and maintaining a healthy weight over a 12-month study period. The frequency of surveys is dependent on data previously provided by the participant through EMA surveys and self-monitoring data obtained via a third-party website and wi-fi enabled scale. We have developed the technology infrastructure to support this real-time assessment of the 150 subjects in EMPOWER. This report outlines the developmental process, highlighting challenges and resolutions. We approached infrastructure development in the following stages: (1) determined sources of data and how to manage data retrieval and processing from all sources, (2) identified storage solutions and determined the best fit for our needs, (3) determined how to deliver EMA survey application updates in real-time, and (4) established how to automatically detect anomalies in data to resolve problems remotely and quickly. We encountered multiple challenges at each step. For example, we needed to negotiate with a 3rd-party vendor to gain special access to their server so that self-monitoring data may be received daily in an appropriate format. We also required special access to the university's 2-way secure communication server so data could flow between devices and servers through its firewall. A 4-month pilot study (n=12) demonstrated that different smartphone models behave differently while running identical applications. In the presentation, we will share technical insights, pitfalls encountered and their resolutions. Investigators need to be realistic in estimating the potential challenges they may face. Proper infrastructure development and extensive pilot testing are critical to the success of high-tech behavioral research.

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B-110

ETHNIC IDENTITY AND NEIGHBORHOOD COHESION AND TRUST IMPACT BODY MASS INDEX AND BODY FAT IN AFRICAN AMERICAN AND HISPANIC WOMEN

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Ethnic identity is related to obesity in minority women. Ethnic identity has also been positively related to neighborhood cohesion and trust (NCT), suggesting that a stronger ethnic identity leads to increased positive social interaction within one's neighborhood. However, the link between NCT and obesity remains inconclusive. The purpose of this study was to investigate the impact of ethnic identity and NCT on body composition in African American and Hispanic women. Methods: Healthy women (N=410, 63% African American, M age=45.2±9.4 yrs, M BMI=34.7±8.5 kg/m², M body fat=42.8±7.1 %) in Houston (n=311) and Austin (n=99), TX who participated in the Health is Power (NIH 1R01CA109403) study and completed the Multigroup Ethnic Identity Measure (MEIM), items on NCT, and anthropometric measures of BMI and percent body fat. Women reported low ethnic identity (M Overall MEIM=1.9±0.6) but high NCT (61.3 % agreed people around their neighborhood were willing to help their neighbors). Ethnic identity differed by ethnicity (t=-3.652, p<.001), site (t=-2.536, p=.012), education (F(3,344)=6.396, p<.001) and income (F(4,324)=2.576, p=.038); NCT, BMI and body fat did not. After adjusting for ethnicity, site, age, education, and income, a two-way MANOVA showed a significant ethnic identity by NCT interaction effect on BMI (Wilks' λ=.496, F(134,414)=1.3, p<.05). There was an overall significant difference in BMI in participants who reported increased ethnic identity and NCT (F(67,208)=1.656, p=.004) but no difference in percent body fat (F(67,208)=1.237, p=.131). Women reporting higher levels of ethnic identity and NCT had significantly lower BMI than women with low levels of ethnic identity and NCT. Results suggest that the reinforcement of positive ethnic identity, such as role models and culturally relevant messages and programs, can be used as an effective tool for reaching minority women. NCT has been associated with positive self-rated health and physical activity, suggesting that neighborhood factors must be considered in the promotion of physical activity.

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B-111

OVERWEIGHT ADULTS' EXPERIENCE OF PERCEIVED STEREOTYPE THREAT

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Objective: The Multi-Threat Framework (Shapiro, 2011) accounts for potentially different forms of stereotype threat that differ in target (i.e., the individual or the group) and source (i.e., the self or others). This investigation examined how these different forms of perceived stereotype threat were related to concepts such as group identity, stereotype endorsement, and stigma consciousness among overweight and obese individuals.

Method: Two hundred sixteen adults completed an online survey. Participants' mean age was 23.6 (SD=10.1; range: 18-64) years and mean BMI was 31.6 (SD=7.5). Participants completed measures of perceived weight-related stereotype threat, stigma consciousness, group identity, and anti-fat attitudes.

Results: Participants reported a history of feeling threatened by stereotypes related to weight. When reflecting on past experiences of perceived stereotype threat, participants reported greater levels of self/own stereotype threat compared to group stereotype threat. Level of stereotype threat was related to a number of personal characteristics (i.e., sex, BMI) and individual factors (i.e., group identity, stigma consciousness, and fear of fat).

Conclusion: The findings support the Multi-Threat Framework for weight-related stereotype threat based. Overweight individuals' susceptibility to stereotype threat may vary systematically depending on several factors. Future research should examine weight related stereotypes' impact on cognitive, affective, and behavioral outcomes.

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B-112

PSYCHOMETRIC PROPERTIES OF BARRIERS TO HEALTHY EATING SCALE

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Barriers to healthy eating may impede weight loss efforts. Measuring barriers could provide insight to improve weight loss treatment. A previous study testing psychometric properties of the 22-item Barriers to Healthy Eating Scale (BHE) revealed 3 factors; however, only 45.1 % of total item variance was explained. We aimed to confirm the BHE factor structure by examining its psychometric properties in a larger sample. Methods: The BHE was administered to 505 participants in 3 clinical trials for weight loss. Results: After removing 9 individuals with random missing values, the sample of 496 was predominantly female (85.1 %) and White (73.4 %) and on average (±SD), 47.5±9.7 years old with 15.6±2.9 years of education and 33.8±4.2 kg/m² for BMI. No inter-item correlations exceeded .80, revealing no redundant items. The Kaiser-Meyer-Olkin statistic was .88 indicating the inter-item correlation matrix was appropriate for exploratory factor analysis. Principal component extraction using both orthogonal and oblique rotations identified the same 6 factors: emotion, nutrition knowledge, daily mechanics, family/friend support, challenge of food restriction, and high risk situation. Internal consistency reliability via Cronbach's α for each subscale was >.57, except the high risk situation subscale. After removing the item on the "benefits of losing weight", the total item variance explained by the 6 factors improved from 58.4 % to 60.2 %, and the internal consistency of high risk situation subscale increased from .43 to .57. Conclusion: These findings reveal that the BHE with 6 subscales may be a reliable instrument to assess individuals' barriers to healthy eating for weight loss once the item measuring the benefits of losing weight is removed. Future studies need to establish validity and test the factor structure of the revised 21-item BHE in a more diverse population.

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ASSOCIATION BETWEEN OBJECTIVELY RECORDED SELF-WEIGHING AND WEIGHT CHANGE IN A WEIGHT LOSS TRIAL

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Self-monitoring of weight is recommended as a weight loss strategy. However, self-weighing data typically are self-report. Thus, we aimed to examine adherence to a self-weighing protocol and the association between objectively recorded self-weighing on a digital scale and weight change during standard behavioral weight loss treatment (SBT). As a preliminary analysis, we used complete data (n=12 out of 43) from participants whose scales were free of technical issues that may have biased results. Participants were randomized to the self-efficacy enhancement arm of the 18-month ongoing SELF Trial. They were provided a scale (Carematix, Inc., Chicago, IL) as they began SBT and instructed to weigh at least 3 days/week or every other day. The scale date- and time-stamped each weighing, storing 100 readings that were uploaded every 3 months. Linear mixed modeling was used for statistical analysis. Self-weighing was examined as both a continuous variable (mean days/week) and a dichotomous adherence variable (<3 days/week vs. >3 days/week). The sample was predominantly female (75.0 %) and White (66.7 %) and on average (±SD) 55.3±13.2 years old with 16.1±2.8 years of education. Mean baseline BMI was 32.4±3.4 kg/m². The mean days of self-weighing per week was 2.4±1.2 during the first 6 months and declined to 1.4±1.1 during the 2nd 6-month phase and to 1.1±1.0 during the final 6 months (p=.005). Percent weeks of adherence to self-weighing declined from 48.6 % to 25.4 % to 18.5 % at each 6-month point (p=.002). The association between self-weighing adherence, not mean days of self-weighing, and percent weight change varied over time (p=.006). Both mean days of and adherence to self-weighing declined over 18 months, revealed by the electronic scale, which has not been observed previously with self-reported weighing. The association between self-weighing measured by an electronic scale and weight loss needs to be further studied in a larger sample.

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THE ROLE OF ETHNICITY IN SCHOOL-BASED CHILD OBESITY INTERVENTION

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Purpose: Child obesity prevalence rates have increased disproportionately for Latino and Black youth over the past three decades (Ogden & Carroll, 2010). School-based obesity intervention literature demonstrates variable body mass index (BMI) related outcomes, but studies do not typically examine the interactive effect of ethnicity on outcomes within the same sample. In this study, the effects of a universal, school-based obesity prevention were examined on the outcome of BMIz, with ethnicity tested as a moderator of this effect.

Methods: Participants (N=125), ages 7–11 (56 % female) from four urban, public elementary schools were recruited. Participants were low income (91–97 % free or reduced lunch), ethnic minority youth (58 % Black, 42 % Hispanic or Latino). Two schools received the Urban Initiatives Work to Play health intervention, while two schools served as controls. Height and weight measurements were collected by research staff at baseline and post-intervention, and a spreadsheet based on CDC growth charts for age and gender was used to determine BMIz score and weight class.

Results: A hierarchical multiple regression model was used to analyze the independent and interactive effects of intervention status and ethnicity on BMIz, after controlling for child gender and baseline values of BMIz. No significant main effects of intervention participation were found, but there was a main effect of ethnicity ($\beta = .28, p = .003$) such that Latino youth had higher BMIz at follow-up than Black youth. A significant interaction between intervention status and ethnicity was found ($\beta = -.28, p = .004$). Post hoc probing of simple slopes revealed Latino youth in the intervention group had lower BMIz than Latino youth in the control group ($\beta = -.28, p = .02$). Participation in the intervention did not cause BMIz outcomes to be significantly lower for Black participants.

Conclusions: Results will be discussed within the context of school-based child obesity intervention with ethnic minorities literature, and similarities and differences of program components will be proposed as differently efficacious for Black and Latino children.

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B-115

ARE SUBSTANCE USE DISORDERS AND “FOOD ADDICTION” ASSOCIATED WITH OTHER ADDICTIVE BEHAVIORS AMONG WEIGHT LOSS SURGERY PATIENTS?

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Recent evidence suggests that weight loss surgery (WLS, or bariatric) patients are at risk for developing substance use disorders (SUDs; Saules et al., 2010). Anecdotal evidence suggests that WLS patients may be at risk for developing other addictive behaviors, yet no empirical research has yet been conducted. The purpose of this investigation was therefore to examine the rate of post-WLS addictive behaviors and their relationship to “food addiction” and SUDs. Participants (N=62) completed a web-based survey assessing substance use (Michigan Assessment-Screening Tests/Alcohol-Drug; MAST-AD), food addiction (Yale Food Addiction Scale; YFAS), and addictive behaviors (Addictive Behaviors Questionnaire; ABQ). WLS patients with probable SUDs were oversampled from support groups to examine differences between those with probable SUDs and those without. WLS patients with a probable SUD (46.8 %) were significantly more likely to meet criteria for all addictive behaviors. Specifically, rates for SUD versus non-SUD WLS cases were 86.2 % vs 21.2 % for overeating, 65.5 % vs 0 % for gambling, 65.5 % vs 0 % for shoplifting, 75.9 % vs 3 % for excessive shopping, 69 % vs 3 % for sexual behavior, 65.5 % vs 0 % for excessive internet use, 65.5 % vs 3 % for excessive TV watching, 72.4 % vs 0 % for “workaholism,” and 75.9 % vs 9.1 % for “bad or unhealthy relationships” (all p 's < .001). Logistic regression analyses revealed that “food addiction” was not related to other addictive behaviors, but SUD was significantly associated with all addictive behaviors except for internet use. WLS patients, particularly those who develop SUDs, may be at risk for developing other addictive behaviors. Future research should both explore treatment needs as well as the factors that may confer risk for post-surgical SUDs and other addictive behaviors among WLS patients.

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B-116

THE INFLUENCE OF BINGE EATING AND NEIGHBORHOOD AVAILABILITY OF FAST FOOD RESTAURANTS ON DIET AND WEIGHT STATUS

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Background: African American (AA) and Hispanic/Latino (HL) women have high rates of overweight and obesity (OW/Ob). Fast food restaurants (FFR) are prevalent in low income and minority neighborhoods. Environmental cues trigger binge eating (BE), which is common among OW/Ob women. For women prone to BE, neighborhood FFR (NFFR) availability may promote poor diet and OW/Ob. **Objective:** This study tested the effects of BE and NFFRs on diet and body mass index (BMI) among AA and HL women. **Methods:** At baseline of Health Is Power, a randomized clinical trial, 25–60 year old primarily OW/Ob (BMI M=34.67, SD=8.53 kg/m²), healthy AA and HL women were measured (BMI) and completed validated measures of BE (Binge Eating Scale, BES) and total energy intake and % total energy intake from fat (Diet History Questionnaire). Non-bingers (non-BE'ers) and bingers (BE'ers) were identified based on BES scoring criteria. Raters used the Goods And Services Inventory to code the number of FFRs in participants' neighborhoods, mapped with Geographic Information Systems technology. NFFRs were dichotomized (0 or >1 NFFRs). 2 (BE) X 2 (NFFRA) ANCOVAs were used to test effects on diet and BMI while controlling for demographics. **Results:** Of the total sample (N=162), 48 % had 1–15 NFFRs and 29 % were BE'ers. There was an interaction effect on BMI ($p = .05$). BE'ers with >1 NFFR had higher BMI than non-BE'ers or BE'ers with no NFFRs. There were no significant interaction or NFFR main effects on total energy or fat intake (p 's > .05). A main effect of BE showed BE'ers consumed more total energy ($p = .005$) and fat ($p = .005$) than non-BE'ers. **Conclusions:** BE'ers represented a substantial proportion of this predominantly OW/Ob AA and HL sample of women. The association between NFFRs and weight status is complicated by BE status, which is related to diet.

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INCREASING ACTIVITY AND HEALTH IN OVERWEIGHT KIDS: IMPACT ON QUALITY OF LIFE

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As rates of childhood obesity increase, the physical and psychosocial health of our youth is increasingly negatively affected. The present study evaluated the impact of physical activity and psychological interventions on quality of life among a sample of overweight children. Participants (N=24) aged 6–16 years with a BMI \geq 85th percentile completed a 6-month activity-based mentoring program. Participants completed psychological, morphometric, and exercise tests at baseline, 6 months, and 1 year. The program was conducted in two versions; in both, each subject met with a physical therapy graduate student to engage in a physical activity of choice once per week for 6 months. In the second version (Version 2; n=12), each subject and at least one parent also met with a psychology graduate student once per month. Participants in each version were administered two questionnaires at baseline, 6 months, and 1 year: the Impact of Weight on Quality of Life-Kids (IWQOL-Kids) and the Pediatric Quality of Life Inventory (PedsQL). Mean within-group (baseline to 6 months) and between-group (Version 1 to Version 2 at 6 months) differences were evaluated (using a repeated measures ANOVA). There were no significant between-group differences for the IWQOL-Kids or PedsQL. However, there was a significant multivariate main effect for the time at which the IWQOL-Kids was completed, Wilk's $\Lambda=0.69$, $F(1,13)=5.85$, $p=.031$, partial eta squared (η^2)=0.31. Both groups scored significantly higher on the IWQOL-Kids outcome measure at 6 months (95 % CI, 0.504 - 8.934), indicating that both groups demonstrated improvements in quality of life compared to baseline. Specifically, both groups showed significant improvements in terms of the effect of their weight on quality of life.

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B-118

CHANGES IN FAMILY HEALTH BEHAVIORS AFTER A "HEALTHY FAMILIES" (HF) INTERVENTION: A MIXED METHODS PERSPECTIVE

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Family-based community interventions have shown to positively impact children's health. However, few of these interventions have used mixed methods approaches to collect rich data that may provide insight into the effective components of and overall impact of the intervention. The purpose of this study was to qualitatively and quantitatively explore changes in family behaviors after the HF intervention. Methods :HF was a 12-week theory-based intervention with a 12-week follow-up. Seventeen families participated in the first cohort and 16 in the second. Qualitative interviews were conducted at post intervention and follow-up. Quantitative assessments were conducted at baseline, post-intervention, and follow-up. Results: Parents reported they were surprised by their child's desire to learn about healthy behaviors and that as a result of HF their children were more open to trying new fruits/vegetables. Families stated they checked food labels more often and most parents mentioned they were buying and offering their children healthier foods. However quantitative data found no change in the number of unhealthy foods available in the home (e.g. candy, cookies). Families also reported they were fitting in more physical activity and incorporating active games they learned at HF after the intervention. Yet, quantitative results found no significant change in physical activity from baseline to follow-up. Conclusion: Using qualitative methods, families reported they had made changes in their health behaviors (i.e., physical activity, eating) but quantitative findings found no significant changes. This lack of consistency between data collection methods may be a result of the combination of misperceptions about the amount of change needed to significantly modify health behaviors and/or a lack of the quantitative instruments ability to capture small changes. More research is needed that includes both quantitative and qualitative evaluation to better understand the complexities of behavior change in family-based community interventions.

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THE CALORIC CALCULATOR: A COMMON METRIC FOR MEASURING THE EFFECTIVENESS OF CHILDHOOD OBESITY INTERVENTIONS

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Background: Behavioral interventions to tackle childhood obesity either increase physical activity or decrease caloric intake. However, no common metric exists to measure the comparative effectiveness of the various programs and policies.

Methods: We used an iterative and collaborative process to review the literature and select interventions showing an affect on youth diet and/or activity levels, energy balance, and weight. Interventions lacking sufficient information to inform caloric impact or behavioral/environmental change were excluded. Caloric impact of physical activity interventions on energy expenditure were estimated based on program reach, frequency, duration, and intensity, as well as the target population's baseline weight, age, and sex. For dietary interventions, we employed reported changes in energy intake or the caloric content of the food or beverage reduced. Average body weight by age (preschool (2–5), elementary (6–11), middle (12–14), or high school (15–18)) was based on the 2009–2010 National Health and Nutrition Examination Survey. We developed a web tool, Caloric Calculator (www.caloriccalculator.org), to disseminate our study results and allow user specification of target population.

Results: As of September 2012, we included 14 interventions informed by 51 studies, ranging from individual- to policy-based strategies. The most effective population-based intervention was to pass California's competitive food standards in high schools nationally, resulting in a 78 kcal/day difference. This group would have to walk 31.5 minutes a day to achieve the same impact. The tool also displays how interventions can close the energy gap and reverse the childhood obesity level to pre-1990 levels.

Conclusion: The Caloric Calculator provides researchers and policymakers an opportunity to integrate the reach and effect size of different types of programs and compare them using a common metric. The framework will also serve as a platform for evidence-based dialogues on new environmental or policy approaches as data emerge.

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PSYCHOLOGICAL AND BEHAVIORAL CONSEQUENCES OF OBESITY IN A SAMPLE OF PREDOMINANTLY HISPANIC COLLEGE STUDENTS

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Research suggests a relationship between obesity and psychological and behavioral consequences. Prior research has suggested that unhealthy behavioral weight management practices are associated with binge-eating, observed among obese individuals. Research has not been conducted in predominately Hispanic college populations. The present study examined the psychological and behavioral consequences of obesity in a survey of 276 students, 79.7 % of whom were Hispanic.

Overall results indicated that obese students were more likely to report eating disorder risk behaviors ($p<.05$), greater use of diet and exercise to manage weight ($p<.05$), greater use of diet aids ($p<.05$), and increased frequency of skipping meals and fasting ($p<.01$). The self-esteem of obese students was less contingent overall ($p<.05$) and in specific domains of appearance ($p<.05$) and contingent self-worth academic psychological traits ($p<.05$). Obese students indicated lower body esteem related to weight ($p<.05$) and to contingent self-worth appearance ($p<.05$), and a higher dislike for their body shape ($p<.05$).

These results suggest that obesity indicates greater symptoms of disordered eating, is less contingent on self-worth appearance and academics, and more contingent on weight management practices. In addition, the research data suggest that obesity is related to lower body esteem sub-scales, such as weight, appearance, and body dislike.

The research also suggests that the psychological and behavioral consequences of obesity may differ by ethnicity, and that the gender is a moderator for these effects.

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BIOPSYCHOSOCIAL VARIABLES PREDICT COMPENSATION AND MEDICAL COSTS OF ROTATOR CUFF SURGERY IN UTAH WORKERS' COMPENSATION PATIENTS

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Rotator cuff injuries are the most common shoulder problem among workers' compensation patients. Rotator cuff problems often involve lingering symptoms that typically include pain, limited range of motion, and reduced quality of life. Many workers will seek surgical treatment and outcomes for such procedures are variable. Some surgery patients will experience long recovery periods and may fail to return to work. These patients may accrue significantly higher medical and compensation costs than other patients. However, little research has examined the costs of rotator cuff repair in injured workers or identified possible biopsychosocial factors that may contribute to these costs. This study sought to quantify compensation and medical costs associated with rotator cuff repair in Utah workers' compensation patients and determine presurgical variables predictive of these costs. Patient presurgical and cost data were obtained via a review of workers' compensation medical and administrative records. Patients incurred average medical costs of \$37,764 (SD=\$28,029) and average compensation costs of \$30,710 (SD=\$55,193). Referral to a case manager (B=0.36, p=0.00) and vocational rehabilitation (VR; B=0.30, p<0.01) were significant predictors in models predicting both medical costs (p=0.00) and total compensation costs (p<0.01; case manager: B=0.27, p=0.02; VR: B=0.25, p<0.04). Gender, age, and number of prior claims were not significant predictors. Additionally, patients referred either to a case manager or to VR were 3.37 (p=0.00) and 15.96 (p=0.00) times more likely (respectively) to be in a group comprised of patients whose aggregate costs exceed the 75th percentile. Presurgical patient factors are related to costs of rotator cuff repair surgery for injured workers. This knowledge may be useful in anticipating costs for workers with rotator cuff injuries and helping to direct potentially high-cost patients to the most supportive care.

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WHO ARE INFORMAL CAREGIVERS? RESULTS FROM A NATIONALLY-REPRESENTATIVE US SURVEY

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Objectives: To characterize the sociodemographics, health, and well-being of informal caregivers in the US.

Methods: Using a large US nationally representative survey (N=348,712), we identified individuals reporting that they provided informal care to friends or family members with a health problem, long-term illness, or disability. Descriptive statistics and propensity matching were used to characterize caregivers and compare their perceived health and social support to sociodemographically-similar adults who were not caregivers. Logistic regression models examined associations between caregiving and respondents' mental health, general health, perceived social support, and sleep problems.

Results: 111,156 (25.3 %) participants reported being caregivers, most of whom reported good mental health (90 %) and adequate social support (83 %). After adjusting for respondents' gender, caregivers reported worse mental health than non-caregivers (OR=1.35, 95% CI=1.31-1.39) but better general health (OR=.96, 95%CI=.94-.98). Whereas both men and women caregivers reported worse mental health than non-caregivers of the same gender (OR=1.5, 1.3, respectively; p<.001) only men caregivers reported somewhat worse overall health than non-caregivers (OR=1.1, p<.001).

Conclusions: Although reporting good overall well-being, caregivers remain vulnerable for worse outcomes than non-caregivers. Caregiving negatively affects the mental health of both men and women, and may have additional impacts on the physical health of caregiving men.

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INCOME AND NOT HEALTH LITERACY OR KNOWLEDGE IS ASSOCIATED WITH OSTEOPOROSIS MEDICATION ADHERENCE

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Introduction: Osteoporosis is a chronic widespread disease which requires medication, both for prevention and treatment. Therapeutic treatment for osteoporosis has been proven to increase bone density. Poor adherence with medication therapy may pose a major barrier to treat the disease or prevent it. Poor medication adherence may be due to financial barriers, low health literacy and poor knowledge about osteoporosis and treatment.

Objective: To characterize the association between adherence to oral bisphosphonates treatment, income, knowledge, health literacy and receiving instructions from a pharmacist or doctor, among Arab postmenopausal women diagnosed with osteoporosis in Israel.

Methods: Three hundred and three Arab postmenopausal osteoporotic women, insured by Clalit Healthcare Services, and treated with oral bisphosphonates (Fosalan), were interviewed. The questionnaire included socio-demographic characteristics, osteoporosis knowledge and health literacy. Adherence was measured by calculating the medication possession ratio (MPR) according to the number of prescription refills registered in the database of Clalit Health Services.

Results: Forty-one percent of the women were compliant according to MPR. The main predictor of adherence in a multivariate logistic regression was income (odds ratio 1.84, confidence interval 1.11-3.05, p=0.017). After adjustment for income health care provider's counseling, knowledge and health literacy were not predictors of adherence.

Conclusions: Policy makers should take into account the out of pocket money needed to buy the medication over and above national health insurance, this may be a major barrier to adherence with treatment.

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B-126

A QUALITATIVE STUDY OF AFRICAN-AMERICAN WOMEN'S PERCEIVED INFLUENCES ON AND STRATEGIES TO REDUCE SEDENTARY BEHAVIOR

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Despite a growing body of research linking sedentary behavior (SB) with adverse health outcomes, few studies have explored perceptions of this behavior.

Purpose: To describe African American women's perceived influences on and proposed strategies for reducing SB.

Methods: Three focus groups were conducted with African-American women in Columbia, SC (N=32, 53.6±6.0 years, 75 % obese). Groups were audio-taped, transcribed, and coded by two independent raters. QSR NVivo 9 was used to code and organize themes, defined as concepts discussed by ≥3 participants across ≥2 groups.

Results: Participants were unfamiliar with the term SB prior to the focus groups yet described spending a large portion of their time in SB at work and home. Participants were not concerned about excessive time spent in SB during their leisure-time. They reported being "stressed out" or tired and viewed leisure-time SB as necessary for stress management, personal time, and enjoyment. Participants were more amenable to decreasing SB at work. Participants also identified personal (daily routine, health, age, enjoyment), social (social role constraints, cultural influences, family and friend influences), and environmental factors (home, work) as contributing to their SB. Strategies for reducing SB included building physical activity into daily routines, taking breaks at work, and focusing on psychosocial factors (social support, self-monitoring). Message framing was a key component for influencing strategies for reducing SB.

Conclusions: Interventions aimed at African-American women should first strive to increase knowledge about SB and its associated health risks. Approaches that target prolonged sitting at work by incorporating designated times for breaks and prompts to take breaks hold promise. Furthermore, improving stress management techniques may be necessary for simultaneously reducing stress and decreasing SB during leisure time.

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Citation Poster

B-127

ASTHMA MANAGEMENT IN INNER CITY AFRICAN AMERICAN ADOLESCENTS: A RANDOMIZED CONTROLLED TRIAL OF MULTISYSTEMIC THERAPY (MST)

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Inner city African American adolescents are at significantly higher risk for asthma complications due to poor illness management. However, few asthma management interventions have targeted these adolescents. This study is a randomized controlled trial with 138 African-American adolescents (12 to 16 yrs) with moderate to severe persistent asthma and at least 1 hospitalization or 2 ED visits in the past year. Half were randomized to 6 months of Multisystemic Therapy (MST), an intensive, home/community-based family treatment, and half were randomized to 6 months of Supportive Home Visits (SHV). Mean age was 13.5 years (SD=1.35), and 61 % were male. 53 % of the families had a yearly income of less than \$16,000. The Family Asthma Management System Scale (FAMSS) measured illness management, lung functioning was measured by spirometry (FEV-1), and a pilot measure of eosinophilic airway inflammation (FeNO) was also included. Measures were assessed at baseline and 7 months. Mixed design 2 x 2 (Treatment x Time) ANOVAs examined the effect of the intervention on asthma outcomes. A significant effect was found for illness management [$F(1,136)=9.30, p=.003$], with youths receiving MST reporting greater improvement in medication adherence compared to youths in SHV. For lung functioning, a trend to significant effect was found [$F(1,134)=3.03, p=.08$], indicating MST youths had a tendency toward greater improvement in FEV-1 compared to SHV youths. Mean improvement in FEV-1 was 10 % for MST youths versus 4 % for SHV youths. Illness management on the FAMSS was related to FEV-1 at follow-up ($r=0.17, p=.05$). Change in FeNO was not statistically significant but was clinically significant, where the MST group showed a 16 % mean improvement while the SHV group showed a mean worsening of 8 %. The results indicate that among inner-city African American youths with high-risk asthma, illness management can be improved through MST. Using FeNO as an indicator of illness management is promising. Additional studies are needed to assess stability of intervention effects over time.

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SUPPORTING EMPLOYEE WELLNESS PRESENTATIONS WITH ON-LINE HEALTH COACHING AND TEXT MESSAGING

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Purpose: Wellness programs often use in-person presentations to provide education about health behavior. Lectures have not been effective for changing behavior (Davis, 1997) because of information-only approaches. Empirical models of behavior change (IBM; Fisher & Fisher, 1992) are available and could be used in presentations to improve outcomes. Internet and text messaging could extend the reach of in-person presentations. The purpose was: 1) to enhance an in-person presentation by providing a specific strategy for changing behavior and 2) to provide an engaging technology-based follow-up to support employees with the process of changing.

Method: Employees voluntarily attended a presentation on changing behavior. They were surveyed about actual and intended health-related changes and were reminded to use a web-based 15 m health coaching program (bit.ly/HCiDemo) consisting of interactive exercises and videos. Users did a motivational exercise (Amrhein et al., 2003), created a personalized strategy, and did a mental contrasting exercise (Adriaanse et al., 2010). They could opt-in for mobile phone SMS.

Results: To date, 2,207 employees attended 14 presentations and 48 % completed a follow-up survey. Of these, 53 % reported actual behavior change and 38 % reported the intention to do so. The on-line program was opened by 372 employees and completed by 198 (53 %). Ninety-five percent of those who completed page 3 completed all 10 pages of the program. SMS text messaging via QR code was subscribed to by 19 employees.

Conclusion: These descriptive data suggest that including a behavioral change strategy into a wellness presentation may provide employees with the "how" to change behavior that is often overlooked. Reminding employees about an online resource increases users. Engagement and completion rates for the multimedia on-line program were excellent. If users passed "page 3" of the program, 95 % completed. Finally, SMS opt-in rates were low and could be due to the requirement of Smart Phone technology to access the QR code.

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VACCINATION INTENTIONS: WHO WILL GET THE FLU?

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Vaccination is a safe, cost-effective means to reducing susceptibility to a wide range of infectious diseases, including influenza. The Centers for Disease Control's (CDC) Advisory Committee on Immunization Practices consistently ranks influenza among the top ten leading causes of death in the United States (2011); however, mortality rates can be reduced through immunization by as much as 50 % (CDC, 2011).

The Theory of Planned Behavior (TPB) has been studied as it relates to a wide range of health behavior, although its relation to vaccination behavior is not completely understood. Compared to studies on eating, exercise, and alcohol and drug use, the model's utility in predicting vaccination behavior has been far less examined.

The present study aims to investigate intention to receive the influenza vaccination in an undergraduate student sample using the TPB as a framework. Vaccination behavior for the influenza virus is particularly interesting to study in this population because college students are likely making health care decisions for themselves for the first time.

Participants in this study were 161 undergraduate college students from a Midwestern institution who completed an online survey on past vaccination behavior and current intentions to get vaccinated, based on the TPB constructs of attitudes, subjective norms and perceived behavioral control.

A multiple regression was used to assess the ability of attitudes, subjective norms and perceived behavioral control to predict intentions to be vaccinated. The results of the regression indicated the model explained 57.9 % of the variance, $F(3, 140)=64.22, p<.01$. Attitudes toward vaccination significantly predicted intention, ($\beta=.52, p<.01$), as did social norm ($\beta=.33, p<.01$). These results suggest that individuals may place greater emphasis on positive attitudes and the roles and behaviors of important others in making vaccination decisions, with the role of perceived control over the behavior playing a much less important role in the decision-making process. Further implications and future directions will be discussed.

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ACCELEROMETER-BASED ACTIVITY IN ADULTS WITH PHYSICAL LIMITATIONS

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Background: Existing evidence of the association between physical activity and physical function is focused on older adults even though nearly 20 % of adults in the US report at least some physical limitation. Understanding the dose of PA across the spectrum of disability is important for increasing PA in adults aging with physical limitations.

Objective: To determine if adults with more difficulty with activities of daily living (ADL) participate in less light-intensity and total PA.

Method: Adult participants (N=2874, 50.1 % female, M age=65.51 years, range: 20–85 years; 13.2 % met PA guidelines) completed measures of physical functioning and wore an accelerometer to assess daily PA as part of the NHANES 2003–2004 and 2005–2006 waves. Almost one-third of the sample reported difficulty in one or more areas of activities of daily living. Trend analysis and multiple linear regression were used to examine the dose-response relationship between ADL limitations and PA.

Results: No differences were detected in ADLs by gender. The age groups reporting the most ADL difficulty were in the 40–49 (40.8 %) and 50–59 (51.0 %) year age groups. A dose-response association was found between PA and the number of ADLs with which a participant had difficulty (P for trend <0.0001). However, comparison of the distribution of activity by number of ADLs revealed wide variation even within the most limited group. Participants with no ADL difficulty engaged in the greatest amount of activity and those reporting difficulty with all ADLs accumulating the fewest minutes of PA. For each ADL limitation, total daily physical activity decreased by 17.45 minutes (P<0.0001).

Conclusion: These data support the hypothesis that increased difficulty with ADLs is related to decreased PA. Unexpectedly the greatest proportion of ADL difficulty was within age groups younger than 65 years. The wide variation in PA participation warrants further examination of the type and dose of activity, and the health effects of light-intensity PA among participants with physical limitations.

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DYADIC EFFECTS OF ATTACHMENT ON RELATIONSHIP SATISFACTION IN COUPLES WITH MULTIPLE SCLEROSIS

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People facing multiple sclerosis (MS) report significantly higher rates of relationship distress, divorce, and separation than healthy controls. Adult attachment refers to internalized working models that guide beliefs, expectations, and emotions in relationships, which has been widely researched with intimate dyads, but has never been examined in MS couples. We examined the dyadic effects of avoidant attachment (e.g. individuals who have a negative view of others and tend to dismiss close others) and anxious attachment (e.g. individuals who have a negative view of themselves and tend towards clinging and controlling behaviour) on dyadic adjustment, and whether sex (male vs. female) or role (patient vs. partner) moderated these associations. MS couples (N=110 dyads) recruited from St. Michael's Hospital in Toronto and the community across Canada, completed self-report questionnaires assessing attachment (Experiences in Close Relationship Scale-Revised) and dyadic adjustment (Dyadic Adjustment Scale) at one time point. Data were analyzed using the Actor-Partner Interdependence Model, which uses multilevel modeling to account for the non-independence of participants. We found a significant effect of actor avoidance, $b=-7.28$, $p<.01$; that is, an individual's own greater avoidant attachment was associated with their own worse dyadic adjustment. Second, we found a marginally significant effect of partner avoidance, $b=-1.76$, $p<.06$, which was significantly moderated by sex, $b=1.92$, $p<.05$. That is, for females, but not males, there was a negative effect of one's partner's avoidant attachment on one's own dyadic adjustment, $b=-3.45$, $p<.01$. Role was not a significant moderator. Additionally, there were significant effects of actor, $b=-5.37$, $p<.01$, and partner anxiety $b=-1.91$, $p<.05$. That is, an individual's dyadic adjustment was negatively affected by their own and their partner's greater anxious attachment. These associations were not moderated by sex or role. The current study indicates the importance of considering attachment, and sex as opposed to role, for interventions targeting marital quality in MS couples.

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GENDER DIFFERENCES IN MINDFULNESS SKILLS AND PHYSICAL SYMPTOMS IN YOUNG ADULTS

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Gender differences in pain and other physical symptoms have been identified in previous research. It is unclear whether mindfulness skills (e.g., observe, act with awareness, acceptance, describe) may serve to moderate or alter the relationship between gender and physical symptoms. The following study examined how gender and mindfulness played a role in the prediction of physical symptoms in a sample of 494 young adults (71 % female; mean age 21.4, $SD=4.8$). Fifty-eight percent of the sample self-identified as European American, 19 % African American, 12 % Latino(a), 8 % Asian/Asian American and 3 % other ethnicity. Participants completed a battery of self-report measures, including a demographic questionnaire, the Kentucky Inventory of Mindfulness Skills (Baer, Smith & Allen, 2004) and a 31-item physical symptoms checklist (e.g., aches/pains, headaches, stomach problems). Physical symptoms were negatively correlated with acting with awareness in men ($r=-0.19$, $p<.05$). For women, physical symptoms were negatively correlated with acting without judgment ($r=-0.11$, $p<.05$) and positively correlated with observing ($r=0.11$, $p<.05$). Hierarchical multiple regression analyses revealed that female gender, less acting with awareness and greater use of observing as a mindfulness skill were associated with greater physical symptoms ($R^2=.05$, $F(10, 483)=2.25$, $p<.05$). The interaction between gender and mindfulness skills was examined, but no significant differences were present. Our findings suggest that some mindfulness skills may serve to lessen physical symptoms in men and women, while others increase focus on physical symptoms. Consistent with previous findings, females reported greater physical symptoms than males. Mindfulness skills do not appear to moderate the relationship between gender and physical symptoms within our sample. Longitudinal, experimental designs are needed to examine these relationships in order to implement intervention strategies that promote physical health across the lifespan.

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ACCESS AND UTILIZATION OF PROFESSIONAL DENTAL SERVICES: PERCEPTIONS OF PREGNANT AND PARENTING ADOLESCENT WOMEN

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Purpose: Good oral health plays an important role in general and pregnancy health, yet many pregnant and parenting adolescent women do not visit a dentist during the perinatal period even when oral problems are obvious. Lack of access and utilization of professional dental services (PDS) may exacerbate existing oral health problems, interfere with dietary quality and appropriate oral health self-care practices important for maternal health.

Methods: A qualitative descriptive design was used. The sample consisted of 24 school-based adolescent women recruited from a larger mixed-method study. Participants ranged from 14–18 years of age ($M=16.3$, $SD=1.23$ years). Three racial/ethnic groups were represented; White (3;12.5 %), Black/AA (3;12.5 %), and Hispanic/Latina (18;75 %). Manifest and latent content analysis was conducted with transcribed data from face-to-face interviews.

Results: Qualitative analysis generated several categories and subthemes. Participants described cost, language difficulties, cultural differences, and lack of personal awareness as barriers to accessing and utilizing PDS. Furthermore, inconsistent practices among dental professionals thwarted utilization of PDS where there was access. Because these barriers were often difficult to navigate, participants in this study sought alternate sources for obtaining dental services, such as traditional healers, unlicensed individuals, and unregulated dental practices located in the border regions of Mexico.

Conclusions: Barriers to accessing and utilizing PDS were influenced by many factors. Thus, alternate sources of dental care were sought by study participants and their families. Health care providers should investigate barriers to PDS and provide resolution of barriers when possible. When resolution is not possible or desired, health care providers should explore the use of alternate dental services among adolescent women within the context of culture; acknowledge those services if they exist, and integrate them into professional and self-care practices if deemed safe and appropriate.

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Meritorious Poster

B-132

SEXUAL MINORITY WOMEN AND UTILIZATION OF GYNECOLOGICAL SERVICES

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Sexual minority women (SMW) have unique health needs that have recently begun to gain attention by researchers and the medical community. While research suggests that SMW may be at greater risk for breast/gynecological cancers than heterosexual women, SMW are less likely to seek preventative health care (e.g., pap smears, breast exams), perhaps due to experiences of discrimination and homonegative attitudes within society and the health care system. The present study aimed to explore whether select culturally-relevant variables [i.e., sexual identity disclosure, internalized homonegativity (IH), perceived risk of sexually transmitted infections (STIs), body satisfaction] help to explain gynecological service utilization among SMW. Structural equation modeling was used to examine the relationships among these variables within a convenience sample of 360 SMW from the United States. The women ranged from 18 to 45 years of age ($M=27.59$, $SD=9.17$), were predominantly Non-Hispanic (84.7 %), Hispanic/Latina (15.3 %), and lesbian-identified (70.8 %). Participants reported if they verbally disclosed their sexual identity to their gynecologist and their perceived risk of obtaining a STI, completed the Lesbian Internalized Homophobia Scale (LIHS), various indices of body satisfaction, and reported their frequency of gynecological visits. Greater perceived risk of STIs, less IH, greater body satisfaction, and disclosure of sexual identity were hypothesized to help explain greater gynecological utilization. The final model indicated that less IH helped explain greater body satisfaction ($B=-1.33$, $p<.01$), while greater body satisfaction ($B=.24$, $p<.01$) and sexual identity disclosure ($B=.64$, $p<.01$) helped explain greater gynecological utilization. Model fit indices were acceptable ($CFI=.98$; $RMSEA=.047$). The findings suggest that IH, body image issues and lack of sexual identity disclosure reduce gynecological services utilization among SMW. Interventions that improve body image and reduce IH may help to improve gynecological care and reduce health disparities among SMW.

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THE INFLUENCE OF SUBJECTIVE NORMS ON DECISIONS ABOUT OPTIONAL NEWBORN SCREENING FOR DUCHENNE MUSCULAR DYSTROPHY

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Purpose: Many newborn screening (NBS) programs have expanded to include optional tests that require parents to make explicit decisions about testing. Parent's decisions may depend not just on medical information but also on subjective norms, i.e., whether other parents are having their child screened. We sought to describe how information about subjective norms influences parents' decisions to utilize the optional Duchenne Muscular Dystrophy (DMD) NBS.

Methods: An online panel of respondents (N=3,199, mean age=28.6, SD=9.5) read a vignette describing a DMD NBS scenario. In addition to basic information about DMD and NBS, a random half of respondents were additionally told that 'most parents had agreed to have their baby screened for DMD.' We measured respondents' intention to utilize DMD NBS in response to the vignette and their attitudes towards DMD NBS in general.

Results: Most participants reported they would intend to utilize DMD NBS (68.6 %). There was no direct effect of subjective norms on intended utilization. There was a direct effect of subjective norms on the belief that DMD NBS is important (F=2.88, p=0.02).

Conclusions: Overall, participants likely intended to utilize DMD NBS in a hypothetical study. The knowledge of peers' decisions had no direct effect on actual utilization, but it did affect personal beliefs about the importance of DMD NBS. With increasingly expanding NBS programs, parents are faced with new decisions regarding their children's care. Further research with parents of newborns is needed to assess subjective norm effects on real-life decisions about optional NBS testing.

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ALLOCATION OF FOOD ALLERGY RESPONSIBILITIES FOR CHILDREN AND ADOLESCENTS

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Rationale: For children with food allergies, a growing concern is their ability to self-manage medical demands as they spend more time away from caregivers. The present study assessed and compared self-management (SM) report from patients and caregivers as well as whether SM is associated with anxiety.

Methods: Caregivers and patients with a food allergy (N=249, 62 % males) completed a commonly used measure of SM assessing the allocation of responsibility among families for specific tasks (remembering appointments, calling the team with questions, noticing reactions, following dietary restrictions and explaining requirements of the allergy to others) as well as measuring SM continuously. Data were analyzed separately for child (N=190, mean age=10.04, SD=1.41) and adolescent aged (N=59, mean age=14.65, SD=1.31) patients. Patient anxiety was measured using the Multidimensional Anxiety Scale for Children (MASC).

Results: For children, there were significant correlations between patient and caregiver report on all SM items indicating agreement over who is overseeing each task. For adolescents there was poor agreement on following dietary restrictions, Spearman rho=0.16, p=0.22 (patients allocated more responsibility to caregivers than their caregivers reported), and explaining requirements of the allergy, Spearman rho=0.21, p=0.12 (patients stated that they were doing this more than their caregiver said they were). For adolescents only, the correlation between MASC score and the SM item "I am able to tell an adult when I am having an allergic reaction," was, r=-0.29, p=0.03, and for "I can be trusted to follow dietary restrictions," r=-0.34, p=0.01.

Conclusions: These findings on food allergic patients are consistent with studies showing that SM acquisition is tenuous for adolescents and it also may be anxiety-provoking. Clinicians might consider inquiring about SM patterns and concerns in families, particularly for adolescents in order to ensure that all critical behaviors are being overseen.

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B-137

USE OF AN ELECTRONIC HEALTH RECORD IN RURAL PRIMARY CARE CLINICS: CLINIC STAFF PERCEPTIONS OF USEFULNESS AND ATTRIBUTIONS ABOUT PATIENT USERS

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Background: Electronic health records (EHRs) can improve patient care by promoting patient engagement and providing support for clinical decisions. An EHR was developed for use in two rural primary care clinics. Key informant interviews with clinic staff were conducted to determine desirable features and problems of EHR use, and attributions about patient users. **Methods:** Interviews were conducted with diverse staff across the two clinics using the EHR. Interviews were recorded, transcribed and de-identified. Interview transcripts from nine in depth interviews were analyzed based on grounded theory techniques. **Results:** Perceived benefits of system use were functional and workflow. The ease of prescribing medications and reduction in patient fraud were beneficial functions. Improved patient tracking and fewer patient calls were reported workflow improvements. Problems with the system included technical glitches and concern that patient reported information was too detailed to use. Clinic personnel reported the "kind of patient" they thought interested in using the EHR. Themes included technically capable, computer literate, and enjoying computer use. Patients were also described as "younger" and "people who really, truly care about their health". Attributions centered around personality characteristics including organized, detail-oriented, and motivated to care for health. Consistent themes attributed to non-users included old, childless, and fearful about privacy violations or the computer itself. **Conclusions:** Clinic staff perceive an EHR as positive for clinical care though not problem free. Patient users of the EHR are thought of quite positively whereas non-users are believed to have negative characteristics. Implications for integration EHR use into rural clinics will be discussed.

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PATIENT USERS OF AN ELECTRONIC HEALTH RECORD IN A RURAL HEALTH CLINIC: HOW DO EARLY ADOPTING USERS TO EHR TECHNOLOGY COMPARE TO NON-USERS?

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Background: Electronic health records (EHRs) are important resources for improving patient care and patient engagement in healthcare. A patient-facing electronic health record (EHR) was developed for rural primary care clinics. Patients completed a survey reporting experience with their healthcare clinic and with computer use. A small group of survey patients were early adopters of the EHR allowing a characterization of patient EHR users and non-users. **Methods:** A telephone survey of 811 patients (5 % early adopting users) was conducted. **Results:** Early adopting EHR users' responses were compared to those of non-EHR users using t-tests. Comparisons included age, access to computers, health management, and experience with the clinic. The early-adopters were not different from non-users in age, gender, chronic illness status, reports that the provider explained or listened carefully, or satisfaction with the provider. This group of early adopting users were significantly (all ps < .05) different from their non-user counterparts on a number of dimensions related to computer use- more likely to have access to a computer at home (t(45)=2.36, an email account for personal use (t(44)=2.37; comfortable accessing the internet (t(42)=-3.19; and have internet access at home (t(45)=2.34. In addition, there was some indication that early adopting users were particularly active patients; more likely to know what their prescribed medications do (t(808)=-1.38 to know different treatments available for their health conditions (t(41)=-2.12, and to report enough time spent with the provider (t(53)=-2.47. **Conclusions:** Early adopting users may be particularly active patients and technically savvy. Implications for EHR use and potential interventions for target users will be discussed.

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BASIC RESEARCH, MULTIPLE IMPLICATIONS: AN ANALYSIS OF THE NATIONAL INSTITUTES OF HEALTH OPPNET PORTFOLIO

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The National Institutes of Health (NIH) initiated its Basic Behavioral and Social Science Opportunity Network (OppNet) to augment its portfolio in basic scientific inquiry on individual and group processes that inform health-related human attitudes, decisions, and behaviors. The 24 NIH Institutes and Centers, which concentrate mostly on diseases or somatic contexts, contribute to a single funding pool that funded \$25,951,437 across 108 research grants between October 2009 and September 2011. To demonstrate the impact on NIH's overall portfolio, this analysis constructed three comparison groups: OppNet grants (IC=OP, n=108), behavioral and social science research grants (with RCDC code BSSR, n=7804), and basic-BSSR grants (with RCDC code bBSSR, n=4246). Groups were constructed to eliminate overlap. Results describe the count and proportion of each group in the top 15 NIH research areas:

Additional results include demographic descriptions of OppNet principal and co-investigators, regional distribution of OppNet grantees, and qualitative results from a thematic analysis of OppNet's funded grant abstracts and specific aims that found three main themes: OppNet explains processes that link brains and behaviors; OppNet research explains basic processes among self and settings; and, OppNet advances basic research methodologies. Quotations illustrate the analysis and relate OppNet initiatives to larger NIH goals. Additional findings include that OppNet grants uniquely generate more basically-oriented research in the NIH portfolio, augment NIH Institute and Center-specific socio-behavioral projects, and, in turn, help advance the mission of the country's medical research agency to help turn discovery into health outcomes for all.

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CHANGES IN PATIENTS' EMOTIONS FOLLOWING SURGICAL CONSULTATIONS

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Quality patient-provider communication promotes satisfaction with healthcare, adherence to treatment recommendations, and improved health. However, little research has examined emotional aspects of patient-provider communication. Patients (N=235) who arrived at a general surgery clinic for an initial surgical consultation were interviewed before and after the consultation. Prior to the consultation with the surgeon, patients completed baseline measures of their emotional state, demographics, subjective health, and pain. Following the consultation, patients completed measures of feelings toward the hospital and its staff, effort made by the surgeon during the consultation, sense of empowerment, and their emotional state. In general, patients became less nervous, more hopeful, and happier after their surgical consultations compared to baseline, $t_s > 2.23$, $p < .05$. The following analyses controlled for patients' baseline emotions. Positive feelings toward the hospital and its staff were associated with reductions in nervousness and increases in hopefulness and happiness, $\beta_s > .18$, $p < .02$. Perceived surgeon effort (e.g., effort to provide information, reduce worry, increase satisfaction) was associated with an increase in hopefulness and happiness, $\beta_s > .17$, $p < .02$, but not a decrease in nervousness. Finally, feelings of empowerment (understanding the information provided, adherence intentions, and a sense of control) were associated with reductions in nervousness and increases in hopefulness and happiness, $\beta_s > .14$, $p < .05$. Demographic variables, subjective health, and pain did not predict changes in emotions. These findings identify aspects of psychosocial care that are critical for promoting positive (and mitigating negative) emotional states in patients facing surgery. Even in a brief consultation in a clinic setting, surgeons can improve patients' emotional state by making a clear effort during the consultation, promoting a sense of control, and clarifying information they convey.

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LIFE GOALS OF VETERANS SEEKING TREATMENT AT THE VETERANS AFFAIRS

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Background: The VA's ability to reduce disability among Veterans requires that treatment approaches are aligned with Veterans' health-related goals. Currently, only 40 % of Veterans with health conditions seek treatment and 68 % of those who seek treatment terminate prematurely. One suggested reason for poor treatment fidelity among Veterans is that treatment goals for evidence based therapy are linked to symptom reduction and are not linked to the patient's life goals.

Methods: Our aim was to determine the life goals of Veterans seeking treatment at the War Related Illness and Injury Study Center (WRIISC), a VA tertiary care center for Veterans with post-deployment health concerns. We sent questionnaires to 1,200 Veterans previously seen at the WRIISC. Veterans were asked: "We are interested in learning what your current life goals are. For example, some people may want to get a job or spend more time with their family." We then used an iterative process to create a code system with a code book and coded the Veterans' responses to this question. Veterans' responses could be coded as more than one code (e.g. "I want to go back to school and make my wife happy" would be two codes: career and family).

Results: Two hundred and sixty-two Veterans completed and sent back the questionnaire. The average age was 48.53 \pm 13.55 years old, with 86 % male. The majority of the sample reported that their health was fair (39.3 %) or poor (18.3 %). We had a total of 353 coded responses. We found 8 themes (% of total responses): health (18 %), family (24 %), career/school (24 %), housing (5 %), enjoy life (10 %), retirement/relocation (6 %), personal goals (e.g. lose weight) (8 %) and disability (2 %).

Conclusions: The majority of Veterans' stated life goals concerned family and career/home. Fewer responses were about health or symptom reduction. Despite this almost all evidence based therapies are focused on symptom reduction. Future studies should examine the concordance of life goals to treatment goals and its impact on adherence.

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COGNITIVE MECHANISMS OF CHANGE IN MULTIDISCIPLINARY TREATMENT OF PATIENTS WITH CHRONIC WIDESPREAD PAIN: A PROSPECTIVE COHORT STUDY

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Background: Cognitive mechanisms of change in the multidisciplinary treatment of patients with chronic widespread pain (CWP) are only partially understood.

Objectives: To evaluate the contribution of improvement in negative emotional cognitions, active cognitive coping, and control and chronicity beliefs to the outcome of the multidisciplinary treatment in patients with CWP.

Methods: Data were used from baseline, 6 months and 18 months follow-up of a prospective cohort study of 120 CWP patients who completed a multidisciplinary pain management treatment. Longitudinal relationships were analyzed between changes in cognitions and outcome, using generalized estimated equations. Outcome domains included: depression, interference of pain in daily life, pain, and global perceived effect.

Results: Improvements in negative emotional cognitions were associated with improvements in all outcome domains, in particular with improvement in depression and interference of pain in daily life. Improvements in active cognitive coping were associated with improvements in interference of pain in daily life. Finally, improvements in control and chronicity beliefs were associated with improvements in depression and pain.

Conclusions: Improvement in negative emotional cognitions seems to be a key mechanism of change of multidisciplinary treatment in CWP. Improvement of active cognitive coping and improvement of control and chronicity beliefs may constitute mechanisms of change as well, although the evidence is less strong.

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AGE DIFFERENCES IN SLEEP AMONG THOSE WITH CHRONIC PAIN

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Sleep quality is positively related to physical and mental wellness. Sleep problems are very common among those living with chronic pain. In addition, sleep complaints are very common among the elderly; however, sleep disturbance is not necessarily a part of healthy aging. Rather, sleep problems are more likely related to comorbidities associated with aging, such as chronic pain. In a clinical trial of treatment-seeking individuals with chronic pain (N=114) comparing Cognitive-Behavioral Therapy with Acceptance and Commitment Therapy, we sought to better characterize the sleep of those with chronic pain. Sleep was assessed using the Pittsburgh Sleep Quality Index (PSQI). The PSQI provides a global score of sleep quality that is well-validated and ranges from 0–21; a score above 5 denotes clinically significant sleeping problems. Repeated measures ANCOVA analysis was used to assess PSQI across age groups, controlling for potential confounds as pain severity, depression diagnosis, and sleep medication or benzodiazepine usage at baseline. This analysis found that in those who provided data through 6-month follow-up (n=79), those who were over age 60 (n=32) reported better sleep than did those younger than age 60 (n=47). PSQI global score was statistically significant at all 4 time points across age groups (F(1, 74)=8.788, p=.004, M1=11.40, M2=9.09). There were no significant effects of time or treatment on sleep quality in these analyses (p>.05). These results suggest that those who are under age 60 may be suffering from more severe sleep problems than are those over age 60; in addition, gold-standard psychological treatment for chronic pain did not affect sleep outcome scores. Therefore, psychological interventions for those with chronic pain may be bolstered with inclusion of behavioral treatments for sleep to better target this important health outcome in treatment, especially with younger populations.

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RELATION OF PAIN AND SLEEP IN PATIENTS EVALUATED FOR SPINAL CORD STIMULATOR IMPLANTATION

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Chronic pain is associated with sleep difficulties, and several constructs, including depression, anxiety and catastrophizing, have been identified as possible mediators of the relation between pain and sleep. Patients being evaluated for spinal cord stimulator (SCS) surgery may differ from other chronic pain patients in the way that sleep and pain are related, and mediators of this association also may function differently for SCS patients. Differences between SCS patients and other chronic pain patients in the relation of pain and sleep, which have not been well investigated, could affect how sleep problems are conceptualized and addressed in this population. The present study examined data collected for 203 patients referred for pre-surgical SCS psychological evaluation (n=102; mean age=53.7, SD=13.9; 57.8% female) or behavioral pain management (BPM; n=101; mean age=48.8, SD=12.9; 63.4% female). Patients rated their average pain intensity with a 0–10 graphical numerical rating scale, and sleep was assessed using the Pittsburgh Sleep Quality Index. Patients also completed the Center for Epidemiological Studies Depression Scale, Pain Catastrophizing Scale, and Pain Anxiety Symptoms Scale-20. Although the two groups reported no difference in average pain intensity, SCS patients reported less sleep disturbance. Pain was significantly associated with sleep for BPM patients (r=.39) but not for SCS patients (r=.20). Path analyses and Sobel tests considering all three mediator variables (depression, anxiety, and catastrophizing) further revealed significant indirect effects were exerted only through depression for both SCS patients ($\beta=.09$, $p<.05$) and BPM patients ($\beta=.14$, $p<.05$). This study suggests pain and sleep ratings are related differently for SCS and BPM patients. For BPM patients, pain and sleep were directly related, with indirect effects through depression; among SCS patients, however, pain was only related to sleep indirectly through depression. Thus, targeting depression may be as important as reducing pain to improve sleep in SCS patients.

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ASSOCIATIONS BETWEEN BODY IMAGE-RELATED COGNITIONS AND PAIN ACCEPTANCE IN WOMEN WITH PERSISTENT PAIN

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Body image concerns have been evaluated in women affected by cancer and HIV, but there is little information on these cognitions in women with persistent pain. Chronic pain often leads to behavioral changes, physical inactivity and functional impairment which can adversely affect women's perceptions of their bodies. However, self-objectification theory suggests that women who appreciate their body's functionality despite pain may have greater body awareness and body satisfaction. Body awareness involves accurately discriminating body sensations, which can lead to more adaptive feelings and behaviors in response to pain. Further, greater body appreciation may promote body satisfaction and more activity engagement despite pain, one part of acceptance. Using self-objectification theory as a framework, we assessed body image-related cognitions (body awareness, body appreciation and body satisfaction) and their associations with acceptance in women with chronic pain. Eligible outpatients completed measures on pain, body image-related cognitions and acceptance. Participants (n=51; M age=43.8; SD=12.6; 69.2% Caucasian) had M average pain in the past week=6.2 (SD=1.9). Further, M body appreciation=3.6 (SD=0.7) and M body satisfaction=3.1 (SD=0.8); total scores measured from 1–5. Greater body appreciation was associated with greater body satisfaction (r=.51, $p<.05$) and both were associated with more pain activity engagement (r=.30; r=.39; both $p's<.05$). Greater body satisfaction was also associated with greater total pain acceptance (r=.29; $p<.05$) but body awareness was not. Results suggest that women with pain had moderately-high body image. Further, greater body appreciation and body satisfaction, but not body awareness, were associated with more willingness for activity engagement despite pain. Future studies should clarify potential modifiers of the association between body image and pain acceptance, and whether interventions targeting body image in women improve patient adjustment to pain.

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THE GOLDBLOCKS PARADOX OF JOHN HENRYISM AND PSYCHOLOGICAL DISTRESS IN A SAMPLE OF ADULT PATIENTS WITH SICKLE CELL DISEASE

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Coping, as a construct, remains of significant interest to those who study African American patients with sickle cell disease (SCD). The current study evaluated the effects of John Henryism, a commonly recognized 'active' coping strategy identified in African Americans, on the psychiatric disposition of patients with SCD. We evaluated responses to the SCL-90 with respect to subscale and symptom index scores in 88 adult patients (58% female; mean age 34.15±12.23) with SCD. Based on the distribution of scores on the measure of John Henryism, 3 groups indicating a low, moderate and high degree of JH coping were derived. Results indicated that individuals in the moderate JH group reported greater obsessive compulsion, depression, anxiety, hostility, phobic anxiety, psychoticism and overall symptom distress (all $p's<.05$) compared to those who scored in either the low or high range on John Henryism. Additionally, there was a marginal trend ($p=.06$) on the measure assessing fear of movement due to pain, a common experience for patients with SCD. While the majority of the JH literature has consistently found a positive association between higher JH and worse health outcomes (i.e. higher blood pressure) in AA's, a few studies have suggested that JH coping may be a positive, protective factor for AA's. As our results suggest, future studies may need to consider a greater range of responses to better capture the dynamic impact of JH coping on physical and psychological health outcomes.

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STATIC AND DYNAMIC FEATURES OF PAIN: PILOT FINDINGS FROM A LONGITUDINAL INVESTIGATION OF PATIENTS WITH SICKLE CELL DISEASE

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Pain is a common, often unavoidable, experience for patients with sickle cell disease (SCD) that imposes serious limitations on physical as well as psychological and social functioning and well-being. Reciprocally, psychological and social factors such as coping and social support can impact the experience and response to painful crises. Given the typical early onset and short life expectancy of individuals with SCD, little longitudinal data exist to examine how these factors change over time - especially in adults. In the present study, we examined responses to the Multidimensional Pain Inventory-2 (MPI-2), in a subsample (N=20) of patients with SCD across two assessments (Mean elapsed time=2.8±2.6 years). Results revealed significant decreases in Pain Severity ($p<.01$), Interference ($p<.001$) and Life Control ($p<.001$) domains and a marginal decrease in Affective Distress ($p=.10$) as assessed by the MPI-2. Additionally, these changes did not appear to be determined by changes in either active coping or social support. As these data suggest, the adaptation to the functional impact and severity of pain in patients with SCD may involve multiple mechanisms. Future studies should further evaluate coping and support, as well as other potential pathways of change in the pain experience in this population.

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DOES LONELINESS MODERATE THE RELATIONS BETWEEN INTERPERSONAL EVENTS AND EVENT APPRAISALS, FATIGUE, AND PAIN IN CHRONIC PAIN PATIENTS?

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Research has suggested that lonely people demonstrate distinct differences from nonlonely people in their behaviors, mood, and interpersonal experiences. This study examined whether among individuals who are also enduring a chronic pain condition, lonely people are at greater risk that nonlonely people for negative outcomes because their loneliness may occur in the context of stigmatization regarding their health condition, mood disturbances, and pain-related disability. To that end, the current study examined chronic and transitory loneliness in a sample of 126 chronic pain patients. Participants completed diaries each evening for 21 days to assess the occurrence of positive and negative interpersonal events, appraisals of interpersonal events, pain, and fatigue. Multilevel modeling was used to examine effects of being a lonely person (i.e., between person effects) as well as having a lonely episode (i.e., within-person effects) on daily life outcomes. Results indicated that both chronic and transitory loneliness were associated with more frequent reports of negative and less frequent reports of positive events, higher ratings of stress and lower ratings of enjoyment from social interactions, and higher levels of pain and fatigue. Loneliness did not affect symptom and mood reactivity to negative interpersonal events, but did influence responsiveness to positive interpersonal events, such that lonely people had greater boosts in enjoyment than nonlonely people on days when they experienced more positive interpersonal events than usual. These findings suggest that both chronic loneliness and transient episodes of loneliness (i.e., state loneliness) are associated with more negative daily life consequences. However, for individuals who are either chronically lonely or experiencing a lonely episode, more frequent positive interpersonal events provides access to more day-to-day enjoyment of social relations, a finding that help to inform future clinical interventions for lonely chronic pain patients.

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STANDARDIZING AN EVIDENCE-BASED METHOD FOR PRESURGICAL PSYCHOLOGICAL EVALUATIONS

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Introduction: The outcome of spinal surgery and other invasive treatments for pain is influenced by a number of psychosocial variables. Systematic reviews by den Boer et al. and Celestin et al. have identified the biopsychosocial variables most closely associated with the outcome of spinal surgery. The variables empirically determined to be most predictive were depression, anxiety, somatization, poor coping, disability, pain complaints, age, duration of symptoms, education level, maladjustment, and job dissatisfaction. In order to make these findings applicable to clinical practice, steps were taken to develop and validate a risk score based on these findings.

Methods: The Battery For Health Improvement 2 (BHI 2) profiles, demographic and other information was gathered from 527 patients in multidisciplinary treatment for pain or injury, and 725 community members. These subjects were gathered from 106 sites in 36 US states, and the groups approximated US census demographics. The BHI 2 was also administered twice with a one-week interval to a patient group.

Using these data, a standardized method was developed to calculate a composite measure of presurgical risk. This risk score was the number of the above criteria determined to be present, calculated by employing a cutoff for each variable or BHI 2 scale that was one standard deviation above the mean of the patient norms. Each risk factor was then assigned a weighting based on the level of available evidence.

Results: The mean, standard deviation, median and mode of the risk scores were as follows for patients (5.45, 5.35, 4.0, 1.0) and community members (3.63, 3.79, 3.0, 2.0) respectively. The test-retest reliability results displayed robust consistency (.957 overall).

Conclusions: Standardization is an important part of clinical assessment, as it helps reduce error and provide consistency essential to derive the meaning of data. By establishing the validity, reliability and norms of these scores, they become potentially useful in clinical practice and to surgery outcome.

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SELF-REPORTED EXECUTIVE DYSFUNCTION IN CHRONIC PAIN PATIENTS

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Abstract

Objectives: The present study assessed the prevalence of self-reported symptoms of executive dysfunction in a sample of chronic pain patients undergoing evaluation prior to participation in a multidisciplinary pain management program.

Method: The Behavior Rating Inventory of Executive Function - Adult Version (BRIEF-A), a self-report assessment of executive functioning, was completed by 413 chronic pain patients as a component of evaluation for treatment. The BRIEF-A is a widely used instrument to assess for problems with different types of behavior related to inhibitory control, ability to move freely from one situation to another, modulate emotional responses, tracking behavior and the effect it has on others, problem-solving strategies, working memory, and planning and organizing activities. Averages of T-scores were obtained on the various scales and means were reported as being elevated or not elevated.

Results: Chronic pain patients endorsed elevations across a wide array of specific aspects of executive functioning, most notably difficulties with initiating tasks, monitoring tasks for accuracy, and working memory. Other areas that were elevated, but to a lesser extent, were the ability to shift between activities, inhibit unwanted responses, emotional control, and the ability to plan and organize accurately and efficiently. No mean elevations were found for the ability to track the individual's behavior and the impact it has on others and the ability to organize everyday environments.

Conclusion: Executive dysfunction is a common phenomenon experienced by individuals with chronic pain, particularly the ability to begin tasks, track tasks for accuracy and utilize working memory efficiently to solve problems. Furthermore, developing interventions tailored to the various areas of disrupted executive functioning would be beneficial in the response to treatment and management of chronic pain.

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ACT PRODUCES CHANGES IN SELF-CONCEPT AND ACCEPTANCE OF PAIN IN WOMEN WITH FIBROMYALGIA

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INTRODUCTION: Women who develop Fibromyalgia (FM) often find they have to make major lifestyle changes because of the condition, which can have a profound impact on self-concept. As a result, some begin to define themselves in terms of their illness and their self-schema and illness-schema become intertwined in a process termed schema-enmeshment. Schema-enmeshment is related to psychological distress and poor quality of life making it a prime target for intervention. Acceptance and Commitment Therapy (ACT) may be appropriate in reducing schema-enmeshment as it emphasizes living with the condition, rather than allowing it to control their lives. The aim of this pilot RCT study was to test the hypotheses that ACT would reduce schema-enmeshment between self and illness components and increase pain acceptance, as pain is a major defining feature of the condition. **METHOD:** Participants (n=28) were randomly assigned to ACT or a psychoeducational intervention, and met one-on-one with an interventionist once a week, for 50 minutes, for 8 weeks. Participants completed a self-report battery prior and immediately following the intervention. The battery included the Pictorial Representation of Illness and Self Measure (PRISM), an interactive measure used to assess schema-enmeshment. **RESULTS:** An intent-to-treat analysis supported the hypotheses. Significant group differences in schema-enmeshment with various components of illness were observed following the intervention. Specifically, the ACT group reported greater reductions in self enmeshment with FMS, fatigue, and cognitive symptoms, but not pain, compared to the education group. The ACT group also experienced greater gains in acceptance of pain compared to the education group. **DISCUSSION:** ACT may be a promising intervention for targeting maladaptive beliefs about the self in relation to illness and increasing pain acceptance. Changes may be related to increases in quality of life.

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THE FEAR-AVOIDANCE MODEL OF PAIN IN A TREATED CLINICAL SAMPLE

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The fear-avoidance model of chronic pain incorporates cognitive and behavioral elements to explain the development and maintenance of pain behaviors. It posits that pain-related fear serves a mediating role between subjective pain experience and disability development. Previous studies have indicated that pain-related fear is a strong predictor of disability and mediates the relationship between pain and disability. Less clear is whether the predictions of the fear-avoidance model are maintained in clinical populations that have undergone successful treatment. In the present study, 68 chronic pain patients participated in a 4-week interdisciplinary pain treatment program. Self-report data included a 100 mm visual analogue scale (VAS), the pain and impairment relationship scale (PAIRS), and the Survey of Pain Attitudes-Disability scale (SOPA-d), which measure pain intensity, pain-related fear, and level of perceived disability, respectively. Participants were surveyed before and after completing the 4-week program. Significant reductions were observed across all clinical measures from intake to discharge. Consistent with the fear avoidance model, pain-related fear was shown to be a significant predictor of disability upon completion of the program. Mediation analyses indicated that pain-related fear had a significant indirect effect on pain and disability, indicating it to be a full-mediator at intake and a partial mediator at discharge. Implications for further research examining the role of fear avoidance beliefs on clinical pain management interventions will be discussed.

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THE INFLUENCE OF NARCISSISM AND EXERCISE ENVIRONMENT ON EXERCISE BEHAVIOR, MOOD, AND PERCEIVED EXERTION

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Summary. This exercise laboratory study examined the influence of narcissism and exercise environment on exercise behavior, mood, and perceived exertion. Forty-four undergraduates (24 males, 20 females) were asked to complete the same exercise behavior of pedaling a Monark stationary bike at a moderate level of exertion for 20 minutes. However, all participants were randomly assigned to one of three different laboratory exercise environment conditions while they biked. These included the use of (1) motivational posters (i.e., using a high fit celebrity male and female personal trainer) while exercising in front of a mirror, (2) exercising in front of a mirror only without any motivational posters, and (3) a control condition exercising without any posters or mirror. All participants completed the Narcissistic Personality Inventory (NPI) as well as the Adjective Check List (AD-ACL) assessing exercise related mood. They also completed the Borg Scale to assess exercise exertion as well. Repetitions per minute (RPMs), pulse rate, and bike speed were also recorded during the session. Results indicate that females scoring high on the NPI scale were more likely to enjoy the mirror only condition while males scoring high on the NPI were more likely to enjoy the mirror with poster condition the most. Findings suggest that those who are more narcissistic are more likely to enjoy exercise with mirrors than those scoring lower on narcissism. Implications suggest that exercise environment should be considered depending on personality dimensions of the participants.

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DEVELOPMENT AND VALIDITY OF QUESTIONNAIRES FOR BELIEFS ABOUT RESISTANCE TRAINING AMONG OLDER ADULTS

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Our purpose was to develop questionnaires for assessing beliefs about resistance training (RT) among older adults. Questionnaire development involved four phases. In the first two phases we conducted interviews (N=14; ages 50-67; 8 females) and distributed open-ended questionnaires (N=56; ages 50-70; 47 females) to elicit beliefs about RT from local YMCA members who fit into one of four RT categories: regular, sporadic, past, and never. In the third phase we created an initial questionnaire based on social cognitive theory and data obtained in phases one and two. We then obtained feedback from five experts in RT and/or behavioral science theory regarding face validity, ease of understanding, and additions to our item pool. In the fourth and final phase we distributed the resulting 287-item questionnaire to an independent sample of local YMCA members (N=94; ages 50-69; 60 females) of whom 81 completed an identical questionnaire one month later. Based on factor analysis, the full-length questionnaire was trimmed to 98 items resulting in scales for the following theory-based constructs: outcome expectancy (factor-based subscales: positive affect, positive health, positive social, negative affect, negative physical), attitudes (subscales: affective, instrumental), perceived likelihood of overcoming barriers (subscales: instrumental, affect), social norms, perceived behavioral control, satisfaction with the outcomes of RT, self-regulatory strategies (subscales: planning, social), and behavioral intentions. Criterion validity was demonstrated by significant bivariate correlations between baseline scores for each of the psychosocial variables and self-reported frequency of RT at baseline ($r=.22$ to $.51$; $p<.05$) and one month follow-up ($r=.23$ to $.53$; $p<.05$), with the exception of instrumental attitude which was uncorrelated with RT in the longitudinal analyses. The validated questionnaire is currently being used to assess RT beliefs among older adults enrolled in an RCT testing an RT promotion program for prediabetic older adults.

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GENDER DIFFERENCES IN PHYSICAL ACTIVITY AMONG EGYPTIAN YOUTH

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Background: Obesity is an emerging problem in Egypt with females disproportionately affected. Little is known about the determinants of this disparity.

Purpose: The purpose of this analysis is to examine gender differences in PA among Egyptian youth. **Method:** Data from the 2009 Survey of Young People in Egypt, a multistage household-based probability sample of youth aged 10–21 yrs (n=9476) in all regions of Egypt, were analyzed. Youth were asked about participation in types of PA, active commuting, and play/work involving PA. Analyses were conducted in Stata 10.1 with population weights and standard error adjustments, and included crude comparisons of activities by age categories, gender, and age/gender groups. Multivariable logistic regression further tested gender differences, controlled for urbanicity, marital status, in-school status, disability, chronic health conditions, wealth and household size.

Results: An overall decrease in PA by age was observed but some types of PA, gym use, at-home sports and work-related PA ($p < 0.001$), increased with age. Active commuting and football decreased with age ($p < 0.001$). Girls were less likely than boys to be involved in any type of PA; these differences were especially pronounced in active commuting and football ($p < 0.001$). Age trends reflecting decreased active commuting were more pronounced for girls ($p = 0.08$) and increased work-related PA was greater for boys than girls ($p < 0.001$). In multivariable analyses, girls' participation in PA was significantly lower than boys across PA types. Males still evidenced greater increases in work-related PA with age compared to young women ($p < 0.001$).

Conclusions: Gender differences in PA patterns during adolescence and young adulthood may contribute to observed gender disparities in obesity in Egypt. Similar patterns are seen in the U.S. Education and public health action are warranted that allows Egyptian girls and young women greater motivation and better access to PA opportunities.

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MOTHERHOOD AND MARITAL STATUS: A COMPARISON OF PHYSICAL ACTIVITY PARTICIPATION

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Background: Societal trends have resulted in an increasing number of unmarried mothers in the United States. Single motherhood is associated with negative health consequences that might be improved through regular physical activity participation. **Purpose:** This pilot study compared the magnitude of differences in physical activity between unmarried mothers, married mothers, and non-mothers as a first step in understanding physical activity and its health benefits in unmarried mothers. **Methods:** Participants (N=66) in 3 equal sized groups (n=22) of unmarried mothers, married mothers, and non-mothers completed a battery of physical activity questionnaires and then wore an ActiGraph accelerometer for one week. We conducted ANOVAs with Bonferroni post hoc comparisons to determine differences in physical activity between the three groups and estimated effect sizes for the magnitude of differences between groups. **Results:** There were significant overall effects for Godin Leisure-Time Exercise Questionnaire ($F(2,61)=6.11, p=.004$) and Modifiable Activity Questionnaire scores ($F(2,61)=8.65, p=.001$) and post hoc comparisons indicated that unmarried mothers were less physically active than married mothers ($d=0.87, 1.01$, respectively) and non-mothers ($d=1.02, 1.22$). Minutes spent in moderate-to-vigorous physical activity ($F(2,58)=4.39, p=.02$) from the accelerometer significantly differed between unmarried mothers and non-mothers ($d=.93$) and approached significance for unmarried and married mothers ($d=.55$). There were no statistically significant differences between groups for International Physical Activity Questionnaire scores ($F(2,56)=2.71, p=.08$) or accelerometer activity ($F(2,59)=2.05, p=.14$) and step ($F(2,59)=1.07, p=.35$) counts. **Conclusions:** Overall, this pilot study indicated that unmarried mothers were less physically active than married mothers and non-mothers. Only unmarried mothers were not meeting national public health guidelines for physical activity. Future studies should explore the correlates and health outcomes associated with physical activity among unmarried mothers.

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COMPARING THE PHYSICAL, COGNITIVE AND WORK PERFORMANCE EFFECTS OF USING AN ACTIVE ELLIPTICAL MACHINE DESK VERSUS A STANDARD DESK

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Background: Sedentary behavior is responsible for 9 % of premature deaths worldwide placing sedentary workers at an increased risk for death. There is a need to test new technologies that allow sedentary workers to be active while working without sacrificing productivity. **Objective:** To compare the acute physical, cognitive and work performance effects of using an active elliptical machine desk (LifeBalance Station (LBS)) to using a standard desk. **Methods:** Eighteen adults (43.4in better treatment attendance, medication compliance, and clinical 11.6 yrs; 94 % female, BMI=28.8in better treatment attendance, medication compliance, and clinical 5.5 kg/m²) working in full-time, sedentary jobs completed sedentary computer tasks while both: 1) sitting at a standard desk; and 2) pedaling on the LBS at a light intensity (40 rpm). Objective measures of energy expenditure (indirect calorimetry), muscle activation (electromyography), cognitive function (CogState Research), and work productivity (Compass Software) were used. Paired t-tests and effect sizes (Cohen's d) were calculated to compare resting and pedaling conditions. **Results:** Compared to rest, light intensity LBS pedaling resulted in a two-fold increase in energy expenditure ($P < 0.001$; E.S.=0.87) and increases in activation of the biceps femoris ($P < 0.001$; E.S.=1.28) and vastus lateralis ($P < 0.001$; E.S.=0.28) leg muscles. No group differences were observed for measures of typing speed ($P=0.67$; E.S.=0.02), typing errors ($P=0.72$; E.S.=0.05) or mouse clicking errors ($P=0.24$; E.S.=0.22). No differences were observed for cognitive measures of learning ($P=0.67$; E.S.=0.05) or attention ($P=0.84$; E.S.=0.84). Memory speed was slightly faster while pedaling compared to rest ($P=0.01$; E.S.=0.34). **Conclusions:** These findings suggest using LBS at a light intensity results in beneficial increases in energy expenditure and muscle activity over resting while resulting in minimal to no detriments in cognitive function and/or work performance.

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A TEXT MESSAGING WALKING PROGRAM FOR OLDER AFRICAN AMERICANS

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OBJECTIVES: To examine if a six week program of motivational text messaging will increase physical activity (step count) among older African Americans in an urban setting. **DESIGN:** Randomized, controlled trial pilot study with allocation to a motivational text messaging group or a control group.

SETTING: General community.

PARTICIPANTS: Thirty-six African Americans aged 60 to 85.

INTERVENTION: Both groups received pedometers and walking manuals to record step counts. The intervention group received motivational text messages three times a day, three days a week, for six weeks.

MEASURES: Primary outcome measure was step count. Secondary outcome measures were Body Mass Index (BMI) and the Leisure Time Exercise Questionnaire (LTEQ).

RESULTS: Motivational text messaging three times a week for six weeks led to greater improvements in step count (+879 vs. +398; $P < .05$) and LTEQ ($P < .05$) along with lower BMI ($P < .05$) than the group who did not receive any text messages.

CONCLUSION: Motivational text messaging three times a week for six weeks was effective in increasing step count and self-reported leisure time exercise behavior, and decreasing BMI among older African Americans. Larger and longer-term studies are needed to examine the impact of text messaging and maintenance of healthier life choices through text messaging in this population.

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PERCEPTIONS OF THE BUILT-ENVIRONMENT AND ASSOCIATIONS WITH PHYSICAL ACTIVITY AMONG ADOLESCENTS IN HONG KONG

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Research in Western countries suggests that some characteristics of the built-environment may influence physical activity (PA) patterns, but it is unknown if these findings extend to ultra-dense urban areas of Asia. Using cross-sectional data from the population-representative Hong Kong Student Obesity Surveillance (HKSOS) study (2009–2010 cohort), we explored the associations between perceived attributes of the built-environment and physical activity among secondary school students in Hong Kong. A total of 3254 adolescents (aged 11–18 years, 50.5 % male) completed questionnaires related to their PA patterns and their perceptions of the built-environment. Time spent physically active (specifically, exercise PA (ExPA), non-exercise PA (NEPA), and weekly frequency of 30 min bouts of exercise (ExFreq)) were reported. Perceptions of the built-environment were assessed using a modified version of the Abbreviated Chinese-version of the Neighbourhood Environment Walkability Scale (NEWS-A). Associations between perceived environmental attributes and each PA outcome were assessed by logistic regression, with adjustment for potential confounders. Age-stratified models (11–14 yr and 15–18 yr) were also explored. Overall walkability (adjusted ORs: 1.02 to 1.04 for various PA domains), perceived aesthetics (adjusted ORs: 1.13 to 1.20), diversity of public sports facilities (adjusted ORs: 1.04 to 1.07), and infrastructure and safety for walking (adjusted ORs: 1.19 to 1.25, 11–14 yrs only) ($p < 0.05$ for all) were predictive of higher levels of PA. Environmental factors were more strongly associated with PA among 11–14 year olds compared with 15–18 yr age group. Our results suggest that the built-environment may be influential in shaping the PA patterns of adolescents in HK. Prospective studies, using both objective and subjective measures of PA and the built-environment, are required to confirm these findings.

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DAILY PHYSICAL ACTIVITY AND SEDENTARY BEHAVIOR HAVE ADDITIVE EFFECTS ON SATISFACTION WITH LIFE IN EMERGING ADULTS

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Satisfaction with life (SWL) has important implications for happiness, health, social relationships, and even productivity at the workplace. Given the established benefits of SWL, it would be worthwhile to better understand the factors that influence SWL so strategies can be developed to enhance SWL. Physical activity (PA) is a well-established between-person, top-down predictor of SWL. More recently, the influence of PA has also been investigated from a within-person, bottom-up perspective. Although this approach has revealed a direct within-person association between PA and SWL, it is limited in that (1) it relied on self-reported PA and (2) it did not differentiate between low levels of activity and sedentary behavior (SB). A 14-day daily diary study ($n = 128$) was designed (1) to determine if the association between PA and SWL previously present using self-reported activity was also present using directly-measured activity and (2) to untangle the effects of PA and SB on SWL. Multilevel models revealed that PA and SB had additive, within-person effects on SWL across both measures of PA (self-report: $\gamma_{10} = 0.34$, $p < .05$; directly-measured: $\gamma_{10} = 0.13$, $p < .05$) and SB (self-report: $\gamma_{20} = -0.12$, $p < .05$; directly-measured: $\gamma_{20} = -0.20$, $p < .05$). People reported greater SWL on days when they were more active than was typical for them, and lower SWL on days when they were more sedentary than was typical for them. An additional analysis revealed that moderate-intensity PA appears to be driving the within-person association between PA and SWL across both measures of activity (self-report: $\gamma_{20} = 0.62$, $p < .05$; directly-measured: $\gamma_{20} = 0.80$, $p < .05$); however in directly-measured PA light-intensity activity also contributed to this association ($\gamma_{30} = 0.79$, $p < .05$). These findings suggest that the most effective strategies to promote daily SWL should encourage individuals to displace SB with bouts of light- or moderate-intensity PA.

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THE ENHANCE EXERCISE PROGRAM: BUILDING A SUSTAINABLE EXERCISE AND WELLNESS PROGRAM FOR HEAD AND NECK CANCER PATIENTS

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Physical activity (PA) interventions as a method to positively impact symptom management, treatment-related recovery and quality of life (QoL) have largely excluded head/neck cancer populations. Head/neck cancer patients deal with severe weight loss, with upwards of 70 % attributed to lean muscle wasting, leading to extended recovery times, decreased QoL, and impaired physical functioning. There are a lack of treatment options to help sustain or rebuild this wasted muscle, but strength training and PA hold great potential. Additionally, PA may improve adaptation to cancer related stressors into survivorship by enhancing QoL, increasing physical functioning and reducing cancer recurrence. However, only a minority of patients currently meet prescribed PA recommendations, often due to barriers such as lack of information and programming options. METHODS: ENHANCE was a structured 12-week group-based exercise program delivered with a collaborative clinical focus. Patients on or off treatment were referred to the program and following assessment and education, engaged in once weekly group exercise classes. Patients were encouraged to include an additional 2–3 days of home-based activity each week. Assessments pre- and post-intervention included physical fitness and functional testing as well as symptom management. RESULTS: Results ($n = 17$) indicate improved fitness in upper and lower body strength and increased aerobic capacity (all p 's $< .05$). Participants reported a significant decrease in overall tiredness, depression, and drowsiness, and improvements in overall well-being (all p 's $< .05$). They also reported the program helped them to meet their health and wellness goals, manage symptoms, and gain motivation for PA participation. This program facilitates advancements in patient wellness, survivorship, and autonomy, and provided feasibility data for a current RCT. Funding sources: Psychosocial Resources Integrated Symptom Relief Services, Alberta Health Services Interface Project

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PSYCHOSOCIAL MEDIATORS OF PHYSICAL ACTIVITY AND FRUIT AND VEGETABLE CONSUMPTION IN THE FAITH, ACTIVITY, AND NUTRITION (FAN) PROGRAM

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Background: Although it is essential to test whether interventions successfully change the targeted behavior, it is also important to understand how interventions change behavior. Mediation analyses allow researchers to understand how an intervention achieved its effects and can ultimately be used to improve interventions.

Purpose: The purpose of this study was to examine whether self-efficacy, social support, and church support mediated changes in leisure-time physical activity (PA) and fruit and vegetable (FV) consumption in a faith-based intervention targeting African American churches in South Carolina. Method: The 15-month PA and FV intervention, guided by the structural ecological model, targeted the social, cultural, and policy influences within the church. Self-reported outcomes and mediators were measured at baseline and follow-up. Analysis of Covariance, using SAS PROC MIXED to account for church clustering, examined the relationships between intervention group assignment and change in mediators, and change in mediators and change in outcomes. MacKinnon's product of coefficients tested for mediation.

Results: Participants were 582 (PA outcome) and 588 (FV outcome) individuals from 68 churches. Participants, on average, were 57 ± 12 years old and had a BMI of 33 ± 7 ; 99 % were African American, 76 % were female, 59 % had at least some college education, 88 % were overweight or obese. Despite the significant increases in FV and PA, none of the hypothesized mediators were significant mediators of change in PA or FV consumption. Changes in many of the mediators were associated with changes in outcomes.

Conclusion: Future studies should consider mediation analyses a priori, putting careful thought into the types of measures used and the timing of those measures, while also being cognizant of the burden that could be imposed on both participants and staff. Finding a balance will be fundamental in successfully understanding how interventions exert their effects.

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AN EXPERIMENTAL PILOT TEST OF AN ACCEPTANCE-BASED PHYSICAL ACTIVITY INTERVENTION

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Background: Many young adults do not engage in sufficient moderate-to-vigorous physical activity, despite its importance for physical and mental health. Psychological skills that might promote physical activity include mindful decision making; willingness to experience emotional, cognitive, or physical discomfort; and clarity about the value of goal-directed behaviors. Thus, acceptance-based behavioral interventions (ABBI) that teach these skills may have promise for physical activity promotion. **Method:** This pilot study tested a newly developed ABBI for physical activity promotion in adults age 18–39. Participants (n=48) were randomized to one of three conditions: ABBI; educational and behavioral intervention (EBI); or self-help (SH). ABBI and EBI sessions were held weekly in small groups for 6 weeks. SH participants received educational and behavioral material by e-mail on a weekly basis. The primary outcome measure was the percent of time spent in moderate-to-vigorous physical activity (MVPA), as measured by Actigraph 3TGX accelerometers. Repeated measures ANOVAs were conducted to examine pre- to post-intervention change by condition. Pre- and post-test self-report measures were completed by 83 % of participants (n=40). Pre- and post-test pre- and post-test accelerometer data were valid for fewer participants (n=31) due to hardware error. Given the sample size, effect size (ES) was emphasized, with ES in the medium-to-large range being of note (i.e., $\eta^2 \geq .06$). Results: A medium ES was observed for change in MVPA by condition ($\eta^2 = .06$), with the largest increase observed in the ABT group. Among participants who had the lowest levels of physical activity at baseline (n=18), this ES was even larger, ($\eta^2 = .21$; e.g., participants in this subsample of the ABT group doubled their MVPA). Change over time in a self-report measure of willingness to experience discomfort related physical activity differed significantly by group, with ABBI increasing most (p=.03, $\eta^2 = .16$). **Conclusion:** ABBI has promise and warrants additional research to examine its effectiveness.

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PHYSICAL ACTIVITIES, BARRIERS, AND FACILITATORS IN VETERANS WITH AMPUTATIONS

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Low levels of physical activity (PA), obesity, and sedentary behaviors are common among persons with a disability. To improve the health of this population, information is needed on the types and quantity of PA, barriers to performing PA, and facilitators that may increase PA. 161 VA Northwest patients with a toe, foot, or leg amputation completed a 28-page mailed questionnaire on usual PA, barriers and facilitators to PA, demographic characteristics, mobility, type of amputation, and health status. 98 % of respondents were male with a mean age of 65 years. Amputation levels were minor (35 %), transtibial (40 %), and transfemoral (25 %); 36 % of amputations were trauma-related with a mean of 15 years since amputation. The most commonly reported physical activities were walking/wheeling (67 %), muscle strengthening (42 %), yard work or gardening (30 %), and bicycling (11 %). The most highly ranked barriers to performing PA were pain in back, knees, or shoulders; cost to join a fitness facility; and an illness or injury. Lack of time was not a major barrier. Those who were regularly physically active (44 %) were more likely to have had a trauma-related amputation (51 vs 24 %) and better global and physical, but not mental health scores, and were less likely to report the following barriers: pain caused by a prosthesis not fitting well (12 vs 33 %); pain in back, knees or shoulders (22 vs 56 %); fear of falling (16 vs 35 %); and fatigue/sleepiness (18 vs 32 %). Prosthetic fitting and specialized equipment were important for patients with a transtibial amputation, but less important/unimportant for other groups. Interventions to increase PA in this population must address pain management, injury/illness prevention, self-efficacy, and fatigue/sleepiness.

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FRIENDS WITH HEALTH BENEFITS: A STRUCTURAL EQUATION MODEL EXAMINING AGE, SOCIAL SUPPORT, SOCIAL CONTROL, SELF-EFFICACY, AND PHYSICAL ACTIVITY

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Social support and self-efficacy are established contributors to changes in behavioral health practices, including physical activity. However, health-related social control, a mechanism through which support influences physical activity, is not as well understood. Thus, in a structural equation model examining cross-sectional data from 370 adults (Mage=45.21 years, SD=26.94, 66 % women), social support, social strain, positive social control, negative social control, and exercise self-efficacy were examined for their associations with physical activity. Along with age, these factors explained 23 % of the variance in physical activity in a well-fitting model: $\chi^2(35) = 59.20$, $p = .006$, CFI = .96, PRATIO = .53, RMSEA = .04 [CI (90) .02 - .06], PCLOSE = .70. Consistent with predictions, younger age and higher exercise self-efficacy were directly associated with more frequent physical activity. Furthermore, higher social support was associated with more frequent physical activity indirectly through higher positive social control and higher exercise self-efficacy. Higher social strain was indirectly associated with more frequent physical activity only through higher positive social control. These results indicate the potential benefits of strong social support as it pertains to health and health behaviors. In particular, the present results suggest that social support may work through health-related social control and exercise self-efficacy to enhance physical activity behavior. While these results need to be replicated with longitudinal data, their implications suggest that it is important for health care providers to understand the effects of a strong support system. Furthermore, in order to encourage regular physical activity, providers may need to enlist the aid of patients' friends and family members by encouraging them to adopt a supportive approach toward patients.

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WOMEN'S PREFERRED FEATURES IN MOBILE PHYSICAL ACTIVITY (PA) APPLICATIONS

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Mobile devices (e.g., smartphones and tablets) may provide an opportunity to help women improve their PA, specifically through mobile applications (i.e., apps). Most current apps are not based on scientific theory or rigorous research and do not consider the unique needs of various user populations. The purpose of this study was to describe features middle-aged women prefer in mobile apps designed to help them improve their PA.

Women aged 30–64 years (N=159) completed an online survey measuring demographics and mobile PA app preferences. The survey was developed from Social Cognitive Theory (SCT) and technology adoption principles of the Unified Theory of Acceptance and Use of Technology (UTAUT).

Women were more likely to own smartphones (86 %) than tablets (55.7 %). Less than half (44 %) had used an app to increase their PA, and 81.7 % of non-users were interested in using an app. The most cited reasons for using or considering using an app were to track PA (72.4 %), lose weight (70.4 %) and track diet (68.3 %). When asked about SCT features most liked in PA apps, women reported the ability to track PA/diet and set goals. Women also thought that receiving feedback (90.1 %), in addition to PA tracking (91 %) and goal-setting (77 %), to be the most useful features for improving PA. In terms of UTAUT features, it was most important that an app be easy to learn (97 %), interact with (95 %) and use (94 %). Among features least liked, women mentioned lack of personal tailoring, user friendliness and up-to-date information.

These data suggest that smartphones, as opposed to tablets, may provide a promising mode to improve middle-aged women's PA, but additional descriptive studies in women of diverse backgrounds are needed. Mobile apps may be most appealing if they include PA and diet tracking, in addition to personalized goal-setting and feedback. Concerted efforts to include evidence-based methods of technology adoption are also needed to design apps that are easy to learn and use for middle-aged women. Future research aims to test an SCT/UTAUT theory-based mobile app developed from these data.

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PHYSICAL ACTIVITY INTERVENTION EFFECTS ON PSYCHOLOGICAL WELL-BEING ARE MEDIATED BY SELF-EFFICACY IN WORKING MOTHERS

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For working mothers, the demands of fulfilling multiple roles may lead to elevated stress, fatigue, anxiety, and depression. Physical activity might alleviate these negative health outcomes, but most working mothers face numerous exercise barriers and are not regularly active. The purpose of this study was to examine changes in psychological well-being among women who participated in a brief intervention to promote physical activity. Participants (N=141) were randomly assigned to an intervention or control condition. The intervention consisted of two group-based workshop sessions designed to teach behavior modification strategies using social cognitive theory. All participants completed measures of physical activity, exercise self-efficacy (EXSE), stress, fatigue, anxiety and depression at baseline and 6 months later. Physical activity was measured via self-report and accelerometry. Standardized residual change scores were computed for each outcome. Among participants who received the intervention, regression analyses revealed changes in physical activity predicted changes in EXSE [F (8,86)=9.65, $p<.001$, $R^2=0.40$] when controlling for demographics. Furthermore, changes in EXSE contributed significantly to changes in stress [F (8,86)=3.66, $p=.001$, $R^2=0.25$], fatigue [F (8,86)=3.97, $p<.001$, $R^2=0.27$], anxiety [F (8,86)=3.78, $p=.001$, $R^2=0.26$], and depression [F (8,86)=3.20, $p=.003$, $R^2=0.23$] when controlling for changes in physical activity and demographics. These results suggest increases in physical activity were associated with improvements in psychological well-being among working mothers, but the effects of the intervention were mediated by changes in self-efficacy. Future interventions for working mothers should continue to focus on enhancing self-efficacy in order to promote improvements in physical activity and psychological well-being.

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Citation Poster

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"WILL THE REAL BREAKS PLEASE STAND UP!" DETECTING BREAKS FROM SITTING USING OBJECTIVE TOOLS & NOVEL ANALYTIC TECHNIQUES

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Studies have shown relationships between sedentary behavior and health outcomes, independent of physical activity. New objective data suggest breaking up periods of sitting may convey a health protective effect via metabolic and musculoskeletal pathways. To date, studies of breaks in sitting have used accelerometer count threshold data, although the processes have not been validated for detecting standing. We assessed a broad range of sedentary behaviors in free living adults (n=40) over 4 days using ActiGraph 3Xin better treatment attendance, medication compliance, and clinical accelerometers, Qstanz BT1000X GPS devices, and SenseCam units (devices that provide an objective observation through first-person point-of-view images). 86,109 minutes of data and 364,841 SenseCam images were included. Images were coded for sitting and standing posture using a validated coding protocol. Sensitivity and specificity of the commonly used accelerometer 100 counts per minute (cpm) sedentary behavior classification was determined and compared with the image data. Supervised Machine Learning (ML) techniques were employed to predict postures from 44 features of the accelerometer and GPS data using the image data as the annotated training (ground truth) file. Finally, we used ML techniques to detect sit-to-stand transitions. The accelerometer 100 cpm correctly identified sitting 90 % of the time. However, bouts of standing were measured as <100 cpm 72 % of the time, indicating that this commonly used cutpoint may not adequately detect breaks in sitting. Random Forest ML techniques demonstrated a sensitivity of 96 % for sitting and 83 % for standing. ML techniques were also able to identify sit-to-stand transitions. Researchers should be cautious of the 100 cpm accelerometer cut point for identifying breaks in sitting. Incorporating ML techniques and SenseCam images of free living behavior may improve assessments of sit-to-stand transitions.

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ATTENDANCE, SOCIAL SUPPORT AND MOTIVATIONAL READINESS LEAD TO INCREASED PHYSICAL ACTIVITY IN WOMEN PARTICIPATING IN A PILOT LATIN DANCE INTERVENTION

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Physical inactivity is an ongoing challenge among ethnic minority women. Social support and motivational readiness (MR) are related to physical activity (PA), hypothesized to be important in the behavior change process, and may impact the effectiveness of health interventions. The purpose of this study was to explore the hypothesized impact of attendance on social support leading to MR and then PA in women participating in a Latin dance intervention. Ethnic minority women (N=50, M age=41.9±9.6 years, M BMI=29.7±5.3 kg/m²) in the SAVING LIVES STAYING ACTIVE study participated in an 8-week PA pilot study and completed measures of social support for PA (SSPA) from family and peers, exercise and weight MR and weekly leisure-time PA (LTPA) at baseline (T1) and post-intervention (T2). Confirmatory factor analysis was used to create SSPA (SSPA family $B=1$, SSPA peer $B=1.007$, $p<.001$) and MR (Exercise MR $B=1$, Weight MR $B=.997$, $p<.001$) latent constructs. Path analysis was used to explore determinants of LTPA. Attendance was included as an exogenous variable, SSPA and MR at T2 were included as potential intervening and/or exogenous variables, and LTPA at T2 was used as the ultimate endogenous variable. The model was an adequate fit to the data ($\chi^2(2)=16.458$, $p<.001$, $GFI=.942$, $NNFI=.992$, $CFI=.993$). Attendance had a direct effect on SSPA ($B=.820$, $p<.001$) and SSPA had a direct effect on MR ($B=1.000$, $p<.001$), which had a direct effect on LTPA ($B=1.046$, $p<.001$). Findings suggest social support resulting from intervention attendance may lead to cognitive changes in MR, important for behavior change, and that social support may be necessary but not sufficient to increase LTPA in ethnic minority women. Health interventions targeting behavior change should seek to improve psychosocial factors, such as SSPA from family/peers and exercise/weight MR, to increase PA adoption among ethnic minority women.

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CROSS-VALIDATION AND PSYCHOMETRIC EQUIVALENCE OF TWO MEASURES OF DECISIONAL BALANCE FOR EXERCISE

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Although several Decisional Balance (DB) measures for exercise have been validated in the literature, they are rarely evaluated comparatively and none have been validated for all 6 stages of change. This study examines the psychometric properties of two separate DB measures for exercise (Marcus et al., 1996, DBM; Plotnikoff et al., 2002, DBP) using a multi-state, cross-sectional, convenience sample of adults (N=1441, age range 18-90 yrs), in the precontemplation through termination stages for exercise and who completed both DBM and DBP. Confirmatory factor analyses and MANOVAs supported the internal and external validity of both measures. Theoretically based two-factor (Pros, Cons) models fit both measures well, with high internal consistencies ($\alpha>.70$). Tests of stage differences showed large effect sizes that were similar for both measures (Pros, $\omega^2=.11-.13$; Cons, $\omega^2=.16-.18$), and no measure by stage interactions. Both Pros and both Cons latent factors were highly correlated across versions ($r>.80$), demonstrating convergent validity and cross-validation for both measures. Thus, the psychometric properties of both DBM and DBP measures are comparable and valid for measuring DB across all 6 stages of change. Although comparable psychometrically for this population, the DBM and DBP measures differ on other factors that might be relevant for use in intervention studies (e.g., length, response format, instructional set, target population, etc.). Future research is needed to comparatively evaluate the ability of the DBM and DBP measures to detect longitudinal changes in Pros and Cons for exercise over time.

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THE EFFECTS OF YOGA ON COGNITION: A META-ANALYSIS OF CHRONIC AND ACUTE YOGA EFFECTS

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Yoga and cognition is becoming an increasingly topical area of enquiry. While the field is still in its nascent stages, there is an increasing number of RCTs as well as cross-sectional studies employing yoga based interventions to examine the cognitive benefits of this mind-body exercise. The objective of this meta-analysis was to synthesize the existing yoga-cognition literature and determine the effect sizes that could serve as a platform to design, power, and implement future studies. We searched electronic databases and identified 10 studies which investigated the acute (single yoga bout, n=4) or chronic (RCTs with yoga intervention, n=6) effects of yoga on cognition. Given the small number of studies we did not exclude them based on cognitive tests used. Study quality was evaluated but not used as a criterion for study selection. Using CMA version 1.0 (Borenstein, Hedges, Higgins, & Rothstein, 2005), we computed Hedge's *g* and found a significant overall moderate effect of yoga on cognition ($g=.40$, $se=.11$, $95\%CI=.17$, $.63$, $p<.001$) however given the diverse methodologies, there was significant heterogeneity among studies ($Q=18.91$, $p<.05$). We then assessed effect sizes independently for the 6 RCTs ($N=406$) and found a moderate but nonsignificant effect ($g=.30$, $se=.18$, $95\%CI=-.06$, $.65$, $p<.10$; $Q=15.34$, $p<.01$). The acute effect (4 studies, $N=268$) on the other hand was significant and larger ($g=.57$, $se=.12$, $95\%CI=.31$, $.80$, $p<.001$) and showed no heterogeneity within studies ($Q=1.17$, $p<.76$). Overall, these findings provide preliminary evidence that the active attentional component in the practice of yoga does offer cognitive benefits. There was considerable heterogeneity among studies, particularly within RCTs, in terms of sample size; population characteristics and methods; varied duration, frequency and type of yoga interventions; and use of a variety of cognitive test batteries. Rigorous systematic RCTs to comprehensively explore yoga as a means to improve or sustain cognitive abilities in the aging process are warranted.

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IF YOU BUILD IT, THEY WILL PLAY: EXAMINING GENDER DIFFERENCES IN PHYSICAL ACTIVITY ON STRUCTURED AND UNSTRUCTURED SCHOOLYARD AREAS

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Gender disparities in physical activity (PA) may be associated with the use of schoolyard components (e.g. more girls report using swings, more boys report playing basketball). This study examines differences among the PA of elementary school students who use structured areas/permanent PA equipment (e.g. basketball court) and unstructured areas (e.g. multi-purpose playing fields). At 24 schools in urban Denver, CO, SOPLAY (System for Observing Play and Leisure Activity in Youth) observers recorded momentary PA in structured or unstructured zones (n=396). Structured zones (82.8%) were utilized by 5.98 (±4.22) children with 48.8% girls per zone; unstructured zones were utilized by 4.15 (±5.59) children with 39.8% girls per zone. PA was quantified as the total energy expenditure rate (EER in kcal/kg/min) for each zone (overall and by gender) by multiplying the number of active children at each PA level by a constant (sedentary*.051 kcal/kg/min; walking*.096 kcal/kg/min; and very active*.144 kcal/kg/min) and summing the results. Two sample Wilcoxon rank-sum tests revealed significant differences between structured and unstructured zones overall and by gender (all $ps<.001$). Overall, students had higher EERs on structured zones (EER=0.63±0.54) than unstructured zones (EER=0.43±.59), and both boys (EER=0.33±0.27) and girls (EER=0.30±0.25) were more active in structured areas than boys (EER=0.27±0.40) and girls (EER=0.16±0.21) in unstructured areas. Structured play areas may induce more PA among both genders than unstructured areas. When designing PA interventions, it is recommended to ensure access to structured play areas, especially those preferred by girls. Also, unstructured areas may be underutilized and interventions could consider encouraging their use.

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THE EFFECTS OF HEALTH-RELATED FITNESS INTERVENTIONS ON STUDENT OUTCOMES IN SCHOOL-BASED PHYSICAL EDUCATION: A META-ANALYSIS

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Objective: The purpose of the present study was to synthesize the effects of health-related fitness (exercise) interventions on student outcomes in school-based physical education programs.

Design: The present study completed a quantitative research synthesis design using meta-analytical procedures. Data from empirical studies summarized research to determine the overall effectiveness of health-related interventions on student outcomes in school-based physical education.

Methods: Standard meta-analytical procedures were used to identify inclusion criteria, perform literature searches in electronic databases and screen relevant literature, code studies to conduct outcome and subgroup (moderator) analyses, and perform common statistical techniques to complete the analysis. Cohen's (1988) criteria for effects sizes were used to interpret results and Comprehensive Meta-Analysis (CMA) version-2 software completed effect size calculations. Results: There were 669 articles screened for inclusion with 134 studies meeting inclusion criteria. The overall treatment using a random effects model for health-related interventions in physical education was small ($k=134$, $d=0.341$, $p<.001$). Outcome analyses identified a range of small to large trends ($Z<.05$, $p<.05$) across several different student outcomes. Subgroup (moderator) analyses also produced significant trends within subgroup variables ($Z<.05$, $p<.05$); however, there were no significant differences ($QB<.05$) between subgroup categories.

Conclusions: Outcome and subgroup (moderator) analyses identified several variables that should be considered for future health-related fitness interventions conducted in school-based physical education.

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CORRELATES OF LATINA PREGNANT WOMEN'S EXERCISE BEHAVIOR: A PILOT STUDY

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Despite the safety and benefits of exercise during pregnancy, a majority of pregnant women stay sedentary. Recent studies have examined the determinants of exercise behavior during pregnancy using the theory of planned behavior (TPB). However, the samples primarily represented White-Caucasian population, and little is known about such determinants among minority women. Such an inquiry is important for identifying psychosocial determinants of exercise during pregnancy and designing effective behavioral interventions with this population. Therefore, the objective of this study was to examine the relationships among TPB constructs and exercise behavior during the first trimester of pregnancy in a sample of Latina women. All participants ($N=43$, $M_{age}=29$) were enrolled in a medical assistance program (Adopt-A-Mom) which provides prenatal care aid for pregnant women. They completed a packet of questionnaires assessing the TPB constructs, physical activity, and demographic information during the participants' initial visit to the program office. Logistic and multiple regression analyses were used to analyze the data. Logistic regression analysis demonstrated that the TPB constructs significantly discriminated between physically active and non-active participants (omnibus chi-square=9.62, $df=2$, $p=.008$). However, standardized regression coefficients indicated that perceived behavioral control, but not intention, was significantly associated with exercise status. Subsequent multiple regression analysis indicated that attitude, subjective norm, and perceived behavioral control were not significantly associated with exercise intention [$F(3,39)=.818$, $p=.492$]. The findings suggest partial support for TPB constructs in understanding exercise behavior in this sample of pregnant Latina women. Future research might elaborate on the feasibility of the TPB in explaining pregnancy exercise behavior and examine the moderating effects of other variables (e.g., socioeconomic status), within this population.

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YOGA THERAPY FOR INACTIVE OLDER ADULTS

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In the next few decades, a dramatic increase in the number of Americans age 65+ is expected. Many older adults are sedentary and can benefit from interventions that increase mobility and physical function. Although many interventions may help sedentary older adults, yoga can produce broader changes and impact multiple health outcomes simultaneously. Other features of yoga such as transportability, home practice, social interaction, and spirituality may increase its appeal to older adults.

Silver Age Yoga Community Outreach (SAYCO) provides free yoga programs to older adults who have limited resources and who reside at community senior centers. The yoga program consists of weekly 60-minute sessions that are specifically designed for inactive older adults. A gentle pace and props are used to make it accessible to all functional levels. Volunteer instructors are recruited to sustain the programs as long as possible. Participants at four new SAYCO programs were invited to complete questionnaires before their first class and again 3 months later. Questionnaires included measures of pain, functional status (HAQ), depression (CESD-10), fatigue, and health-related quality of life (EQ5D). Paired t-tests were used to compare baseline scores to those at the 10-week follow-up for the single group, pre-post design.

Baseline and follow-up data were available for 31 participants who were 81 % female, 23 % Hispanic, 77 % white, 48 % had a college degree; median annual income was \$20-39 K and mean age was 69.1 years. Participants had good health status (EQ5D=.778). Despite the small sample size, significant decreases were found for depression ($p=0.025$) and pain frequency ($p=0.040$). Improvement trends were also found for fatigue, total pain severity, and pain discomfort. The data suggest that inactive older adults derive health benefits from free weekly yoga programs. However, the limitations of a small, unfunded, single-group study make conclusions tentative. A larger randomized, controlled trial of the yoga for older adults can answer these questions more definitively.

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APPLICATION OF THE TRANSTHEORETICAL MODEL FOR FRUIT AND VEGETABLE CONSUMPTION, NON-EXCESSIVE ALCOHOL CONSUMPTION AND PHYSICAL ACTIVITY IN COLLEGE ATHLETES

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The current pilot study gathered preliminary data relative to influences on the multiple health behaviors of collegiate level athletes via Transtheoretical Model (TTM) construct questionnaires. The principal objective of the current study was to gather novel data relative to the application of TTM constructs among collegiate-level athletes, and inform future data collection. A sample of 20 collegiate-level athletes participated in focus groups (~90-minutes) to indicate the presence of TTM constructs in successful maintenance of their physical activity, daily fruit & vegetable consumption (FVC), and non-excessive alcohol intake. A mixed method design examined the face validity of each TTM construct across health behaviors. Using a three-point scale ("essential," "useful but not essential," or "not necessary"), athletes helped verify that the TTM construct intended to be measured was captured by questionnaire items. The qualitative investigation included a content analysis, whereby common athlete responses were aggregated and rank ordered. For physical activity maintenance, questionnaire items were rated between 28 and 89 % essential. Daily FVC and alcohol intake constructs were reported 17 to 83 % and 17 to 78 %, respectively. When anticipating future maintenance of physical activity, participating athletes reported positive outcome expectations and intrinsic motivation as the most influential factors. Preference and availability/accessibility were reported as the most salient influences on daily FVC. Finally, athletes reported social contexts with friends and special occasions/celebrations as the leading influences on their level of alcohol consumption. This examination is among the first to test the application of TTM constructs among collegiate-level athletes and across multiple health behaviors. Results provide an essential foundation for progressive research examinations and inform future athlete-specific intervention development.

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THE IMPACT OF STRESS APPRAISAL AND COPING RESPONSE ON POSTPARTUM DEPRESSION SYMPTOMS IN WOMEN OF MEXICAN ORIGIN

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Transition into motherhood may be a time of mixed emotion. Approximately 13 % of all women who give birth suffer from postpartum depression (O'Hara & Swain, 1996). Some studies report Hispanic women report postpartum depression (PPD) symptoms at rates as high as 47 % compared to other racial/ethnic groups (Howell et al., 2005). This prospective, repeated measures study of a community sample (N=129) of adult women of Mexican origin used Lazarus and Folkman's Transactional Model of Stress and Coping (Lazarus & Folkman, 1984) to explore how self-report depression symptoms, stress appraisal, and coping strategies in pregnancy and postpartum, and select socio-demographic factors impacted self-report PPD symptoms. Participants completed a series of surveys including the Beck Depression Inventory II, the Perceived Stress Scale, the Pregnancy Related Stress Inventory, and the Brief COPE. The Postpartum Depression Screening Scale long version was used to assess PPD symptoms. Study variables were analyzed using structural equation modeling. A final model that examined the influence of time 2 stress, approach, and avoidance coping on postpartum depression (controlling for all variables at time 1) accounted for 44 % of the variance in PPD symptoms and showed good fit to the data (Chi square=15.36, NS; NFI=.961; RMSEA=.047). Results showed that stress directly impacted PPD symptoms ($b=.51$) whereas approach and avoidance coping exerted differential effects indirectly via stress (indirect effects=-.14 and .18 for approach and avoidance coping respectively, both $p<.05$). The results suggest that stress and coping during postpartum significantly influence the level of depression symptoms experienced by these women with approach coping leading to less PPD symptoms and avoidance coping leading to greater symptoms.

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MATERNAL PSYCHOSOCIAL ADAPTATION TO HIGH-RISK PREGNANCY, PRETERM LABOR, AND PRENATAL HOSPITALIZATION

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The most persistent causes of infant morbidity and mortality are preterm birth (PTB) and low birthweight (LBW). Both psychosocial and medical factors contribute to PTB and LBW. Based on the 2008 Surgeon General's and the 2007 IOM recommendations for assessment of prenatal anxiety and psychosocial factors, particularly in high risk women, an exploratory study of PTB risk factors was conducted.

Method. Sample: 80 multi-ethnic hospitalized gravidas at high risk for PTB and LBW. Self-report questionnaires included: Sociodemographic/behavioral risks, general and pregnancy-specific anxiety, maternal-fetal attachment, and coping skills. We conducted separate regression analyses to determine the unique impact of psychosocial adaptation to pregnancy, coping, and attachment on two birth outcomes: Birthweight and Gestational Age.

Results. Analyses examining psychosocial adaptation showed that after controlling for demographic and clinical factors (e.g., age and prior premature deliveries) Relationship with Mother ($\beta=-.41$) and Husband ($\beta=.28$) had meaningful associations with Birthweight respectively. Gestational Age was predicted by Relationship with Mother ($\beta=-.44$), Relationship with Husband ($\beta=.20$), and Identification with Motherhood Role ($\beta=.17$). One coping strategy (Emotional Support) was consistently associated with both birth outcomes (β s ranged from -0.25 to -0.29). Analyses examining attachment showed that Intensity of Preoccupation with Attachment was associated with both Birthweight ($\beta=-.28$) and Gestational Age ($\beta=-.20$).

Conclusions. Support support, relationships with husband and mother, and maternal attachment are related to birth outcomes in hi-risk women. Negative associations of coping with birth outcomes may reflect increased use of those strategies in high risk women.

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SURVEY MODALITY PREFERENCE IN A DIVERSE PREGNANT POPULATION WITH GESTATIONAL DIABETES MELLITUS (GDM)

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Health care providers and researchers are increasingly using the internet to communicate with patients in lieu of traditional modalities such as mail or telephone. However, this practice may introduce new health care disparities. To better understand the demographic and socioeconomic characteristics of patients who do and do not prefer to use the web, we examined survey modality preference among women recruited for the Gestational Diabetes' Effects on Moms study (GEM). Of 2449 women contacted, 1774 (72.4 %) agreed to participate. Participants did not differ from non-participants in age, education level, or median household income; all surveys were offered in English or Spanish. Participants completed the first survey either by telephone (68.6 %) or mail (31.3 %) and were asked to select a modality preference (telephone, mail, or web) for the follow-up survey at 6 weeks postpartum. For the follow-up survey, participants preferred the web (52.0 %) to mail (36.8 %) or telephone (11.2 %). A multinomial logistic regression was performed to predict modality preference, with mail serving as the reference group. Only race predicted a preference for telephone versus mail: Asians were less likely than Whites to prefer telephone (OR=.42; $p=.005$). Many characteristics predicted preference for the web versus mail. Being under age 30 (OR=1.49; $p=.003$) and employed (OR=1.37, $p=.02$) were associated with greater odds of preferring the web; lower education (high school or less; OR=0.43; $p<.001$), being born outside the US (OR=0.55; $p<.001$), preferring a language other than English (OR=.60; $p=.04$), having a household income less than \$50,000 (OR=.49; $p<.001$), and having low health literacy (OR=.59, $p=.01$) were independently associated with lower odds of choosing the web over mail. Health providers and researchers who seek to communicate with patients via the internet need to be aware that certain populations may be more likely to prefer traditional methods of communication.

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THE EFFECTS OF MORNINGNESS/EVENINGNESS CHRONOTYPE ON PERCEIVED STRESS AND RESILIENCE DURING PREGNANCY

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Although studies in recent years have suggested that having an evening chronotype could be related to a myriad of negative personal and health characteristics, such as experiencing higher perceived stress, none have investigated the relationship between chronotype and its effects on stress and the ability to cope with and adapt to life changes in pregnant women. The current study examined whether being classified as a Lark (morning type) versus Owl (evening type) versus neither type (Owl and Lark Questionnaire; Chelminski et al., 1997) was related to perceived stress (Perceived Stress Scale 4-Item; Cohen et al., 1988) and resilience (Resilience Scale; Wagnild et al., 1993), when controlling for age. Our sample consisted of 40 primarily low-income pregnant women (mean age=26±5 years; 70 % with annual family income below \$25,000; 43 % Latina; 23 % African American) in their second trimester of pregnancy (M=17±5 weeks of gestation). Analysis of covariance (ANCOVA) analyses (controlling for age) showed that pregnant women classified as being an Owl (evening type; N=4) had marginally significant higher perceived stress than both pregnant women classified as being a Lark (morning type, N=15) and pregnant women classified as being neither type (N=21; $F=2.6$, $p=.067$). Furthermore, pregnant women classified as being an Owl (evening type) showed significantly lower levels of resilience than pregnant women classified as being a Lark (morning type) and pregnant women classified as being neither type ($F=3.4$, $p<.05$). These findings suggest that pregnant women who are classified as having an evening chronotype may be more susceptible to feeling stressed and being less resilient, which may place them at higher risk for certain adverse health outcomes.

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Citation and Meritorious Poster

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TRI-OCCURRENCE OF BEHAVIORAL RISK FACTORS PREDICTS HEART DISEASE, CANCER, AND STROKE

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A substantial body of data has identified smoking, obesity, and physical inactivity as the three most significant behavioral risk factors associated with poor health, mortality, and increased healthcare costs. While research has demonstrated the degree to which these factors interact with significant health outcomes independently and in pairs, no study exists examining the tri-occurrence of these three factors. Combined, smoking, obesity, and physical inactivity may create a "perfect storm" of behavioral risk factors for developing an array of chronic health conditions that amass immense human and economic costs. This study examined the likelihood of developing any of the three leading causes of death in the United States (i.e., cancer, heart disease, stroke) as related to the individual, bi-occurrence, and tri-occurrence of these behavioral risk factors. Using data from the 2009 Behavioral Risk Factor Surveillance System (BRFSS) provided by the Centers for Disease Control (N=432,607), odds ratios (ORs) were produced for each individual and combined behavioral risk grouping (e.g., smoking, smoking & obesity, smoking & obesity & physical inactivity) as related to each of the three leading causes of death. For heart disease and stroke (tri-occurrence ORs=2.671 and 2.547, respectively), similar patterns of increased risk were observed when risk factors bi- or tri-occurred. Interestingly, cancer differed in trend, revealing that obesity (OR=0.890), smoking (OR=0.685), their bi-occurrence (OR=0.887), and tri-occurrence (OR=0.794) actually decreased the likelihood of reporting cancer diagnosis. Although these findings are counterintuitive, possible explanations associated with the nature of the BRFSS database are discussed (e.g., high mortality rates in these conditions may preclude full representation of the population). Additional limitations and implications were discussed.

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A PILOT STUDY TO ASSESS THE IMPACT OF A NEWBORN SAFETY INTERVENTION

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Introduction: Abusive Head Trauma (AHT), formerly known as Shaken Baby Syndrome, and Sudden Infant Death Syndrome are leading causes of morbidity and mortality in the young child. Safety education for new mothers on these dangers may decrease the incidence. This pilot study tested the effectiveness of a newborn safety education intervention.

Hypothesis: Mothers' knowledge on newborn safety issues will improve from baseline to post intervention and at 2 weeks.

Subjects: 30 mothers (50 % White, 47 % African-American [AA], 3 % Asian) from the Southern U.S. were recruited after delivery of a healthy newborn. 50 % reported breastfeeding, 17 % formula, and 33 % both methods. 13 % reported a smoker in the home.

Methods: In this one group, repeated measures design, following a pre-test, two videos were presented: Safe Sleep and Portrait of Promise: Preventing Shaken Baby Syndrome. Immediately after the presentations, a post-test was administered (PT1), and again 2 weeks later (PT2). Paired t-tests were used to assess the difference in pre-and post-test scores, and ANCOVA to test for differences in scores by characteristics of the mother and infant.

Results: The test scores increased with time for all mothers in the study: average pre-test score=9.15 (max.score of 11), PT1 scores=9.87 and PT2=10.42 with statistically significant differences between the pre-test and PT1 scores (9.15 [SD 1.37]; 9.87 [SD 1.15]; $p=0.0069$). Scores for PT2 showed a positive trend, but were not statistically significant. Having a smoker in the home or feeding method did not impact scores. There was a difference by ethnicity with white mothers having a larger improvement in mean education score (10.63, SD 0.40) than AA mothers (9.04, SD 1.17, $p=0.0038$).

Conclusions: This newborn safety education intervention was effective in increasing mothers' knowledge with white mothers showing more improvement than AA mothers. Further research is needed to confirm this initial data and to explore the effects of ethnicity and health literacy in newborn safety interventions.

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POSTTRAUMATIC COGNITIONS AS PREDICTORS OF POORER HEALTH-RELATED QUALITY OF LIFE AMONG YOUNG ADULTS WITH A HISTORY OF CHILDHOOD MALTREATMENT

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Background: Childhood maltreatment is a pervasive public health issue. Extensive research on the long-term effects of maltreatment strongly supports poorer health-related quality of life (HRQOL) outcomes. However, there is a limited understanding of intervening variables associated with this relationship. In accord with emotional processing theory, dysfunctional cognitions about the world and self have been identified as significant predictors of the development and maintenance of posttraumatic stress disorder (PTSD). These maladaptive cognitions may contribute to poorer overall health. The purpose of this study was to examine the role of posttraumatic cognitions (PTCs) in HRQOL among a group of young adults with a history of childhood maltreatment.

Method: Multiple linear regressions were used to examine PTCs related to self (PTC-Self) and the world (PTC-World) as predictors of HRQOL among 268 young adults with a self-reported history of mild to severe childhood maltreatment on the Childhood Trauma Questionnaire (Bernstein & Fink, 1998). Mental and physical health composite scores derived from the Medical Health Outcomes Short Form (SF-36, Ware & Sherbourne, 1992) were used for HRQOL measures. Lower scores were indicative of greater impairment. Analyses were conducted separately for mental and physical health for a comparative interpretation of results.

Results: Negative cognitions accounted for 37.1 % of the variance in mental HRQOL, $F(3,266)=78.36$, $p<0.001$, and 3.2 % of the variance in physical HRQOL $F(3,266)=4.41$, $p<0.05$. PTC-Self made a unique and significant contribution to the predictions of both mental and physical HRQOL, ($\beta=-.584$, $p<.001$; $\beta=-.156$, $p<.05$, respectively).

Conclusions: Results suggest that more negative PTCs, specifically PTC-Self, are associated with more negative HRQOL. Given the developmental sequelae of childhood maltreatment, interventions should focus on restructuring PTCs among maltreated children in an effort to reduce the risk of negative health outcomes in young adulthood.

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ASSOCIATION BETWEEN MARIJUANA USE AND SEXUAL RISK BEHAVIOR AMONG HETEROSEXUAL WOMEN ATTENDING AN STI CLINIC

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Background. Women attending an STI clinic are at increased risk of acquiring HIV from their male partners. Although substance use is commonly reported by clinic patients, relatively little is known about the association between marijuana use and sexual risk behavior among women. This study investigated the marijuana-risky sex association among heterosexual women attending a STI clinic. Methods. Women (N=570; 64 % Black; M age=28) completed a survey that assessed (a) demographics, (b) marijuana and other substance use, and (c) sexual behaviors. Multiple regression analyses were used to examine the association between marijuana and sexual risk behavior (no. of sexual partners, no. of protected vaginal sex events, and co-occurrence of marijuana and sex).

Results. More than one-third of participants (n=220, 39 %) reported using marijuana in the past 3 months. Women used marijuana daily (36 %), monthly (27 %), multiple days per week (21 %), and weekly (17 %). Compared to non-users, marijuana users were younger ($p<.001$), reported having fewer children ($p=.002$), and were more likely to use illegal drugs other than marijuana ($p=.002$). Multiple regression analyses controlled for age, children, and other drug use. Analyses revealed that marijuana users were more likely to have multiple sexual partners ($\beta=.09$, $p<.04$). Frequent marijuana users were more likely to use substances before or during sex with their steady ($\beta=.66$, $p<.001$) or casual ($\beta=.63$, $p<.001$) partners. Marijuana use was not associated with condom use. Conclusions. Marijuana use among heterosexual women receiving services at a STI clinic is prevalent and associated with sexual risk behaviors. Continued research is needed to examine the complex patterns between marijuana use and sexual health behaviors.

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THE CONDITIONAL IMPORTANCE OF SEX: INDIVIDUAL DIFFERENCES IN THE ASSOCIATION BETWEEN SEXUAL SATISFACTION AND LIFE SATISFACTION

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Although sexual activity is rated as an important component of people's lives the world over, relatively few studies have explicitly tested the relationship between satisfaction with one's sex life and overall life satisfaction. Our goal in the current study was to expand on past research in this area by A) assessing the strength of association between sexual satisfaction and life satisfaction in a sample of women reporting recurrent impairments in sexual function, and B) identify factors that affect the strength of this association (i.e., for whom is sexual satisfaction predictive of life satisfaction?). To meet these goals, we assessed 90 women utilizing daily diary methodology. Results suggested that sexual satisfaction was significantly associated with life satisfaction, and that this association tended to be stronger for women reporting lower relationship satisfaction, shorter relationships, and higher levels of attachment anxiety. In each case, these women exhibited larger decreases in overall life satisfaction when reporting low sexual satisfaction. In other words, negative fluctuations in sexual well-being predicted larger drops in overall well-being. These results suggest that sex is an important predictor of life satisfaction, but that it is more important for some individuals within certain relational contexts. Practical and theoretical implications are discussed.

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MODERATORS OF THE ASSOCIATION BETWEEN SEXUAL FUNCTION AND DISTRESS IN WOMEN: REPLICATIONS IN A CLINICAL SAMPLE

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A number of recent studies have identified moderators of the association between sexual function and distress in women, suggesting that the two factors are strongly related in some cases and weakly related in others. These findings have a number of potential clinical implications, however, the effects were generally identified using samples in which clinically-relevant levels of sexual impairment were relatively rare. To increase our confidence in the applicability of these results to clinical practice, the current study sought to replicate the findings in a sample where clinically-diagnosable cases of female sexual dysfunction were well-represented. We assessed 90 women that reported recurrent impairments in one or more aspect of sexual function, 57 (63.3 %) of which met criteria for a diagnosis of sexual dysfunction. We used validated self-report measures of sexual function, sexual distress, and a number of previously identified moderating factors. Results supported relationship satisfaction, history of childhood sexual abuse (CSA), and age as moderators. Generally mirroring previous research, various levels of sexual function were associated with higher sexual distress for women in less satisfying relationships, women with a history of CSA, and older women. These results strengthen our confidence in the applicability of findings from earlier studies to clinical populations.

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THE RELATIONSHIP BETWEEN SLEEP DURATION AND DISEASE CONTROL AMONG HISPANIC ADULTS WITH TYPE 2 DIABETES

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The US Hispanic population experiences higher rates of diabetes complications than other ethnic groups, a poorly understood disparity. To reduce this disparity it is necessary to identify contributing factors, particularly behaviors related to disease control. Recent evidence has shown sleep duration is predictive of type 2 diabetes incidence, but less information exists regarding the effect of sleep on disease control among adults with pre-existing diabetes, and there is a scarcity of research on the sleep-diabetes relationship among Hispanics. This study examined the relationship between sleep and diabetes control among Hispanic Americans.

Participants were 271 Hispanic adults with type 2 diabetes in a Peers for Progress sponsored study. Data included hemoglobin A1C (HbA1c) scores, demographics, BMI, sleep duration (categorized as ≤ 6 and >6 hours/night) and other factors related to diabetes control such as self-care and treatment adherence. Diabetes control was measured using HbA1c and number of unplanned healthcare visits for diabetes-related symptoms in the past 6 months.

Nearly half (42.4 %) of participants reported sleeping less than 7 hours per night. Bivariate analyses showed no significant relationship between sleep duration and HbA1c or unplanned healthcare visits in the full sample. Among the male participants (n=92) there was a significant inverse association between sleep duration of less than 7 hours and HbA1c ($\beta = -.267$, $p < .01$). When included in a multivariate model with demographics, a measure of self-care, and insulin use, sleep was no longer significantly associated with HbA1c ($p = .19$).

The current study found a sex-specific relationship between sleep duration and diabetes control in Hispanic adults. Future research should investigate potential mediating factors to further explain this relationship.

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"SHARE" SURVEYS WITH THE-HARD-TO-REACH THROUGH SOCIAL MEDIA: ACCULTURATION AND PERCEIVED TOBACCO EXPOSURE

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Background: Motivating community members from ethnic minorities to participate in research remains challenging; culturally-unique barriers (e.g., openly expressing personal problems seen as a sign of weakness) have been documented for Korean American community members. Nevertheless, accessing these communities is essential to study cultural factors contributing to disparities in tobacco use and exposure. The goals of this study were 1) to introduce social media as an efficient tool to access an understudied ethnic group: young Korean Americans with diverse backgrounds, and 2) to examine the effects of acculturation levels on perceived social norms and involuntary tobacco exposure.

Method: From June through August of 2012, we recruited 437 Korean American emerging adults (Mage=20.9, SDage=2.1; 57.9 % female) via social media sites (e.g., Facebook). Our sample was demographically diverse: 46.2 % of the sample participated in online survey in Korean language; 41.7 % was in workforce; 43.2 % visited Korean-owned businesses (KOB) twice or more per week; 49.0 % identified themselves as Koreans or Koreans living in US; 23.1 % were current smokers.

Results: The frequency of visits to KOB was positively related to peer smoking rates ($p < .01$), perceived smoking rates among general population ($p = .05$) and among other Korean Americans ($p < .01$), controlling for age, sex, survey language, US-orientation and current smoking status. Furthermore, those who took English survey (vs. Korean) more strongly believed that thirdhand smoke was harmful for infants and children ($p < .01$); in contrast, those who took Korean survey (vs. English) believed more strongly that restricting tobacco use in public places was unfair ($p < .01$).

Conclusion: This calls for efforts to design a culturally-appropriate intervention to modify perceptions about social norms and involuntary tobacco exposure among less-acculturated young Korean Americans. Use of social media should be encouraged when accessing the hard-to-reach communities although data quality and clustering effects need to be considered.

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ANTHROPOMETRIC CHANGES DURING AN EXERCISE-AIDED PHARMACOTHERAPY SMOKING CESSATION TRIAL FOR WOMEN

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Tobacco smoking is the leading cause of preventable death worldwide. Yet, failure rates remain high for those who attempt smoking cessation. For women, post-cessation weight gain is a common culprit for both postponing and unsuccessful quit attempts, but also relapses. Research suggests that exercise, in addition to NRT, benefits tobacco users seeking cessation and may aid in preventing weight gain and favorably influencing body composition. The purpose of this study was to combine smoking status, attendance, and peak VO₂ to provide meaningful information on anthropometric changes during an exercise-aided pharmacotherapy smoking cessation trial for women (Getting Physical on Cigarettes, NCT01305447). Inactive female smokers (n=223, mean age=41.66 years) exercised in a supervised facility where their workload progressively increased to 70-75 % of their maximum heart rate over a 14 week period. Body composition was objectively assessed using dual x-ray absorptiometry at baseline and at week 14. Repeated measures ANOVAs showed interactive effects for weight ($p = 0.076$, $n_2 = 0.044$), percent android fat ($p = 0.064$, $n_2 = 0.05$), and percent body fat ($p = 0.10$, $n_2 = 0.04$). The subsequent order of the following groups represents the least to highest gains in weight, percent android fat, and percent body fat: smokers with no improvement in peak VO₂ and attended less than 59 % of sessions; smokers who showed an improvement in peak VO₂ and attended more than 80 % of sessions; nonsmokers with an improvement in peak VO₂ and attended more than 80 % of sessions; and nonsmokers with no improvement in peak VO₂ and attended less than 59 % of sessions. Considering reduced metabolism and the ephemeral increase in appetite due to sustained smoking abstinence and moderate-to-vigorous exercise, these results provide encouraging evidence that energy expenditure minimizes anthropometric changes, as measured by high quality body composition parameters.

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TRY AND TRY AGAIN: FREQUENCY AND PREDICTORS OF SMOKING CESSATION ATTEMPTS IN A SOCIOECONOMICALLY DISADVANTAGED SAMPLE

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The number and length of quit attempts a smoker makes is positively associated with long term abstinence. There is some research which shows that smokers from lower socioeconomic status make as many quit attempts as those from higher socioeconomic status but fail to convert these into long term abstinence. Little is known as to why this may be occurring. Furthermore, no research has included highly disadvantaged samples with the highest smoking prevalence rates. It is important to explore the sociodemographic and psychological variables that may predict quit attempts within disadvantaged groups. This study aims to examine the number and length of quit attempts and the predictors of quit attempts within a disadvantaged sample.

A cross sectional survey of smokers and ex-smokers attending a non-government social and community service organisation assessed number of previous quit attempts, along with sociodemographic and psychosocial variables. Univariate and multivariate analyses were carried out in the form of negative binomial regression analyses.

In total, 300 smokers completed the survey (98 % response rate). The mean age of participants was 40 years (SD=11), 55 % were female and 13 % were Indigenous Australian. Participants experienced significant disadvantage, with 78 % earning AUD\$400 or less per week and 68 % having left school before the age of 16. Half of all smokers (51 %) had made a quit attempt within the past 12 months with the mean number of quit attempts being 2 (SD=2). The most popular methods used to quit included willpower (50 %), NRT (30 %) and exercise (30 %). Predictors of previous quit attempts will be discussed.

These results demonstrate that individuals experiencing high levels of socioeconomic disadvantage are making attempts to quit. The predictors of these quit attempts have important implications for policy and intervention design and implementation.

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B-196**RISKY COMBINATIONS: THE PREVALENCE AND PREDICTORS OF TOBACCO AND ALCOHOL USE WITHIN A HIGHLY SOCIOECONOMICALLY DISADVANTAGED SAMPLE**

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High levels of tobacco and alcohol use have been identified within disadvantaged populations, however little is known about the prevalence of co-occurring tobacco and alcohol use in disadvantaged groups. This study aimed to assess the prevalence and predictors of concurrent tobacco smoking and risky alcohol use within a disadvantaged sample. Possible predictors included both sociodemographic and psychological factors.

A cross sectional survey using a touch screen computer of adult clients attending a non-government social and community service organisation assessed smoking status, alcohol use, sociodemographic and psychosocial variables. Univariate and multivariate analyses were carried out in the form of logistic regressions.

300 participants completed the survey (98 % response rate). The mean age of participants was 40 years (SD=11), 55 % were female and 13 % were Indigenous Australian. Participants experienced significant disadvantage, with 78 % earning AUD\$400 or less per week and 68 % having left school before age 16. 66 % of respondents reported to be daily smokers and 60 % reported to drink at nationally defined risky levels. The prevalence of concurrent tobacco smoking and risky alcohol use was high at 68 %. Predictors of concurrent alcohol and tobacco use will be discussed.

High levels of concurrent tobacco and risky alcohol use within this sample indicate that interventions that address alcohol use may improve tobacco cessation amongst socioeconomically disadvantaged groups. The impact of specific predictors of concurrent alcohol and tobacco use will be discussed within the context of improving cessation programs within these groups.

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B-197**"SMOKING IS A PART OF MY LIFE NOW". A SYSTEMATIC REVIEW OF THE SELF-REPORTED BARRIERS TO SMOKING CESSATION WITHIN SELECTED SOCIOECONOMICALLY DISADVANTAGED GROUPS**

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The prevalence of smoking is disproportionately higher in socioeconomically disadvantaged groups. Effective interventions to reduce smoking within these groups require an understanding of the factors that prevent disadvantaged groups from stopping smoking. This study aims to identify and synthesise the literature describing the barriers to smoking cessation within selected disadvantaged groups and classify these barriers within the Social Determinants of Health framework. This framework recognises that health behaviours are influenced by multiple factors including an individual, their community networks, and wider socio-cultural contexts.

Medline, Embase, CINAHL and PsycINFO were searched for publications prior to March 31 2011. Inclusion criteria were: qualitative or quantitative descriptions of the self-reported barriers to smoking cessation within six socially disadvantaged groups: Indigenous populations, people with a mental illness, people of low socioeconomic status, the homeless, prisoners and at risk youth. Identified barriers were categorised using the SDHF. Methodological quality was assessed using existing adapted tools.

34 papers were included in this systematic review (13 Indigenous, 7 mental illness, 11 low SES, 3 homeless, 2 prisoners) no papers were found that described barriers for youth at risk. The results of this review indicated that barriers to smoking cessation occurred at all levels identified within the SDHF and include; addiction to nicotine, lack of social support, high acceptability of tobacco use amongst community, stressful life situations, limited resources to quit, cultural norms and socioeconomic factors. Most barriers were common across all groups, but differed in the way in which they manifested in each group.

The barriers identified by this review suggest multiple factors have compounding effects on the ability of disadvantaged individuals to stop smoking. Encouragingly, many of the barriers identified can be addressed by both social and health intervention programs and policies.

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B-198**WHY VS. HOW: WHAT GETS THE ANTI-SMOKING MESSAGE ACROSS TO HIGHLY SOCIOECONOMICALLY DISADVANTAGED SMOKERS?**

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Background: Smoking rates among very disadvantaged population groups remain high - often more than twice the Australian general population smoking rate. Anti-tobacco TV ads are an integral and effective part of general population tobacco control strategy, however limited evidence suggests these ads may also have unintended consequences, acting as cues to smoke, with certain sub-groups of disadvantaged smokers. The impact of anti-smoking TV ads among socially disadvantaged smokers has not been adequately assessed, and there is a need for rigorous research using innovative methodology adapted to suit the needs of this population.

Aims: To evaluate the relative perceived effectiveness of key anti-tobacco message types among a sample of highly socioeconomically disadvantaged smokers. **Methods:** Clients seeking financial or material assistance from a Social and Community Service Organisation in NSW, Australia were invited to complete a touchscreen computer survey. Participants were exposed to two of three types of anti-smoking advertisements (why-graphic; why-emotional; how), randomly selected and ordered for each participant. Participants were asked about their responses to the advertisements immediately after viewing.

Results: N=400 smokers (76 % response rate) completed the survey (59 % female; mean age 38 years). The smoking rate in this setting is 65 % (daily and occasional). Most respondents had not completed high school, three-quarters had an income of less than AUD\$400/week, and 18 % identified as Indigenous Australian. Comparison of Why-graphic, Why-emotional and How-to-quit message types showed that socially disadvantaged smokers give more positive ratings to 'why' compared to 'how' ads. Ads using highly graphic visceral imagery, or highly emotive personal testimonial were rated similarly.

Conclusions: Mass media advertisements using strong graphic imagery or emotive personal testimonials to convey the negative health consequences of smoking rated highly as effective amongst highly socially disadvantaged smokers.

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B-199**WILL CIGARETTE PLAIN PACKAGING WORK AMONGST HIGHLY SOCIOECONOMICALLY DISADVANTAGED SMOKERS? THE RESULTS OF AN EXPERIMENTAL STUDY**

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Background: Packaging is a key marketing tool in the promotion of tobacco products. Evidence shows that packaging colours, branding imagery and logos impact on a consumer's perceptions and experiences of a product. Previous research has demonstrated that progressively plainer packaging for cigarettes that incorporates larger health warnings and fewer company branding elements are perceived as less attractive and are associated with cessation intentions. The effect of plain packs remains understudied with severely socially disadvantaged individuals who have among the highest smoking rates.

Methods: Clients attending a community service organisation for welfare support were invited to complete a computer touchscreen survey. A 2 (Winfield Blue 25 versus Benson & Hedges Smooth 25) x 2 (branded versus plain) experimental cross-over trial was conducted using a touch screen computer tool to expose participants to one randomly selected cigarette pack, which they were asked to rate on pack, smoker and experience characteristics.

Results: The survey response rate was 76 %. A total of 400 smokers completed the survey (59 % female; mean age 38 years). The smoking prevalence rate in this setting is 65 % (daily and occasional). Most respondents had not completed high school, three-quarters had an income of less than AUS\$400/week, and 18 % identified as an Indigenous Australian. In comparison to branded packs, plain packs reduced smoker's ratings of 'positive pack characteristics', 'positive smoker characteristics' and 'positive taste characteristics'. Respondents who were only exposed to plain packs were more likely to choose not to purchase any pack compared to those smokers who were only presented with branded packs.

Conclusions: Plain packaging policies that strip tobacco products of most branding elements are likely to be successful in reducing cigarette brand image associations amongst severely disadvantaged smokers.

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WHAT IS THE COST? MAINTENANCE OF SMOKING DESPITE CIGARETTE PRICE RISES AMONG HIGHLY SOCIOECONOMICALLY DISADVANTAGED SMOKERS

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Background: Modelling studies show that taxation policies and increasing cigarette prices have the potential to reduce smoking rates across social groups. However, there is evidence that socially disadvantaged smokers experience higher levels of financial stress, and financial stress leads to a reduction in the likelihood of making quit attempts. Smokers from socially disadvantaged backgrounds spend a greater proportion of their income on tobacco than most other smokers. It is unclear what behaviours are modified in order to accommodate smoking maintenance despite rising tobacco prices among smokers experiencing financial hardship. **Methods:** Clients seeking welfare assistance from a Community Service Organisation in NSW, Australia were invited to complete a touchscreen computer survey. Questions covered smoking history, budgeting, financial stress and cigarette price-minimising behaviour. Highest price to encourage quitting was assessed.

Results: Survey response rate was 76 %. N=400 smokers completed the survey (59 % female; mean age 38 years). The smoking rate in this sample was 65 % (daily and occasional). Most smokers had an income of less than AUD\$400/week, had not completed high school and spent an average of AUD\$56 on tobacco each week. All smokers had experienced financial stress; half had experienced smoking-related deprivation. Smokers estimated they spent 20 % of their income on personal luxuries (e.g. tobacco and alcohol), and when faced with 10 % or 20 % price increases selected the following as the most popular response strategies: i) try to quit; ii) no change; iii) buy lower priced brands; iv) smoke fewer sticks; v) use loose tobacco. Smokers nominated \$25 as the average price a 25-pack of cigarettes needed to reach before they would quit.

Conclusions: Severely disadvantaged smokers make use of numerous price-minimising strategies in order to sustain current smoking behaviours in spite of increases in taxation and product prices.

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DEVELOPMENT OF A MEASURE OF INCREMENTAL BEHAVIOR CHANGE TOWARD SMOKING CESSATION

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Objective: Smoking cessation often results from a succession of small behavior changes that move away from tobacco use and toward abstinence. Reliable measures that detect incremental changes toward cessation would be valuable when evaluating small-scale or moderate-intensity cessation interventions. This paper presents the development and evaluation of a self-report measure of incremental behavior change toward smoking cessation.

Methods: Survey items were evaluated using classical test theory and Rasch modeling in a measure development and measure application sample. For both samples, adult smokers (n=840) completed a survey regarding their smoking related attitudes and behavior prior to a routine primary care visit, followed by reassessment six weeks later. A significant change in the incremental behavior score was defined as a positive change exceeding the 95 % CI upper bound based on the conditional standard error of the respondent's baseline score. Concurrent validity of the measure was evaluated by testing the association of significant change scores with self-reported cessation.

Results: A preliminary set of 12 items, administered to 430 participants, had an acceptable model fit, and a moderate range of difficulty (-0.96 to 1.38). Eight new items were written to fill gaps and to expand the scale range. Four poorly performing items were dropped. The application sample of 410 patients completed the revised 16-item survey. Fifteen items met fit criteria, and the range of difficulty for the scale was improved (-2.15 to 1.51). Participants with a significant change score were three times more likely to report cessation at 6 weeks (OR 3.37, 95 % CI 1.48–7.68).

Conclusions: The Incremental Behavior Change for Smoking cessation measure (IBC-S) is reliable and positively associated with self-report of smoking reduction and cessation. As a sensitive measure of change, the IBC-S is ideally suited to evaluate low to moderate intensity smoking cessation interventions.

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ASYNCHRONOUS ECOUNSELING WITH MOTIVATIONAL INTERVIEWING: RESULTS FROM QUIT-PRIMO AND NATIONAL DENTAL PBRN STUDIES

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Background: Tobacco Treatment Specialists (TTS) counsel smokers to quit in person, over the phone and increasingly online. It is unclear if motivational interviewing (MI) techniques translate to online asynchronous communication. We examined TTS messages to smokers using Decide2Quit.org (D2Q). **Methods:** Smokers were referred to D2Q from 274 medical and dental practices. TTS trained in MI sent individualized responses to smokers' messages through D2Q secure e-messaging. Blinded to outcomes, we double-coded coded TTS messages with the published Motivational Interviewing Self-evaluation Checklist (MI-SC), adapted for asynchronous communication. Inter-rater reliability was >90 %; discrepancies were resolved by group review.

Results: Our preliminary analysis included 400 messages between 77 smokers and 2 TTS. 34 % of these smokers were over 45 years old, with 12 % minority, 70 % female, and 66 % thinking of quitting. The most common MI-SC codes were "supported smoker's strengths" (25 % of messages) and "engagement" (34 %). Controlling for readiness to quit, gender, age and education, messages coded with "supported smoker's strengths" were associated with a higher likelihood of 6-month cessation (OR=3.1, 95 % CI=1.3–7.4). A scale incorporating "supported strengths" and codes for assessing or promoting internal motivation demonstrated a dose-response, the higher the exposure the more likely they were to report quitting (OR=2.2, 95 % CI=1.2–4.2). Other codes were not associated with quitting.

Conclusions: Preliminary analysis demonstrates that MI techniques can be used in asynchronous messaging. In this observational cohort study, the presence of supporting strengths and promoting internal motivation was associated with cessation, even after adjusting for readiness to quit.

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PSYCHOLOGICAL PREDICTORS OF CONFIDENCE IN QUITTING AMONG CIGARETTE SMOKERS

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The present study examined a variety of psychological variables that may predict cigarette smokers' confidence in quitting smoking: negative affectivity, depression, anxiety sensitivity (fear of anxiety), perceived stress, and perceived barriers to cessation. Participants included 335 smokers (52.6 % male; mean age=37.65, mean cigarettes/day=18.32) who were motivated to quit.

On a scale of 1 (not at all confident) to 11 (most confident), participants were moderately confident in their ability to quit smoking (M=7.04). Separate hierarchical regression analyses controlling for known demographic and substance use predictors of confidence in quitting (i.e., gender, years of smoking, smoking rate, alcohol consumption) indicated that all of the proposed psychological variables independently predicted confidence in quitting (β s=-.225 to -.135, p s=.000 to .023), except for perceived barriers to cessation (β =-.003, p =.953). Higher levels of negative affectivity, depression, anxiety sensitivity, and perceived stress were all related to less confidence in quitting. A model in which all of the predictor variables were entered simultaneously in order to determine the explanatory value of each predictor when accounting for all of the other predictors was then tested. Perceived stress remained the only significant predictor of confidence in quitting (β =-.233, p =.005), suggesting that perceived stress is the best psychological predictor of smokers' confidence in their ability to quit smoking.

This research is an important step in understanding psychological factors that contribute to confidence in quitting, which is important for developing treatment strategies to address smokers' lack of confidence in their quitting ability, specifically by lowering their perceived stress. Future research should explore such treatments and examine how smokers' confidence in their ability to quit smoking affects their actual quit success over time.

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B-204

TRUST RELATIONS AND NETWORK ENGAGEMENT IN THE NORTH AMERICAN QUITLINE CONSORTIUM

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This research examines trust within the North American Quitline Consortium - a network of organizations providing tobacco cessation services to clients through phone-based counseling. Trust is a fundamental concept for understanding collaborative relationships between organizations and a critical component of the network perspective, providing the “glue” that holds network members together. Within NAQC, trust is especially important in relations between network members (the many state and provincial quitline organizations), and the network’s administrative organization, or NAO, whose role it is to facilitate the flow of information about evidence-based practices to enhance the efficacy of services for getting people to quit smoking. To study network trust, data were collected in 2009 using a web-based survey of 186 of 277 individual respondents (67.1 % response rate) who represented 85 of the 94 (90.4 %) funder and provider organizations that made up the full NAQC network. Our primary analytical procedures were social network analysis and Qualitative Comparative Analysis. QCA enables non-linear analysis of data when there are a relatively small number of cases. We found that NAQC organizations with high NAO trust were either highly embedded in the network of relationships (network core members) but did not have high power or reputation, or they were not highly embedded in the network (periphery members) but highly engaged in the NAQC platform. In contrast, those NAQC organizations that did not have high NAO trust were either very powerful/high reputation, or not highly embedded in the network (peripheral) and not highly engaged in the NAQC platform. We explain the implications of our findings both for understanding network governance in general, and more specifically, for enhancing the role and impact of NAQC in its efforts to disseminate and facilitate the flow of practice information to improve smoking quit rates.

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B-205

HOW IS THE NETWORK OF QUITLINES CHANGING? KEY SERVICE FINDINGS OF THE KIQNIC PROJECT

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This study is designed to better understand the network and communications mechanisms by which stakeholders in the North American Quitline Consortium (NAQC), especially state/provincial-level funders and service providers/vendors, interact, share new knowledge, make decisions about how and when to implement new knowledge, and actually adopt practices that they believe will improve quitline outcomes. Surveys were implemented 2009–2011, and our goal is to explore how new knowledge - especially new scientific and innovations evidence - is disseminated, implemented, and integrated within NAQC community of 73 funder entities (Canadian quitlines had multiple funders) and 20 service providers plus the NAQC main office (NAO). Our primary analytical procedures were social network analysis. We found that when density of the network ties across quitlines decreased over the period of the study (0.12 to 0.07, which is quite observable via network maps and represents a functional shift in quitline communication. In addition, when all ties are considered, the network in year 1 was modestly centralized while in Year 3 the network became much more centralized (0.35 to 0.6). While the overall connectivity of the network declined somewhat over time, it is apparent that much of the strength of the network, at least in terms of the flow of information regarding services, is based on ties to the NAO and through the contractual relationship between individual quitline funders and their providers. Once these two information connections are excluded, network density drops substantially, suggesting that both providers and funders are not reaching out to those in other states and provinces to send and receive service related information.

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B-206

FACTORS INFLUENCING DECISIONS TO ADOPT AND IMPLEMENT QUITLINE PRACTICES WITHIN THE NORTH AMERICAN QUITLINE CONSORTIUM

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Decision makers within quitlines decide which practices to adopt and implement. Although information from within and outside the network of North American quitlines has some bearing on adoption decisions, other factors impose constraints on what quitlines can and cannot offer clients. We argue that decisions to adopt and implement smoking cessation routines and protocols by members of the North American Quitline Consortium (NAQC) are constrained by factors internal and external to each member’s organization. Such constraints include but are not limited to, budgets, expertise to implement, mission, and the extent to which the organization is a leader or follower in terms of adopting and implementing quitline practices. Moreover, the type of decision-making process used (e.g., consensus, one person decides) is related to the types of constraints perceived by organizational members.

171 NAQC members responded to an online survey regarding decision-making practices related to the adoption and implementation of smoking cessation protocols. Factor analysis identified two dimensions of constraints, one related to issues internal to quitlines, the other external issues. In addition, respondents indicated the extent to which decisions within quitlines were made by consensus or unilaterally. Results indicate that consensus is the preferred decision-making process when both types of constraints are high. Furthermore, participants reported that organizations were more likely to adopt cessation practices in general when consensus decision-making processes were used. The data also indicate that other processes are at play when quitline organizations decide to adopt smoking cessation practices. We discuss the implications for our findings for both theoretical issues as well as practical problems associated with decision-making in the North American quitline community.

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B-208

DEPRESSIVE SYMPTOMS, ACCULTURATION, AND RELIGIOUS INVOLVEMENT IN HISPANIC AMERICANS

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Religious involvement has generally been shown to be positively related to health. Although the mechanisms are unclear, religious involvement may serve as a resource to persons facing emotional challenges. Seeking support through religious involvement when distressed has been shown to be prevalent among ethnic minorities, especially among Hispanic Americans (HAs). This study explored the relationship between depressive symptoms and religious involvement in HA adults, and whether acculturation moderates this relationship. Self-identified HA men and women (N=824) ages 21 and older completed the Duke University Religion Index, a five-item measure of religious involvement that yields three subscales of organizational religious activity (OR), non-organizational religious activity (NOR), and intrinsic religiosity (IR). Depressive symptoms were assessed by the Personal Health Questionnaire-9, and acculturation was measured as self-reported English or Spanish language preference. Hierarchical linear regression was used to examine if depressive symptoms were predictive of different forms of religious involvement, and if language preference moderated this relationship. Controlling for age, significant main effects (p<0.05) were found for depressive symptoms as a predictor of OR, and for acculturation as a predictor of OR, NOR, and IR. Fewer depressive symptoms were associated with more OR. Spanish language preference was associated with more time involved in all three forms of religious activity. However, the interaction of depression and language preference was not a significant predictor for any form of religious activity. These findings suggest that depressive symptoms are associated with more involvement in organized religious activities, and that less acculturated HAs are more involved in all three of the evaluated types of religiosity. The relationships of depressive symptoms and acculturation to religious activity, however, appeared to be independent of one another.

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B-210

THE FEASIBILITY OF A SPIRITUALITY-BASED WELLNESS PROGRAM ON STRESS REDUCTION AND HEALTH BEHAVIOR CHANGE

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Introduction: Faith-based programs have focused on the physical dimension of health for improvement in health and healthy behaviors (i.e. exercise and diet). Few have specifically intervened on the mental dimension (i.e. distress/stress) in conjunction with the spiritual and physical dimensions. **Purpose:** To evaluate the feasibility of a spirituality-based stress reduction and health behavior change program (Optimal Health) using the Spiritual Framework of Coping (SFC) model. The program was designed to target multiple dimensions of wellness/well-being.

Methods: This study was a quasi-experimental one group, pretest-posttest design. The study lasted 12 weeks and was conducted at a non-denominational Christian church. The program met for 8 weeks, once a week for 1.5 hours. Weekly phone calls were made during a four week follow-up period. Feasibility was assessed by the acceptability, demand, implementation, practicality, integration, and limited efficacy [(SF-12 (well-being), Brief RCOPE (spiritual coping), PSS-10 (perceived stress), P/Q and accelerometer wear (physical activity), NCI Fruit & Vegetable Screener (fruit & vegetable intake), body composition, blood pressure] of the program. **Analysis:** Objectives were assessed by frequencies of responses to evaluations and limited efficacy of pretest-posttest measures were conducted by paired t-test ($p < .05$).

Results: The program was positively accepted. The demand for the program was shown with average attendance of 78.7 % and was successfully implemented as shown by meeting session objectives and 88 % homework completion. The program was practical for the intended participants and was successfully integrated within the existing environment. Limited efficacy measures showed no pre-post changes.

Conclusion: This study addressed the feasibility of a faith-based program and provided preliminary support for the design and further testing of the theoretical components of the SFC model.

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B-211

PSYCHOLOGICAL & PHYSIOLOGICAL EFFECTS OF A 1-WEEK MINDFULNESS-BASED INTERVENTION

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Mindfulness meditation (MM) is a state of active awareness of thoughts, emotions, & sensations without judgment. Evidence demonstrates the effectiveness of 8-week Mindfulness-Based Stress Reduction (MBSR). Shorter mindfulness based interventions (MBIs) appear psychologically beneficial, but merit further research in regard to physiological measures.

This study examined psychological & physiological effects of a 1-week MBI using a within-subjects design. Participants were recruited from Intro Psychology courses ($N=15$, $m=19$ years, majority female & Caucasian, meditation novices). Participants attended two lab sessions with one week in between. They practiced daily 20-minute CD-led MM. During lab sessions, they underwent 20-minute CD-led MM, & data were collected pre-, during-, & post-MM. Data included state psychological surveys pre & post (relaxation, stress, anxiety, emotion), longer-term psychological surveys pre-MM (stress, anxiety, mindfulness); & HRV via ECG pre-, during- & post [low frequency (LF), LF norm, high frequency (HF), HF norm, LF/HF ratio] during both lab sessions. Repeated measures ANOVAs examined changes over time.

After the 1-week MBI, dispositional mindfulness & state relaxation significantly increased. Stress & anxiety (state & 1-week) significantly decreased. Sympathetic nervous system (SNS) activity significantly increased during-MM (LF, LF norm, LF/HF ratio). After 1-week MBI, this increase showed a reversal of the upward trend observed before the MBI by decreasing post-MM (LF norm, LF/HF ratio). An opposite pattern emerged for parasympathetic nervous system (PNS) activity, with decreases during-MM that reversed post-MM only after 1-week MBI (HF norm).

In conclusion, 1-week MBI appears to provide psychological benefits. SNS increase & PNS decrease may reflect the novelty of this state & its focus on the present (positive or negative). These findings suggest that 1-week is not long enough to show SNS dampening & PNS heightening indicative of non-reactivity. Future researcher should employ a control group & various MBI lengths to further investigate at what point this occurs.

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B-212

A NEW MEASURE OF PERCEIVED STRESS BEYOND HEALTH STATUS

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Stress that is not medical in nature is a risk factor for lower physical and mental health functioning in older age. Most of the available stress measures are confounded with health status and are not created to assess stress levels in older age. One exception is the Elders Life Stress Inventory (ELSI), but this tool is lengthy at 31 items and is not specific to older women. It also does not cover geographical isolation from loved ones and it assumes that major caregiving responsibility is exclusively for aging parents, while caregiving can be provided for various family members or friends (especially in non-European-American cultures). The Older Women's Non-Medical Stress Scale (OWN-MSS), created by the first author, is a culturally-relevant 9-item measure of the extent of perceived stress level experienced for each stressor endorsed, with no time limits imposed on when the event occurred. Perceived stress is measured via ratings on a Likert-type scale ranging from 0 (not at all stressful) to 5 (extremely stressful). "Not applicable" is also offered as an option. We tested the new tool on a culturally heterogeneous sample of 245 non-institutionalized older women. Its scores were compared to scores on two well-established measures: the aforementioned Elders Life Stress Inventory (ELSI) and a depression measure, the Center for Epidemiological Studies - Depression Scale² (CES-D). Results indicated adequate internal consistency of our tool (Cronbach's $\alpha=.71$). Regarding convergent validity, a bivariate correlation between the OWN-MSS and the ELSI showed that there was a significant relationship between the two stress measures ($r=.19$). The modest size of this correlation is likely due to the fact that the OWN-MSS assesses allostatic load over participants' lifetime, while the ELSI quantifies stress occurred during the past year only. We conducted linear regressions to establish predictive validity, with stress level as the predictor and depressive symptomatology as the criterion variable. OWN-MSS scores accounted for 28 % of the variance in depressive symptomatology.

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B-213

TRUST IN AUTHORITIES AND PTSD AMONG CHILEAN ADULTS EXPOSED TO THE 27TH FEBRUARY EARTHQUAKE

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In February 27 2010, a major earthquake hit Chile, leaving an important number of the population isolated with no electricity, no phone and disconnected for several days. This was perceived as additional demands to the ones result of the exposure to the earthquake, and in particular in places where the response of the authorities was perceived as insufficient. In the present study we examined the role of trust in local authorities and its role on the development of PTSD symptoms. We expected to find lower trust would be associated with worst mental health outcomes. Participants in this study were 768 Chilean 18 years of age and older (65 % females) who were part of a health outcomes study. Data collection was conducted within three months of the earthquake and participants were interviewed on the phone by trained interviewers. We measured PTSD symptoms, consequences associated with the earthquake, trust in the authorities and controlled for previous depression that had been measured 6 months before the earthquake. We found that lower trust ($OR=0.602$, $p<0.027$) was associated with greater risk of presenting PTSD even when controlling for previous depressive symptoms ($OR=4.314$, $p<0.01$), sex ($OR=1.804$, $p=0.027$), consequences associated with the earthquake ($OR=2.289$, $p<0.024$). The discussion focuses on the influences that preparation and response from local authorities may have on mental health outcomes among individuals exposed to natural disasters.

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B-215

TESTING A MODERATED MEDIATION MODEL OF MINDFULNESS, PSYCHOSOCIAL STRESS, AND ALCOHOL USE AMONG AFRICAN AMERICAN SMOKERS

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Psychosocial stress is a common trigger for increased alcohol use and related problems. Mindfulness (purposeful attention to the present moment with an attitude of acceptance) may improve coping with stress and lessen the likelihood that stress triggers excess alcohol use. Mindfulness-based strategies have received empirical support for treating alcohol use disorders. However, mechanisms of mindfulness are unclear, and research is needed to elucidate potential benefits of mindfulness for racial/ethnic minorities with low socioeconomic status (SES). This study tested a moderated mediation model to explain how mindfulness might promote healthier drinking patterns. This model posits that mindfulness reduces perceived stress (leading to less alcohol use and related problems) and also weakens the linkage between stress and alcohol use. African American smokers with low SES (N=399, 51 % female, Mage=42) completed measures of trait mindfulness, perceived stress, and alcohol use (quantity of alcohol use, frequency of binges, symptoms of alcohol abuse). Path analyses were conducted to test the model using bootstrapping, controlling for smoking status and demographic covariates. Fit indices indicated excellent fit. Participants with higher trait mindfulness reported less psychosocial stress, less alcohol consumption, lower frequency of binge drinking, and less likelihood of an alcohol use disorder (p 's<0.05). Furthermore, mindfulness moderated the relationship between perceived psychosocial stress and quantity/frequency of alcohol use (p 's<0.05). That is, higher perceived stress was associated with increased alcohol use (i.e., more drinks per week and higher binge drinking frequency) among participants low, but not high, in trait mindfulness. Mindfulness may be one strategy to reduce perceived stress and associated alcohol use among low-SES African American smokers.

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A COMPARISON OF THE BASICS HARM REDUCTION APPROACH AND PERSONALIZED NORMATIVE FEEDBACK FOR REDUCING ALCOHOL-RELATED BEHAVIORS AMONG FIREFIGHTERS

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Firefighting is a hazardous occupation due to the nature of firefighting duties including frequent exposure to traumatic events. As a result, firefighters have been shown to cope with such stress by drinking alcohol. Indeed, studies of firefighters have found that roughly 30 % report being problem drinkers and approximately 50 % of firefighters to have a diagnosis of alcohol abuse or dependence. Despite high rates of alcohol use, most firefighters receive inadequate training regarding alcohol and other personal risk behaviors. Furthermore, it is rare for fire departments to act proactively regarding problems like alcohol consumption.

The present study adapted two brief intervention protocols, BASICS and PNF - approaches that have been widely to reduce risks in college students - for use in a large sample of metropolitan firefighters. Thus, 740 firefighters participated a single assessment/intervention session and completed follow up assessments 3-4 months later. Firefighters were assigned to one of three conditions based on their pre-determined training schedule: Control, BASICS, & PNF. Measures of alcohol-related outcomes included "at-risk" drinking assessed by the AUDIT and alcohol-related problems assessed by RAPI.

Two-way, 3 (Control, BASICS, & PNF) x 2 (time), between subjects ANOVAs suggested main effects for time such that that alcohol risk levels ($F=10.88^{***}$) and alcohol-related problems ($F=7.03^{**}$) decreased significantly from intervention to follow up, and that this effect that was uniform across all three conditions. Overall, the results suggest that firefighters are responsive to a variety of intervention strategies. The results have important implications for the use of brief interventions in community samples.

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MARIJUANA AND THE MORTAR BOARD: THE NEGATIVE EFFECT OF CANNABIS USE ON COLLEGE PERFORMANCE

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Accumulating evidence suggests that heavy cannabis use has long-term negative cognitive effects, especially when users begin using before 17 years of age. Coupled with the notion that many college students express pro-cannabis beliefs, better understanding how cannabis use is related to college performance is needed. As such, the primary goal of the present research was to investigate the extent to which cannabis use influences college performance. In the current study, 382 University of Colorado freshmen were recruited based on self-reported cannabis use. Participants were categorized as cannabis abstainers ($n=127$; have never used cannabis), infrequent cannabis users ($n=147$; smoke less than four times per month), or frequent cannabis users ($n=101$; smoke five or more times per week). Cannabis use was assessed using the Time-Line Follow Back survey (TLFB; see Sobel & Sobel, 1992), the Marijuana Use Scale, and the Marijuana Dependence Scale (MDS; e.g., Stephens, Roffman, & Curtin, 2000). To assess college performance, grade point averages (GPA) were obtained via official university transcript documents. Results show that GPA was negatively related to cannabis use. That is, frequent cannabis users showed significantly lower GPAs ($M=2.82$) compared to infrequent cannabis users ($M=3.09$) and cannabis abstainers ($M=3.17$). Additionally, GPA was negatively correlated with self-reported cannabis addiction symptoms, cannabis craving, as well as problems associated with use. GPA was also associated with age of initial cannabis use ($r=.14$, $p=.04$) such that the earlier participants indicated using marijuana, the lower their GPA was at the time of their laboratory session. These results highlight the importance of targeting college campuses for cannabis use interventions. Specifically, although the lay belief is that marijuana has little influence on college performance, the present research demonstrates otherwise.

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CBASP FOR CO-OCCURRING CHRONIC DEPRESSION AND ALCOHOL DEPENDENCE: A PILOT STUDY

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Depression and alcoholism frequently co-occur and make effective treatment more complex and challenging. Co-morbid depression is associated with poorer prognosis during and after alcoholism treatment and depressed mood may be an important trigger of alcoholic relapse. Knowledge about effective behavioral treatment options is far from complete, and few published studies of behavioral treatments for chronically depressed alcoholics exist. Prior research hypothesizes that an integrated therapy with motivational, cognitive, behavioral, and interpersonal components may be most effective to target co-morbid depression and alcoholism. Cognitive Behavioral Analysis System of Psychotherapy (CBASP) has been shown to be effective in treating chronically depressed individuals and is a promising behavioral approach for use with alcohol dependent individuals with chronic depression. We administered CBASP augmented with coping skills training for alcohol dependence as an integrated treatment for 2 chronically depressed alcoholics and evaluated its impact on mood symptoms and alcohol consumption over time. Patients included a Caucasian female, age 53, with a graduate degree; and a Caucasian male, age 45, working as a sales vendor. After completion of a 20-week intervention, patients receiving CBASP demonstrated both decreases in number of standard drinks consumed (37 vs. 15 average drinks from initial to final session) and decreased HAM-D scores (15 vs. 3 average scores) over time. Learning acquisition was also assessed to capture increases in perceived functionality and comprehension of coping strategies. It appears that reductions in depression scores and drinking correspond with acquisition of performance skills (0 vs. 3.5 average scores on a 5-point performance rating scale). Acknowledging our limited ability to draw inferences based on sample size and the need for additional research utilizing this modality, findings suggest CBASP may be an effective therapeutic intervention for chronically depressed alcoholics.

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Meritorious Poster

B-219

UNDERSTANDING ALCOHOL USE AMONG LATINO IMMIGRANT MEN: PERSPECTIVES ON THE FEASIBILITY AND NEED FOR SCREENING AND BRIEF INTERVENTION

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Background: Research suggests that Latino immigrant men face difficulties in adapting to life in the United States. One way Latino men cope with these stressors is with heavy alcohol use. Latinos are less likely to receive treatment for alcohol use problems than non-Latinos due to limited access to care and culturally inappropriate care. The objectives of this study were to explain patterns of alcohol use in Latino immigrant men and to identify their needs in order to develop an intervention to reduce heavy alcohol use in this population.

Methods: We conducted 13 semi-structured interviews with substance use providers that serve the Latino immigrant community in Seattle, WA. Additionally, we recruited 27 Latino immigrant men who were current drinkers for focus groups and semi-structured interviews. Interviews were recorded and transcribed, then each transcript was coded and analyzed in Atlas.ti by two members of the research staff.

Results: Men's alcohol use patterns included frequent drinking and episodes of binge drinking. Many of the men reported feelings of loneliness, social isolation, and guilt related to being away from their families which contributed to their alcohol use. Providers noted a great need for substance use services for Latino immigrants in Seattle. Providers believed that evidence-based interventions, such as Screening, Brief Intervention, and Referral to Treatment (SBIRT) that are culturally adapted would be an effective public health approach to prevent and reduce heavy drinking among Latino immigrant men. Male drinkers were receptive to the idea of receiving brief interventions in locations such as day labor work centers and community-based organizations.

Discussion: Our results suggest that evidenced-based interventions conducted in clinical settings, such as SBIRT, may be more efficacious if conducted in community settings where men more frequently seek services. Our findings can be used to culturally tailor existing SBIRT protocols, which could help prevent and reduce heavy alcohol use in this population.

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PSYCHOLOGICAL CORRELATES OF SUBSTANCE USE IN UNDERGRADUATES

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Substance use in undergraduates is a serious public health issue in the US. Mood and self-esteem have shown correlation with alcohol, drug, and tobacco use; substances with potential health consequences. This study aims to examine the relationship between mood, self-esteem, substance use, and hangover symptoms. It was predicted that lower self-esteem and symptoms of depression will be related to increased substance use and tobacco use and mood will mediate the relationship between alcohol consumption and hangover symptoms.

Data were collected from 291 US undergraduates, 80.4 % female and 64.9 % Caucasian, who completed the Demographics Questionnaire, Substance Use Screener, Depression and Anxiety Stress Scales, Rosenberg Self-Esteem Scale, and Hangover Symptom Scale. Depression was not associated with alcohol or tobacco use, but was significantly related to lower use of sleep agents ($r = -.19, p = .01$) and higher experience of hangover symptoms ($r = .15, p = .02$). Self-esteem was not related to substance use, but was significantly related to mood such that higher self-esteem was related to higher endorsement of depressive symptoms ($r = .62, p = .00$). Tobacco users were significantly more likely to report using alcohol ($r = .33, p = .00$). Endorsement of alcohol consumption was not related to hangover symptoms.

The correlation between alcohol and tobacco use suggests the importance of targeting both behaviors in interventions. Depression was associated with lower use of sleep agents which may reflect lethargy already present in students experiencing depression or that demands on students make increased sleep less desirable. The finding that high self-esteem is positively related to depression may indicate environmental factors contributing to depression and not necessarily self-perception. Those who reported increased depression did not report using alcohol more often, but experienced more frequent hangovers which may indicate that emotionally distressed students may consume a higher quantity of alcohol than non-distressed peers.

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LOOKING BEYOND SOCIAL SUPPORT: EXAMINING DIMENSIONS OF RELATIONSHIP QUALITY IN KIDNEY TRANSPLANT RECIPIENTS

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Perceived availability or receipt of instrumental social support has generally been associated with favorable outcomes in kidney transplant recipients, yet there has been insufficient attention in the literature to other social relationship processes that may contribute to mental and physical health. The present study examined whether emotional closeness, sexual relations, support transactions, respect/acceptance, and conflict, within the context of a close interpersonal relationship, were associated with psychosocial and medical outcomes in kidney transplant recipients when accounting for the effects of global social support. Participants were 6 months - 5 years post-transplant at study enrollment. A total of 93 participants completed the protocol and 67 were involved in a romantic relationship. Participants were predominantly White non-Hispanic (89.2 %), male (55.9 %), ranged in age from 20-81, had some college education, and were an average of 2.4 years post-transplant. SEM results suggested that poorer relationship quality was associated with increased symptoms of depression (standardized $\beta = -.391, p = .002$), decreased feelings of well-being (standardized $\beta = .249, p = .05$), and worse mental health-related quality of life (standardized $\beta = .248, p = .05$) for the romantic subsample. Similar results were found using the full sample. The path between relationship quality and depression remained significant for the romantic subsample when global social support was included in the model, but global support was more strongly associated with psychosocial outcomes. Significant gender interactions were also found, such that high conflict and lack of emotional intimacy were more strongly associated with poorer self-reported adherence in women. The present study provides novel evidence that other dimensions of relationship quality contribute to outcomes in transplant patients. A comprehensive assessment of recipients' close relationships throughout the transplant process could improve clinical practice and patient health.

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B-223

PHYSICIAN AND PATIENT PERCEPTIONS OF HEALTH: THE ROLE OF HEALTH RELATED QUALITY OF LIFE IN LIVER TRANSPLANT CANDIDATES

Anne C. Fernandez, MA,^{1,2} Reuben Ng, MA³ and Dwain C. Fehon, PsyD¹

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Health-related quality of life (HRQOL) has gained increasing importance as an end-point in health-care treatment outcomes. However, research has shown that physician-rated indicators of health and functioning are weak predictors of patients' subjective HRQOL. This is especially true in the case of liver transplant candidates, for whom organs are allocated based on an objective measure of mortality risk, known as the Model for End-Stage Liver Disease (MELD) score. This study aimed to determine whether physician-rated measures of health (MELD and Karnofsky Performance Score) were related to patients' self-assessments of HRQOL. The sample was comprised of 117 liver transplant candidates at a university-affiliated hospital in the Northeastern United States. Patients completed measures of HRQOL, depression, anxiety, coping, and resilience. Analyses examined the direct relationship between physician and patient measures and the moderating influence of coping and resilience. There was no direct relationship between MELD and HRQOL, depression, or anxiety. There was a direct positive relationship between Karnofsky score and HRQOL ($r = .27, p < .01$). Coping moderated the Karnofsky and anxiety link, such that subjects with better coping skills had less anxiety as impairment increased. These findings add to a growing literature that shows that the MELD score has little to no relationship with HRQOL, and the Karnofsky score has a moderate association. Considering additional research has also shown that HRQOL predicts mortality among liver transplant patient, liver allocation decisions should possibly incorporate HRQOL data. This major change in organ allocation would be consistent with emerging empirical evidence and the shifting definition of health to incorporate well-being.

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Friday
March 22, 2013
8:45 AM–10:15 AM

Symposium 23 **8:45 AM–10:15 AM** **3001**

RISK AND RESILIENCE FACTORS DURING THE TRANSITION TO EMERGING ADULTHOOD AMONG YOUTH WITH TYPE 1 DIABETES

Vicki Helgeson, PhD¹ and Korey Hood, PhD²

¹Carnegie Mellon University, Pittsburgh, PA and ²University of California, San Francisco, San Francisco, CA.

Emerging adulthood is an understudied period of development and a period associated with high rates of mental health difficulties and problem behaviors. This period of development may be especially critical to those with a chronic illness, such as type 1 diabetes. In this symposium, we examine an array of risk and resilience factors as predictors of how youth with type 1 diabetes fare during the early stage of emerging adulthood (i.e., ages 17–21). In one study, youth who are in their senior year of high school participated in a daily diary study to determine the impact of self-regulatory skills on adherence. A second study examined the relation of depressive symptoms to adherence among a sample who had recently graduated from high school. Finally, a third study used a longitudinal design to examine early adolescent predictors of emerging adulthood outcomes, specifically risk behaviors, mental health, and glycemic control. Taken collectively, these three studies highlight the protective effect of resilience factors such as executive function and a high quality relationship with parents for the transition to emerging adulthood as well as the potential risk of having highly controlling parents, difficulties regulating emotions, and depressive symptoms. These results also isolate some of the most noteworthy areas of concern for emerging adults with diabetes—depressive symptoms, risky health behaviors (e.g., alcohol), and poor diabetes self-care. These findings can be used to target youth during adolescence who may be at risk for poor outcomes during the transition to emerging adulthood. The implications of these risk and resilience factors for how youth with diabetes navigate the increased independence associated with the next phase of emerging adulthood will be discussed.

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Symposium 23A

3002

PERCEIVED REGULATORY SKILLS ASSOCIATED WITH DAILY ADHERENCE DURING LATE ADOLESCENCE

Cynthia A. Berg, PhD,¹ Deborah Wiebe, PhD,² Yana Suchy, PhD,¹ Amy Hughes, MS,¹ Emilie Franchow, BS,¹ Jonathan Butner, PhD,¹ Jessica Anderson, MS,¹ Elida Godbey, MS,² Pamela King, PhD,³ Christy Tucker, BS² and Andrea Pihlaskari, BS²

¹Psychology, University of Utah, Salt Lake City, UT; ²University of Texas Southwestern Medical Center, Dallas, TX and ³Wayne State University, Detroit, MI.

Adherence during adolescence and emerging adulthood requires regulatory skills to plan and organize behaviors while regulating mood and cognition. We examined whether daily adherence behaviors reflected individual differences in self-regulation (incentive sensitivity, executive function, attentional control) as well as daily fluctuations in using those skills to monitor blood glucose (BG), a central component of managing diabetes. Forty-one seniors in high school (M age=17.33, SD=.48), being followed as they transition to emerging adulthood, completed a 14-day online diary, rating daily adherence behaviors and regulatory skills surrounding BG control (e.g., Each time I was about to test my blood glucose, I got distracted by something else). In addition, adolescents completed individual difference metrics of their regulatory skills (Behavior Rating Inventory of Executive Function, Conners Adult ADHD Rating Scale, Difficulties in Emotion Regulation Scale, and Behavioral Self-Control Scale). Hierarchical linear modeling revealed that individual differences in adolescents' perceptions of problems in executive function, attentional control, and behavioral self-control ($p < .01$), but not incentive sensitivity and emotion regulation ($p > .5$) were associated with worse daily adherence behaviors. Further, daily fluctuations in self-reported problems with planning and emotion regulation surrounding blood glucose control were associated with daily adherence behaviors ($p < .01$). Understanding the role of planning and executive control in daily adherence is important as these adolescents transition into emerging adulthood, a time when individuals must regulate their diabetes more independently from their parents in the face of new challenges that may tax their regulatory system. Funding NIH R01 DK092939

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Symposium 23B

3003

PARENT AND FRIEND RELATIONSHIPS DURING ADOLESCENCE AS PREDICTORS OF EMERGING ADULTHOOD OUTCOMES AMONG YOUTH WITH AND WITHOUT TYPE 1 DIABETES

Vicki Helgeson, PhD and Dianne K. Palladino, MA

Carnegie Mellon University, Pittsburgh, PA.

Emerging adulthood is a high-risk period for mental health difficulties and problem behaviors—especially among those with a chronic illness, such as diabetes. We examined whether adolescent relationships with parents and friends predicted mental health, risk behavior (alcohol and smoking), and—among youth with diabetes—glycemic control during the transition to emerging adulthood. We enrolled youth with ($n=132$) and without type 1 diabetes ($n=131$) into a study when they were average age 12 and followed them until one year after high school (average age 19), retaining 91 % of the sample. Regression analysis showed that higher quality relationships with parents during adolescence predicted fewer depressive symptoms during emerging adulthood ($p < .05$). Parent control interacted with group to predict both depressive symptoms and clinical depression ($p < .01$), such that parent controlling behavior during adolescence was associated with less depression for the diabetes group but more depression for the control group. Parent relationship quality interacted with group to predict alcohol use ($p < .01$) and binge drinking ($p < .05$), such that higher quality relationships with parents during adolescence predicted a lower likelihood of alcohol consumption and binge drinking only for youth with diabetes ($p < .01$). The only variable that predicted smoking was parent control ($p < .01$), such that more parent control during adolescence was related to a greater likelihood of smoking during emerging adulthood. Friend support predicted glycemic control ($p < .05$); greater friend support during adolescence was associated with poorer glycemic control during emerging adulthood. These results suggest that relationships with parents—and friends somewhat—during adolescence carry some significance in predicting problem behaviors during emerging adulthood. There also was some evidence that parent relationships during adolescence have stronger implications for the subsequent health of youth with than without diabetes.

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Symposium 23C

3004

DEPRESSIVE SYMPTOMS AND SELF-CARE BEHAVIORS IN EMERGING ADULTS WITH TYPE 1 DIABETES

Maureen Monaghan, PhD, Megan McCormick King, PhD, Fran R. Cogen, MD and Randi Streisand, PhD

Center for Translational Science, Children's National Medical Center, Washington, DC.

Emerging adults with type 1 diabetes (T1D) are at increased risk for psychosocial distress and negative health outcomes. Depressive symptoms are directly associated with decreased self-care in adolescents and adults with T1D, but this relationship is less explored in emerging adults. Greater understanding of correlates of self-care skills in emerging adults is particularly important, as this group is assuming independent responsibility for disease management. The goal of this study is to evaluate the association of depressive symptoms with T1D adherence and self-care skills associated with independence (executive functions, goal setting). It is hypothesized that increased depressive symptoms would be associated with poorer adherence and fewer skills related to independent self care. Sixty-three emerging adults with T1D (59 % female; 78 % Caucasian; M age=18.58 yrs±.93; M disease duration=8.48 years±5.12) completed self-report questionnaires on mood, adherence, executive functions, and self-care goals. A1c and blood glucose (BG) monitoring frequency were taken from the medical chart. 20 % of the sample reported elevated depressive symptoms on the CES-D. Greater depressive symptoms were significantly associated with fewer BG checks/day ($r=-.30$), poorer adherence ($r=-.31$), poorer executive functions ($r=-.49$), and fewer goals for independence ($r=-.30$; all $ps<.05$). Depressive symptoms were not associated with A1c. Controlling for gender and ethnicity, depressive symptoms accounted for 7 % of the variance in BG monitoring frequency, 11 % of the variance in adherence, 25 % of the variance in executive functions, and 7 % of the variance in diabetes goals for independence (all $ps<.05$). A significant portion of emerging adults with T1D reported increased depressive symptoms, contributing to self-care skills and goals. Thus, interventions targeting patient adherence during this transitional period should account for depressive symptoms. As such, multicomponent interventions addressing mood and behavior may be the most successful for this age group.

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Symposium 24

8:45 AM–10:15 AM

3005

THE POSSIBILITIES AND POTENTIAL OF SOCIAL ECOLOGICAL FRAMEWORKS TO UNDERSTAND HEALTH BEHAVIOURS AND OUTCOMES

Alice M. Brown, Doctoral candidate,¹ Daniel Stokols, PhD,³ James Sallis, PhD,⁴ Robert A. Hiatt, PhD⁵ and Tracy Orleans, PhD²

¹Education, University of Southern Queensland, Springfield, Queensland, QLD, Australia; ²Robert Wood Johnson Foundation, New York, NY; ³Departments of Psychology and Social Behavior and Planning, Policy, and Design, University of California, Irvine, CA; ⁴Family and Preventive Medicine, University of California, San Diego, CA and ⁵Population Sciences, University of California, San Francisco, CA.

The health status of individuals and groups is influenced by a wide array of factors. In 2000 a landmark publication, *Promoting Human Wellness* edited by Janner-Sneider and Stokols, provided compelling evidence of the "complex web of interrelated influences that operate dynamically to determine health and wellness" (p. 1). Thirteen years later, it is timely to revisit this work in light of subsequent changes to our world, and ebb and flow of research trends. Scholarly and societal interest in the multifaceted influences on physical and emotional well-being has stimulated growing interest in social ecological (SE) analyses of health among community and environmental health specialists and other professionals. These professional groups have found SE to be a valuable framework for understanding the multiple levels of influence on human behavior. There is increasing recognition of the value of utilizing broader conceptual models for purposes of understanding and managing various intrapersonal, interpersonal, physical environmental and sociocultural influences on health outcomes and health behaviors.

This symposium will examine SE models of health and will feature a number of pioneers who have drawn upon SE principles to better understand health behavior, and to develop multi-faceted health promotion interventions ranging from macro-societal to micro-environmental level research. Speakers will discuss their reasons for utilizing a SE framework to effectively understand and influence bi-directional, multi-level processes that either support or hinder an individual's engagement in health protective behaviours. The symposium presentations also will suggest guidelines for health promotion interventions focusing on multiple environmental levels.

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Symposium 24A

3006

OPERATIONALIZING AND EVALUATING ECOLOGICAL MODELS IN PHYSICAL ACTIVITY RESEARCH

James F. Sallis, PhD

Family & Preventive Medicine, UCSD, San Diego, CA.

Ecological models have been widely used in physical activity research and practice, and models have progressively become more specific. Although ecological models initially stimulated research on the environmental and policy levels, the research is becoming more sophisticated in testing ecological principles. This presentation will illustrate analyses that evaluate principles of ecological models using physical activity data. Data come from a set of similar cross-sectional studies, based on ecological models, and conducted with different age groups, from young children to older adults. All studies include measures of variables at the demographic/biological, psychological, social, and built environment levels. Question 1 to be addressed is, "are ecological models justified by findings that built environment variables are related to physical activity?" Question 2 to be addressed is, "are hypotheses that built environment variables are related differentially to domains of physical activity supported?" Question 3 is, "is there evidence that variables at all levels of influence are related to physical activity?" Question 4 is, "does evidence support the hypothesis of interactions across levels of influence in explaining physical activity?" Question 5 is, "how well do associations of physical activity and built environments generalize across countries and cultures?" Findings from studies based on ecological models are having impact on practice in multiple fields, including public health, transportation, city planning, and parks and recreation. There is evidence that investigators in multiple fields are increasing their use of ecological models in research.

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Symposium 24B

3007

THE SOCIAL ECOLOGIC PERSPECTIVE IN ENVIRONMENTAL HEALTH

Robert A. Hiatt, MD, PhD

UCSF Helen Diller Family Comprehensive Cancer Center, University of California San Francisco, San Francisco, CA.

Dr. Hiatt will discuss the application of social ecologic principles to a large multi-center study of the role of the environment on early development in girls as a window on the development of breast cancer in adult life. The Breast Cancer and the Environment Research Program, supported by the National Institute of Environmental Health Sciences and the National Cancer Institute, is a consortium of studies including laboratory science, epidemiology and community participation all focused on the common problem of understanding the impact of environmental factors over the life-course that predispose to breast cancer development. Molecular biologists, geneticists, psychologists, epidemiologists, endocrinologists, pediatricians, toxicologists, and community participants have been working together in this on-going study across disciplines seeking new insights that extend beyond their individual fields. The results of this research find application in health education and health promotion at the individual and community-level as well as having the potential to influence policy decisions governing the use of industrial chemicals. Dr. Hiatt will share his perspective on how this particular project and the field of epidemiology in general use a transdisciplinary approach to science and its relevance to behavioral medicine.

Symposium 24C

3008

THE APPLICATION OF A SOCIAL ECOLOGICAL MODEL FOR EXPLORING FACTORS IMPACTING ON HEALTH BEHAVIOR WITHIN THE MICRO-ENVIRONMENT

Alice M. Brown, Doctoral candidate

Education, University of Southern Queensland, Springfield Central, Queensland, QLD, Australia.

Health and health behaviours do not occur in a social vacuum, rather they are influenced by a complex set of determinants that emerge from multiple environments, including that of the ecological niche of the family home. Parents are recognized as significantly influencing the health behaviors and values of young children, yet a range of factors will impede or facilitate these behaviors. This presentation demonstrates the robustness and flexibility of ecological models and their application not only in large scale studies, cross-sectional studies, and studies adopting a transdisciplinary approach, but also valuable for qualitative research conducted at the micro level. Based on the author's doctoral research, that used intrinsic and instrumental case study, a rational for an adapted social ecological framework is outlined. The framework was motivated by the desire to better understand the influence of multiple environments and social ecological factors on parental practices, understandings and values for supporting active play with their young children within the home environment.

Discussion will then focus on the strength of this model for interpreting the pervasiveness of ecological factors and their impact on health behavior, with a specific focus on the micro-environment. This presentation will expand on current understandings about the idiosyncratic nature of the health behaviours of parents and families, more specifically on their efforts to support the active play experiences of young children. The author will also identify a range of factors that sat both inside and outside the micro-environment of the family home and skewed determinants into becoming either a barrier or an enabler, depending on context.

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Symposium 25

8:45 AM–10:15 AM

3009

RELIGIOUS/SPIRITUAL COPING WITH ILLNESS AND STRESS: AN EVALUATION OF MECHANISMS

Thomas V. Merluzzi, PhD,¹ Amy Wacholtz, Ph D,⁴ Errol J. Philip, Ph D,⁵ Thomas G. Plante, PhD³ and Crystal L. Park, PhD²

¹Psychology, University of Notre Dame, Notre Dame, IN; ²Psychology, University of Connecticut, Storrs, CT; ³Psychology, Santa Clara University, Santa Clara, CA; ⁴Psychiatry, UMass Medical Center, Santa Clara, MA and ⁵Psychiatry/Behavioral Sciences, Memorial Sloan Kettering CC, New York, NY.

Religious/spiritual (R/S) beliefs are pervasive: 92 % believe in God, 82 % belong to a religious denomination, and 54 % state that religion is "very important" in their lives (Gallup, 2010). Accordingly, people depend on R/S beliefs to cope with illness and other challenges in their lives and to give their lives meaning (Conley, 2012). Thus, R/S is frequently used in coping with illnesses as well as in managing everyday stressors. Recently, there have been calls for identifying the mechanisms involved R/S coping (Stefanek, McDonald, & Hess, 2004). Along those lines, the focus of this symposium is to explicate some of those mechanisms involved in R/S coping. One presentation deals with an understudied topic, the link between R/S coping and treatment adherence. This presentation examines these links in congestive heart failure, a progressive and ultimately fatal illness that requires adherence to an extensive, difficult lifestyle. Results indicate that different dimensions of R/S relate to adherence differently. The second presentation delves into the R/S coping mechanism of "letting go" by tracing its roots from ancient philosophy and theology to contemporary psychological theory and by presenting contemporary data relating to "letting go" in the context of coping with cancer. The third presentation illustrates how the use of R/S coping may differentially affect the cognitive and physical symptoms of burnout in the context of a high-stress medical environment. These presentations emphasize the mechanisms underlying religious coping and integrate those mechanisms into the contexts of illness and stress. Thus, R/S strategies may have important clinical and health implications for those for whom these coping strategies are compatible.

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Symposium 25A

3010

RELIGIOUS & SPIRITUAL DIMENSIONS DIFFERENTIALLY PREDICT TREATMENT ADHERENCE

Crystal Park, PhD

University of Connecticut, Storrs, CT.

Religiosity/spirituality (R/S) is increasingly linked to myriad aspects of physical well-being, but, to date, little research has examined links between different dimensions of R/S and treatment adherence. The present study examined these links in patients with congestive heart failure (CHF), a disease requiring adherence to extensive and difficult lifestyle management.

Method: 179 CHF patients (66 % male, 85 % White, 10 % African American, 4 % Native American; mean age=68.6; mean time since diagnosis=6.8 years) completed measures of R/S (BMMR/S; NIA/Fetzer, 1999) and adherence to CHF treatment (Sherbourne et al., 1983).

Results: Participants reported more difficulties adhering to diet and exercise recommendations than to others. Further, different dimensions of R/S related to different aspects of adherence. For example, private religious practices and religious coping were related to following doctor's recommendations regarding fluid intake but only private religious practices related to adherence to limiting salt intake. Religious coping and organized religious involvement were the only R/S dimensions related to following recommendations for alcohol and tobacco use; only organized religious involvement was positively related to following exercise recommendations. Spiritual struggle was inversely related to reporting of symptoms and following exercise recommendations. Daily spiritual experiences were related to symptom reporting and stress management. These results indicate that R/S dimensions relate to adherence in complex ways. For example, personal and illness-specific aspects of R/S, such as religious coping and private prayer, may help patients adhere to difficult dietary recommendations, while organized religious involvement may facilitate normative abstinence from substance use. While preliminary, results suggest that interventions to promote adherence through encouraging patients to draw on various aspects of their religious and spiritual lives may be effective.

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Symposium 25B

3011

"LETTING GO" - THE PARADOX OF CONTROL IN RELIGIOUS COPING FOR PERSONS WITH CANCER

Thomas V. Merluzzi, PhD¹ and Errol J. Philip, PhD²

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From antiquity (e.g., Taoism, Buddhism, Stoics) to modern times (e.g., Martin Heidegger, Reinhold Niebuhr), "letting go" has been posited as one approach that may lead to a better life. Modern psychological theory has contributed to this discussion through the examination of primary control (bringing the environment in line with our wishes) and secondary control (bringing ourselves in line with environmental forces). Secondary control, in particular, involves coming to terms with our limits and includes the concept of "letting go". Pargament (1997) established styles of religious coping that map onto primary control (Self-Directing[SD];belief in God, but my life is my responsibility), secondary control (Deferring[D];put things in God's hands, "letting go") and a combination of the two (Collaborative[C]; God and I are partners). In healthy persons the SD has been associated with better psychological adjustment than C or D; however in persons with cancer, (N=365; mixed diagnoses) the D and C styles were highly correlated ($r=.70$) forming a C/D style. Groups were formed to compare coping types: C/D type (35 %; high C&D, low SD); SD type (35 %; high SD, low C&D), "Paradoxical" coping type (PCT) (18 %; high SD, high C&D); Null-type (12 %; low SD, low C&D). C/Ds scored higher than SDs on coping efficacy ($p=.001$), problem-focused coping ($p=.001$), quality of life ($p=.013$), satisfaction with life ($p=.001$), and lower on depression ($p=.025$). For most contrasts, C/D and PCT were comparable and Nulls fell in between the C/Ds-PCTs and SD scores. These results establish "letting go" as a viable spiritual coping mechanism that represents an active stance. Moreover, the PCT coping style, may represent a more flexible style that adapts based on the demands of the situation. These findings suggest that individuals who utilize the SD style may be at risk for poorer adjustment in the face of cancer, while the benefits of a flexible approach that includes elements of secondary control could inform effective clinical interventions.

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Symposium 25C

3012

IS RELIGIOUS COPING DIFFERENTIALLY RELATED TO PHYSICAL, EMOTIONAL, AND SPIRITUAL SYMPTOMS OF BURNOUT?

Amy Wachholtz, PhD, MDiv and Mai Lan Rogoff, MD

Dept of Psychiatry, UMass Medical School, Worcester, MA.

Background: Religious and spiritual (R/S) coping is a protective factor against the stress of chronic illness (Pargament & Ano, 2006; Wachholtz & Keefe, 2006) but to date there have been no studies on how R/S coping affects the physical, emotional-cognitive, and spiritual symptoms of chronic stress in the context of burnout.

Method: An internet link to an anonymous survey including measures of spirituality (DSE; FACIT-SP), burnout (Burnout Measure-Short, psychological distress (HADS), and the Brief COPE was sent via email to students at a public northeastern medical school; 259/469 (55.2 %) completed it.

Results: Burnout total and subscales were normally distributed (skewness <0.5) with the mean score ($M=3.2, SD=1.0$) indicating serious risk of burnout. R/S coping subscale (Brief Coping) was inversely correlated with physical burnout symptoms ($r=-.11, p<.05$), but not to the emotional-cognitive burnout symptoms ($p=ns$). A regression analysis indicated that after controlling for anxiety, depression and spiritual well being, R/S coping continued to significantly predict physical symptoms of burnout ($B=.149; p<.05$). A median split on R/S coping revealed no differences between groups on the cognitive symptoms of burnout ($p=ns$), and marginal rates on the overall experience of burnout ($p<.1$). However, Low R/S coping were more likely to have physical burnout symptoms ($p<.05$) whereas High R/S coping was associated with greater life satisfaction ($p<.05$), more daily spiritual experiences ($p<.001$), greater likelihood of using adaptive coping strategies ($p<.001$) and less likelihood of using maladaptive coping strategies ($p<.05$).

Discussion: R/S coping is differentially related the different symptom domains of burnout. These findings show that high religious copers are less likely to experience the physical and spiritual symptoms of burnout, but are as likely as low religious copers to experience emotional-cognitive symptoms. Implications of these findings will be discussed. Future research should identify the mechanisms by which religious coping may differentially affect physical symptoms.

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Symposium 26

8:45 AM–10:15 AM

3013

THERE'S A WHOLE WORLD OUT THERE! EXEMPLARS FROM HUMAN COMPUTER INTERACTIONS FOR CREATING HEALTH BEHAVIOR CHANGE TECHNOLOGIES

Eric B. Hekler, PhD,¹ Timothy Bickmore, PhD,² Sunny Consolvo, PhD,³ Erika Poole, PhD⁴ and Andrea Grimes, PhD^{2,5}

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The field of Human-Computer Interaction (HCI) researches how to design and evaluate consumer- and patient-focused information technologies that are useful, usable, and enjoyable. HCI researchers increasingly create technologies and publish related to health behavior change technologies. Despite being relevant to behavioral medicine, much of this research remains unknown to the SBM community. This symposium aims to bridge the gap between the HCI and SBM communities, to facilitate knowledge exchange. HCI research is largely disseminated through the ACM SIGCHI Conference on Human Factors in Computing Systems (CHI). In this symposium, active participants in CHI will discuss their research on health behavior change technologies and its relevance to SBM. Specifically, Dr. Timothy Bickmore (Northeastern University), Senior Program Committee member for the CHI 2013 conference and head of the SBM Behavioral Informatics SIG, will discuss his research in embodied conversational agents (i.e., automated health coaches) for physical activity and other health promotion activities. Dr. Sunny Consolvo (Google), Associate Chair for the CHI 2013 conference, will discuss her on developing UbiFit system (a project that explored theoretically-driven ways to provide feedback via mobile phones) and other research she has done (e.g., work related to sleep). Dr. Erika Poole (Penn State), Associate Chair for the CHI 2013 conference will discuss her research on active video games to promote healthful behaviors among children. Finally, Dr. Andrea Grimes Parker (Northeastern University), Associate Chair for the CHI 2013 conference, will discuss the research she has done to address diet-related health disparities through mobile and public displays. The symposium will be moderated by Dr. Eric Hekler (Arizona State), a behavioral scientist with active involvement in both communities.

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Symposium 26A

3014

AESTHETIC EXPERIENCES: ADDRESSING HEALTH DISPARITIES THROUGH ENGAGING HEALTH SYSTEMS

Andrea G. Parker, PhD

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The field of Human-Computer Interaction (HCI), at its core, is concerned with understanding how to create usable, enjoyable, and effective Information and Communication Technology (ICTs). For example, McCarthy & Wright [2] provide a framework for understanding aesthetic experiences with technology, that is, those experiences that are particularly satisfying and fulfilling because of the way they engage users' emotions and senses.

In this talk I will discuss how the aesthetic experiences framework can be applied in the health domain. Broadly, my research examines how ICTs can address persistent health disparities by helping people overcome the barriers to health and wellness. This work has explored the potential of personal health technologies, that is, tools that non-health experts use to manage their own health or encourage healthy behaviors in others. I will discuss two systems I designed to help members of low-income, predominantly African American neighborhoods overcome the limited access to healthy foods. These systems support the sharing of experiential healthy eating knowledge through rich, vivid media [1,3].

I will use findings from my evaluations of these tools to argue that, by focusing explicitly on the emotional and sensory dimensions of experience, designers have the opportunity to create more effective and enjoyable health applications. Furthermore, I will discuss how my work is reflective of a broader interest within HCI in the qualitative experience of health information technology.

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Symposium 26B

3015

CONVERSATIONAL INTERFACES IN HCI AND BEHAVIORAL MEDICINE

Timothy Bickmore, PhD

Northeastern University, Boston, MA.

Face-to-face dialog represents the first and primary site of language use, and automated dialog systems can thus represent an important communication channel for individuals with low computer and reading literacy. In this talk I will review work in the Human-Computer Interaction (HCI) and behavioral medicine communities on dialog systems for health communication, spanning animated conversational agents, conversational robots, and interactive voice response (telephony) systems. I will focus particularly on work in my lab over the last decade on animated conversational agents that simulate face-to-face conversation between health providers and patients in automated health education and health behavior change interventions. These agents use the same myriad verbal and nonverbal cues that people use when talking to each other, including the use of hand gestures, facial expressions, and body posture, in addition to speech, and are particularly effective for tasks in which long-term retention, engagement, adherence, and therapeutic alliance are important. Animated conversational agents have been evaluated in a dozen clinical trials with over 2,500 patients and consumers in areas spanning medication adherence promotion, exercise and diet promotion, breastfeeding promotion, patient education at hospital discharge and for clinical trial and medical procedure informed consent, preconception care screening and intervention, and substance abuse screening. I will also discuss the design, development and evaluation methodologies used in creating these interventions, and challenges in fielding these systems in clinical trials.

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Symposium 26C

3016

HOW TO DESIGN USEFUL, USABLE, AND ENGAGING GAME-BASED HEALTH AND WELLNESS INTERVENTIONS FOR DIVERSE POPULATIONS

Erika S. Poole, PhD

The Pennsylvania State University, University Park, PA.

The past few years have seen an explosion of consumer applications for monitoring aspects of health and wellbeing (e.g. physical activity participation, food intake, weight, blood pressure, or blood sugar). To make these experiences more engaging, these applications may include online games or social media components that allow users to compete or share progress with their friends. In this talk, I will broadly discuss opportunities and challenges in the design, development, and evaluation of online games and social media interventions encouraging behavior change. To ground the discussion, I will discuss my experience as a member of an independent evaluation team for Humana Innovation's American Horsepower Challenge, an online health game aimed to increase daily physical activity of children and adolescents. It broadened opportunities for the participants—even those with little skill in traditional sports—to compete in a month-long athletic competition for their school. Results from the evaluation showed that the group health competitions might create tensions between group and individual success, sometimes at the expense of people most in need of the intervention. Through analyzing the motivations and play styles of AHPC participants, we created a player type taxonomy that can help health game designers integrate group-based mechanisms that maximize intervention effectiveness and account for player diversity. This example will be used to provide insights into common barriers to the creation of useful, usable, and engaging game- and social media-based interventions.

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Symposium 26D

3017

USING PERSONAL, GLANCEABLE DISPLAYS TO SUPPORT HEALTH AND WELLNESS

Sunny Consolvo, PhD

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From the screens on mobile phones, tablets, and laptops to new dynamic displays on jewelry and personal accessories, people have personal displays with them everywhere they go. Because they see those displays at a glance so often as part of their normal routines, the human-computer interaction and behavioral science communities have the opportunity to use those displays to communicate information to people to help increase awareness about their health and wellness behaviors. In this talk, I will highlight two consumer-focused projects that we have done over the past several years that use glanceable displays on the background screens of people's mobile phones to promote healthy behaviors: UbiFit to encourage regular and varied physical activity—that is, cardiovascular exercise, strength training, flexibility training, and walking—and ShutEye to promote awareness of activities performed throughout the day—such as consuming caffeine or eating a heavy meal—that could impact sleep that night. I will discuss the theories, related literature, and our own prior work that influenced our designs, including how we designed displays that could be interpreted by the mobile phone owner without revealing anything particularly sensitive to others who may (and often do) see the phone. I will also discuss the early-stage field studies of the systems and present results that focus on participants' experiences with the systems and engagement with the targeted health behaviors.

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Symposium 27

8:45 AM–10:15 AM

3018

INNOVATIVE COMMUNITY-BASED METHODS FOR ASSESSING AND EVALUATING THE IMPACT OF THE PATH TRIAL ON PHYSICAL ACTIVITY AND WALKING

Dawn K. Wilson, PhD,¹ Sandra Coulon, MA,¹ Kassandra Alia, BA,¹ Dawn Wilson, PhD¹ and Ken Resnicow, PhD²¹Psychology, University of South Carolina, Columbia, SC and ²School of Public Health, University of Michigan, Ann Arbor, MI.

Positive Action for Today's Health (PATH) is a randomized efficacy trial examining the effects of an environmental intervention on improving access and safety for walking and physical activity (PA) in underserved (low income, high crime) communities. Recent evidence suggests that environmental factors play an important role in shaping health behaviors such as increasing community participation in neighborhood walking programs. Key variables that were intervention essential elements included improving perceptions of neighborhood safety by engaging police support during walks, increasing access to PA by identifying walking trails, and improving aspects of the physical environment for participating communities. Little research has focused on developing community-based walking interventions in minority and disadvantaged communities, and this symposium will discuss innovative aspects of this unique trial including 1) an empowerment approach to developing a grass roots social marketing intervention to promote walking, 2) the development of an observational tool for measuring community level trail use, and 3) the preliminary outcomes of the trial based on walking attendance data and community level observations of trail use.

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Symposium 27A

3019

AN INNOVATIVE SOCIAL MARKETING STRATEGY TO INCREASE PHYSICAL ACTIVITY IN THE PATH TRIAL: ADAPTING TECHNOLOGY TO MATCH COMMUNITY NEEDS

Sandra M. Coulon, MA,¹ Nevelyn Trumpeter, MS,¹ Dawn Wilson, PhD,¹ Sara St. George, MA,¹ Kassandra Alia, BA,¹ Shamika Robinson, MHA¹ and Sarah Griffin, PhD, MPH²¹Department of Psychology, University of South Carolina, Columbia, SC and ²Department of Public Health Sciences, Clemson University, Clemson, SC.

African Americans experience high rates of obesity and engaging in physical activity (PA) reduces obesity risk. The Positive Action for Today's Health (PATH) trial delivered an innovative social marketing program to address access and safety barriers to PA and walking in underserved African American communities. Data were collected over 24-months in adults (N=434) residing in three communities matched demographically. Communities were randomized to receive a police-patrolled walking-plus-social marketing program (full intervention), a police-patrolled walking-only program, or a no-walking program. Development of the social marketing campaign relied on focus groups and community steering committee feedback. The full intervention community worked with a social marketing firm to develop messages for promoting PA and walking, and to determine the most effective way to deliver campaign messages. Campaign messages were that PA and walking would benefit physical, mental and spiritual health, increase confidence for engaging in healthy behaviors, be a safe activity, and build social connectedness. Dialogue between the social marketing firm and the community revealed that grassroots campaign strategies would be more effective than the use of high-tech marketing strategies; residents in these underserved communities reported barriers to accessing high-tech media, and placed greater value on word-of-mouth, community-based approaches. Messages were delivered through print media and the development of peer-led Pride Strides that disseminated the campaign messages using interpersonal rather than technological innovations. An innovative, grassroots social marketing approach to increase PA can therefore be effectively tailored to meet the needs of an underserved African American community. A broader implication is of the importance of adapting technology-based interventions in populations at-risk for physical inactivity and obesity.

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Symposium 27B

3020

ASSESSING URBAN WALKING TRAILS IN THE PATH STUDY: MODIFYING SYSTEMATIC OBSERVATIONAL PROTOCOLS FOR UNDERSERVED ENVIRONMENTS

Kassandra A. Alia, BA,¹ Dawn K. Wilson, PhD,¹ Natalie Colabianchi, PhD,² Duncan Meyers, MA,¹ Thomas McKenzie, PhD³ and Barbara Ainsworth, PhD⁴

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Measures for assessing trail use and physical trail qualities have yet to be refined and modified for use in underserved communities. The purpose of the present study is to describe how two systematic observational protocols were modified and utilized reliably as a supplement to the Positive Action for Today's Health (PATH) walking trial. Project PATH employed a police-patrolled walking intervention to increase safety and access for physical activity in low income, high crime communities. The System for Observing Play and Recreation in Communities (SOPARC) was used to assess participation in organized walking groups—a component of the PATH intervention—and trail use at the community level. SOPARC assesses demographics and activity intensity level of trail users. The Path Environment Audit Tool (PEAT) was used to assess physical features of the trail (e.g., overgrowth, litter, sidewalk condition) in relation to design and functionality. Both tools were initially designed for recreational trail use; as such, adaptations were made to make the protocols better suited for urban trail use. PDA's were used as an innovative technology feature to minimize opportunity for error in coding. Coding conventions were adapted to the environment. For example, coding conventions were implemented for PEAT items that were less straightforward, such as the inclusion of cars and garbage cans as "temporary barriers". Trail team members were certified after extensive didactic and hands-on training. Examination of inter-observer reliability indicated that data for measuring trail use ($ICC=.98, p<.01$) and features of the trail ($\kappa=.77-1.00$; $ICC=.34-1.00$) were found to be high. Results demonstrate that the protocols customized for this study are able to be applied with a high level of reliability and that their content is appropriate for assessing trail use and trail environment in underserved communities.

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Symposium 27C

3021

RESULTS OF THE POSITIVE ACTION FOR TODAY'S HEALTH (PATH) TRIAL FOR PROMOTING WALKING AND PHYSICAL ACTIVITY IN LOW-INCOME AFRICAN AMERICANS

Dawn K. Wilson, PhD,¹ Kassandra Alia, BA,¹ Natalie Colabianchi, PhD,² Nevelyn Trum-peter, MS,¹ Sara St. George, MA,¹ Sandra Coulon, MA,¹ Hannah Lawman, MA,¹ Rebecca Siceloff, PhD,¹ M. Lee Van Horn, PhD¹ and Barney Gadson, BA³

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The Positive Action for Today's Health (PATH) trial evaluated an environmental intervention for improving access and safety for walking and physical activity (PA) in underserved (low income, high crime) communities. Three communities were randomized to receive either: a combined police patrolled-walking program plus social marketing program, a police patrolled-walking only program, or no walking-related intervention. Measures included PA (7-day accelerometer; walking attendance), and community level observations (System for Observing Play and Recreation; SOPARC) at baseline 12-, 18-, and 24-months. The trails were identified by community stakeholders on pre-existing side-walks in each community. Through the use of momentary time sampling techniques, the SOPARC tool allowed for systematic scans of trail users within trail segments. During stationary observations, all trail users on the walking trail who passed by the coding station were coded for activity level and characteristics. Trail use was also assessed for each segment of the trails via mobile observations to capture trail use as a whole since the trail could be accessed at multiple points. Trail users in both trial communities were predominately African American (95%), and adults (78%). The walking plus social marketing intervention resulted in greater increases in walking attendance as compared to the walking only program at 12 months (424 vs. 40 walkers/month). Results of the community level observations indicated that the average number of walkers observed using the stationary SOPARC was greater overall in the walking plus social marketing ($M=12, SD=7$) as compared to walking only community ($M=6, SD=3$). Mobile observations of the trail use during non-walking group periods indicated little change in the daily rate of trail users for both communities. These results provide preliminary support that the PATH intervention resulted in greater community level walking than the walking only program.

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Symposium 28

8:45 AM–10:15 AM

3022

TREATMENT ADHERENCE IN PERSISTENT PAIN: PSYCHOSOCIAL MECHANISMS AND RESEARCH CHALLENGES

Lara Dhingra, PhD,¹ Lance McCracken, PhD,² Daniel Bruns, PsyD³ and Elizabeth Seng, PhD⁴

¹Beth Israel Medical Center, New York, NY; ²King's College London, London, United Kingdom; ³Health Psychology Associates, Greeley, CO and ⁴VA Connecticut Healthcare System, West Haven, CT.

Research shows that adherence to pharmacologic and behavioral therapies for pain management is a major clinical problem. To date, there are few theory-based interventions for improving treatment adherence in pain. This symposium will 1) examine theoretical models of adherence to pharmacologic and behavioral pain therapies, 2) present data on psychosocial mechanisms of adherence behaviors and 3) discuss methods for measuring adherence. Presentation 1 will reframe non-adherence as instances of inadequate coordination by the assigning agent or of psychological inflexibility on the part of the person whose behavior is non-adherent. It will briefly review data for types of non-adherence, including to medication prescription, present a model of psychological flexibility, and summarize a study of one component of this model, committed action, in 216 people seeking pain treatment. Presentation 2 will examine adherence behaviors related to the use of medications taken on an as-needed basis (PRN) for the acute treatment of headache disorders. It will discuss characteristics of adherence behaviors for the effective management of pain using PRN medications, present a model of adherence as a pattern of distinct behaviors required for optimal medication use, and summarize qualitative data on adherence and its barriers from 15 providers and 21 people with headache disorders using phenomenological analysis. Presentation 3 will review data from 2,264 subjects that shows psychosocial risk factors are associated with poor medical treatment outcomes and other clinical concerns, including non-adherence. A second study of 32 million patients examined a patient care model that included psychological screening prior to chronic opioid therapy and other treatments. Results suggest that this biopsychosocial approach reduced disability and medical treatment costs. The Discussant will address the consequences of non-adherence, synthesize information from the presentations and suggest areas for future research investigation.

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Symposium 28A

3023

THE ROLE OF PSYCHOLOGICAL FLEXIBILITY AND COMMITTED ACTION IN CHRONIC PAIN: AN ANSWER FOR NON-ADHERENCE?

Lance M. McCracken, PhD

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Chronic pain persists, and typically so does the disability associated with it. Hence the effects of treatment must persist so that good long term outcomes are achieved. Whether it is medication, physical exercise, or psychological methods, it is often presumed that these persisting treatment effects have two parts: the treatments must remain potent and the patient must keep engaging in them. This latter part is sometimes called adherence. Although treatment adherence is a longstanding challenge in chronic pain, a fresh perspective may be possible, and the purpose of this presentation is to suggest one. Psychological flexibility is the core therapeutic process in a form of cognitive behavioral therapy called Acceptance and Commitment Therapy (ACT). ACT is a growing approach within clinical psychology that has recently been applied and tested in areas of behavioral medicine such as stress, diabetes, epilepsy, multiple sclerosis, smoking, exercise, and chronic pain. Psychological flexibility is defined as the capacity to continue or to change behavior, guided by goals and situational prospects, in a context of interacting influences based in cognitive processes and direct experience. This presentation will present the psychological flexibility model, apply it to adherence, and then describe a study of one component of psychological flexibility, committed action. Participants were 216 people seeking treatment for chronic pain in the UK. Part of this study involves the development of an instrument, the Committed Action Questionnaire (CAQ). Preliminary analyses support the internal consistency and construct validity for the CAQ. Further analyses show that scores from this instrument account for significant variance, $\Delta R^2=.062$ to $.20$, in depression, social functioning, mental health, vitality, and general health in this sample, even when pain severity and acceptance of pain are taken into account. Results support the utility of the psychological flexibility model for understanding adherence in chronic pain.

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Symposium 28B

3024

WHEN MEDICATION USE IS NOT ROUTINE: OPTIMAL USE OF MEDICATIONS TAKEN AS NEEDED

Elizabeth Seng, MS

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Adherence research has primarily focused on the consistent use of medications taken on a fixed schedule to manage chronic disease. Little research has examined behaviors required for optimal use of medications taken as-needed (PRN) to treat recurrent episodes or symptom exacerbations, such as headache disorders. Optimal use of PRN medications appears to require successful performance of complicated sequences of behaviors, which are contingent on symptom- and situation-specific factors. This paper presents data from phenomenological interviews with 21 people with headache [63.9 % female, M age=34.1 (SD=12.8), M headache days/30 days=9.9 (SD=9.4)] and 15 health care providers (86.7 % physicians, 13.3 % nurses). Interviews elicited behaviors required for optimal use of PRN headache medication and barriers to those behaviors. Interviews were recorded and transcribed to establish an audit trail. Researchers coded interviews independently and discrepancies were resolved by discussion. Categories were evaluated through peer-debriefing with headache experts. Interviews revealed 8 behaviors required for optimal use of PRN headache medication, including 3 cross-episode behaviors (keeping PRN medication available, communicating with health care providers and limiting the frequency of use) and 5 episode-specific behaviors (distinguishing between headache types, choosing optimal type and dosage of medication, taking medication at the optimal time, using nonpharmacological alternatives, and repeating doses when necessary). Interviews also identified 10 barriers that could hinder performance of behaviors required for optimal use of PRN headache medications. A model characterizing medication adherence as a pattern of distinct behaviors required for optimal medication use captures the complex balance of behaviors required for optimal use of PRN medications. Results suggest identification of behaviors required for optimal use of a specific medication, and barriers to those behaviors, can guide the development of targeted assessments and interventions for adherence.

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Symposium 28C

3025

PRETREATMENT EVALUATION OF PSYCHOSOCIAL RISK FACTORS FOR POOR MEDICAL TREATMENT OUTCOMES AND ADVERSE CLINICAL CONCERNS

Daniel Bruns, PsyD

Health Psychology Assoc, Greeley, CO.

There is a growing body of evidence that presurgical psychological evaluations (PPE) have a significant ability to predict the outcome of spinal surgical procedures, especially when the procedures are performed to reduce pain. Standardized measures have been previously developed to assess primary (extreme), as well as secondary (moderate) risk scores for poor spinal surgical outcome. However, these risk scores may also have applicability for adherence to medications and other treatments. The hypothesis that the risk scores generated by PPE may also predict other concerns of clinical interest including treatment adherence was tested using data obtained from 777 patients and 1487 community subjects gathered from 106 sites in 36 US states. Using the Battery for Health Improvement 2, the secondary risk scores of subjects who reported various clinical concerns were compared to the scores of those who did not. For each of the clinical concerns, the mean of the community at risk group was compared to the mean of the community control group, and the same was done for patients. The significance of these differences were as follows for the community and patient groups respectively: Non-adherence to medication recommendations ($p=.050$; $p<.001$), need for pain medication ($p<.001$; $p<.001$), addicted to pain medication ($p<.001$; $p<.001$), history of drug treatment ($p<.001$; $p<.001$), expectation of zero pain ($p<.001$; $p<.001$), ticketed for driving while intoxicated ($p=.001$; $p<.001$), angry at MDs ($p<.001$; $p<.001$), plan for malpractice suit ($p<.001$; $p<.001$), plan for suicide ($p<.001$; $p<.001$), violent ideation ($p<.001$; $p<.001$), more than 4 marriages ($p=.004$; $p=.080$), more than 4 jobs in last 5 years ($p=.002$; $p<.001$), history of more than a week in jail ($p=.001$; $p<.001$), and perceive self as disabled ($p<.001$; $p<.001$). In a second study utilizing an insurance database of 32 million patients, an estimated \$760 million was saved in medical treatment and disability costs in 2009 by a treatment system that mandated PPE. Overall, these data suggest that PPE risk scores may apply generally to outcomes and treatment adherence.

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Symposium 29

8:45 AM–10:15 AM

3026

QUANTIFYING THE HEALTH INFORMATION REVOLUTION

Bradford W. Hesse, PhD,¹ Lila J. Finney Rutten, PhD, MPH,⁴ Wen-ying (Sylvia) Chou, PhD, MPH,² Ellen B. Beckjord, PhD, MPH³ and Alan Chirstensen, PhD²

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The health information revolution appears to be in full swing, especially with a recent escalation in the adoption rates and "meaningful use" of Health Information Technology given financial incentives from the American Recovery and Reinvestment Act of 2009. Speculations have been rampant on how these changes may influence patient engagement and health. Population-level data on decennial trends for usage and attitude patterns have just now become available.

For this symposium, we have brought together some of the leading experts in population trends to present the results of new integrative analyses on a decade's worth of surveillance data from the Health Information National Trends Survey, or HINTS. The HINTS program is a national surveillance system in health communication administered by the National Institutes of Health. Speaker # 1 will begin the symposium with an assessment of what Americans know about Electronic Health Records (EHRs) utilization by physicians and how their perceptions of doctors' use may moderate assessments of healthcare quality. Speaker # 2 will continue with a much-awaited analysis of trends in the area of social media use, and will offer an in-depth analysis of the differential utility of these new participative platforms for different population groups. Speaker # 3 will complete the panel presentations with an analysis of how people are taking advantage of health information resources, and will present an evolving theoretical framework for understanding information competency in the new environment. We have asked a representative from the SBM board to serve as a discussant for the panel and to reflect on how the analyses presented may contribute to a better balance of "excitement" and "evidence" in line with the conference's prevailing theme.

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Symposium 29A

3027

TRENDS IN THE AMERICAN PUBLIC'S USE OF, BELIEFS ABOUT, AND ATTITUDES TOWARD INFORMATION TECHNOLOGY IN HEALTH CARE

Ellen B. Beckjord, PhD, MPH,¹ Lila J. Finney Rutten, PhD, MPH,³ Kelly Blake, ScD,² Richard P. Moser, PhD,² Sana Naveed, MPH² and Bradford W. Hesse, PhD²

¹University of Pittsburgh, Pittsburgh, PA; ²National Cancer Institute, Bethesda, MD and ³Mayo Clinic, Rochester, MN.

Background: Over the past ten years, health information technology (HIT) in health care has drastically expanded. Tracking how HIT impacts health care consumers' behaviors, beliefs, and attitudes is critical to ensuring that HIT evolves in a patient-centered way. Here, we describe changes in key HIT-related behaviors and attitudes of Americans between 2002 and 2012.

Method: Data are from four cross-sectional iterations of the National Cancer Institute's Health Information National Trends Survey (HINTS 1–4; 2002–2003; 2005; 2007–2008; 2012). HINTS provides nationally representative estimates on changes over time in use of the Internet; use of the Internet to order medication; use of email to communicate with health care providers (HCP); use of a personal health record (PHR); beliefs about HCP use of electronic health records (EHR); attitudes regarding HCPs sharing health information electronically; and attitudes about being able to access one's own health information electronically.

Results: All outcomes have significantly changed over time including Internet use (63 % in HINTS 1 versus 78 % in HINTS 4); use of the Internet to order medication (9 % in HINTS 1 versus 17 % in HINTS 4); use of email to communicate with a HCP (7 % in HINTS 1 versus 19 % in HINTS 4); use of a PHR (14 % in HINTS 3 versus 19 % in HINTS 4); beliefs that HCPs use EHRs (67 % in HINTS 3 versus 84 % in HINTS 4); endorsing HCPs sharing health information electronically as "very important" (49 % in HINTS 3 versus 64 % in HINTS 4); and endorsing the ability to get one's own health information electronically as "very important" (52 % in HINTS 3 versus 70 % in HINTS 4).

Conclusions: The American public attaches significant value to what IT can enable in health care, but struggles for access to fundamental IT tools and may overestimate the availability of EHRs to their HCPs. The potential of IT to positively impact health care will not be realized until IT implementation matches consumer demands.

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Symposium 29B

3028

SOCIAL MEDIA FOR HEALTH: DATA FROM HINTS 4

Wen-ying Sylvia Chou, PhD, MPH, Abby Prestin, PhD and Sana Naveed, MPH

Health Communication and Informatics Research Branch, National Cancer Institute, Bethesda, MD.

The Internet has become a primary medium for health communication. As such, it is a priority to monitor and provide the best scientific evidence on patterns of health-related Internet use in this evolving digital landscape. This study describes trend, prevalence, and user profiles of Web 2.0 health communication. Data from the most recent iteration of Health Information National Trends Study (HINTS 4) (N=3,959) were analyzed to assess prevalence and population-level trends in Internet access, online health-information seeking, and health-related social media use (support groups, social networking sites, blogs). Demographic and health correlates were explored through weighted logistic regression modeling. Overall Internet access increased from 69 % in 2008 to 78 % in 2011, and a significant positive linear trend ($F(1,196)=168.49$) was observed from 2003 to 2011. Yet, results suggest a persistent Digital Divide in Internet use, whereby older age, lower education, and racial/ethnic minority status predict lower Internet use. Moreover, in 2011, 16 % of Internet users reported visiting a social networking site (SNS) for health purposes. Women were more likely to engage in health-related social media use than men. Online support groups and health-related SNS had distinct user profiles: more education was associated with more support group participation, and less education predicted use of SNSs. Generally, once on the Internet, race/ethnicity, health status, and personal history of cancer did not predict health-related online activity; only age predicted support group, blog, and health-related SNS use after adjusting for all study variables. Rapidly growing Internet and social media penetration has altered the way we seek and share health information and engage in our health care. Understanding online user characteristics will inform health communication strategies leveraging Web 2.0 to increase program reach and effectiveness. This study highlights the need to increase equitable Internet access to alleviate disparities in health information access.

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Symposium 29C

3029

USE OF ELECTRONIC HEALTH RECORDS AND RATINGS OF CARE QUALITY

Lila J. Rutten, PhD, MPH,¹ Neeraj Arora, PhD,² Ellen Burke Beckjord, PhD, MPH,³ Richard P. Moser, PhD² and Bradford W. Hesse, PhD¹

¹Director of Population Health, Center for the Science of Health Care Delivery, Department of Health Sciences Research, Division of Epidemiology, Mayo Clinic, Rochester, MN; ²National Cancer Institute, Bethesda, MD and ³University of Pittsburgh, Pittsburgh, PA.

The adoption of new technologies such as Electronic Health Records (EHR) requires care to ensure that such tools are meaningfully used to facilitate patient-centered care. We analyzed nationally representative data from the Health Information National Trends Survey (HINTS) to explore whether patient reports of healthcare provider use of EHR are associated with their ratings of healthcare quality. We collected data in 2011 and 2012 through mailed questionnaire (n=3959). We used SUDAAN to analyze the complex survey data and all data were weighted to provide representative estimates of the adult US population. Crosstabulation with Chi Square was conducted to explore differences in sociodemographic characteristics and healthcare access by EHR status and mean quality ratings were calculated and compared by EHR status. A multivariable linear regression model was developed to explore independent associations of sociodemographic variables, healthcare access, and EHR use with quality ratings. Most respondents (84 %) reported that their healthcare providers maintained an EHR. Mean ratings of quality of care were significantly higher among those who reported that their healthcare provider maintained an EHR (mean=81.1) compared to those who reported no use (mean=73.8; $t=3.53$, $p<.001$). The association between quality and reported use of EHR remained significant ($p=.05$) when controlling for sociodemographic variables and became marginally significant when usual source of health care and health insurance status were added to the multivariable model ($p=.08$). Our analyses provide some initial evidence, from the patient perspective, of meaningful use of information technology in the healthcare setting.

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Symposium 30

8:45 AM–10:15 AM

3030

OUTCOMES OF PEER SUPPORT PROGRAMS FOR DIABETES MANAGEMENT - PEERS FOR PROGRESS

Edwin B. Fisher, PhD,^{1,2} David H. Thom, MD, PhD,³ Monika Safford, MD,⁴ Michele Heisler, MD, MPA⁵ and Russell E. Glasgow, PhD⁶

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Peers for Progress is a program of the American Academy of Family Physicians Foundation to promote peer support (PS) in health care and prevention around the world. Systematic review of "community health workers," "promotores de salud," etc. identified 69 papers between 2000 and 2011 of which 84.7 % showed statistically significant evidence of benefits of PS. Restricting to diabetes and extending to July, 2012, 19 of 20 papers, showed significant evidence of benefits of PS. Among 14 papers providing data, HbA1c declined from 8.63 % before to 7.77 % after intervention ($p=0.001$). Projects supported by Peers for Progress have evaluated PS in type 2 diabetes. In San Francisco, a clinic based PS program serving a multi-ethnic population reduced average HbA1c 1.07 points, from 10.05 % to 8.98 %, significantly greater than the 0.30-point reduction in usual care or the 0.50-point reduction generally viewed as clinically meaningful. In Alabama, community based PS reached and engaged low income, rural African Americans and engendered greater weight loss than usual care. In Michigan, parallel projects in Latino and African American communities evaluated the incremental value of PS as an addition to a group education course. Measures of retention and participation indicate good engagement in the program; clinical and psychosocial outcomes will be presented at the annual meeting. Along with other projects of Peers for Progress, these document feasibility in diverse settings, acceptance and engagement of intended audiences, effectiveness, and sustainability and adoption of PS programs. Russell Glasgow, Deputy Director for Implementation Science at the National Cancer Institute will serve as discussant.

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Symposium 30A

3031

PROCESS AND CLINICAL OUTCOMES OF THE PLEASED INTERVENTION

Michele Heisler, MD, MPA,¹ Elizabeth Lockhart, MPH,² Brandy R. Sinco, BS, MS,³ Gloria Palmisano, BS, MA⁴ and Tricia Tang, PhD⁵

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Peer-Led, Empowerment-based Approach to Self-management Efforts in Diabetes (PLEASED) included a training program in behavioral change and facilitation skills to train diabetes patients to be peer leaders. In Phase One, peer leaders facilitated formal diabetes self-management training programs that, when led by professionals, have improved diabetes-related health and psychosocial outcomes. In Phase Two, participants were randomized to clinical care alone or 12 months of 'drop in' weekly group sessions and peer telephone outreach provided by the peer leaders. PLEASED was implemented in two distinct cultural and linguistic communities: low income African-American adults in a community-based setting (Ypsilanti, Michigan) and inner-city Latino adults (Spanish- and English-speaking) in a clinic-based setting (Southwest Detroit). We recruited and trained 15 peer leaders, 13 of whom continued as peer leaders throughout the 12-month intervention. 211 diabetes patients were recruited, of whom 167 completed the program (retention=79 %). Key challenges included maintaining peer leader morale and persistence in following up with participants. Monthly "Peer Wellness" dinners facilitated exchange and joint problem-solving among peer leaders. Because many participants in the southwestern Detroit site faced transportation barriers limiting regular participation in face-to-face group sessions, peer leaders relied extensively on telephone contacts. Evaluations completed by November, 2012, will compare those receiving 12 months' peer support and those returned to clinic care alone. The primary clinical outcome is HbA1c, a measure of average blood glucose control over the prior three months. Results of analyses of clinical and psychosocial outcomes will be presented.

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Symposium 30B

3032

VOLUNTEER PEER SUPPORT IN RURAL ALABAMA

Monika M. Safford, MD,¹ Jewell H. Halanych, MD, MSc,¹ Michelle Y. Martin, PhD,¹ Susan J. Andreae, MPH,¹ Debra S. Clark, MS,¹ Ethel Johnson, BS,¹ Joshua S. Richman, MD, PhD,¹ Christopher M. Gamboa, MPH² and Andrea L. Cherrington, MD, MPH¹

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Peer support shows promise for chronic disease self-management, but it is not clear how much peer support adds to culturally adapted diabetes education. Our group-randomized controlled trial tested the hypothesis that volunteer peer support leads to superior outcomes compared with diabetes education alone in the Alabama Black Belt, a rural area with deep poverty, high diabetes prevalence, high proportion of black residents, and scarce resources for managing chronic disease. Peer supporters were residents of our partnering communities and had diabetes or were helping a family member care for their diabetes. Peers were trained over 2 days, emphasizing empowerment, motivational interviewing skills, and goal setting. Each of the 200 intervention arm participants worked with a certified peer advisor over the telephone weekly for 8 weeks, then monthly for 10 months. All 424 participants received a culturally adapted, simplified 1-hour education class (covering diabetes basics, physical activity, healthy eating and the doctor visit) and a diabetes report card with HbA1c, blood pressure, cholesterol and weight. The 360 participants with follow-up (retention 84.9 %) were 87.5 % black, 75.3 % women, with mean age 60.2 in better treatment attendance, medication compliance, and clinical 12.1 years; mean baseline HbA1c was 7.94 % in better treatment attendance, medication compliance, and clinical 1.96 % and mean body mass index was 36.3 in better treatment attendance, medication compliance, and clinical 8.5 kg/m². At follow-up, both study arms had increased diabetes knowledge, ate more fruits and vegetables and adhered better to medication regimen ($p < .05$), with greater improvement in patient activation and social support for the intervention group and no change in physical activity for either arm. In both study arms, HbA1c and blood pressure were unchanged, health status and depression improved slightly, but intervention arm participants lost significantly more weight ($p < .05$). Culturally adapted diabetes education was associated with improved diabetes knowledge, some health behaviors and outcomes one year later. Volunteer peer support provided modest additional improvement in several measures.

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Symposium 30C

3033

PEER HEALTH COACHING IMPROVES GLYCEMIC CONTROL IN LOW-INCOME PATIENTS WITH DIABETES: A RANDOMIZED CONTROLLED TRIAL

David H. Thom, MD,¹ Amireh Ghorob, MPH,¹ Danielle Hessler, PhD,¹ Diana De Vore, BS,¹ Ellen Chen, MD² and Thomas A. Bodenheimer, MD¹

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Context: Peer health coaches offer a potential model for extending the capacity of primary care practices to provide self-management support for patients with diabetes.

Objective: We conducted a randomized controlled trial to test whether clinic-based peer health coaching, compared with usual care, improves glycemic control for low-income patients with poorly controlled diabetes.

Design: Randomized controlled trial.

Setting: Six public health clinics in San Francisco. Participants: Twenty-three patients with a glycosylated hemoglobin (HbA1C) level < 8.5 %, who completed a 36-hour health coach training class, acted as peer coaches. Patients from the same clinics with HbA1C > 8.0 % were recruited and randomized to receive health coaching ($n = 148$) or usual care ($n = 151$).

Intervention: Peer coaching over 6 months.

Outcomes: The primary outcome was the difference in change at 6 months in HbA1C, a measure of blood sugar control over the previous 3 months. Secondary outcomes were proportion of patients with a drop in HbA1C of > 1.0 % and proportion of patients with HbA1C < 7.5 % at 6 months. Data were analyzed using a linear mixed model with and without adjustment for differences in baseline variables.

Results: By 6 months, HbA1C levels had declined from 10.05 to 8.98 % in the coached group versus 9.85 to 9.55 % in the usual care group. The decline by 1.07 points in the coached group was significantly greater than the 0.3 point decline in usual care, a difference of 0.77 points in favor of coaching ($p = .01$, adjusted). HbA1C levels dropped > 1.0 % in 49.6 % of coached patients vs 31.5 % of usual care patients ($p = .001$, adjusted) and levels at 6 months were < 7.5 % for 22.0 % of coached vs 14.9 % of usual care patients ($p = .05$, adjusted).

Conclusions: Peer health coaching significantly improved diabetes control in this group of low-income primary care patients.

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Symposium 31

8:45 AM–10:15 AM

3034

PHYSICIANS' RACIAL BIAS AND DISCRIMINATION

Sarah J. Miller, PsyD,¹ Yendelela Cuffee, PhD² and Hayley S. Thompson, PhD³

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Decades of research have found that well-intentioned physicians hold biases toward patients from minority racial/ethnic groups. Physicians' racial biases, though often unintentional, can play a significant role in creating and perpetuating health disparities. This symposium will highlight the cutting edge research being conducted in this field. The first aim of the symposium is to review research on the consequences of physicians' racial biases. In particular, the presentations will discuss how physicians' racial biases can lead to the unequal medical treatment of racial/ethnic minorities. In addition, the symposium will discuss how physicians' biases can directly and indirectly influence patient outcomes (e.g., increase patients' medical mistrust, hinder patients' perceptions of healthcare interactions, decrease patients' adherence to medical recommendations, and lead to poor health outcomes). The second aim of the symposium is to present conceptual models/explanatory mechanisms of physicians' racial biases and their impact on patient outcomes. The third aim of the symposium is to present research on interventions designed to reduce physicians' racial biases and improve patient outcomes. Finally, the fourth aim of this symposium is to discuss areas for future research and to set a health promotion agenda. Some of the leading researchers in this field will be presenting their recent work and ample time will be allotted to address questions, comments, and discussion points.

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Symposium 31A

3035

THE INFLUENCE OF ENVIRONMENTAL, INTERPERSONAL, AND INDIVIDUAL FACTORS ON CLINICIAN BIAS IN HEALTH CARE ENCOUNTERS

Michelle van Ryn, PhD,¹ Diana Burgess, PhD,^{3,2} Sean Phelan, PhD, MPH¹ and Steven Fu, MD^{3,2}

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Thousands of studies have demonstrated that under-represented minority adults and children are less likely to get appropriate, guideline-concordant, and cutting-edge medical care than their white counterparts. A variety of other clinically irrelevant social identity factors such as sexual orientation and education have also been shown to affect provider behavior, medical encounters and outcomes. A decade ago we proposed a conceptual model illustrating a set of hypothesized mechanisms through which providers' behavior, cognition, and decision-making might contribute to inequalities in care. Empirical evidence has supported many of these hypothesized mechanisms, demonstrating that medical care providers sometimes: 1) hold negative implicit (unconscious) biases and explicit stereotypes; 2) have implicit racial and other biases that persist independently of and in contrast to their explicit (conscious) attitudes, and 3) can be influenced by bias in their clinical decision-making and behavior during encounters. This presentation describes our updated model of the provider contribution to disparities in care. The model incorporates new evidence from several disciplines regarding the individual, situational and context factors that influence the likelihood that implicit and explicit bias will affect provider expectations and behavior, patient expectations and behavior, or both. Evidence from studies in other settings will be used to illustrate the way a complex interaction between setting factors, provider unintended biases and patients' experiences of discrimination & stereotype threat may influence processes of care. The talk will conclude by applying the latest evidence to specific recommendations for intervention studies aimed at preventing inequalities in care.

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Symposium 31B

3036

PATIENT REACTIONS TO RACIAL BIAS: THE (VERY PERCEPTIVE) EYE OF THE BEHOLDER

Louis A. Penner, PhD, MA

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Racial and ethnic disparities in health status are due, in part, to substantial racial disparities in the quality of health care Blacks and Whites receive. Despite physicians' overwhelming condemnation of racial bias in healthcare and generally positive explicit racial attitudes, subtle or implicit racial bias exists among health care providers and plays a role in healthcare disparities. This presentation focuses on the impact of implicit provider racial bias on Black patients' immediate and longer-term reactions to health care interactions. Data will be presented to show that not only do Black patients detect and react to implicit racial bias, they react most strongly to providers who show a disparity between their explicit and implicit racial attitudes. During racially discordant interactions, physicians who display low explicit bias, but high implicit bias (known as aversive racists) are perceived by Black patients as less warm and trustworthy, engender less patient satisfaction and interpersonal rapport, and cause more patient distress/unease. At the same time, data indicate that Black patients who report higher levels of previous discrimination are more actively engaged during the medical encounter, but report less satisfaction with the interaction, less trust and adhere less to the physicians' recommendations several months after the visit. However, it is possible to increase patient trust and improve the adherence following racially discordant medical interactions. Results of a randomized controlled study will be reported, in which Black patients either received standard care or an intervention based on a model used to reduce intergroup bias—the common ingroup identity model. The intervention emphasized doctors' and patients' common "team" identity. Patients who received this intervention displayed higher sustained levels of trust in their doctor and greater subsequent medical adherence than Black patients who received standard care. The implications of these findings for health care disparities will be discussed.

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Symposium 31C

3037

STIGMA "IN THE AIR": THE INFLUENCE OF EXPERIENCING RACIAL AND ETHNIC STIGMA ON HEALTH-RELATED TREATMENT AND INTERVENTION

John F. Dovidio, PhD,¹ Valerie Earnshaw, PhD,² Allecia Reid, PhD³ and Blair T. Johnson, PhD⁴

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While racial and ethnic biases among healthcare providers contribute directly to disparities in health, awareness of being stigmatized can adversely affect the perceptions, decisions, and reactions at various points in the process, leading to less effective medical care even in the absence of immediate discrimination in a medical encounter. This presentation is organized into three interrelated sections. First, it introduces a conceptual model and reviews relevant literature demonstrating how the experience of stigma among members of racial and ethnic minority groups contributes to (a) stressful life experiences that can have a cumulative negative effect on the health and well-being of racial and ethnic minorities, (b) distrust of the medical community that leads to underutilization of health services, and (c) less adherence to medical recommendations and interventions. Second, the presentation then describes empirical support for key elements of the model in a meta-analysis of the role of structural (residential segregation) and psychological (Whites' attitudes in the local community) on the effectiveness of HIV-preventions, for up to one year, with African Americans. Third, the presentation builds on the theoretical and empirical foundation of the first two sections to identify a health-promotion agenda, recognizing the importance of building intergroup trust and communicating respect for intersectional identities, to enhance psychological resilience to stigma and its detrimental consequences in health and healthcare.

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Symposium 32

8:45 AM–10:15 AM

3038

INTEGRATED CARE TEAM APPROACHES FOR TREATMENT OF OBESITY

Stephanie L. Fitzpatrick, PhD,¹ Russell E. Glasgow, PhD,² Suzanne Bennett Johnson, PhD,³ Kenneth R. Jones, PhD⁴ and Mark Vogel, PhD, ABPP⁵

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Currently 35.7% of U.S. adults are obese. Contributing factors to the increasing prevalence of obesity include lifestyle, environment, and psychosocial correlates. Obesity is often comorbid with cardiovascular disease, diabetes, and mental illness. Given the complex causes and medical comorbidities of obesity, treatment for obesity is complex and requires input from several disciplines. Despite the need and growing evidence for a multidisciplinary approach to treatment of obesity, this team approach has not been fully implemented in clinical care settings. In fact, the recent Center for Medicare & Medicaid policy on behavioral treatment of obesity only reimburses primary care practitioners. The purpose of this symposium is to allow experts to present views, practice/organizational strategies, and current research on integrated care team approaches for treatment of obesity in clinical care settings. During the symposium, Dr. Russell Glasgow will provide a working definition of an integrated care team and discuss the need for standardized patient reported measures within EMR as tools to promote integrated care. Dr. Suzanne Bennett Johnson will discuss the growing need for and role of psychologists within integrated care teams for obesity treatment as well as the recent practice and policy work the American Psychological Association is undertaking to address the obesity epidemic. Dr. Kenneth Jones will present recent outcome data on the effectiveness of the MOVE! Weight Management Program for Veterans on weight management within the VA Healthcare System and the critical role of integrated care teams. Dr. Mark Vogel will lead the discussion on challenges, opportunities and implications of implementing integrated care teams for the treatment of obesity.

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Symposium 32A

3039

MOVE![®] WEIGHT MANAGEMENT PROGRAM: IMPLICATIONS FOR CENTERS FOR MEDICARE AND MEDICAID SERVICES (CMS)

Kenneth R. Jones, PhD, Lynn Novorska, RD, Susi Lewis, MA, RN, Megan Simmons, MS, Trang Lance, MPH, Sophia Hurley, MSPT and Linda Kinsinger, MD, MPH

VHA National Center for Health Promotion and Disease Prevention, Veterans Health Administration, Durham, NC.

The Veterans Health Administration (VHA) has observed steady increases in the prevalence of overweight and obesity among Veterans. In response, VHA implemented MOVE! in 2006. MOVE! has rapidly become the largest weight management program offered by a healthcare system. Citing the experience of MOVE!, CMS has modified their rules to reimburse providers for up to six weight management sessions per year. In contrast to the CMS model, MOVE! was developed to utilize a multidisciplinary team approach and decrease physician burden. The MOVE! Handbook requires that the team be made up of dietitians, nurses, behavioral health experts, physical activity professionals, and a physician champion. A previously reported systematic analysis of facilities with very high weight loss outcomes (compared with facilities with low weight loss outcomes) revealed that structured care and group interventions were necessary but not sufficient conditions for high outcomes. Four program models with additional necessary components were identified that produced high outcomes: a) high program complexity and high staff involvement, b) the use of quality improvement strategies and no waiting list, c) care with combined group and individual visits, and d) an active physician champion. While an active physician champion was included in one model, this was only in the presence of a structured program of care and the availability of the group care (typically led by non-physicians). More recently, ongoing evaluation has revealed that patients seen eight or more times over a span of at least four months are much more likely to achieve weight loss goals. CMS has made an important step by adding coverage for weight management care, but the MOVE! experience suggests that CMS may limit the effectiveness of this care by placing too much of a burden on physicians while not adequately providing group interventions, a structured treatment program, and necessary levels of patient contact.

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Symposium 32B

3040

INTEGRATED CARE TEAMS: DEFINITION, EXAMPLES AND NECESSARY TOOLS

Russell E. Glasgow, PhD,¹ Rodger Kessler, PhD,² Alex Krist, MD,³ Hector Rodriguez, PhD⁴ and Suzanne Heurtin-Roberts, PhD¹

¹Division of Cancer Control and Population Sciences, National Cancer Institute, Rockville, MD; ²Department of Family Medicine, University of Vermont College of Medicine, Berlin, VT; ³Department of Family Medicine, Virginia Commonwealth University, Richmond, VA and ⁴Department of Health Services, UCLA School of Public Health, Los Angeles, CA.

This presentation will provide background for the other talks in this symposium by presenting a working definition of integrated care, providing example applications, and discussing key resources and tools needed for integrated care teams to function effectively. The working definition to be presented uses a realist perspective to focus on what is being integrated, across what staff, and for what purposes. Important points are that care is integrated for multiple risks, conditions and behaviors and integrated across multiple disciplines to produce patient-centered outcomes. Examples are provided of both co-located integrated care and care integrated between primary care and community organizations. The importance of having standard, actionable patient reported measures, especially of health behaviors, psychosocial issues, and patient preferences will also be discussed. Iterative, participatory processes to identify a brief practical set of patient report measures recommended for routine inclusion in electronic health records for all adult primary care patients will be summarized. An ongoing pragmatic trial to test the implementation of these measures and a related automated feedback tool will be described. Finally, implications and key questions for research, practice and policy will be discussed with the audience.

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Symposium 32C

3041

ADDRESSING THE OBESITY EPIDEMIC: WHY SHOULD PSYCHOLOGISTS CARE? WHAT IS APA'S RESPONSE?

Suzanne Bennett Johnson, PhD

American Psychological Association, Washington, DC.

Obesity has reached epidemic proportions in the United States; over one-third of US adults and 50 % of African-American women are obese (body mass index \geq 30). The number of obese individuals rapidly increased from 13 % of the US population in 1960–2 to 35.1 % in 2005–6. Obesity is now the second leading cause of death in the US, and is likely to become the first. Unless this epidemic is successfully addressed, life expectancy will actually decline in the US. The obesity epidemic is not a product of changing genes or biology. It has its roots in the social environment and human behavior. Psychologists are experts at understanding human behavior as well as initiating and maintaining behavior change. Although obesity impacts an individual's physical and psychosocial well-being, the medical consequences have been emphasized. Although many psychologists have contributed to our understanding of obesity, its treatment and prevention, most psychologists are unaware of the obesity epidemic or view it as the domain of the medical establishment. Expanding psychology's role in advancing health is one of the core elements of APA's strategic plan. To successfully address this goal, psychology must play a larger role in addressing the obesity epidemic - from basic science to prevention to treatment to public policy. Integrated care teams that include psychological expertise is one important way to address the obesity epidemic. However, for such teams to be successful, adequate numbers of psychologists must be trained to serve effectively on integrated care teams and their services must be adequately compensated. APA efforts to address these important issues will be discussed including activities focused on both education and training, reimbursement for psychological services, and building inter-organizational collaborations.

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Symposium 33

8:45 AM–10:15 AM

3042

BIO-BEHAVIORAL CONNECTIONS TO OBJECTIVE SLEEP DISTURBANCES IN BREAST CANCER

Arianna Aldridge-Gerry, PhD, MPH,¹ Oxana Palesh, PhD, MPH,¹ Firdaus Dhabhar, PhD,^{1,3} Michelle Rissling, PhD⁴ and David Spiegel, MD^{1,2}

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Symposium Overview: Sleep disturbance among women with breast cancer is prevalent, and significantly higher than that experienced by healthy women. Investigations of the psych-immunological effects of objectively measured sleep disturbance among women with breast cancer are rare. The current symposium seeks to disseminate recent findings, using gold-standard measurements of sleep including polysomnography (PSG) and actigraphy that demonstrate how disruption of sleep in women with breast cancer is related to their psychological and immune function. Our discussions will center on the biopsychosocial effects of sleep disturbance, including the relationships of depression, general physical health, and immune function to cancer progression. New research on the deployment of natural killer cells and their diurnal rhythms, and novel treatment methods for sleep disturbance in breast cancer will be discussed. Our first presentation will discuss findings on methods characterizing objective sleep disturbance, and how severe disturbance in metastatic breast cancer is related to mood and faster disease progression. The second study will address the role of obesity as it is related to circadian disturbance, exercise, and mood. The third presentation will focus on immune function and distribution of NK cells as they relate to disease status and sleep disruption. The final presentation will provide insight into advancements of novel bright white light therapy to improve sleep and activity rhythms in women undergoing chemotherapy for breast cancer. Overall, the symposium will address the clinical implications of sleep disturbance related to the health of women with breast cancer, and provide future recommendations for targeted interventions that may improve quality of life and disease course.

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Symposium 33A

3043

CANCER PROGRESSION AND ALTERATIONS OF SLEEP ARCHITECTURE IN WOMEN WITH METASTATIC BREAST CANCER

Arianna Aldridge-Gerry, PhD, MPH,¹ Jamie Zeitzer, PhD,^{1,4} Oxana Palesh, PhD, MPH,¹ Firdaus Dhabhar, PhD,^{1,3} Booil Jo, PhD,¹ Eric Neri, BS,¹ Bitra Nouriani, MS¹ and David Spiegel, MD^{1,2}

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Background: Sleep disturbance is common among women with metastatic breast cancer (MBC), but few studies have utilized polysomnographic (PSG) evidence of sleep disruption and related it to depression and disease progression.

Methods: 91 women with MBC (aged 57.9 \pm 7.3 yrs) and Karnofsky ratings of at least 70 were recruited. Latent profile analysis was employed to derive distinct patterns of PSG measured in-lab sleep, and used to predict depressive symptoms (measured by CES-D), affect (measured by PANAS) and disease progression (disease free months before metastases).

Results: Findings revealed two classes of women described as "mildly disturbed sleepers" (n=67) or "severely disturbed sleepers" (n=24). Severely disturbed sleepers had worse quality of sleep (e.g., worse sleep efficiency) and spent significantly more time in light non-rapid-eye-movement sleep, and less time in slow wave and REM sleep. One-way ANOVA revealed that severely disturbed sleepers reported significantly higher symptoms depression (p<.05), and greater negative affect (p<.05). Strikingly, severely disturbed sleepers had shorter disease free intervals (49 months vs. 80 months, p<.05), and worse Karnofsky ratings (M=87.06 vs. M=93.22, p<.05) than their counterparts, indicating worse medical prognosis.

Conclusion: Women with severely disturbed sleep had worse mood and accelerated cancer progression than women with mild sleep disruption. This is the first study to show rapid disease progression is associated with disrupted sleep in women with MBC.

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Symposium 33B

3044

OBESITY IN WOMEN WITH METASTATIC BREAST CANCER IS ASSOCIATED WITH DISRUPTED CIRCADIAN RHYTHMS, POOR SLEEP, DEPRESSION AND REDUCED PHYSICAL ACTIVITY

Oxana Palesh, PhD, MPH,¹ Cheryl Koopman, PhD,¹ Jamie Zeitzer, PhD,¹ Arianna Aldridge-Gerry, PhD, MPH,¹ Eric Neri, BS,¹ Karen Mustian, PhD, MPH,³ Bitu Nouriani, MS¹ and David Spiegel, MD^{1,2}

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Obesity occurs in a significant proportion of women undergoing treatment for breast cancer. Obesity increases risk for cancer recurrence and accelerates progression. The aim of this cohort study is to identify biobehavioral factors and related opportunities for intervention among obese women with MBC. 103 women with MBC were assessed using wrist actigraphy (24 hours/day for 14 days), polysomnography (1 night), and patient reported outcomes of depression and physical activity. Women were classified as obese (BMI \geq 30, n=31, mean age=57) and non-obese (BMI<30, n=72, mean age=58). Obese women had significant disruption of the circadian locomotor rhythm, characterized by low L<O index (% of minutes of activity counts in bed below the median activity counts out of bed), compared to non-obese women (obese=87 % vs. non-obese=92 %, p=.011). Obese women exhibited more nighttime sleep fragmentation (p=.05) and more moderate-to-severe obstructive sleep apnea (obese=32 % vs. non-obese=13 %, p=.026) compared to non-obese women. Obese women also reported more depression (p=.016) and less physical activity (walking >60 mins/wk; obese=32 % vs. non-obese=70 %, p=.009 and stretching; obese=52 % vs. non-obese=76 %, p=.045) compared to non-obese women. Obese women with MBC are at increased risk for disrupted circadian rhythms, sleep fragmentation, obstructive sleep apnea, depression, and low levels of physical activity - all of which are associated with accelerated cancer progression and mortality. Obesity is a treatable risk factor that can respond to behavioral and exercise interventions. Future research should focus on understanding disease progression mechanisms related to obesity and developing interventions tailored to the needs of women with MBC.

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Symposium 33C

3045

NATURAL KILLER (NK) CELL DIURNAL RHYTHMS AND SLEEP DISRUPTION IN METASTATIC BREAST CANCER

Firdaus S. Dhabhar, PhD,^{1,3} Booil Jo, PhD,¹ Eric Neri, BS,¹ Jamie Zeitzer, PhD,¹ Nicole M. Bricker, MAS,³ Bitu Nouriani, MS,¹ Arianna Aldridge-Gerry, PhD, MPH¹ and David Spiegel, MD^{1,2}

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Rationale: Numbers of protective immune cells in the blood, and their diurnal rhythms are a measure of immuno-protection. Therefore, we examined these variables and their association with health measures and sleep disruption in metastatic breast cancer patients (MBC).

Methods: We quantified diurnal changes in absolute numbers of NK cells in MBC (n=48) and controls (n=19) every 4 h, starting 12 h (T1) after sleep midpoint on day 1, and ending 24 hours later (T7). Health status was measured by disease free interval and Karnofsky Rating and sleep quality by home actigraphy over two weeks.

Results: Controls showed peak NK numbers at T1 with a trough at sleep midpoint (T4) and return to peak 12 h later. MBC showed lower peak NK (p=0.039), indicating a decrease in NK-mediated immuno-protection. Among MBC, lower peak NK was associated with shorter disease free interval (p=0.036) and lower Karnofsky Rating (p=0.083, trend) indicating worsening health. MBC also showed a smaller peak to trough decrease (p=0.006) that suggests reduced diurnal NK redistribution among immune compartments which could also decrease immuno-protection. We further investigated the relationship between sleep disruption and NK rhythms in MBC: The diurnal peak to trough decrease in NK number was negatively associated with higher average wake time after sleep onset (R=-0.38, p=0.006) and larger number of awakenings (R=-0.36, p=0.014). In contrast, increased sleep efficiency was associated with a larger peak to trough decrease (R=0.40, p=0.005) indicating a positive association between better sleep and a healthier diurnal NK rhythm.

Conclusion: MBC patients showed lower numbers and blunted diurnal redistribution rhythms of NK cells. Among patients, lower NK numbers were associated with shorter disease free interval and worse Karnofsky Rating, and blunted NK rhythms with sleep disruption.

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Symposium 33D

3046

PREVENTING SLEEP DISRUPTION WITH BRIGHT LIGHT THERAPY DURING CHEMOTHERAPY FOR BREAST CANCER: A RANDOMIZED CONTROLLED TRIAL

Michelle Rissling, PhD,¹ Vera Trofimenko, MD,² Neelum Jeste, MD,³ Lianqi Liu, MD,^{4,6} Loki Natarajan, PhD,⁵ Ariel Neikrug, MS,¹ Barbara Parker, MD^{6,7} and Sonia Ancoli-Israel, PhD^{1,4}

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Objectives: Disturbed sleep is one of the most common and distressing complaints among breast cancer patients. In addition to nighttime sleep disruptions, breast cancer patients also complain of longer and more frequent daytime naps as cancer treatment progresses. The goal of this study was to examine whether daily morning bright white light therapy would maintain or improve sleep in women undergoing chemotherapy for breast cancer.

Methods: Data on sleep and activity (measured with wrist actigraphy and self-report) were collected prior to treatment and during the treatment and recovery weeks of chemotherapy cycle 1 and 4 in 39 women with newly diagnosed breast cancer. Participants were randomized to either 30 minute daily morning bright white light or dim red light condition.

Results: Results suggested that at the end of cycle 4 of chemotherapy, women in the bright white group evidenced significantly longer nighttime sleep (1.051 hrs) and fewer (-1.23 naps/day) and shorter daytime naps (-0.63 hrs/day, ps<0.05). Women in the bright light group also exhibited less activity at night (p=0.05) and more activity during the day (p=0.01) by the beginning of cycle 4 of chemotherapy.

Conclusions: Consistent to the study hypothesis, these results suggest that morning bright white light therapy administered during chemotherapy may protect patients from nighttime sleep and daytime wake disruption.

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Friday
March 22, 2013
11:45 AM–12:45 PM

Panel Discussion 09 11:45 AM–12:45 PM 3047

SHARED DECISION MAKING MEASURES: PROMOTING HARMONIZED DATA USING THE NATIONAL CANCER INSTITUTE'S GRID-ENABLED MEASURES (GEM) PORTAL

Sarah Kobrin,¹ Miho Tanaka, PhD,¹ Paul Han,² Karen Sepucha,³ Sana Naveed¹ and Richard Moser¹

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Background: In the last twenty years, numerous studies have empirically examined decision making processes and outcomes in clinical settings. However, a paucity of standardized measures of Shared Decision Making (SDM) constructs prevents data sharing; comparison and validation of findings between studies; meta-analysis; and other approaches to advancing science through data synthesis.

Methods: We used the NCI's Grid-Enabled Measures (GEM) portal to create a publicly available repository of SDM measures for use in the clinical setting and to begin building consensus about optimal antecedent, process, quality and outcome measures. A three-step process was undertaken to engage the scientific community in discussion of a wide range of SDM measures. First, NCI provided educational sessions, presented at scientific conferences, and contacted networks of subject matter experts (EDUCATE). Then, the scientific community contributed SDM measures (POPULATE) and provided feedback on suggested measures (RATE), including the conceptual bases, psychometric properties, and overall quality of the measures.

Results: This three-step participatory process allowed us to begin building consensus around harmonized measures for use in future SDM studies. The presentation will describe the results of the EDUCATE, POPULATE and RATE steps and the progress toward gathering an agreed on set of SDM measures. Finally, we will discuss lessons learned from these steps, conceptual implications for SDM, and plans for the future evaluation and dissemination of the measures.

Conclusions: GEM-SDM has the power to engage the scientific community in a conceptual and empirically based discussion of current SDM measures. This discussion will shift the field toward use of common measures and will allow sharing harmonized data, thereby facilitating transdisciplinary research and moving science forward by creating a cumulative knowledge base.

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Panel Discussion 10 11:45 AM–12:45 PM 3048

HOW DO I FIND AND WORK PRODUCTIVELY WITH A COMPUTER SCIENTIST? A PANEL DISCUSSION ON WORKING ACROSS THE DISCIPLINARY DIVIDE FOR DEVELOPING BEHAVIOR CHANGE TECHNOLOGIES

Eric B. Hekler, PhD,¹ Caroline Richardson,² Pedja Klasnja,² Paul Resnick² and Julie Wright³

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Human Computer Interactions (HCI) is a field of research at the interface of computer science and cognitive science focused on scientifically studying and creating tools that focus on the interaction between humans and computing machines (e.g., computers, smartphones). The study of health behavior change technologies is a rapidly growing interest area within the HCI community and the research being conducted by HCI researchers are highly relevant to behavioral scientists who are developing technology related interventions. Further, HCI researchers, with their common interest in developing health behavior change technologies, are key colleagues for conducting eHealth/mHealth research. Unfortunately, the siloed nature of academia can make it difficult for behavioral scientists to identify and cite work published in the HCI literature, let alone work with colleagues from these other communities. Both disciplines are increasingly recognizing the advantages of interdisciplinary and other trans-disciplinary work for advancing their research. In this panel discussion, two members of the HCI community and two members of the behavioral medicine community will share their experiences collaborating across the disciplinary divide to develop and evaluate technology-based behavior change interventions. The goals of the panel are to provide SBM members with: (a) an introduction to the culture, methods, and core questions within the HCI community with an explicit discussion on how the methods differ and often complement research conducted by behavioral scientists; (b) to provide the audience with stories including opportunities and challenges with working between the two broad communities from those experienced in doing so; and (c) a discussion on strategies used by the panelists to foster productive working relationships across the disciplinary divide.

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Panel Discussion 11 11:45 AM–12:45 PM 3049

IF YOU BUILD IT, WILL THEY COME? EXPLORING THE CHALLENGES OF TRACKING THE UTILIZATION OF EHEALTH INTERVENTIONS

Linda Fleisher, MPH, PhD,¹ Lee M. Ritterband,² Gary G. Bennett,³ Deborah Tate⁴ and Kevin Patrick⁵

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This panel session explores emerging issues related to tracking the utilization of eHealth interventions. Although the Internet and related technologies provide exciting opportunities to reach and impact health behavior, recent research findings suggest potential concerns regarding their uptake. Issues include actual program usage and adherence, attrition, and potential variations in utilization between research and consumer implementation. There are concerns that research participants may utilize these programs differently than 'real-world' consumers might once they are made available. Compounding these issues is the lack of standardization revolving around what and how to track utilization. This panel will discuss opportunities to build consensus definitions to allow for broader cross project evaluation. A number of topics will be explored regarding eHealth usage patterns, including: 1) ways to report participant utilization, 2) setting appropriate expectations of percentage of non-users, 3) challenges in outcome analyses, 4) discrepancies in self-report and objectively measured usage, 5) understanding patterns of use by different populations, and 6) strategies to increase utilization.

An improved understanding of the issues explored here could inform planning and implementation of eHealth interventions and encourage ongoing dialogue among health communication researchers regarding research methodology.

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Panel Discussion 12 11:45 AM–12:45 PM 3050

MALE PARTICIPATION IN WEIGHT LOSS INTERVENTIONS: PRESENT FINDINGS AND FUTURE DIRECTIONS

Gina Evans-Hudnall,^{1,2} Lonique R. Pritchett,¹ Jessica Y. Breland^{1,3} and Cora Platt^{1,4}

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Obesity is a public health epidemic that affects roughly equal numbers of males and females in the United States (32 % vs. 36 %). Men may be in greater need of weight loss interventions as they are less likely to perceive themselves as overweight, and are less likely to attempt weight loss than women. Additionally, men are more likely than women to store fat in locations associated with worse health outcomes. Given these factors, men are at greater need of weight loss interventions. However, males comprise only 27 % of participants in weight loss and related chronic disease self-management interventions. Ethnic minority men are even less represented in weight loss interventions (<2 %), despite the fact that many minority groups are more likely to be obese and to be negatively affected by health conditions that are exacerbated by obesity. Therefore, there is a need to recruit more men, especially ethnic minority men, into weight loss interventions. Recent research has highlighted some factors that might improve recruitment of male participants into weight loss interventions, including male-only groups and a focus on physical functioning as opposed to appearance. Research suggests that technology is an understudied intervention approach among men and may be an important tool in increasing participation among men in weight loss interventions. In an effort to inform future research, we will discuss: 1) current research detailing the hypothesized rationales for limited male participation in weight loss interventions; 2) the impact of racial and ethnic factors in male participation in weight loss interventions; 3) the ways in which future research might use these findings to improve male participation in weight loss interventions; and 4) the ways in which technology could improve the recruitment and retention of male participants in weight loss programs.

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Panel Discussion 13 11:45 AM–12:45 PM 3051

INTEGRATING OUTCOMES TRACKING INTO EVIDENCE-BASED PRACTICE - TECHNOLOGICAL CHALLENGES AND STATE-OF-THE-ART SOLUTIONS

Freda F. Liu, PhD,^{1,2} Corey Fagan³ and Carol Rockhill^{1,2}

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The need to demonstrate efficacious and cost-effective mental health services in the age of escalating healthcare costs has spurred intense interest among healthcare agencies to tracking clinical outcomes. An emerging body of research suggests that routine monitoring of symptoms (RMS also known as "outcomes tracking") with feedback to clinicians positively affects care (e.g., improving diagnosis, clinicians' responsiveness, detection of deterioration). Technological advances in the collection and use of behavioral health data in recent years further increases the feasibility RMS. However, implementation of outcomes tracking systems as part of routine clinical care is a substantial undertaking that requires considerable resources and broad institutional support for system, culture, and behavior change. This panel discussion will provide insight into the process of implementing RMS in a specialty child and adolescent mental health clinic of a large regional medical center. This discussion will highlight the importance of RMS to the effective delivery of evidence-based treatments, the complexity of designing and integrating a tracking system that meets the various needs and goals for RMS, the challenges of integrating new technology, engaging clinicians and support systems in behavior and procedure changes, and possible solutions to overcome some of these barriers to implementation. Panelists will also describe the technological solution that was an integral part of the implementation efforts—a web-based behavioral health information tracking and assessment system designed to support evidence-based practice and collaborative care approaches. Attendees will be invited to participate in the discussion to reflect on potential challenges and solutions to implementing RMS in their clinical settings.

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Panel Discussion 14 11:45 AM–12:45 PM 3052

CANCER SURVIVORSHIP CHALLENGES OF MINORITY, LOW INCOME, RURAL POPULATIONS: IS THERE A ROLE FOR MODERN TECHNOLOGY?

Michelle Y. Martin,^{1,2} Maria Pisu, PhD,^{1,2} Kimlin Ashing-Giwa³ and Shelley A. Johns^{4,5}

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Presenters will highlight the multiple quality of life challenges that underserved cancer survivors across the US face during and after diagnosis and treatment. The first presentation will discuss a population of primarily African American low income survivors in Alabama. In particular, the presenter will highlight challenges with healthy behaviors and how technology can be used to address these challenges. The second presentation will focus on economic challenges of minority and non minority survivors in urban and rural areas of the southern US, and on ways identified by black and white breast cancer survivors to help patients deal with the financial challenges of cancer. A third presenter will highlight the challenges of underserved survivors in California, home to the largest and most ethnically diverse cancer survivor population with high proportion of inadequate insurance coverage and access to care. The presenter will focus on developing patient-friendly approaches to access survivorship care planning using computer based resources. The last presenter will offer a clinician's perspective on the challenges of working in a safety net hospital, providing psychological services to adults with advanced-stage cancer, other serious medical conditions, and difficult psychosocial circumstances (e.g., inadequate social support, psychiatric co-morbidity, addictions, no transportation, limited finances and homelessness). This panel will engage the audience in a discussion about potential avenues for intervention implementation using technology as a tool to reach survivors and improve survivorship outcomes.

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Panel Discussion 15 11:45 AM–12:45 PM 3053

NIH ADHERENCE RESEARCH NETWORK: A ROUNDTABLE DISCUSSION ON HOW TO ADVANCE THE SCIENCE AND PRACTICE OF ADHERENCE

Wendy Nilsen, PhD

Office of Behavioral and Social Sciences Research/NIH, Bethesda, MD.

NIH Adherence Network Program Staff will lead a discussion among participants interested in the area of adherence to medical and behavioral regimens to determine how NIH can move this critical field forward. Special focus will be on emphasis areas needed to advance the science of adherence and foster improvements in adherence within clinical practice and community settings. Program staff will also highlight current funding opportunities for adherence research at NIH.

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Panel Discussion 16 11:45 AM–12:45 PM 3054

TRANSLATIONAL PIPELINES FOR EVIDENCE-BASED DIGITAL HEALTH

Abdul R. Shaikh, PhD, MHSc,¹ Sean Mullen,⁵ Lee M. Ritterband,² Alex Fair³ and Bem Shen⁴

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How can behavioral scientists engage with technology startups and funders to develop innovative evidence-based technologies for clinical and public health impact? With the rapid evolution of technology, digital health, and data science leading to new avenues of health research and practice, there is a clear need to translate scientific evidence for preventive and clinical health into viable products that can improve the safety, effectiveness, equity, and efficiency of the nation's health system. To address this challenge, the proposed session brings together innovators, researchers, and funders to discuss new translational pathways for developing and disseminating digital health technologies. Participants will explore emerging trends and federal efforts that encourage innovation and the commercialization of evidence-based technologies; venture capital and collaborative funding strategies for health-related startups; and emerging platforms in industry and academia for crowdfunding health-related innovations and supporting rapid development of online behavioral interventions. Learn how to navigate the evolving digital health landscape and partner with technology entrepreneurs to disseminate evidence-based digital health technologies.

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Friday
March 22, 2013
2:00 PM–3:30 PM

Feat Symposium 4 2:00 PM–3:30 PM **3054a**

PATTERNS IN WELL-BEING AND HEALTH BEHAVIORS AMONG LONG-TERM CANCER SURVIVORS: RESULTS OF THE AMERICAN CANCER SOCIETY'S STUDY OF CANCER SURVIVORS (SCS)

Kevin Stein, PhD,¹ Corinne Leach, PhD, MPH,¹ Tenbroeck Smith, MA,¹ Lee Westmaas, PhD¹ and Annette Stanton, PhD²

¹Behavioral Research Center, American Cancer Society, Atlanta, GA and ²University of California Los Angeles, Los Angeles, CA.

Despite the recent surge in interest in the quality of life (QOL) and health behaviors of cancer survivors, the majority of research with people affected by cancer has focused on their functioning during active treatment and the years immediately after the completion of treatment. Current knowledge regarding the physical health and mental well-being of long-term (>5 years post-diagnosis) cancer survivors remains limited. In addition, little is known about survivors' ongoing health behaviors, such as smoking, or their continuity of cancer care. To address these gaps, the American Cancer Society (ACS) launched a national longitudinal study of over 6,000 survivors of the 10 most common cancers, known as the ACS Study of Cancer Survivors (SCS). Survivors completed surveys at 1, 2, and 9-years post-diagnosis. This symposium will highlight both longitudinal and cross-sectional findings related to the long-term well-being and health behaviors among survivors.

In the first presentation, Dr. Stein will provide an overview of the rationale, design, and implementation of the SCS, setting the stage for the remaining talks. He will then summarize findings regarding survivors' changes in physical and mental functioning over time. Next, Dr. Leach will discuss the prevalence and longitudinal predictors of changes in comorbidities. Mr. Smith will explore survivors' utilization of oncology and primary care physician services and preferences for their ongoing survivorship care. Dr. Westmaas, using health belief theories as a framework, will present an analysis of the factors associated with smoking and cessation. The Discussant, Dr. Annette Stanton, will consider how the findings presented inform our current knowledge of long-term cancer survivorship and explore potential future directions for research and clinical work.

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Feat Symposium 4A

3054b

LONGITUDINAL PATTERNS IN PHYSICAL AND MENTAL HEALTH AMONG LONG-TERM CANCER SURVIVORS

Kevin Stein, PhD, Rachel Cannady, BS, Svetlana Masalovich, MS, Corinne Leach, PhD, MPH, Tenbroeck Smith, MA and Kenneth Portier, PhD

Behavioral Research Center, American Cancer Society, Atlanta, GA.

Quality of life (QOL) is an important outcome for cancer research, but few studies have explored survivors' adjustment prospectively as they progress through the survivorship continuum. Therefore, we examined cancer survivors' QOL at 1, 2 and 9-years post-diagnosis.

Current analyses included 2688 survivors of 10 cancers who participated in a national longitudinal study. Using a General Mixed Model, we examined patterns of physical and mental functioning (SF-36 PCS and MCS) and cancer-related problems (Cancer Problems in Living Scale; CPILS) over time. As cancer type and gender were confounded, we created a 6-level variable (female breast, male prostate, male and female colorectal, female other and male other). Age-adjusted analyses revealed a significant main effect of time for all outcomes, with both physical (PCS) and mental (MCS) functioning declining significantly ($p < .05$), but survivors reporting fewer cancer-related problems on the CPILS ($p < .001$) at successive survey administrations. Lower PCS scores over time were associated with less education, non-white race, not being currently married, female breast cancer, more advanced stage at diagnosis, and a new cancer diagnosis and/or treatment in the last 5 years (all $p < .05$). For MCS, only being not currently married and a recent cancer diagnosis/treatment were significant (all $p < .001$). For the CPILS, all predictors were significant ($p < .01$) except cancer type/gender. A significant interaction of Time by Cancer Type/Gender was noted for PCS and CPILS, but not for MCS. These findings identify factors that predict survivors at risk for poorer outcomes and for developing interventions to improve overall QOL. Future research should consider additional contextual and psychosocial variables in statistical models. Evaluating the presence of differential trajectories by cancer type and other relevant variables may aid in tailoring interventions. Lastly, studies should explore if intervening early in the survivorship experience can ameliorate subsequent problems.

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Feat Symposium 4B

3054c

CHANGE IN CHRONIC CONDITIONS ACROSS TIME AMONG LONG-TERM CANCER SURVIVORS

Corinne Leach, PhD MPH, Kenneth Portier, PhD, Svetlana Masalovich, MS, Rachel Cannady, BS, Tenbroeck Smith, MA and Kevin Stein, PhD

Behavioral Research Center, American Cancer Society, Atlanta, GA.

Many patients diagnosed with cancer have multiple medical conditions and develop new conditions after cancer. No prospective studies, however, have examined the factors that increase survivors' risk for developing additional co-morbidities across time.

Data from a national longitudinal study of cancer survivors were used to examine predictors of the total number of medical conditions at 1, 2 and 9 years post-diagnosis among 2986 survivors. Predictors included age at time of survey, cancer type/gender, stage at diagnosis, cancer treatment, whether they had a cancer diagnosis and/or treatment in the past 5 years, race/ethnicity, education, and marital status. Since cancer type was confounded by gender, a six-level variable was created (female breast, male prostate, female CRC, male CRC, female other, male other). As expected there was a strong age effect in the number of comorbidities over time. Data were analyzed using a Generalized Linear Mixed Poisson Regression Model. After adjusting for age, significant predictors of an increase in the number of conditions over time include: cancer type/gender (female breast had significantly more conditions than male prostate, $p < .05$, and male colorectal, $p < .05$), having a cancer diagnosis or treatment in the past 5 years ($p < .01$), being a racial/ethnic minority ($p < .01$), and having a high school diploma or less ($p < .01$). Surprisingly, cancer stage, treatment type and marital status were not significant. Looking across time after controlling for all variables, a 65 year old 1-year post-diagnosis had significantly fewer chronic conditions (Estimated Marginal Mean=1.05) than a 65 year old at 9-years post-diagnosis (Estimated Marginal Mean=1.86) ($p < .01$).

These data suggest that having a cancer diagnosis increases the risk of developing additional comorbidities over time and point to those survivors at greatest risk for developing more conditions. Identifying those at greatest risk for long-term health issues soon after cancer diagnosis can help clinicians better monitor survivors and recommend healthy behaviors to decrease their risk.

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Feat Symposium 4C

3054d

SMOKING AND QUITTING IN CANCER SURVIVORS: ASSOCIATIONS WITH CONSTRUCTS FROM HEALTH BELIEF THEORIES

Johann L. Westmaas, PhD, Jeuneviete Bontemps-Jones, MPH, CHES and Kevin Stein, PhD

Behavioral Research Center, American Cancer Society, Atlanta, GA.

Continuing to smoke after a cancer diagnosis decreases treatment effectiveness, increases the likelihood of recurrence, and reduces survival. Interventions to help cancer survivors quit smoking are needed but research is limited on factors associated with smoking or quitting in this population. The present study examined which variables based on health behavior theories, in addition to sociodemographic-medico variables, were associated with smoking status or intentions to quit among a national sample of 2,677 cancer survivors 9 years post-diagnosis. Forty-three percent of survivors (n=1360) were never smokers, 44 % (n=1057) former smokers, and 8 % (n=260) current smokers. Among former smokers, 16 % had quit at the time of or after their diagnosis. Results indicated that the odds of having quit at or after initial diagnosis (vs. current smoking) was associated with decreased perceptions of barriers to quitting (OR=.53, p<.002), no or lower exposure to others' smoking relative to everyday exposure (ORs=5.93-14.47, all p<.001), not having been diagnosed with lung or bladder cancer (OR=.34, p<.001), and not being in the lowest income category (OR=.14, p<.01). Among current smokers, the odds of intending to quit (vs. not) were associated with younger age (OR=.89, p<.0001), greater perceptions of the risks of smoking to one's prognosis (OR=5.5, p<.002), and no or decreased exposure to others' smoking relative to everyday exposure (ORs=14.03-20.18, all p<.01). In sum, results indicate exposure to others' smoking as an important factor in survivors' ability to quit, and that increasing survivors' perceptions of the risks of smoking for their prognosis, and changing perceptions of barriers to quitting may motivate cessation. Survivors of lower income, and those diagnosed with bladder or lung cancer were also vulnerable to continued smoking and should be targeted for cessation interventions.

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Feat Symposium 4D

3054e

LONG-TERM CANCER SURVIVORS ACTUAL AND PREFERRED MODELS OF CARE

Tenbroeck Smith, MA, Dexter Cooper, MPH, Corinne Leach, PhD MPH and Kevin Stein, PhD

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Due to risk for late effects (e.g., cardiomyopathy) and the return of cancer, Long-term survivors (LTS) have unique medical needs. Models of LTS care include Oncologist (Onc) led, primary care physician (PCP) led, and shared care. Yet there is little research describing the models of care that LTS prefer or receive. We investigated the prevalence and predictors of LTS physician visits and preferred models of care.

We drew a population-based sample of survivors of the 10 most common cancers from 11 state cancer registries, and surveyed them 9 years after diagnosis. After removing LTS reporting a cancer diagnosis or treatment in the last 5 years, our analytic sample had 2,407 LTS. Measures included LTS care preferences (Cheung et al. 2009) and cancer worry (Simard & Savard 2008). Results show that in the last 4 years, 47 % of LTS had NOT seen an Onc, but only 6 % had NOT seen a PCP. A logistic regression revealed predictors of being less likely to have seen an Onc in the last 4 years: older age, uninsured, prostate cancer, local stage at diagnosis, low cancer worry, and preferring PCP-led or shared care (all p<0.05); nonsignificant predictors included education, race/ethnicity, comorbidities. Most LTS preferred responsibility for their cancer care be shared by Onc and PCP (63 %), followed by Onc-led (24 %) and PCP-led (12 %). A similar pattern of preferences emerged for cancer screening: shared 65 %, Onc-led 22 %, PCP-led 14 %. LTS preferred PCP-led care for preventive health (77 %) and non-cancer conditions (82 %).

Although most LTS prefer shared cancer care, about half had not seen an Onc in the last 4 years; therefore, their actual care is PCP-led. Other research shows LTS seen only by PCPs are less likely to be compliant with cancer surveillance and PCPs express concerns about caring for survivors. Our results underscore the importance of improving support for PCP-led survivor care. This support might take the form of professional education or survivorship care plans (SCP). SCP might also help align LTS preference for shared care with the reality that many will have PCP-led care.

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Symposium 34

2:00 PM–3:30 PM

3055

ADVANCEMENTS IN ECOLOGICAL MOMENTARY ASSESSMENT (EMA) METHODS FOR HEALTH BEHAVIOR RESEARCH

Genevieve F. Dunton, PhD, MPH,¹ Susan Schembre, PhD, RD,² Jimi Huh, PhD¹ and William Riley, PhD³

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Advances in mobile technologies have created the opportunity for real-time Ecological Momentary Assessment (EMA) of the causes, correlates, consequences, and contexts of health behaviors. Common smartphones are capable of running applications that trigger electronic EMA surveys during the course of everyday life to capture behavioral processes as they are unfolding. EMA has many methodological advantages over retrospective self-report measures including reduced memory errors and improved ecological validity. By collecting multiple repeated assessments, EMA allows researchers to investigate dynamic, time-intensive processes and intraindividual fluctuations. The current symposium will provide an overview and update on recent developments in EMA measures, methodologies, and analytic strategies. The first presentation will discuss how EMA can be deployed in parent-child pairs to investigate dyadic interactions between mothers' affective states and children's physical activity levels within each day. This presentation will also describe how a novel statistical approach for EMA data can examine affective variability (i.e., instability) as a cause or consequence of adults' physical activity engagement. The second session will highlight the use of a new statistical technique for EMA data, time-varying effects modeling, to describe hour-to-hour changes in the relationship between perceived levels of stress and appetite during a typical day of college students. The third session will demonstrate the use of EMA to assess detailed contexts relating to cigarette use among an understudied ethnic group; this information will be the basis to design a culturally-appropriate, individually-tailored Ecological Momentary Intervention (EMI). Practical, ethical, and financial challenges associated with EMA methods will be discussed. Overall, this symposium will stimulate discussion on the capacity of EMA methodologies to advance health behavior theory and practice.

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Symposium 34A

3056

ECOLOGICAL CONTEXTS OF CIGARETTE USE AMONG KOREAN AMERICAN EMERGING ADULTS

Jimi Huh, PhD

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Introduction: Korean American emerging adults (KAEA) face increased risk of smoking and environmental exposure to tobacco. Smoking rates of Korean American males are among the highest (36.7%) relative to any major ethnic groups in California. Research on tobacco use among KAEA is limited; thus, the ecological contexts in which smoking occurs among KAEAs are unknown. This study aims to better understand the effects of individual, sociocultural and environmental contexts around the smoking patterns of KAEA via Ecological Momentary Assessment (EMA). Real-time psychological, social and environmental data will be collected using smartphones.

Methods: This study will employ a nonexperimental, matched-pair, case-crossover design with surveys administered on both smoking and non-smoking occasions. Twenty four KAEA smokers will be recruited from communities in southern California. Participants will be restricted to those who smoke more than 4 times a day. The target sample will be stratified by gender and language preference (Korean vs. English). Participants will carry specially-programmed smartphones for a week to complete EMA surveys assessing location, companion, mood, stress and nicotine craving. Participants will record smoking events throughout the day on the smartphone, about 4–5 of which will be randomly selected to administer EMA survey (i.e., event-contingent). They will also receive 2–3 random prompts each day to complete similar EMA surveys to capture non-smoking occasions. All data obtained via smartphone will be time-stamped. Results: Given the binary nature of the dependent variable (i.e., smoking vs. non-smoking occasion), a series of generalized linear mixed models will be analyzed to predict the probability of a smoking episode, using within-subject predictors assessing various contexts.

Conclusion: The findings from this project will contribute to designing age-specific, culturally-tailored smoking cessation programs. Information about ecological contexts of smoking based on EMA and location data on exposure to tobacco will highlight specific opportunities for intervention.

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Symposium 34B

3057

NOVEL APPROACHES TO USING ECOLOGICAL MOMENTARY ASSESSMENT TO EXAMINE THE INTERRELATIONS OF AFFECTIVE STATES AND PHYSICAL ACTIVITY

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There is growing interest in understanding the role of affective states in physical activity. However, most research in this domain has either used standard retrospective surveys or been conducted under controlled laboratory conditions. These assessment strategies fail to capture within-person variation (i.e., day-to-day or within-day fluctuations) and are not conducted in real-world situations. This presentation will describe two studies in which Ecological Momentary Assessment (EMA) is used to examine micro-level interrelations between affect and physical activity in naturalistic settings. The first study will use EMA in parent-child pairs (N=10) to investigate dyadic interactions between mother's positive and negative affect and their 9 to 10-year old children's physical activity and sedentary behavior within each day. Mother-child pairs will complete seven days of EMA monitoring, with random EMA prompts occurring up to 7 times per day. To examine temporally-lagged relationships within the dyads, each child's response (Tn) will be matched to their mother's response at the previous prompt (Tn-1). The second study used EMA to investigate if variability (i.e., degree of fluctuation) in both positive and negative affect across multiple days is related to adults' physical activity engagement. Adults (N=110) (73 % female, 30 % Hispanic, 62 % overweight/obese) completed a 4-day signal-contingent EMA protocol (Sat - Tues.) with 8 surveys randomly spaced throughout each day. At the same time, participants wore an Actigraph GT2M accelerometer to measure physical activity. Mixed effects location scale modeling will be used to determine whether affective variability is related to total moderate-to-vigorous physical activity during that same period. This presentation will conclude by discussing future applications of EMA methodology and related analytic strategies to address questions pertaining to the role of affect in physical activity.

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Symposium 34C

3058

EXPLORING THE DYNAMIC RELATIONSHIP BETWEEN PERCEIVED STRESS AND APPETITE USING INTENSIVE LONGITUDINAL DATA

Jimi Huh, PhD,¹ Genevieve Dunton, PhD MPH,¹ Stefan Keller, PhD² and Susan M. Schembre, PhD RD³

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Approximately 40 % of the population reports eating in response to stress. Survey- and laboratory-based research generally supports a positive stress-eating relationship; however, the findings have been inconsistent. These inconsistencies may be partly explained by inter-individual variations in the response to stressors (Stress-Eating Paradox), but it may also be reflecting an underlying dynamic nature of the association. Specifically, the magnitude and direction of the relationship might not be stable over time due to intra-individual variation of perceived stress and appetite or hunger levels within and/or between days. Only recently have advanced research and statistical methodologies been developed to better describe temporal relationships among variables of interest. Findings can uncover important changes in behavioral patterns over time. Using technology-aided Ecological Momentary Assessment, intensive longitudinal data (ILD) were collected from 45 young adults (70 % women, 30 % overweight/obese) as part of Project TWEATS (Text with Ease Appetite Tracking System). Participants were asked to report current stress and hunger ratings in response to automated, hourly text-messages during waking hours for 7-days and on real-time eating records. Two weekdays (Tuesday/Wednesday) and one weekend day (Saturday) were selected for this analysis. The total number of paired hunger-stress observations ranged from 618 to 651. Time-varying effect modeling, a newly developed statistical methodology for ILD, confirm that the relationship between hunger and stress is generally positive, but that the strength of the relationship is not static; it changes throughout the day with lows around noon and peaks between 5:00 pm–6:00 pm. This is the first study to provide empirical evidence that early evening is a high-risk time for stress-eating; a time to target in interventions.

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Symposium 35

2:00 PM–3:30 PM

3059

TOWARD A BETTER UNDERSTANDING OF MEANING AND BENEFIT FINDING FOLLOWING CANCER: 10 YEARS LATER

Patricia L. Tomich, PhD,¹ Tracey A. Revenson, PhD,² Stephen J. Lepore, PhD,³ Suzanne C. Lechner, PhD,⁴ Nicole Ennis-Whitehead, PhD,⁶ Debra W. Annane, MA,⁴ Belinda N. Robertson, MA,⁴ Sara E. Vargas, MA,⁵ Vicki S. Helgeson, PhD⁷ and Crystal L. Park, PhD⁸

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Past research in the area of psycho-oncology has largely focused on the negative consequences associated with a diagnosis of cancer. However, there is a growing literature that shows people seek to make sense of trauma and that some people derive benefits. The initial symposiums we first presented 10 years ago established a distinction between the search for meaning and benefit finding following a cancer diagnosis and examined predictors and outcomes of personal growth among individuals with cancer. The purpose of the current symposium is to take a look at the progress that has been made in the field over the last 10 years, with an emphasis on what it means when individuals report deriving benefits from trauma. The first speaker will examine expressive writing as a behavioral intervention strategy to enhance psychosocial adjustment to illness among women and men with colorectal cancer. The second speaker will focus on determining whether benefit finding and growth in post-treatment cancer survivors are associated with salutary psychosocial indicators in minority women. The third speaker will present pilot research that examines the feasibility of a recruitment method to refine the way meaning and benefit finding are assessed for individuals diagnosed with cancer. Finally, two discussants will address the potential impact of these findings for clinical practice and future research efforts that focus on enhancing quality of life among cancer survivors.

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Symposium 35A

3060

GENDER AND THE SOCIAL CONTEXT OF POST-TRAUMATIC GROWTH AMONG COLORECTAL CANCER PATIENTS

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In the literature on adaptation to cancer, the evidence linking unsupportive and supportive social environments to more or less negative psychological outcomes is robust. Fewer studies have examined this association to positive outcomes of stress, such as benefit-finding and post-traumatic growth (PTG), and even fewer have explored whether intimate relationships that constrain emotional disclosure not only increase psychological distress but affect PTG. Further, most studies have not examined the role of gender in how social relationships confer benefits. We address these issues with data from a randomized control trial of expressive writing as a behavioral intervention strategy to enhance psychosocial adjustment to illness among women and men with colorectal cancer (CRC). Using quantitative data from the trial as well as a qualitative analysis of the patients' journal entries, we asked three questions: 1) Do CRC patients report more PTG as a result of emotional disclosure through writing or verbal interactions? 2) Do social support and/or social constraints predict PTG? and 3) Are these effects moderated by gender? Analyses suggest that the effects of emotional disclosure through writing are minimal for both women and men, but that verbal disclosure is strongly related to PTG. Both social support and social constraints were related to greater PTG; women reported greater social support and greater social constraints than men. Although none of the statistical interactions with gender were significant, combining the findings with cancer patients' writings, we suggest that adaption to cancer occurs through a lens of gender, with intimate relationships more critical for women, and that interpersonal relationships must be considered to understand positive outcomes of illness such as PTG.

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Symposium 35B

3061

CANCER-RELATED BENEFIT FINDING IS ASSOCIATED WITH PSYCHOSOCIAL ADAPTATION AMONG UNDERSERVED BLACK BREAST CANCER SURVIVORS

Suzanne C. Lechner, PhD,¹ Sara Vargas, MS,¹ Nicole Ennis-Whitehead, PhD,² Debra Annane, MA,¹ Belinda Robertson, BA,¹ Charles S. Carver, PhD¹ and Michael H. Antoni, PhD¹¹University of Miami, Miami, FL and ²University of Florida, Gainesville, FL.

Reports of positive life changes after the diagnosis of cancer are common. We have shown that levels of benefit-finding and growth (BFG) are related to better psychosocial adaptation in individuals with cancer. However, this literature lacks a complete understanding of BFG among post-treatment cancer survivors, particularly among minority women. Participants were 91 Black women (mean age=50.8) who had completed breast cancer treatment 0–12 months prior (all stages of disease, mean time since diagnosis=14.1mo). Because retrospective report of the extent of change in BFG are not always veridical or intuitive for women to answer, we asked women to rate whether they perceived changes in BFG since diagnosis using a yes/no format on 25 BFG items reflecting all 21 items from the Post Traumatic Growth Inventory and 4 non-overlapping items from the Benefit Finding Scale. Affirmative responses were summed to create a BFG score. BFG was associated with less mood disturbance (POMS total, $r=-.32$), better quality of life (FACT-G, $r=.28$), fewer depressive symptoms (CES-D, $r=-.28$), greater life satisfaction ($r=.32$), lower stress levels (Perceived Stress Scale, $r=-.28$), less fatigue intensity, and less fatigue interference (Fatigue Symptom Inventory, $r=-.36$ and $r=-.27$). For all Analyses: $p<.01$. BFG was unrelated to sleep (Pittsburgh Sleep Quality Index) and intrusive thoughts (Impact of Event Scale-R). Results are consistent with previous findings of the relationship between BFG and psychosocial adaptation among individuals with cancer during earlier points in the illness trajectory and individuals from non-minority backgrounds. While minority patients often report higher total BFG than White individuals, findings reveal that BFG is associated with similar salutary psychosocial indicators in this understudied population of Black, post-treatment cancer survivors.

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Symposium 35C

3062

A DESIGN STRATEGY TO ASSESS BENEFIT FINDING AMONG WOMEN UNDERGOING BIOPSIES FOR BREAST CANCER

Patricia L. Tomich, PhD and Jennifer Moyer, BS

Psychology, Kent State University, Warren, OH.

Studies designed to assess meaning and benefit finding, by and large, rely on retrospective reports of these constructs following adversity, despite abundant evidence in the psychological literature that such reports may not be genuine. The current research (a) describes an approach to study design that assesses benefit finding and (b) evaluates this design's feasibility for women undergoing biopsies for yet undiagnosed breast masses. Key features include pre- and post-diagnosis assessments and the use of a comparison group. Benefit finding from pre- to post-diagnosis was measured using a current standing version of Tedeschi and Calhoun's (1996) Posttraumatic Growth Inventory (C-PTGI). Quality of life was measured using the SF-36. In this research, of 31 women undergoing biopsies for yet undiagnosed breast masses at Time 1, 22 (71 %) completed baseline interviews. Of these 22, 4 (18 %) were diagnosed with breast cancer. Of these 4, 3 (75 %) completed Time 2 interviews (1-month later, post-diagnosis). Thus, 3 of 31 women initially recruited were diagnosed with cancer (10 %), completed Times 1 and 2 assessments, and were matched with age- and race-matched controls with benign breast masses. Although this study design has a number of strengths, particularly its emphasis on pre- and post-diagnosis assessments, there also are some limitations, such as challenges in recruiting large numbers of women into the study as well as the short time-frame for follow-up. Overall, this research suggests that the current study design may be used as a means for assessing whether genuine growth actually occurs, which in turn, may eventually lead to a much-needed shift in the conceptualization and measurement of meaning and benefit finding.

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Symposium 36

2:00 PM–3:30 PM

3063

PAIN MANAGEMENT IN THE PRIMARY CARE SETTING: UTILIZING TECHNOLOGY TO MEET THE CHALLENGES

Martin Cheatle, PhD,¹ Kathleen Darchuk, PhD, LP² and Mark Vogel, PhD, ABPP³¹Psychiatry, University of Pennsylvania, Philadelphia, PA; ²University of Missouri, Columbia, MO and ³Michigan State University, Burton, MI.

The prevalence of chronic pain continues to grow in the United States with an estimated 100 million Americans suffering from chronic or recurrent pain. Poorly controlled pain causes individual suffering and contributes to morbidity, mortality and disability and escalating economic and societal costs. A recent Institute of Medicine report (IOM 2011) estimated the annual cost of chronic pain in the United States to be \$560 to over \$600 billion. The IOM report on pain also emphasized that effective pain management is a "moral imperative". Patients with chronic pain often have multiple medical and psychological co-morbidities requiring a multidisciplinary approach. However, the vast majority of these patients are managed in the primary care setting where there are scant resources to effectively manage these complicated cases.

This symposium will review the core challenges in managing complex pain patients in a busy primary care practice and explore the use of technology to improve the assessment and management of these patients.

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Symposium 36A

3064

MANAGING PAIN IN HIGH-RISK PATIENTS WITHIN A PATIENT-CENTERED MEDICAL HOME

Martin Cheatle, PhD

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The prevalence of chronic pain continues to increase in the United States causing individual suffering, contributing to morbidity, mortality and disability, and causing burgeoning economic and societal costs. A recent Institute of Medicine report "Relieving Pain in America" (2011) outlined guiding principles including that effective pain management is a "moral imperative" and the "serious problem of diversion and abuse of opioid drugs" must be addressed. As more than half of all chronic pain patients receive their pain care from non-specialist, primary care practitioners, the onus for integrating these principles into practice will fall on primary care physicians. Primary care physicians have little time, resources and training to effectively assess, treat and monitor these complicated cases, particularly in individuals who are at high-risk for opioid abuse, misuse or addiction. This is particularly important given the current epidemic of prescription opioid misuse. While there have been several published consensus-based guidelines for safe opioid prescribing, implementation of these guidelines in practice has been limited mostly due to time constraints and lack of training. This presentation will review the efficacy of new technologies (computer-assisted CBT, telemedicine) and delivery systems (electronic health record and computerized decision support systems) for risk stratification, intervention and monitoring of patients with pain receiving opioids, particularly those at high-risk. This will be discussed in the context of a patient-centered medical home approach and the affordable care act.

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Symposium 36B

3065

UTILIZING TELEPHONE-BASED INTERVENTIONS FOR CHRONIC PAIN IN PRIMARY CARE: MODELS, CHALLENGES AND SOLUTIONS

Kathleen Darchuk, PhD

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Chronic pain is one of the most prevalent, costly, and debilitating illnesses in the VA health care system, with the majority of patients with chronic pain being treated within the primary care settings. Thus, effective treatment for chronic pain within primary care has become a major focus within the VA healthcare system. However, treatment for chronic pain poses particular challenges in the primary care setting due to the complex nature of pain, multiple psychological co-morbidities, and requirement of active patient participation to utilize coping and self-management strategies. Within primary care, difficulties coordinating collaborative care across multiple disciplines, brief time-limited visits, limited availability for regular patient follow-up, and inadequacy of educational resources make effective delivery of interventions a challenge. One possible solution for improving the coordination and delivery of pain management services within primary care is to utilize telehealth technology to deliver telephone-based care services. These services have gained traction in the depression literature as a method of delivering effective depression management in primary care. Research has repeatedly shown that telephone-based care management programs for depression decrease symptom severity, improve functional status, and increase compliance with medications and follow-up medical visits. However, few clinical programs have utilized this technology with chronic pain patients and research examining telephone care management for pain is nonexistent. This presentation will discuss the VA Pain Assessment, Care, and Education (PACE) program as an example telephone-based care management model for pain. This presentation will also explore the benefits, challenges and solutions to utilizing telephone-based interventions in the treatment of chronic pain within primary care.

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Symposium 36C

3066

EMBEDDING BEHAVIORAL HEALTH SERVICES IN PRIMARY CARE - ACTUAL AND VIRTUAL

Mark Vogel, PhD

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A collaborative health care model of service delivery calls for coordinated and effective services for individuals with mental health needs in the primary care setting. The Integrated Primary Care (IPC) model builds on this framework to utilize Behavioral Health providers (BHPs) as part of an integrated team. Pain is a common complaint in primary care and one that is challenging for physicians to manage effectively. When a patient presents with complex or chronic non-malignant pain, the BHP, as part of the primary care team, can be utilized to evaluate the patient and provide short-term pain management interventions; the focus on a self-management strategies. BHPs can provide services at the time of the initial visit as well as schedule follow-up appointments to coincide with follow-up visits with the primary care physician (PCP). BHPs communicate with the PCP on a regular basis and provide written reports about treatment progress, while the PCP maintains overall medical care for the patient.

In order to maximize the limited availability of BHPs and provide targeted/brief interventions efficiently, BHPs utilize a variety of handouts, guides, and resources to assist patients. As an adjunct to interventions provided by the BHP, computer-assisted delivery of self-management and support messages allows other providers to deliver some services (e.g. nurse care managers) and to have interventions provided beyond the office visit. Patients are provided with both in-office computer-assisted instruction and given links to web-based education and skill development modules that continue treatments delivered in the office. These methods have direct application to self-management of chronic pain (e.g. pacing exercises, relaxation training, stress management, increasing activity). The combination of the BHP present in the office and the virtual services provided outside of the primary care setting increases the range of intervention options and extends the reach of providers.

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Symposium 37

2:00 PM–3:30 PM

3067

MARKETING HEALTH

Wendy Nilsen, PhD,¹W. Douglas Evans, PhD,³ Jeff Jordan, MS² and Yvonne Hunt, PhD¹¹National Institutes of Health, Bethesda, MD; ²Rescue Social Change, San Diego, CA and ³George Washington University, Washington, DC.

There is much to be learned from commercial marketers about how to use marketing techniques to promote health behaviors. Marketing includes a large and growing evidence base on consumer engagement and effective techniques for linking products and services to consumer values, wants and needs. Marketers have developed methods to tailor information about a product or service to so that it matches the consumer's personal goals. Branding is a fundamental marketing strategy that is designed to build relationships between consumers and the products, services or organizations they represent. Brands provide value by offering social/emotional and functional benefits to consumers and are used to make promises to consumers about their benefits and effective brands consistently deliver on their promises. The most effective brands are tailored-using both quantitative and qualitative methods—to a specific segment of the audience. Similarly, marketing builds relationships between health behaviors and target audiences by creating positive associations about added values and benefits. Health brands are strategically positioned within the larger social and physical environments in which target audiences live and mirror their values. Branding and other marketing techniques can also be used for behavior change. For example, the use of branded health messages as part of public health campaigns, such as the Legacy Foundation's TRUTH anti-smoking campaign, has been shown to be an effective behavior change strategy at the population level. However, marketing has not been widely adopted by health researchers and practitioners as a tool in individually-focused behavior change programs. This symposium will feature a panel of presenters who will provide information on the use of marketing techniques to promote health, including results from a recent literature review, a trial to reduce adolescent smoking cessation using social branding and the marketing techniques used to develop a federal smoking cessation website. It will also include information on NIH's Health Branding Conference and NIH interests in marketing health.

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Symposium 37A

3068

EVIDENCE AND EXAMPLES FROM A SYSTEMATIC REVIEW OF HEALTH BRANDING

W. Douglas Evans, PhD

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Brands build relationships between consumers and products, services, or lifestyles by providing beneficial exchanges and adding value for consumers. Through brand promotion, these associations can become established and lead to a long-term relationship between the product or service and the, such as Nike with its signature 'Just Do It' tagline and branding of an active lifestyle.

Similarly, health brands are based on the relationships that individuals form with healthy behaviors and lifestyles that embody multiple health behaviors, and can be measured by the associations people form with them. Recent research by the authors has validated a brand equity scale in multiple domains including tobacco use, obesity, HIV/STIs, and drug abuse prevention. We searched the literature for published studies on public health branding available through all relevant, major online publication databases. Health branding was operationalized as any manuscripts on branding or brands in health promotion marketing. We developed and applied formalized inclusion and exclusion rules. We initially identified over 500 articles and reviewed a final set of nearly 100, many of which represented global health programs. This review builds on a previously published review by Evans and colleagues (2008).

We evaluated the reviewed programs for evidence of effectiveness and coded all articles on a set of criteria based on utilization of branding principles for behavior change. Branded health campaigns spanned most of the major domains of public health. Based on this review, we outline a research agenda for health branding. More experimental studies are needed to build the growing evidence base illustrated by the systematic review. More education of the scientific workforce is needed to translate branding theory and evidence research into practice.

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Symposium 37B

3069

SOCIAL BRANDING - USING COMMERCIAL BRANDING STRATEGIES TO CHANGE HEALTH BEHAVIORS

Jeff Jordan, MS

Rescue Social Changes, San Diego, CA.

Applying branding strategies to health behavior change requires the convergence of two distinct sets of principles; health communications and commercial branding. The “Social Branding” model successfully merges these disciplines by addressing discrepancies and defining a strategy to “associate positive health behaviors with desired lifestyles and identities.” Specifically, Social Branding defines the differences between commercial branding strategies that focus on brand preference change and behavior change strategies used in health communications. In addition, the model demonstrates how audience segmentation strategies in commercial marketing are different and often more effective than those typically used in health communications. Methodologically combining the most promising components of each discipline, Social Branding presents a model for effectively using branding in public health.

Two Social Branding case studies will be presented to illustrate the key principles. First, the Commune Social Branding program (San Diego, CA) focuses on tobacco use prevention among young adults at bars and clubs. An evaluation of the program showed that, compared to baseline, a significant decrease in current (past 30 day) smoking was observed in the total sample attending targeted bars from 56.3 % to 48.8 % at the 28-month follow up. Among those who identified most strongly as Hipsters, which was the targeted lifestyle segment, we observed a significant decrease in smoking from 61.6 % at baseline to 52.3 % at 28 months. We also observed an unexpected significant decrease in past month binge drinking from 78.5 % to 69.6 % at 28 months.

Secondly, the SYKE Social Branding program (Virginia) focuses on tobacco use prevention among teens who identify with the alternative rock lifestyle. 37.6 % of teens who attend rock shows currently smoke, compared to 20 % of all Virginia teens. Compared to baseline, alternative teen smoking at rock shows has decreased to 32.7 % at 24 months. The Social Branding components of the strategy will be reviewed.

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Symposium 37C

3070

THE SMOKEFREE APPROACH TO CESSATION: TOOLS, TECHNOLOGIES & STRATEGIES FOR ENGAGEMENT

Yvonne Hunt, PhD

National Institutes of Health, Bethesda, MD.

Despite having markedly fallen during the last 50 years, smoking prevalence within the US has remained at approximately 20 % for more than a decade and smoking continues to be the number cause of preventable death. Identifying means to more effectively reach and engage current smokers in cessation is crucial in our efforts to address this key public health problem. As part of the Department of Health and Human Services’ national tobacco control strategy, the National Cancer Institute (NCI) has developed a suite of eHealth/mHealth resources to deliver cessation interventions to target populations. These include Smokefree.gov, Smokefree Women, Smokefree Teen, Espanol Smokefree.gov and SmokefreeTXT.

The Smokefree Initiative leverages an array of web, mobile and social media tools to deliver evidence-informed cessation resources. This presentation will discuss the evolution of the Smokefree suite of resources and provide case studies of individual resources to illuminate how the functionality of various platforms is being used to reach target populations. More specifically, these case studies will address: 1) how marketing techniques (e.g., brand development and market segmentation) informed the development of the SmokeFree programs; 2) Using web as primary cessation intervention platform (Smokefree.gov); 3) Harnessing social media for encouragement and support (Women.Smokefree.gov); 4) Embracing a multi-platform approach to penetrate a hard to reach audience (Teen.Smokefree.gov); 5) Leveraging mobile usage to deliver cessation messaging on the go (SmokefreeTXT).

Both qualitative and quantitative data will be presented. Quantitative data will focus on trends of usage, program enrollment, site traffic and social media engagement. Qualitative data will include examples of messages directly from our audience.

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Symposium 38

2:00 PM–3:30 PM

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EARLY EVIDENCE THAT POLICY CHANGES ARE WORKING TO REDUCE CHILDREN’S OBESITY LEVELS AND DAILY “ENERGY GAPS”: LESSONS LEARNED FOR FUTURE RESEARCH

C. Tracy Orleans, PhD¹ and James F. Sallis, PhD²

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Our current childhood obesity (CO) epidemic reflects the accumulation of small daily increases in children’s “energy gap”—the excess of calories consumed over calories expended. To reverse this epidemic, numerous policies have been implemented to change one or both sides of today’s youth energy gap by reducing calories consumed or increasing calories expended through physical activity. Recent data from state- and city-wide initiatives (e.g., California, Mississippi, Philadelphia, NYC) and from many smaller-scale studies indicate that even narrower, singular policies are proving successful in reducing youths’ population CO levels and/or mean daily energy gaps. This symposium presents lessons learned from these studies about successful policies and the methods and metrics needed to evaluate them going forward.

Paper 1 reviews recent significant state- and city-level declines in CO rates, where multi-component policy/environmental change strategies have been implemented. It spotlights the need for sound “natural experiment” designs, standardized measures of school-, community- and state-level policies, reliable data on youth BMI, and analyses to identify which strategies appear most successful overall and in high-risk populations. Paper 2 provides similar insights from recent smaller-scale policy “success stories.” It also introduces the energy gap as a common metric (kcal/day) for assessing the impact of policies that alter youth diet and/or physical activity and for translating behavioral outcomes into possible effects on obesity prevalence when BMI data are not available. Paper 3 presents a new and innovative tool, the Caloric Calculator, which helps researchers, policy makers and the public to generate, compare and contrast estimates of calories consumed and expended for a range of different obesity-prevention policies. The discussant describes the policy briefs needed to communicate policy successes to policymakers.

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Symposium 38A

3072

SUCCESS STORIES FROM POLICIES AND ENVIRONMENTAL CHANGES TO CLOSE THE “ENERGY GAP”: LESSONS LEARNED TO INFORM CHILDHOOD OBESITY POLICY AND RESEARCH

Tina J. Kauh, PhD,¹ Laura Leviton, PhD,¹ Neel Koyawala, BS in progress,¹ Marjorie Gutman, PhD,² Amy Woodrum, BA¹ and Tracy Orleans, PhD¹

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With growing concerns about childhood obesity (CO) rates, efforts to reverse the epidemic through policy and environmental changes are being made across the country and at every level of the social-ecological model. From among these, an increasing number of research “success stories” (SS) have been reported, showing that focused (i.e., single-component) policies and environmental changes have led to significant declines in measured BMI levels and/or the underlying daily “energy gap” between the number of calories consumed or expended. This paper highlights several such studies and introduces the “energy gap” (average daily surplus of calories consumed over those expended) as a helpful metric (kcal/day) for (1) estimating and comparing intervention impacts on CO and (2) helping practitioners and policy makers identify effective policy strategies.

The process by which model SS studies were identified is described as a means to detect effective interventions targeting diet and/or physical activity behaviors in varied settings. Examples include eliminating household and school access to sugar-sweetened beverages and/or unhealthy snacks and facilitating physical activity by updating playground equipment. For the many studies of physical activity-focused interventions lacking BMI outcomes, effects on per-capita youth kcals and children’s per-capita daily “energy gap” were estimated from behavioral measures (e.g., time spent in moderate/vigorous physical activity, steps taken). Both the SS search process and the in-depth SS analyses that followed provide critical “lessons learned” about the methodological limitations of current policy evaluations (e.g., need for more policy- and obesity-relevant outcomes) and ways to address them in future research to maximize its influence on public health practice and policy decisions.

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Symposium 38B

3073

SUCCESS STORIES FROM POLICIES AND ENVIRONMENTAL CHANGES TO CLOSE THE “ENERGY GAP”: RATIONALE FOR THE APPROACH

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Although policy makers and the public express increasing concern about childhood obesity (CO), prevention faces a dual challenge: the relatively small number of credible outcome studies, and end-users’ lack of familiarity with the interventions that are most likely to be effective. The nation’s experience with preventing the use of tobacco and other substances points to the importance of policy and environmental changes. A variety of such interventions at several levels within the social-ecological model could prevent CO, yet the gathering of empirical evidence for these efforts is still in its infancy, so decision-makers have a difficult time selecting just a few for special focus. Moreover, neither policy makers nor the public are familiar with promising policy-based strategies. For these reasons, it is critically important to focus on empirical “success stories,” in which BMI levels and/or the number of excess calories consumed or calories expended through physical activity have changed significantly. This paper outlines ways in which prevention research can capitalize on emerging success stories to advance the field, guide end users, and build momentum for action. It focuses on studies of multi-component intervention associated with city- and state-wide reporting actual declines in population CO levels (e.g., California, Mississippi, New York City, Philadelphia, Anchorage). While most of these studies have not yet established clear causal linkages between interventions and changes in BMI and behavior, they are helpful to the field because they narrow our focus to interventions that are both powerful enough to merit further tests and feasible for many communities to employ.

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Symposium 38C

3074

PAPER 3: THE “CALORIC CALCULATOR”: A TECHNOLOGICAL INNOVATION FOR ESTIMATING POLICY EFFECTS ON CHILDHOOD OBESITY LEVELS AND HEALTHY PEOPLE 2020 GOALS

Claire Wang, MD, ScD,¹ Amber Hsiao, MPH,¹ Michael Slaven, MA³ and Steven L. Gortmaker, PhD²¹Health Policy & Management, Columbia University Mailman School of Public Health, New York, NY; ²Society, Human Development & Health, Harvard School of Public Health, Boston, MA and ³Teachers College, Columbia University, New York, NY.

Previous analyses estimated that an average reduction of 110–165 kcal/day in energy surplus could have prevented excess weight gain accounting for the early rise in US childhood obesity levels over a 10-year period. This paper presents results of recent analyses using the “energy gap” framework to translate the individual-level effects of recent childhood obesity prevention policies into national obesity prevalence estimates. Regression models were applied to 1970–2008 National Health and Nutrition Examination Survey data to estimate the average daily reductions needed to achieve the Healthy People 2020 prevalence target of 14.6 % – approx. 64 excess kcal/day per, with larger reductions needed for adolescents and racial/ethnic minority youth. These reductions can be achieved by decreasing caloric intake, increasing physical activity, or both. The “energy gap” thus provides a common metric for measuring the combined and comparative effectiveness of these interventions and estimating national progress towards reversing the childhood obesity epidemic. The “Caloric Calculator”, a new public-domain web-based tool, is introduced to help researchers, policy makers and the public estimate and compare the behavioral impacts of varied policy strategies based on their likely effects on mean per-capita daily caloric impacts (kcal/day expended/consumed). This new tool is demonstrated by describing the methods and results used to evaluate a range of policy- and programmatic childhood obesity prevention interventions targeting youths in different age groups and settings (pre-school, school, community). Its uses to facilitate the translation of evidence to practice by encouraging the use standardized measures in childhood obesity prevention research, and accelerating the identification and spread of promising and effective interventions is discussed.

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Symposium 39

2:00 PM–3:30 PM

3075

UNDERSTUDIED AND UNDERSERVED: CANCER SURVIVORS LIVING IN RURAL AREAS

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Rural–urban disparities in treatment and health outcomes have been documented in cancer diagnosis and treatment, but little is known about disparities that may persist in the post-treatment survivorship period. There are an estimated 2.8 million rural cancer survivors in the United States, comprising 21 % of all survivors, who may be at increased risk for poor health outcomes during the survivorship period. The lack of information about rural cancer survivors hampers public health planning and the development of interventions to target this vulnerable population of survivors. This symposium will highlight new research on rural–urban disparities among cancer survivors from population-based datasets.

Presentations will address: (1) an overview of research regarding rural–urban disparities among survivors, with a brief presentation of novel data examining financial barriers to care, (2) health behaviors and related associations with health status among rural and urban survivors, and (3) mental health outcomes among rural and urban lung cancer survivors. Target areas for intervention and implications for future research with rural cancer survivors will be discussed.

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Symposium 39A

3076

RURAL–URBAN DISPARITIES AMONG CANCER SURVIVORS: WHAT DO WE KNOW?

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There are approximately 13.7 million cancer survivors in the United States, with 2.8 million residing in rural areas. Rural–urban disparities in cancer screening, diagnosis and treatment have been well documented, and these disparities may have implications for the post-treatment survivorship period. However, there is a paucity of data directly comparing rural and urban cancer survivors. This presentation will present an overview of rural–urban disparities, addressing 3 key themes in survivorship:

- 1) Rural–urban differences in health-related quality of life among cancer survivors. Rural residence has important implications for health, especially for people with chronic conditions such as cancer survivors. Rural cancer survivors have reported poorer health, more non-cancer comorbidities, and higher psychological distress compared to urban survivors. We will review current research regarding health-related quality of life in this population.
- 2) Impact of rural residence on supportive care and information needs. Underserved populations, such as rural cancer survivors, may have insufficient access to information, psychosocial resources, and social support following cancer treatment. We will summarize what is known about rural cancer survivors’ needs compared to urban survivors.
- 3) Rural–urban differences in access to medical care. Rural survivors may face many barriers to obtaining healthcare after cancer, including financial and transportation difficulties and a limited number of local providers. Inability to access medical services may negatively affect health outcomes for cancer survivors. Little is known about access to care among rural and urban cancer survivors at the population level, and the available studies all have important methodological limitations. We will present novel data on rural–urban disparities in forgoing medical care due to cost among cancer survivors, using data from the National Health Interview Survey.

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Symposium 39B

3077

RURAL–URBAN DIFFERENCES IN HEALTH BEHAVIORS AND IMPLICATIONS FOR HEALTH STATUS AMONG US CANCER SURVIVORS

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Background: Rural US adults have increased risk of poor outcomes after cancer, including increased cancer mortality. Rural–urban differences in health behaviors have been identified in the general population and may contribute to cancer health disparities, but have not yet been examined among US survivors.

Purpose: To examine rural–urban differences in health behaviors among cancer survivors and associations with self-reported health and health-related unemployment.

Methods: We identified rural ($n=1,642$) and urban ($n=6,162$) survivors from the National Health Interview Survey (2006–2010), a nationally representative survey of US adults, and calculated the prevalence of smoking, physical activity, overweight/obesity, and alcohol consumption. Multivariable models were used to examine the cross-sectional associations of fair/poor health and health-related unemployment with health behaviors and rural–urban residence, controlling for age, sex, region, marital status, race/ethnicity, education, health insurance, number of cancers, and time since diagnosis.

Results: The prevalence of fair/poor health (rural:36.7 %, urban:26.6 %) , health-related unemployment (rural:18.5 %, urban:10.6 %), smoking (rural:25.3 %, urban:15.8 %), and physical inactivity (rural:50.7 %, urban:38.7 %) was significantly higher in rural survivors (all $p<.05$); alcohol consumption was lower (rural:46.3 %, urban:58.6 %), and there were no significant differences in overweight/obesity (rural:65.4 %, urban:62.6 %). All health behaviors were significantly associated with fair/poor health and health-related unemployment in both univariate and multivariable models. After adjustment for behaviors, rural survivors remained more likely than urban survivors to report fair/poor health (OR=1.21, 95%CI 1.03-1.42) and health-related unemployment (OR=1.46, 95%CI 1.16-1.84).

Conclusions: Rural survivors may need tailored, accessible health promotion interventions to address health compromising behaviors and improve outcomes after cancer. Funding: R03 CA156641-01

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Symposium 39C

3078

DISPARITIES IN MENTAL HEALTH (MH) OUTCOMES AMONG LUNG CANCER (LC) SURVIVORS ASSOCIATED WITH RURALNESS OF RESIDENCE: DOES PLACE MATTER?

Michael Andrykowski, PhD and Rachel Steffens, MS

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Background: Healthy People 2020 identifies elimination of health disparities as a key aim. Cancer disparities research has focused on disparities in incidence and survival associated with race/ethnicity. In contrast, research examining disparities in MH outcomes in cancer survivors associated with ruralness of residence is scant.

Methods: 193 LC survivors ($M=15.6$ mos post-dx) recruited from a statewide SEER cancer registry completed a telephone interview and questionnaire packet including measures of MH outcomes (MOS-SF-36, HADS, Distress Thermometer, Perceived Stress Scale). 152 age-, sex-, and county-matched healthy controls completed these MH measures by questionnaire. Rural, Semi-Rural, and Metro LC survivors and controls were identified based on county of residence using USDA Rural-Urban Continuum criteria.

Results: Across 9 MH indices, Rural and Semi-Rural LC survivors reported poorer MH status relative to Metro LC survivors with mean effect size (ES) of 0.36 standard deviation (SD) and 0.56 SD, respectively. (0.25 SD and 0.46 SD, respectively, adjusted for education.) Comparisons with the HC group suggested the MH of Rural and Non-Rural LC survivors was more negatively impacted by the cancer experience, compared to Metro LC survivors. Across 9 MH indices, the mean ES comparing the LC and HC groups was 0.48 SD and 0.67 SD for Rural and Semi-Rural residents, respectively, compared to 0.19 SD for Metro residents.

Conclusion: Place does matter when it comes to MH outcomes in LC survivors. Ruralness of residence was a risk factor for poorer MH outcomes in LC survivors. As Semi-Rural LC survivors reported even poorer outcomes than Rural survivors, it is possible the most rural environments possess some advantages that at least partially offset disadvantages associated with rural areas. Research is needed to identify mechanisms by which ruralness of residence translates into poorer MH outcomes and to develop, test, and disseminate strategies for minimizing disparities in MH outcomes associated with ruralness of residence.

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Symposium 40

2:00 PM–3:30 PM

3079

PHYSICAL HEALTH RISKS ACROSS DIVERSE POPULATIONS EXPOSED TO PSYCHOLOGICAL TRAUMA

Jeffrey Kibler, PhD

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A growing body of literature has identified health consequences of posttraumatic stress disorder (PTSD). In particular, PTSD appears to be associated with higher risk for cardiovascular disease (CVD). However, more information is needed about the mechanisms that may predispose individuals with PTSD to higher CVD risks. In addition, some populations (e.g., civilian women and children) have been understudied with regard to these issues. This symposium synthesizes contemporary findings in this area, highlighting potential markers for CVD in trauma samples, and provides a broad perspective by featuring research conducted across diverse trauma populations (children, veterans, community samples). The first presentation focuses on the deleterious health effects of psychological trauma related to the Gulf War in children from Kuwait. The second presentation addresses the correlates of a cardiovascular biomarker, flow mediated dilation, among a young sample of veterans and community individuals with and without PTSD. The focus of the final presentation is the prevalence of cardiovascular risk factors among young women with PTSD. In general, findings from across trauma populations suggest potential biobehavioral and psychosocial markers for CVD and elevated CVD risk that may be associated with PTSD.

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Symposium 40A

3080

HEALTH-RELATED OUTCOMES IN KUWAITI CHILDREN FOLLOWING EXPOSURE TO THE GULF WAR OF 1990–1991

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Following the Gulf War of 1990–1991, 151 Kuwaiti children aged 9–12 years (51 % female; M age=10.62 years) were assessed in 1993 (Time 1) and in 2003 (Time 2). Children were sampled from four war-exposure groups: 1) fathers had been killed ($n=40$); 2) fathers were missing at Time 1 ($n=39$); 3) fathers were arrested but returned home ($n=33$); and 4) family members were neither killed, missing, nor arrested ($n=40$). At Time 1, assessments included the Posttraumatic Stress Symptom Scale, a 17-item scale adapted from the Davidson Self-Rating Post Traumatic Stress Disorder Scale, and an 8-item measure of health symptoms (e.g., headaches, colds, stomachaches) experienced during the past six months. At Time 2, assessments included the Life Events Checklist, an 11-item measure of stressful life events, the Pittsburgh Sleep Quality Index, a 19-item measure of sleep quality, duration, and disturbances, and a measure of twelve common health symptoms (e.g., headaches, stomachaches, allergies, sore throats), rated with respect to their frequency during the past month. BMI was also assessed.

Relative to controls, children whose fathers were killed, missing, or arrested reported more health symptoms at Time 1 ($p<.05$) and those whose fathers were missing or arrested reported more posttraumatic stress than controls ($p<.01$). At Time 2, there were no group differences in major life events and the number of health symptoms, once posttraumatic stress and life events were controlled. But those whose fathers were killed, missing, or arrested reported worse sleep quality and higher BMI than controls, even after accounting for major life events and PTS.

We conclude that children exposed to war-trauma exhibit health and post-traumatic symptoms two years later and experience difficulties with sleep and greater BMI in young adulthood. These long-term effects could place those children at increased risk for chronic diseases in adulthood.

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Symposium 40B

3081

THE EVALUATION OF A CARDIOVASCULAR BIOMARKER AND ANGER EXPRESSION IN INDIVIDUALS WITH AND WITHOUT POSTTRAUMATIC STRESS DISORDER (PTSD)

Kimberly T. Green, MS,² Patrick S. Calhoun, PhD,^{2,3} Michelle F. Dennis, BS,² Andrew Sherwood, PhD,² Lana Watkins, PhD,² Rebecca Allen, BS,² Ania Oddone, BA^{1,2} and Jean C. Beckham, PhD^{2,3}

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Objective: This study evaluated correlates of flow mediated dilation (FMD) and anger expression among a young study cohort (18–39 years) comprised of military veterans and community individuals with and without PTSD. FMD is a measure of endothelial functioning; endothelial dysfunction is recognized as an initial step in the atherosclerotic process and can be detected prior to development of CVD.

Method: 130 participants completed the Spielberger Anger Expression Scale (AX), FMD, body mass index [BMI] and smoking status. Ultrasound images of the brachial artery were taken at baseline and during hyperemia induced by inflation and deflation of an occlusion cuff. FMD was defined as the maximum % change in arterial diameter relative to resting baseline. Lower FMD reflects greater risk. Participants reported a mean age of 30 years (SD=5.4) and 57 % were female. The sample was comprised of African American (52 %), White (41 %) and other race (7 %). Sample mean scores were 18.3 on Anger-Out (SD=5.2), and 18.8 on Anger-In (SD=5.8) expression. Analyses included simultaneous regression procedures.

Results: After controlling for demographic (age, gender, minority) and related FMD variables (BMI, smoking), Anger-Out ($p=.04$) was significantly associated with lower FMD. Non-white minority ($p=.04$) and increased BMI ($p=.04$) were significantly related to lower FMD. PTSD group status and Anger-In were not related to FMD.

Conclusions: Results suggested that cardiovascular risk can be detected early through evaluation of an increased tendency to express anger toward other persons or the environment. Future studies would benefit from replication of these findings in other trauma and psychiatric samples and an evaluation of other CVD biomarkers.

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Symposium 40C

3082

CARDIOVASCULAR RISK FACTORS AMONG YOUNG WOMEN WITH PTSD

Jeffrey Kibler, PhD and Mindy Ma, PhD

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Research has indicated that posttraumatic stress disorder (PTSD) is associated with elevated risk for cardiovascular disease (CVD). Most of this research has been conducted with veterans. Relatively little research, particularly among women, has documented mechanisms by which PTSD might confer CVD risk early in life. This presentation will summarize the research to date that has examined CVD risk among women with PTSD, and will highlight a series of studies that were conducted in our laboratory among young women with PTSD. Taken together, these findings suggest that PTSD confers a similar profile of risk among women compared with studies of male veterans. In particular, high blood pressure levels and high rates of obesity appear to be consistent findings in samples with PTSD; unhealthy lipid profiles and high rates of smoking have also been identified with some consistency. Variables requiring further study include physical activity and nutritional habits of individuals with PTSD. The findings to date provide preliminary support for the hypothesis that PTSD is associated with CVD risk factors for women relatively early in life.

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Symposium 41

2:00 PM–3:30 PM

3083

APPROACHES TO STUDYING AND UNDERSTANDING TOBACCO RISK PERCEPTIONS

Annette Kaufman, PhD, MPH

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Tobacco use is the single most preventable cause of disability, disease, and death in the United States, accounting for an estimated 443,000 premature deaths annually. People's perceptions of the risks associated with tobacco vary considerably and depend on numerous factors including smoking status, age, and underlying beliefs. Risk perceptions are often described as an individual's perceived likelihood of experiencing an outcome over a given period of time; however research has unveiled the complex nature of risk perceptions. Current work reveals the multiple ways in which risk perception may be conceptualized and measured in order to better predict tobacco use behavior. This symposium will describe advances in the measurement and research of risk perceptions in the domain of tobacco. The first presenter will describe the measurement of risk perceptions and health belief model constructs as they relate to lung cancer, and how these perceptions are associated with smoking beliefs and behavior in former and current smokers undergoing lung screening as part of the National Lung Screening Trial. The second presenter will discuss research on how beliefs about nicotine and addiction and perceptions of delayed harm are associated with feelings of risk and quitting intentions among young adult smokers. The final presenter will explain how risk perceptions are being incorporated into the work at the U.S. Food and Drug Administration Center for Tobacco Products. Taken together, this symposium highlights the importance of risk perceptions in the domain of tobacco and offers insight into how these findings can inform future research and policy.

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Symposium 41A

3084

LUNG CANCER-RELATED RISK PERCEPTIONS IN THE NATIONAL LUNG SCREENING TRIAL: RELIABILITY AND PREDICTION ACROSS TIME

Amber R. Koblitz, PhD MPH,¹ Annette Kaufman, PhD, MPH,¹ Elyse Park, PhD,² William Klein, PhD¹ and Rebecca Ferrer, PhD¹

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Risk perceptions are subjective judgments people make about the characteristics and severity of a given risk. The extent to which risk perceptions change over time remains relatively unexplored. A substudy of the National Lung Screening Trial (NLST) assessed current and former heavy smokers' (age 55–74) risk perceptions of lung cancer over time. NLST participants (N=3279) completed risk perception questionnaires as part of trial prescreening and 12-month follow-up screening. The questionnaire assessed perceived risk of lung cancer, worry, self-efficacy to quit smoking, perceived benefits of quitting, knowledge of lung cancer, and perceived severity of lung cancer, derived from the Health Belief Model (HBM; Rosenstock, 1974). A confirmatory factor analysis revealed a good fit for the six latent constructs ($\chi^2(76)=509$, $p<.001$; CFI=.96; RMSEA=.05; SRMR=.03). Across time, these constructs showed good reliability ($n=314$; stability coefficient $r_s>.55$, $ps<.001$). Moreover, baseline risk perception constructs predicted self-reported behavior at follow-up. A logistic regression to determine whether participants had smoked any in the past 6 months was significant ($\chi^2=170.23$, $p<.001$) with several significant individual predictors: self-efficacy ($\beta=-1.32$, Wald=72.7, $p<.001$, OR=.27), perceived benefits of quitting ($\beta=-.71$, Wald=8.51, $p=.004$, OR=.49), and worry ($\beta=.71$, Wald=6.86, $p=.009$, OR=2.03). HBM constructs also significantly predicted number of cigarettes smoked per day at follow-up [F(6, 161)=3.02, $p=.008$]. These analyses will begin to elucidate the relationship of commonly-measured risk perception concepts over time and in relation to important screening experiences.

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Symposium 41B

3085

BELIEFS ABOUT NICOTINE ADDICTION AND PERCEPTIONS OF DELAYED HARM OF CIGARETTE SMOKING: IMPLICATIONS FOR FEELINGS OF RISK AND INTENTIONS TO QUIT

Erika A. Waters, PhD, MPH,¹ Eva Janssen, MSc,² Annette R. Kaufman, PhD, MPH,³ Laurel M. Peterson, PhD,⁴ Nicole L. Musanell, MA,⁵ Rosanna E. Guadagno, PhD⁵ and Michelle L. Stock, PhD⁴

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Background: Nicotine addiction occurs rapidly and can be intractable. Over half of smokers attempted to quit in 2010, but only 6 % succeeded. Many people underestimate the power of nicotine addiction and believe that the harmful effects of cigarettes are delayed. Such misperceptions may negatively affect smoking cognitions.

Objective: To examine how beliefs about nicotine addiction and perceptions of delayed harm are associated with smokers' feelings of risk of experiencing negative health consequences and quit intentions.

Method: This study represents a secondary analysis of data collected for another purpose. Smokers (N=333) aged 18–22 were recruited from psychology subject pools. Four hierarchical linear models were generated (two for “risk feelings” and two for “quit intentions”). In all models, gender, race, and amount smoked comprised Step 1. Addiction beliefs or perceptions of delayed harm were added in Step 2. For the intentions models, risk feelings were added in Step 3.

Results: Risk feelings were lower among smokers who endorsed deterministic beliefs about nicotine addiction (eg, addiction is unavoidable) or who perceived that the harms of smoking were delayed ($p's < .05$). Quit intentions were higher among those who believed that smokers can quit “if they really want to” and those who reported higher feelings of risk ($p's < .05$). Exploratory analyses revealed that perceptions of delayed harm did not account for unique variance in risk feelings or quit intentions beyond that accounted for by deterministic beliefs ($p's > .05$).

Conclusion: Feelings of risk and recognizing the difficulty of avoiding harmful consequences are key components of understanding health hazards. Beliefs and perceptions that undermine risk feelings and quit intentions, such as those reported here, may have serious negative health consequences.

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Symposium 41C

3086

TOBACCO-RELATED RISK PERCEPTIONS IN THE REGULATION OF TOBACCO PRODUCTS AT THE FDA CENTER FOR TOBACCO PRODUCTS

David B. Portnoy, PhD, MPH and Conrad J. Choiniere, PhD

Center for Tobacco Products, FDA, Rockville, MD.

Risk perceptions are often highlighted in theories, conceptual models and interventions as important predictors of individual health behaviors and disease outcomes. Often overlooked in these discussions is how these same risk perceptions may also serve as predictors of population health. This talk will provide examples of how FDA will use the relationship between risk perceptions and population health to inform regulatory activities with respect to tobacco products. One example is the Population Assessment of Tobacco and Health (PATH). This longitudinal cohort study of tobacco use and health in the United States will monitor, among many other outcomes, changes in risk perceptions among never, current, and former users of tobacco products. Changes in risk perceptions measured in PATH may serve as an indicator of an emerging issue for FDA activity. They may also provide evidence of the effectiveness of tobacco control efforts. Another example is the list of harmful and potentially harmful constituents in tobacco products, listed by brand and sub-brand, which is slated to be released by FDA in April 2013. FDA research is ongoing to assess whether the list meets the statutory requirement of being “understandable and not misleading to a lay person”. The impact of this list on risk perceptions of tobacco products will play an important role in determining the format of and communication efforts about the list. Another example is the impact of marketing of modified risk tobacco products, i.e., tobacco products that claim to reduce exposure or disease risks, on consumer perceptions and understanding. FDA issued a draft guidance to industry that emphasizes the importance of measuring of risk perception to examine the potential impact of the marketing of those products on tobacco use initiation and cessation. These examples will provide the context for a discussion on how tobacco risk perceptions are important for individual health and the important role they play in population health from a regulatory perspective.

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Symposium 42

2:00 PM–3:30 PM

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MINDFUL EATING: A NEW APPROACH TO WEIGHT MANAGEMENT AND COMPULSIVE OVEREATING

Jean L. Kristeller, PhD¹ and Ruth Q. Wolever, PhD²

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Our relationship to eating and food is laden with mindless and highly conditioned patterns, which leads many individuals towards chronic problems with obesity, compulsive overeating and a general sense of distress and imbalance in their lives. Exercises in mindful eating can provide a powerful means to counteract such patterns in a range of populations. This program will present the conceptual framework and evidence for three variations on mindful eating programs, in NIH-funded randomized clinical trials targeted at somewhat different populations: moderately to morbidly obese and those with Binge Eating Disorder; individuals who report stress-related eating and are overweight to moderately obese; and pregnant women at risk for excess weight gain. Similarities and differences among the interventions both in regard to conceptual issues and treatment components will be highlighted.

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Symposium 42A

3088

MINDFULNESS-BASED EATING AWARENESS TRAINING (MB-EAT): CONCEPTUAL FOUNDATIONS AND RESEARCH EVIDENCE

Jean L. Kristeller, PhD and Kevin Bolinskey, PhD

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The Mindfulness-Based Eating Awareness Treatment (MB-EAT) program is based on well-recognized principles of food intake regulation and self-regulation theory, linked to the practices of mindfulness-based therapeutic approaches. Substantial research shows that many individuals inadequately attend to physical signals related to hunger and satiety, and are excessively sensitive to other eating triggers. The MB-EAT program is designed to cultivate both “inner wisdom” (greater use of awareness of hunger, fullness, and taste to make food choices) and “outer wisdom” (better personal use of nutritional guidelines to manage food choices and quantity, and reduce weight).

This paper will address the conceptual foundation of mindfulness-based eating interventions, which inform each of the papers on this symposium, and summarize evidence from two NIH-funded MB-EAT RCTs. The primary research focus will be on a recently completed trial enrolling 117 men and women, with BMI > 34, randomized to the 10-week MB-EAT program or to a wait list control. Approx. 30 % had a diagnosis of Binge Eating Disorder (BED). In contrast to our previous version of MB-EAT, with minimal focus on weight loss, a weight loss of approx. 7 lbs. occurred at immediate post and was sustained at 6 month followup, regardless of BED status. The WLC gained 3 lbs ($p < .001$). Intervention differences were also significant for the Binge Eating Scale (BES) ($p < .05$); the Disinhibition ($p < .01$) and Cognitive Restraint ($p < .001$) scales of the TFEQ, with results weakened slightly for those with BED at 6 months compared to immediate post and 3 month F/up. Improvement on the BES and the TFEQ Disinhibition scale correlated significantly with improvement on all factors of the Five Factor Mindfulness Questionnaire. These results will be presented in the context of the conceptual framework of the program specifically, and in the context of mindfulness effects on eating more generally.

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Symposium 42B

3089

IS MINDFUL EATING SUSTAINABLE?: SIX-MONTH FOLLOW-UP OF A MINDFULNESS INTERVENTION FOR STRESS EATING

Jennifer J. Daubenmier, PhD,¹ Jean Kristeller, PhD,² Frederick M. Hecht, MD¹ and Elissa Epel, PhD³¹Osher Center for Integrative Medicine, Department of Medicine, University of California, San Francisco, San Francisco, CA; ²Psychology, Indiana State University, San Francisco, IN and ³Psychiatry, University of California, San Francisco, San Francisco, CA.

Chronic stress can trigger overeating and lead to weight gain and poor metabolic health. Mindful eating interventions may reduce stress and improve eating regulation and metabolic health in obese populations. However, sustainability of these effects is unclear. We previously reported the results of a randomized waitlist-controlled pilot study of a mindful eating intervention among 47 overweight/obese women from pre to post-intervention. The intervention showed improvements in mindfulness, eating behavior, and anxiety in the intervention compared to the control group. Among obese participants, the intervention showed a prevention of weight gain compared to the waitlist group. In the present study, we report results from the 6-month follow-up. ANOVAs for repeated measures revealed that the intervention group reported greater increases in mindfulness on the Observe and Act with Awareness Scales of the Kentucky Inventory of Mindfulness Skills, greater increases in body awareness (Body Responsiveness Questionnaire), and greater decreases in emotional and external-based eating (Dutch Eating Behavior Questionnaire), anxiety (State-Trait Anxiety Scale), and a trend for greater decreases in perceived stress (Perceived Stress Scale) compared to the control group from baseline to the 6-month follow-up. Groups did not differ in weight change; however, intervention participants showed greater reductions in fasting glucose levels. Higher class attendance predicted greater decreases in glucose levels and greater adherence to mindful eating during the intervention predicted greater weight loss. Mindful eating interventions may lead to sustained improvements in stress management, eating behavior, and metabolic regulation among overweight and obese women.

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Symposium 42C

3090

MINDFULNESS TRAINING FOR WEIGHT AND WELL-BEING IN OVERWEIGHT PREGNANT WOMEN

Kimberly Coleman-Phox, MPH,¹ Barbara A. Laraia, PhD, MPH, RD,^{1,5} Nancy Adler, PhD,^{4,1} Cassandra Vieten, PhD,² Jean Kristeller, PhD,³ Nicole Bush, PhD⁴ and Elissa Epel, PhD^{4,1}¹Center for Health and Community, University of California, San Francisco, San Francisco, CA; ²California. Pacific Medical Center Research Institute, San Francisco, CA; ³Indiana State University, Terre Haute, IN; ⁴Department of Psychiatry, University of California, San Francisco, San Francisco, CA and ⁵School of Public Health, University of California, Berkeley, Berkeley, CA.

Background: Excess weight gain and high stress during pregnancy are risk factors for adverse outcomes both for the woman and her offspring. Pregnancy is a critical period when women are more motivated to prevent excess weight gain and decrease stress. There are few interventions that target pregnancy weight gain and none that also target stress reduction. We developed the MAMAS (Maternal Adiposity, Metabolism, and Stress) intervention to target both weight gain and stress in low income overweight women.

Method: So far, 43 women have completed the 8-week intervention, and 20 women completed prenatal self report measures as part of the no treatment control group. Weight was assessed at baseline and post-partum.

Results: No differences between intervention and control women were found at baseline on BMI and self-report measures of stress, depression, or eating behavior, suggesting matching was successful. Relative to control women, intervention women exhibited significant improvements from baseline to post-intervention in the primary outcomes including perceived stress ($t(61)=1.66$, $p=.05$), and acceptance ($t(61)=-2.36$, $p=.01$). Forty-four percent of intervention women versus 20% of control women ($X^2(1, N=63)=3.45$, $p=.03$), showed clinically meaningful reductions in perceived stress (5 points or more, approximately 1 SD decrease). Finally more intervention than control women had weight gain during pregnancy that fell within the recommended "healthy" range. We will discuss updated findings and presumed mechanisms for promoting healthy pregnancy weight gain.

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Symposium 43

2:00 PM–3:30 PM

3091

INNOVATIVE APPROACHES TO ORAL HEALTH IN CHILDREN

Claudio Nigg, PhD¹ and David Clark, DrPH²¹Public Health Sciences, Univ Hawaii, Honolulu, HI and ²Behavioral and Social Sciences Research Branch, National Institute of Dental and Craniofacial Research, National Institutes of Health, Bethesda, MD.

The US Surgeon General reports that tooth decay is the most common childhood infection - 5 times more common than asthma. Three out of 10 of US children have untreated tooth decay (cavities). For Pacific Islanders, Native Americans, minority, poor, and rural populations, 6 out of 10 children have untreated tooth decay. Children with untreated cavities are often in pain, cannot concentrate, and have trouble learning and eating. Cavities are a preventable infection. Dental sealants, a plastic coating that protects the chewing surfaces of teeth, reduce cavities by 80%. Fluoride varnish, a material that is absorbed by your body, reduces cavities by 40%. The Center for Disease Control recommends placement of sealants and varnish on children in the school setting, which is also supported by the American Academy of Pediatric Dentistry, and the American Dental Association. Therefore, this symposium presents innovative evidence based approaches to preventing cavities in an effort to motivate more behavioral practitioners and researchers to enter this area. Dr. Niederman will summarize the experience of implementing evidence based approach to oral health in children (Forsyth Kids) successfully implemented in various settings. Ms. Oropeza will present the integration of social network theory with attitude and stages of change targeting oral health programming in an effort to identify change agents for intervention programs. Finally, Dr. Deguchi will provide lessons learned from a pilot test of how to implement evidence based oral health program (the Mino'aka Project) in predominantly Native/part Hawaiian and Pacific Island children. Dr. Clark from the National Institute of Dental and Craniofacial Research will discuss these presentations in the larger picture of behavioral oral health and will highlight research opportunities.

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Symposium 43A

3092

FORSYTHKIDS SCHOOL-BASED COMPREHENSIVE CARIES PREVENTION PROGRAM

Niederman Richard, DMD, Mary Tavares, DMD, MPH and Max Goodson, DDS, PhD

The Forsyth Institute, Boston, MA.

Caries is the most common preventable childhood disease - five times more common than asthma. It affects 10 million U.S. school-age children - more than 29% - and the prevalence in Medicaid, minority and rural populations is twice the national average. Greater than 10% of children with untreated caries have acute pain/infections, and greater than 5% have sepsis, resulting in unnecessary hospitalization for a preventable infection. Clinical solutions are available but underutilized. The CDC recommends, and systematic reviews demonstrate, that caries can be cost-effectively prevented. However, there is wide intra- and inter-state variation in the interventions provided, the frequency of intervention, the target grades, and none assess outcomes. To address these issues we created a caries prevention program, Forsyth-Kids, providing twice yearly, comprehensive, school-based, caries prevention, with three success criteria: Increase access. ForsythKids began in 2003 with 6 schools, grew to 54 schools in 2010, targets schools with greater than 50% free/reduced lunch programs, and provides twice per year comprehensive caries prevention. Electronic records are kept facilitating longitudinal analysis. Care takes 15–20 minutes per visit twice per year in school setting (less than the 0.5 to 1 day lost from school by the child and parent in office-based care). Improved health. At baseline 67% of children had untreated decay in the initial 6 schools - twice the national average. At six years, the percentage of children with untreated decay was 21% - less than the national average, and exceeds the Healthy People 2020 goals prior to 2010. In parallel, at baseline, 17% of these children had acute pain/infections, and at the second visit this was reduced to less than 5%. Reduced cost. Care costs \$60/child/visit. This is less than 1/2 to 1/5 the office-based fees and Medicaid reimbursement rates. Acknowledgements: Supported by NIH-NIMHD / U24 MD006964 and NIH-NIDCR / R34 DE022272

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Symposium 43B

3093

THE MINO'AKA (SMILE) PROJECT: LESSONS LEARNED FROM PILOTING AN EVIDENCE BASED ORAL HEALTH PROGRAM FOR CHILDREN

Mikako Deguchi, DDS,¹ Martha E. Oropeza, BA,¹ Claudio Nigg, PhD,¹ Richard Niederman, DMD,² Jimmy Efird, PhD³ and Tom Valente, PhD⁴

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In Pacific Islanders, Native Americans, minorities, poor and rural populations, the percentage of children with caries experience and untreated tooth decay is significantly higher than that of the national average. In a recent PEW report, Hawai'i received a grade F for children oral health care with the highest rates of dental caries in the nation. Further, Hawai'i does not fluoridate its water nor are there dental/oral health programs in the school system. The Mino'aka Project aims to alleviate these profound disparities of children in Hawai'i by implementing an inclusive school-based caries prevention program. The Mino'aka Project is a feasibility trial study for grade 3 children in 8 afterschool programs in Hawai'i. This report describes challenges encountered and ways to overcome them. Challenges: 1) Collaborating with different agencies: Two after-school programs providers (YMCA and Kama'aina Kids), clinicians, and four co-principal investigators (PIs) (Hawai'i, California, North Carolina, and Massachusetts), 2) Complying to regulations from the University of Hawai'i, Hawai'i Department of Health, and Hawai'i Department of Education, and 3) Identifying/addressing each school site's needs. Overcoming challenges: 1) Establish one designated point of contact with providers, PIs, and clinicians in order to maintain consistent communication, 2) Utilize community health agencies to recruit and hire clinicians and 3) Create solid relationships with sites prior to program dissemination. Pilot preventive programs should take into consideration such limitations. However, these challenges may be unique to Hawai'i and may vary from state to state.

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Symposium 43C

3094

EXPLORING THE RELATIONSHIP BETWEEN ORAL HEALTH SOCIAL NETWORKS, ATTITUDE AND STAGE OF CHANGE IN AFTERSCHOOL STAFF

Martha E. Oropeza, BA,¹ Tom Valente, PhD,² Claudio Nigg, PhD,¹ Jimmy Efird, PhD,³ Mikako Deguchi, DDS¹ and Richard Niederman, DMD⁴

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Social Network Theory posits that well-networked individuals can be change agents for implementing health promotion programs. Positive attitudes and higher stages of change are indicators of successful change agents. This study examined elementary after-school program (EAS) site coordinators' networks, from different providers, with respect to oral health (OH) programming and their relationship with attitude and stage of change. Surveys given to subjects (n=75; 86.7 % Female; 48 % Native Hawaiian) assessed four OH networks (advice, discussion, leadership, and support), attitude, and stage of change. Mean nominations received for advice networks were 2.73±3.17; mean nominations sent were 3.56±2.74. Mean attitude was 4.44±0.70; range 1.7–5. Nominations received in all networks were not associated with attitude (β ranged 0.09–0.14, $p > .05$) or stage of change (β ranged 0.04–0.12, $p > .05$). For one provider, naming discussion partners was marginally associated with positive attitudes toward EAS OH programs ($\beta = 0.32$, $p < .10$), but not with stage of change ($\beta = 0.11$, $p > .05$). A composite total score summing the number of nominations received and sent across four networks was not associated with attitudes, with the exception of a marginal positive association between making many nominations and stage of adoption ($\beta = 0.23$, $p = .10$). These results point to some indication that individuals who make nominations may also be appropriate change agents to implement OH programs. Future studies should explore the role of change agents in successful EAS interventions.

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Symposium 44

2:00 PM–3:30 PM

3095

DEVELOPING ASSESSMENT TOOLS FOR END-OF-LIFE RESEARCH

Barry Rosenfeld, PhD

Psychology, Fordham University, Bronx, NY.

This symposium focuses on developing and enhancing the assessment tools available for researchers who work in palliative care or end-of-life settings. Although a plethora of psychosocial tools have been applied to medical, psycho-oncology, and end-of-life research, the unique challenges posed by these patients and settings raises a number of concerns. In fact, a growing literature has raised concerns regarding the adequacy of many of the tools that have been frequently used for diagnostic and/or assessment purposes, and highlights the need for more rigorous instrument development and evaluation procedures. This symposium will focus on several such studies, addressing both the nature and adequacy of current assessment techniques in end-of-life research, as well as ongoing efforts to improve the existing tools. This symposium addresses a range of important issues in end-of-life research, including the assessment of physical symptoms, cognitive functioning, prognostic awareness, and desire for hastened death. Specifically, we focus on the assessment of neuropsychological impairment among terminally ill cancer patients, in an attempt to understand the limitations that may arise in using self-report measures with cognitively impaired participants. A second study focuses on the extent to which terminally ill patients understand the extent of their illness (prognostic awareness), addressing both the adequacy of existing measures as well as ongoing efforts to improve upon the measurement of this construct. The third study addresses the assessment of physical symptoms, and the adaptations necessary for a commonly used symptom inventory (the Memorial Symptom Assessment Tool) when applied to an end-of-life population. The final presentation will address efforts to develop an abbreviated version of the Schedule of Attitudes toward Hastened Death, a widely-used (but lengthy) measure of desire for death. These four presentations will provide broad coverage of the important issues plaguing end-of-life researchers.

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Symposium 44A

3096

THE ASSESSMENT OF PROGNOSTIC AWARENESS IN ADVANCED CANCER PATIENTS: THE STATE OF THE SCIENCE AND FUTURE DIRECTIONS

Allison J. Applebaum, PhD,¹ Elissa A. Kolva, MA,² Julia R. Kulikowski, BA,¹ Jordana J. Jacobs, BA,¹ Wendy G. Lichtenthal, PhD,¹ Megan E. Olden, PhD³ and Barry D. Rosenfeld, PhD²

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Prognostic awareness (PA) has become an increasingly important topic of research in healthcare communication and psycho-oncology. While a large body of literature has examined the communication of prognostic information, much less attention has been given to the assessment of PA in the palliative care setting. A systematic review was conducted to establish the state of the science of measurement of PA among patients with advanced cancer, yielding a final sample of 29 relevant articles. While use of the structured and semi-structured assessments appeared to offer more face validity than unstructured measures, the absence of descriptions of the measures' psychometrics precluded conclusions about their relative reliability and validity. Methods of assessing PA were inconsistent across studies, which may reflect variations in how these studies defined PA. A surprisingly high percentage of patients (0–75 %) were unaware of their terminal prognosis, particularly in studies conducted outside of North America. We evaluated the performance of the two most commonly used measures in a sample of 235 advanced cancer patients. Based on these measures, only 28 and 38 % of the sample were considered to be fully aware of their terminal prognosis. However, an analysis of patients' predicted lifespan and actual survival in relation to prognostic awareness revealed that roughly 25 % of these same patients overestimated their lifespan by months or years. These results highlight the need for the development of assessment measures that are culturally sensitive and attend to the unique ways in which PA is defined. Patients', physicians', and families' levels of awareness of the patient's prognosis may significantly impact the treatment decision-making process, and therefore such assessments will have significant implications for patient care and end-of-life planning.

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Symposium 44B

3097

SCALE REDUCTION OF THE SCALE OF ATTITUDES TOWARD HASTENED DEATH USING ITEM RESPONSE THEORY TO REDUCE PATIENT BURDEN

Elissa Kolva, MA,¹ Ying Liu, PhD,¹ Hayley Pessin, PhD² and Barry Rosenfeld, PhD¹¹Psychology, Fordham University, Bronx, NY and ²Memorial Sloan-Kettering Cancer Center, New York, NY.

Desire for hastened death (DHD) is the construct underlying suicidality and requests for physician-assisted suicide or euthanasia in patients with terminal illness. The Schedule of Attitudes toward Hastened Death (SAHD) was designed to measure DHD in palliative care populations. The purpose of this project is to examine the psychometric properties of the SAHD, including its factor structure, and to use Item Response Theory (IRT) to determine if a shorter version of the scale would be as accurate as the original. Data for this study were drawn from four studies aimed to understand psychological distress in terminal illness. Participants were English-speaking and had a diagnosis of a life-limiting illness (advanced cancer or AIDS). 1076 participants completed the SAHD, a 20-item self-report measure that uses a true/false format to assess aspects of DHD including fear of pain and anticipated emotional suffering, social or personal factors, and direct thoughts about facilitating one's death. Participants were largely male (65 %) and ethnically diverse (53 % Caucasian, 32 % Black, 10 % Hispanic) with a mean age of 58.1 (SD=32.5). Consistent with the extant literature, a small number of participants reported a moderate (n=64, 5.9 %) or high (n=35, 3.2 %) level of DHD. Categorical principle components analysis suggested a two factor solution, the first factor contains items that assess wishes to hasten death through active or passive means, and the second contains items about ability to cope with illness. A multidimensional IRT model identified a short form of the SAHD that demonstrates equivalent reliability to the original version of the scale. The short form of the SAHD will provide good reliability and validity while reducing patient burden. Additionally, the scale can be more easily integrated into screenings for psychological distress. The study of this construct is integral to the debate surrounding terminally ill patients' "right to die" in the United States.

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Symposium 44C

3098

AN EXPLORATORY FACTOR ANALYSIS OF THE MEMORIAL SYMPTOM ASSESSMENT SCALE (MSAS) IN A TERMINALLY ILL SAMPLE

Kristen G. Tobias, MA,¹ Ying Liu, PhD,¹ Hayley Pessin, PhD,² William Breitbart, MD² and Barry Rosenfeld, PhD^{1,2}¹Psychology, Fordham University, Bronx, NY and ²Psychiatry, Memorial Sloan Kettering Cancer Center, Manhattan, NY.

Measurement of symptom burden is a crucial aspect of understanding quality of life in patients with cancer. The Memorial Symptom Assessment Scale (MSAS) is a self-report instrument designed to assess symptom burden in patients with cancer. The original validation study identified two factors (physical and psychological) and three symptom clusters (psychological, high prevalence physical symptoms, and low prevalence physical symptoms) in a mixed sample of inpatients/outpatients. Although this scale has been frequently used in a wide range of settings and languages, no research has examined the psychometric properties of the MSAS in a palliative care setting. We administered the abbreviated MSAS (MSAS-SF), which includes only the distress ratings associated with the scale's 32 items, to 355 terminally ill patients in an inpatient palliative care hospital. An exploratory factor analysis with varimax rotation based on the dichotomous ratings of symptom presence/absence generated a 3-factor model that resulted in a good fit (RMSEA=.03, CFI=.92). The three factors generated by this model appeared to reflect psychological symptoms, gastrointestinal symptoms, and a range of other physical symptoms such as changes in skin, shortness of breath, and numbness. Interestingly, a number of symptoms that are common in oncology settings did not load on these factors (e.g., pain). Additional analyses compared the factor structure generated by symptom distress ratings to other relevant clinical variables such as survival time and desire for hastened death.

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Symposium 44D

3099

COGNITIVE IMPAIRMENT IN CANCER PATIENTS RECEIVING HOSPICE CARE

Rebecca James, MA, Barry Rosenfeld, PhD and Elissa Kolva, MA

Fordham University, Bronx, NY.

Cognitive impairment (CI) and delirium have been reported in up to 90 % of palliative care patients in the weeks before death. Given the importance of decision-making at the end of life, being able to give informed consent to treatment or other decisions (e.g., advanced directives) is critical. CI may limit patient capacity to make decisions, but is often undetected by treating physicians. The present examination sought to explore the prevalence of CI in a sample of cancer patients in hospice care.

Subjects were recruited from an inpatient hospice facility as part of a larger study on medical decision-making at the end of life. Subjects were approached if they had a primary cancer diagnosis, were over the age of 50, and had no known dementia or CI. Out of the 56 subjects who participated in the study, 32 were able to complete the full neuropsychological battery (MMSE, HVLT-R, D-KEFS) and were included in analyses.

Mean age of the sample was 68 (Range=51–83). Subjects were 40 % male, 73 % Caucasian, 27 % African American, and 10 % of subjects identified as Hispanic. The most frequent types of cancer were lung, breast, ovary, and pancreas.

Using a cut-off score of 23 on the MMSE, 16.6 % of subjects exhibited global CI (Mean=26.43, Range=19–30). For the HVLT-R and the D-KEFS, subjects scoring at or below 1 standard deviation from the mean were classified as having CI. Subjects demonstrated impairments in immediate and delayed recall (84 %; 77 %), letter fluency (62 %), category fluency (72 %), category switching (66 %), and executive function/inhibition (61 %).

Over 60 % of our sample with no previously identified CI exhibited impairment. The present investigation likely underestimates the prevalence of CI given that roughly 40 % of subjects were not able or willing to complete the full battery (and were not included in these analyses), and these subjects also tended to have much lower MMSE scores than those who were able to complete the full battery (Mean=20.61, Range=8–28). Our results reinforce the need for hospice professionals to assess cognitive status when considering patient capacity to make important decisions.

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Friday
March 22, 2013
3:45 PM–5:15 PM

Paper Session 13 **3:45 PM–4:03 PM** **3100**

CAREGIVING BURDEN PREDICTS PSYCHOLOGICAL DISTRESS IN COUPLES COPING WITH LUNG CANCER: A LONGITUDINAL, DYADIC ANALYSIS

Kathrin Milbury, PhD, Hoda Badr, PhD and Cindy Carmack, PhD

Behavioral Science, The University of Texas, MD Anderson Cancer Center, Houston, TX.

Spouses of cancer patients frequently experience caregiving-related strain, which may undermine their ability to provide quality care. While the negative effects of caregiving on spouses' health and well-being are well documented, the effect of spousal caregiving burden on patients' psychological distress is unknown. Thus, this dyadic study examined prospective associations between caregiving burden and psychological distress in patients (63 % male, 88 % Caucasian, mean age=63 years) and their spouses coping with lung cancer over a 6-month period. Patients and their spouses individually completed questionnaires within 1 month of treatment initiation (baseline) and at 3-month and 6-month follow-up. Distress was measured with the Brief Symptom Inventory and caregiving burden with the subscales of the Caregiver Reaction Assessment. Multilevel modeling of data from 158 couples revealed that spouses' reports of caregiving-related health problems at baseline were significantly associated with 3-month ($p < 0.001$) and 6-month ($p = 0.01$) follow-up distress in both patients and spouses even when controlling for baseline distress and dyadic adjustment. There was also evidence that baseline spouse reports of schedule disruption ($p = 0.05$) predicted patient 3-month distress and baseline spouse reports of financial strain ($p < 0.05$) and social isolation ($p < 0.10$) predicted their own distress at 6-month follow-up. Consequently, caregiving burden is problematic for both patients and spouses. Couples in which spouses report caregiving-related health problems at treatment initiation may be at particular high risk of long-term elevated distress. Targets (e.g., self-care, social support solicitation skills) of future couple-focused intervention research for those facing lung cancer will be discussed.

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Paper Session 13 **4:03 PM–4:21 PM** **3101**

AN ONLINE INTERVENTION FOR LUNG CANCER CAREGIVERS BUFFERS NEGATIVE MOOD IN BEREAVEMENT

Lori L. DuBenske, PhD,^{1,2} David Gustafson, PhD,² Kang Namkoong, PhD,³ Ming-Yuan Chih, MHA MS,² Amy Atwood, PhD,² Robert Hawkins, PhD⁴ and James Cleary, MD⁵

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Background: Cancer patients depend on family caregivers for physical and emotional support throughout their disease, especially with disease progression and end of life. But caregiver burden can complicate bereavement. The Comprehensive Health Enhancement Support System (CHESS) is an online system that provides a continuous source of information, communication and coaching to lung cancer caregivers across caregiving and bereavement. **Methods:** Caregivers were randomly assigned to either CHESS ($n = 124$) or the Internet ($n = 122$) for up to 25 months. Caregivers agreed to use CHESS or the Internet and complete bimonthly surveys. They were provided a computer, Internet service and training if needed. Mood was measured in caregiving and bereavement surveys with the POMS depression, anxiety and anger subscales. Regression analysis tested predictors of mood at 3 and 5 months post patient death, including study arm and mood approximately 2 months prior to patient death and their interaction, and controlling for caregiver age and gender, caregiver-patient relationship, and time since diagnosis.

Results: Significant group by pre-death mood interactions were observed for depression at 3 ($\beta = -.266$, $SE = .103$, $sr^2 = .058$) and 5 ($\beta = -.332$, $SE = .097$, $sr^2 = .116$) months and anger at 5 months ($\beta = -.187$, $SE = .092$, $sr^2 = .049$) (all $p < .05$), but not for anxiety. For the Internet group higher levels of pre-death depression and anger predicted higher levels in bereavement, while the CHESS group had lower levels of depression and anger in bereavement regardless of pre-death levels.

Conclusion: CHESS demonstrated a positive impact on depressed mood and anger in bereavement. eHealth systems can play a continued role in supporting caregivers in adjusting to loss and "re-entry" after caregiving.

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Paper Session 13 **4:21 PM–4:39 PM** **3102**

THE EFFECT OF AN ONLINE INTERVENTION ON SYMPTOM DISTRESS IN PATIENTS WITH NONSMALL CELL LUNG CANCER: A RANDOMIZED TRIAL

Lori L. DuBenske, PhD,^{1,2} David H. Gustafson, PhD,² Ming-Yuan Chih, MHA, MS,² Amy K. Atwood, PhD,² Robert Hawkins, PhD,³ Cindy L. Carmack, PhD⁴ and James F. Cleary, MD⁵

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CHESS (Comprehensive Health Enhancement Support System) is a web-based lung cancer information, communication and coaching system for caregiver-patient dyads. This study examined the effect of CHESS versus the Internet on physical symptom distress in patients with nonsmall cell lung cancer.

Methods: In a multi-site RCT, 285 caregiver-patient dyads were randomly assigned to standard care plus either the Internet or CHESS for up to 25 months. Caregivers agreed to use CHESS or the Internet and complete bimonthly surveys; for patients, these tasks were optional. All caregivers were provided a computer and Internet service and training if needed. For pretest and bimonthly follow-up surveys, caregivers rated patient physical symptom distress using a modified Edmonton Symptom Assessment Scale (ESAS) that included pain, nausea, appetite, and shortness of breath, fatigue, constipation, and diarrhea. Linear mixed-modeling compared repeated (2, 4, 6, and 8-month after intervention) caregiver rated patient symptom distress between groups controlling for pretest ESAS score and design factors (recruitment site, caregiver-patient relationship, race).

Results: Caregivers in the CHESS group reported significantly lower patient symptom distress than the Internet group over the first 8-month period ($P = .005$). Comparisons at each survey month showed significant differences at 4 ($P = .031$) and 6 months ($P = .004$), and marginally significant differences at 2 ($P = .051$) and 8 months ($P = .061$).

Conclusion: An online system like CHESS may reduce caregiver report of symptom distress in lung cancer patients.

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Paper Session 13 4:39 PM–4:57 PM 3103

DEVELOPMENT AND VALIDATION OF A CONCEPTUAL FRAMEWORK OF LUNG CANCER STIGMA

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Stigma perceived by lung cancer patients can have significant psychosocial and behavioral consequences, but there are gaps in current conceptualization and measurement. As part of a multi-stage process of measure development (including previously reported descriptive data from 42 patient interviews), we developed a framework of lung cancer stigma. Fundamental elements of the stigma model included: negative appraisal or devaluation from others (felt stigma) and the internalization of these perceptions (guilt, shame, regret, anger). Important moderators of this process, along with both adaptive and maladaptive consequences of lung cancer stigma, were also included within the theoretical framework. To validate and enhance the reliability of this model, we presented it to focus groups comprised of 23 lung cancer patients at two outpatient oncology settings: an NCI-designated cancer center and a county hospital serving a large portion of low income, underinsured patients. Participants included 11 women and 12 men (mean age=60 years). Participant race and ethnicity breakdown included 65 % Non-Hispanic White, 22 % Black, 9 % Asian, and 4 % Hispanic White. Among the sample, 15 (65 %) self-identified as current or former smokers. Approximately one-fourth (26 %) reported a high school degree or less. Focus group participants strongly endorsed the conceptualizations of felt and internalized stigma, along with their connecting pathways. Participants also validated the inclusion of psychosocial consequences, although there was mixed endorsement for treatment-related consequences of stigma (e.g., delay in treatment-seeking). Data analyses also revealed spontaneous discussions of stigma-related moderators, including social support, religiosity, and illness perceptions (e.g., causality, treatability). Overall, the qualitative process, including thematic analyses and conceptual model validation, provides a strong foundation to develop a patient-reported outcome (PRO) measure of lung cancer stigma.

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Paper Session 13 4:57 PM–5:15 PM 3104

EVALUATION OF TREATMENT AND DISEASE-RELATED SYMPTOMS IN ADVANCED HEAD AND NECK CANCER: VALIDATION OF A NEW DISEASE-SPECIFIC QUALITY OF LIFE MEASURE

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Objective: The Functional Assessment of Cancer Therapy-Head and Neck (FACT-HN) is a well validated assessment of quality of life (QOL) used with patients diagnosed with head and neck cancers. The current study is an attempt to evaluate and modify this instrument as necessary in light of the recent regulatory guidelines from the FDA on utilizing patient-reported outcomes in clinical trials.

Design: Patients (n=49) with advanced (stage III and IV) head and neck cancers were recruited from participating NCCN institutions as well as community cancer support organizations in the Chicago area. Patients completed open-ended interviews, as well as symptom checklists. Participating oncology physician experts also rated symptoms.

Results: The final version includes 22 items, which are broken down into disease-related symptoms, treatment side effects or general function and well-being. The new scale has acceptable internal consistency (Cronbach's coefficient alpha=0.86), content validity and concurrent validity as demonstrated by moderate to strong correlations with the existing FACIT measure.

Conclusions: The NFNHSI-22 adequately reflects symptom and side-effect concerns of advanced head and neck cancer patients, as well as oncology physicians. This instrument can be used to evaluate the most important disease-related symptoms, treatment side effects, and function/well-being in patients with advanced head and neck cancers in clinical practice and research.

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Paper Session 14 3:45 PM–4:03 PM 3105

MINDFULNESS-BASED CANCER RECOVERY (MBCR) VS. SUPPORTIVE EXPRESSIVE THERAPY (SET) IN BREAST CANCER SURVIVORS (THE MINDSET TRIAL): IMPACT OF PATIENT PREFERENCES AND PERSONALITY ON OUTCOMES

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An adaptation of Mindfulness-Based Stress Reduction (MBSR), the MBCR program is based on intensive training in mindfulness meditation and gentle Hatha yoga adapted specifically for cancer patients. We recently completed a 5-year multi-site RCT comparing the effects of MBCR to SET and a one-day stress management seminar (SMS) on psychological and biological outcomes in distressed breast cancer survivors (the MINDSET trial). In addition to comparing aggregate group outcomes, we assessed baseline program preference and a number of background variables as moderators of treatment outcome, including personality characteristics, emotional suppression and repression. 272 women who had completed primary treatment for nonmetastatic breast cancer enrolled in the trial. Overall, greater improvements were seen on the MBCR group on measures of stress, mood disturbance and quality of life compared to the other groups post-program. Preference data was available for 161 women. The most preferred program was MBCR (55 %), and overall less neurotic women preferred the SMS, while more extraverted women preferred MBCR. Only 31 % of participants were assigned to their preferred treatment group, but those who got their preference improved more over time on global quality of life and stress symptoms, compared to those assigned to a non-preferred intervention. Of the moderator variables, the only significant predictor of better treatment outcomes was neuroticism, wherein those with higher baseline neuroticism, compared to those with lower levels, showed greater reduction in mood disturbances after SET, but not the other programs. These results suggest that using baseline preferences and personality characteristics to help choose appropriate interventions may have substantial merit in optimizing patient outcomes in psychosocial oncology.

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Paper Session 14 4:03 PM–4:21 PM 3106

PERSPECTIVES OF ASIAN IMMIGRANT BREAST CANCER SURVIVORS ON POST-TREATMENT SURVEILLANCE

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Breast cancer is the most commonly diagnosed cancer among Asian women in the US, yet there is limited research on breast cancer survivorship among Asians, specifically post-treatment breast cancer surveillance. Although data indicate differences in surveillance guideline adherence (e.g., mammography) between other racial/ethnic groups, little is known about adherence among Asian survivors. The current study used a mixed methods approach to explore perspectives on post-treatment surveillance among 14 Asian immigrant breast cancer survivors treated in a public hospital setting (mean age=52 years; 71 % Chinese; 85.7 % completed treatment within past 3 years). Participants completed a 360-item survey guided by the Integrated Model of Behavioral Prediction and a qualitative interview about their final treatment visit, perceived recurrence risk, and related social experiences. A trained ethnographer performed an inductive cultural analysis of the interview transcripts and identified themes that were defined and organized into codes. Ten codes occurred with high to moderate frequency, with the leading three emphasizing the lack of recurrence information provided at the end of treatment (33 occurrences); the receipt of provider recommendation for unspecified follow-up (32 occurrences); and the cultural belief that cancer is a taboo subject within Asian communities (30 occurrences). These findings are consistent with quantitative data indicating that the majority of participants reported hearing almost nothing or relatively little about how to find a recurrence (100 %) or the guidelines for post-treatment surveillance (85.7 %). Furthermore, 64.3 % reported that it was important to receive information about how to talk to family and friends about their cancer and how to cope if significant others withdraw, yet only 14.3 % ever received such information. Findings point to the importance patient-centered information exchange and cultural beliefs in promoting post-treatment surveillance adherence among Asian survivors.

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Paper Session 14 4:21 PM–4:39 PM 3107

INTEGRATIVE ONCOLOGY CONSULTATION DOES NOT DELAY INITIATION OF PRIMARY TREATMENT FOR BREAST CANCER

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It is estimated that between 50 % and 80 % of women in the United States with breast cancer supplement their conventional medical treatment with some form of complementary and alternative medicine (CAM). Most CAM use is self-prescribed. However, some women diagnosed with breast cancer seek consultation with physician-level CAM providers who specialize in integrative oncology (IO). Although these specialists generally seek to provide complementary care concerns have been raised that IO may delay initiation of conventional treatment. Using data from a prospective matched controlled study of women with breast cancer including those who receive IO, we examined data from sixty (60) women who sought IO care each of whom was matched with one or more women with breast cancer who did not use IO and consented after approach through a cancer registry (n=112). Participants were matched based on demographics and breast cancer clinical presentation. Matching criteria included age, stage of cancer, race, ethnicity and marital status at diagnosis. Using data provided by the registry on the date of initial diagnosis and the date of first treatment for breast cancer (surgery, chemotherapy, radiation, and hormonal therapy) the number of days of treatment delay for each woman was determined. We averaged the number of days between diagnosis and first treatment for cases and their matched controls and subjected the result to t-test analysis. The interval between breast cancer diagnosis and start of treatment ranged from 0–89 days for the 60 IO cases compared to 0–87 days in their matched controls. The mean number of days elapsed between initial diagnosis for breast cancer and the day of first treatment for breast cancer was 24.28 (95 % CI: -24.2, 72.76) days for the IO cases and 22.33 (95 % CI: -16.74, 58.56) days for their matched controls. The difference was not statistically significant. Seeking integrative oncology care does not appear to delay standard treatment for breast cancer.

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Paper Session 14 4:39 PM–4:57 PM 3108

RELATIONSHIPS BETWEEN SELF-EFFICACY FOR COMMUNICATION WITH ONE'S PHYSICIAN AND MEASURES OF WELL-BEING, CONCERNS ABOUT TAKING MEDICATIONS, AND MEDICATION ADHERENCE IN BREAST CANCER PATIENTS RECEIVING ADJUVANT ENDOCRINE THERAPY

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Past research has suggested that the patient-physician relationship can influence health-related quality of life and medication adherence. In this study, we examined the relationship between patient self-efficacy for communicating with physicians and measures of emotional well-being, social well-being, functional well-being, concerns about taking medications, and non-adherent medication taking behaviors. 113 post-menopausal breast cancer patients who were undergoing adjuvant endocrine therapy completed a measure of self-efficacy for communicating with their physician along with a series of self-report questionnaires. Regression analysis showed that patients' ratings of self-efficacy for communication with their physician was positively associated with emotional well-being (standardized $\beta=0.26$, $t=3.07$, $p<0.01$), as well as functional well-being (standardized $\beta=0.31$, $t=4.27$, $p<0.01$) and social well-being (standardized $\beta=0.18$, $t=2.02$, $p=0.046$), after controlling for symptoms and relevant demographics. Patients ratings of self-efficacy for communicating with their physician was also inversely associated with concerns about taking medication, such that those who reported greater self-efficacy for communication reported fewer concerns about taking medication (standardized $\beta=-0.24$, $t=-2.70$, $p<0.01$) and fewer non-adherent medication taking behaviors (standardized $\beta=-0.2$, $t=-2.19$, $p=0.03$). Taken together, these findings emphasize that confidence in one's ability to communicate with their physician is important for breast cancer patients receiving adjuvant endocrine therapy, as it relates to higher well-being, fewer concerns about taking medications, and greater medication adherence behaviors. Future research should test interventions aimed at increasing breast cancer patients' self-efficacy for patient-physician communication.

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Paper Session 14 4:57 PM–5:15 PM 3109

HEALTHY MOVES TO IMPROVE LIFESTYLE BEHAVIORS OF CANCER SURVIVORS & THEIR SPOUSES: FEASIBILITY AND PRELIMINARY RESULTS OF INTERVENTION EFFICACY

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Social Cognitive Theory highlights the role of social relationships in behavior change. Spouses are cancer survivors' most important source of support so they may provide critical assistance during behavior change attempts. Yet, even well-intentioned spouses may inadvertently offer counter-productive support. Thus, interventions that promote mutual support for both survivor and spouse may be more effective than those targeting only survivors and may improve health outcomes for both. We modified an efficacious behavior change intervention for improving diet and exercise in cancer survivors to include a couples-based (CB) approach and are pilot testing it in 20 couples with poor health behaviors. Survivors and spouses complete assessments at baseline and 6 months and are randomized to a survivor only (SO) arm or a CB arm. Survivors are mostly white females with breast cancer (64 %). The study has surpassed feasibility benchmarks; 100 % of survivors and 95 % of spouses have completed the 6 month follow-up and attendance for the 9 counseling sessions is 95 %. Mean change scores between baseline and 6 months indicate that survivors in the SO arm show increased fruit and vegetable consumption [+2.9 (2.1); $p<.05$] and decreased waist circumference [-2.5 cm (1.9); $p<.05$] and those in the CB arm show higher fruit and vegetable consumption [+2.3 (0.9); $p<.05$] and trends toward decreased weight [-3.8 kg (4.8); $p=.11$] and saturated fat intake [-5.3 (7.8); $p=.16$]. Spouses in the SO arm show no changes, but those in the CB arm show decreased total [-16.2 (15.3)] and saturated fat [-8.1 (5.5)] intakes ($p's<.05$) and trends toward reduced weight [-4.0 kg (5.2) $p=.12$] and waist circumference [-9.8 cm (12.6); $p=.12$]. These preliminary findings support our hypotheses and the need for further evaluation in a larger trial.

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Paper Session 15 3:45 PM–4:03 PM 3110

PSYCHOLOGICAL ADJUSTMENT AFTER DIAGNOSIS OF CHRONIC CONDITIONS: IDENTIFYING DISTINCT TRAJECTORIES AMONG DIFFERENT CHRONIC CONDITIONS

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Objective: To identify general patterns of depressive symptoms trajectories in middle-aged and older adults with different chronic health conditions, including hypertension, diabetes, heart condition and lung diseases.

Method: Our sample included 1.) adults aged 50+ from the 1996 Taiwan Longitudinal Study on Aging (TLISA) who had selected health conditions and with valid self-reported duration of those conditions, or 2.) newly diagnosed patients in follow-ups during 1999, 2003, and 2007. Depressive symptoms were measured by CES-D (Center of Epidemiological Studies-Depression) scale. Hierarchical linear modeling was used to estimate trajectories of depressive symptoms after a certain condition. Effects of social-demographic factors, health status, co-morbidities, and exercise were also evaluated.

Result: Adults with heart disease have the highest level of depressive symptoms at diagnosis and then the trajectory descends over time. There is a general trend of increasing depressive symptoms following adults diagnosed with hypertension or diabetes. Depressive symptoms at diagnosis of chronic conditions were not significantly associated subsequent change patterns but hypertension patients with a higher level of depressive symptoms at diagnosis have a greater increase in depressive symptoms over time. Educational level, co-morbidity, mobility, and exercise habit may also determine the depressive symptom levels when an adult diagnosed with a certain chronic condition.

Conclusion: Depressive symptoms in older life may be largely affected by different health conditions and the disease progression. The identification of adults who are most at risk for elevating depressive symptom trajectories may lead to the identification of subgroups of adults who are at higher risk for depression associated negative health outcomes

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Paper Session 15 4:03 PM–4:21 PM 3111

BUILDING A COMMUNITY-ACADEMIC PARTNERSHIP: IMPLEMENTING A COMMUNITY BASED TRIAL OF TELEPHONE COGNITIVE BEHAVIORAL THERAPY FOR RURAL LATINOS

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Despite substantial efforts by researchers, policy makers, and federal funding sources to improve access to mental health care for ethnic minority populations, disparities persist and concerns about the appropriate use of EBP with ethnic minority clients and the ability of community agencies to implement EBP persist. This presentation details the processes of developing a community-academic partnership that implemented and pilot tested an evidence-based telephone cognitive behavioral therapy program in partnership with the Yakima Valley Farm Workers Clinic. Originally demonstrated to be effective for urban, middle-income, English-speaking primary care patients with major depression, the program was adapted, culturally tailored and pilot tested for use with rural, uninsured, low-income, Latino patients with major depressive disorder in a primary care site in a community health center in rural Eastern Washington.

One hundred one adults, including 20 men, with major depression were randomized to an 8 session manualized telephone CBT intervention versus care as usual. Patients receiving CBT by phone were more likely to experience improvement in depression scores over the six-month follow-up period compared with patients randomized to usual care ($\beta = -.41$, $t = -2.36$, $df = 219$, $p = .018$, for the SCL; and $\beta = -3.51$, $t = -2.49$, $df = 221$, $p = .013$, for the PHQ-9).

Qualitative data from patients who received the CBT intervention and from primary care physicians at the clinic site highlight the success of this program in addressing many barriers to care and in attaining high patient and provider satisfaction.

This presentation emphasizes the need for a shift to research in practice in which community-academic research partnerships can develop, adapt, and test culturally responsive EBP in underserved communities in effort to effectively address mental health disparities.

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Paper Session 15 4:21 PM–4:39 PM 3112

AUTOMATED TEXT MESSAGING (SMS) TO IMPROVE DEPRESSION TREATMENT IN LOW-INCOME SETTINGS

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Mobile-phone based text messaging (SMS) is a widely available and low cost tool that may help improve healthcare effectiveness and reach. This presentation will discuss the use of SMS to improve care for low-income populations and describe a pilot usability/feasibility study of an automated text-messaging adjunct to cognitive behavioral therapy (CBT) for depression in a public sector clinic.

Method: Daily text messages were sent to patients inquiring about their mood and other themes of a manualized group CBT intervention (thoughts, activities, social interactions). Results: Nineteen patients were approached for participation in the research study that would send them 2–3 text messages daily. Sixteen (84.2 %) patients had mobile phones and eleven patients (58 %) actively used SMS. The average age of the participants was 52.30 (SD=8.13) (range of 37–63). We tested the adjunct with 12 patients (5 English- and 7 Spanish-speakers) during and after treatment. Over a period of 2–4 months (individuals started at different times), the response rate was 64.88 % (SD=24.85 %) with a range of 27 %–99 %. After the CBT groups ended, 75 % of individuals requested the continuation of the text messages. Among all patients approached, higher age was related to lower rates of SMS use prior to the study ($r = -.59$, $p < .01$) but was not related to eventual use of SMS as part of the study ($r = -.09$, $p = .70$) since some patients were taught to use it. Qualitative feedback from both Spanish and English patients highlights an increase in introspection and feelings of social support.

Conclusion: The study supports the use text messaging has potential to improve mental health care among low-income populations in a cost effective manner.

More data available by March

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Paper Session 15 4:39 PM–4:57 PM 3113

IMPACT OF A CULTURALLY-FOCUSED PSYCHIATRIC CONSULTATION INTERVENTION ON DEPRESSIVE SYMPTOMS AMONG LATINO PRIMARY CARE PATIENTS

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Background Latinos with depression are much more likely to seek mental healthcare through primary care providers (PCP) than mental health specialists. A number of provider and patient-level challenges contribute to mental health disparities. We implemented a culturally-focused psychiatric (CFP) consultation service for Latino primary care patients (pts) with depression to understand feasibility, satisfaction and cost of a multicomponent multilingual two-session intervention.

Method Project involved a quasi-experimental design with PCP clinics randomly selected to provide either CFP intervention or usual care. CFP clinicians (psychologists, psychiatrists) provided: psychiatric assessment, psychoeducation, cognitive-behavioral based tools and treatment recommendations (for pts and provider). Depressive symptoms (QIDS-SR) assessed at baseline and six-month follow-up. Current analyses (n=118) tested whether depression differed at follow-up between the two groups. Bivariate analyses compared CFP and control on baseline sociodemographic variables; multiple regression analyses conducted to predict depression at follow-up, controlling for baseline depression, site and significant covariates.

Results At baseline, CFP pts were older and more likely male versus control; depression was more severe among unemployed/retired (vs employed). Work status, age, and gender included as covariates in subsequent analyses. Final multiple regression model indicated that CFP participation predicted lower depression at follow-up (unstandardized beta=-3.07, $t = -2.69$, $p = .009$).

Conclusion Findings lend support that Latinos with depression may benefit from short-term culturally-focused psychiatric interventions. Findings inform development of interventions that seek to address Latinos' mental health through integrating psychiatric care within primary care settings.

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Citation Paper

Paper Session 15 4:57 PM–5:15 PM 3114

COGNITIVE BEHAVIORAL THERAPY FOR ADHERENCE AND DEPRESSION IN ADULTS WITH TYPE 2 DIABETES: ACUTE AND MAINTENANCE OUTCOMES FROM A RANDOMIZED CONTROLLED TRIAL

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Background: Depression is associated with poorer diabetes self-management, hyperglycemia and increased risk of diabetes complications and mortality.

Objective: To evaluate the acute and maintenance efficacy of cognitive behavioral therapy for adherence and depression (CBT-AD) in a randomized controlled trial.

Methods: 87 participants (44 men, 43 women; mean age=56.8(sd=8.2); 86 % White, 8 % Black, 4 % Hispanic), who met criteria for a depressive mood disorder and sub-optimally controlled type 2 diabetes (hemoglobin A1c [HbA1c] =>7.0 %) were assigned to one of two conditions. Enhanced treatment as usual (ETAU) participants met with a nurse for a one-time diabetes education session, a dietitian for two visits to establish tailored dietary and physical activity goals, and a psychologist for one visit to address barriers to adherence via problem-solving. Those randomized to CBT-AD also received 10–12 sessions of CBT-AD, which utilized standardized cognitive behavioral techniques for managing depression and diabetes self-management.

Results: At post-treatment, general linear modeling with multiple imputation showed that CBT-AD participants had superior electronically-monitored oral medication adherence (estimated parameter=-20.68, 95%CI: -31.14, -10.22; $p < .001$ and electronically-assessed glucose monitoring (estimated parameter=-30.16, 95%CI: -42.95, -17.37; $p = .000$), lower independent interviewer-rated depression severity ratings scores (estimated parameter=-6.44, 95%CI: 2.33, 10.56; $p = .002$), and lower HbA1c (estimated parameter=.72, 95%CI: .29, 1.15; $p = .001$) as compared to ETAU participants. Mixed-effects modeling showed that CBT-AD benefits were generally maintained over the 8- and 12-month follow-up assessments.

Conclusions: Among depressed adults with type 2 diabetes, receipt CBT-AD resulted in significant improvements in depression (over 12 months) and diabetes outcomes.

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Paper Session 16 3:45 PM–4:03 PM 3115

USING RELATIONAL AGENTS IN TAILORED INTERVENTIONS FOR MULTIPLE RISK FACTORS: PRELIMINARY 12 MONTH RESULTS

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Multimedia computer-tailored multiple risk factor interventions using the internet represent low cost, easily disseminated methods of reaching a general population. A large number of studies have demonstrated effectiveness using this approach, including those involving automated stage-based message tailoring by Expert Systems. However, such interventions have produced only small effect sizes, partially due to a lack of participant engagement. Relational Agents, computer-based virtual characters who can establish a continuing personal relationship, have the potential to greatly increase engagement. In this study, two risk factor, multimedia expert system interventions (sun protection and exercise adoption) were combined with relational agent technology. The study design was a 3 Group (Control, Expert System Only Intervention, Expert System plus Relational Agent Intervention) x 3 Occasions (0, 12, 24 Months) with all intervention occurring during the first 12 months. A representative national sample of 1365 individuals at risk for both behaviors was recruited. Preliminary results based on N=816 at Month 12 indicated that the interventions were effective for sun avoidance and protection, $F(1, 805)=117.61, p<.01, \omega^2=.127$ and vigorous physical activity, $F(1, 807)=8.84, p<.05, \omega^2=.011$. Preliminary data also supports the idea that the Relational Agent Intervention increased participant engagement. The average number of sessions viewed per week for subjects in the Expert System Only group was 0.048 compared to a rate of 0.142 in the Relational Agents group. Tailored expert system interventions, enhanced by a relational agent, have the potential to increase subject engagement and subsequent intervention effectiveness.

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Paper Session 16 4:03 PM–4:21 PM 3116

A YOUTH-PARTICIPATORY APPROACH TO DEVELOPING VIDEO-BASED UV EXPOSURE MESSAGES FOR YOUNG ADOLESCENTS: FINDINGS FROM A PILOT STUDY

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Skin cancer incidence has been rising at alarming rates, and increasingly affecting young women. Effective UV prevention efforts are needed for young adolescents before pro-tanning and/or anti-sun protection norms and attitudes emerge. We pilot-tested an innovative approach in which middle school students partnered with researchers to develop and disseminate videos promoting sun protection and discouraging tanning. With guidance from public health researchers and expert videographers, teams of 6th-8th grade students (N=20) wrote and produced five short narrative videos (3–5 minutes) and six PSAs (up to 1 minute) reflecting theory- and evidence-based messages designed to appeal to their peers (<http://crtinyurl.com/OperationProtect>). Students posted links to the videos on Facebook and/or emailed them to friends and family members so we could assess the utility of social media tools for disseminating the videos in a young adolescent population. We evaluated change over time in sun protection and tanning intentions in a separate cohort of middle school students (N=284) that was randomly assigned to group viewing of either the narratives, PSAs, or both. Video exposure was associated with increased intentions to wear a protective hat ($p=.05$) and shirt ($p=.09$) as well as higher perceived control over sun protection behavior ($p=.003$). The videos were well-received in focus groups with 10–14 year old youth (N=41), although participants felt the videos were better suited for group viewing and discussion than for peer-to-peer sharing via social media - a finding confirmed in our social media assessment which failed to result in widespread sharing of the videos. Focus group findings also revealed key age and gender differences in video appeal. Lessons learned for larger-scale implementation and evaluation of this approach will be discussed.

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Paper Session 16 4:21 PM–4:39 PM 3117

BARRIERS TO MOBILE TELEDERMOSCOPY IN PRIMARY CARE

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Background: Mobile teledermoscopy (MT) may aid in melanoma early detection. MT consists of an iPhone® coupled with a dermatoscope and application (app) to create a mobile teledermatoscope; acquiring/forwarding highly-magnified skin lesion images using the device, and remote teledermatology review and feedback. No studies have addressed MT use by primary care providers (PCPs).

Aim: To assess the feasibility of implementing MT by PCPs, including barriers to adoption.

Methods: A convenience sample of 10 PCPs completed an online dermoscopy tutorial and corresponding case assessments and received instruction for MT and study procedures. PCPs were given a mobile teledermatoscope, and instructed to take and submit at least 20 images of patients' suspicious lesions over 6 months. With each case submission a form detailing lesion location, melanoma risk factors, skin exam, and lesion diagnosis and management decisions was completed by the PCP. In one clinic, 4 PCPs shared a mobile teledermatoscope. Concurrently, PCPs emailed study personnel about issues and problems using MT. We content-analyzed this information to ascertain categories of MT barriers and exemplars in primary care.

Results: The content analysis yielded two categories. The technological barriers category exemplars were image capture learning curve, app deficiencies resulting in lost data, problems with mobile network/WIFI access, and problems with multiple users for one mobile teledermatoscope. The perceived lack of time barriers category exemplars were the 15-minute clinic visit and time required to complete and submit research materials.

Conclusion: Our findings begin to clarify barriers to MT use in the primary care setting and also reflect concerns in previous teledermoscopy studies about increased workload and complex, time-consuming procedures. Studies of MT ultimately will require a customized app to simplify procedures. Future MT platforms should be further assessed for barriers to use prior to implementation in a primary care setting.

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Paper Session 16 4:39 PM–4:57 PM 3118

FEASIBILITY OF REAL-TIME ASSESSMENT OF SUN PROTECTION DECISION MAKING VIA INTERACTIVE VOICE RESPONSE (IVR) TECHNOLOGY

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Sunburn avoidance is critical to melanoma risk reduction. Understanding intra-individual variations in daily sun protection decision making is vital to developing ways to increase sun protection consistency and reducing sunburns. We developed a phone-based IVR system to examine daily decision making regarding use of sunscreen, hats, protective clothing, and shade-seeking in melanoma first-degree relatives (FDRs), who are at increased melanoma risk but use sun protection inconsistently. Based on ethnographic interviews to identify sun protection decision factors, we created a 29-question survey to assess sun protection use and decision making. The IVR system called participants twice daily (12:30 and 5 pm) for 14 days during the summer to complete the 5-minute survey, and participants also shared narratives of their sun protection decision making for that morning or afternoon. Participants were 22 melanoma FDRs who reported daily job-related or leisure outdoor exposure (63 % female, ages 19–73, M=48 years); to date, 18 participants have completed a feasibility survey after the 2-week assessment period. The IVR system was well-received with most participants reporting that it was very or somewhat easy to use (82 % for surveys, 94 % for narratives) and that they were comfortable (88 % very or extremely) with the system. Most (65 %) were not inconvenienced by the calls and felt that the calls were not intrusive (83 %). A majority (72 %) preferred the IVR over completing phone interviews with researchers and almost all (94 %) said they would do an IVR-based study again. Rates of missing data were low, with 80 % of assessment points completed. Technical problems and poor cell phone coverage were barriers to use. Our work illustrates the feasibility of real-time assessment of sun protection decision making as well as the potential of an IVR system to measure intra-individual variations in decision-making processes for other health behaviors.

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Paper Session 16 4:57 PM–5:15 PM 3119

SUN-PROTECTIVE BEHAVIORS AND PERCEIVED UV RISK IN DEPLOYED MILITARY MEMBERS

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Sun-protective behaviors, such as using sunblock and sunglasses, are receiving increasing attention as a preventive measure for disorders of the skin and eyes. However, these behaviors have not been studied in a military population. The deployed population is a unique opportunity to study sun-protective behavior because members are issued sunglasses and have ready access to (but are not issued) sunblock while working in primarily sunny conditions. The current study surveyed service members deployed to a non-combat location in the Middle East regarding their perceived risk from ultraviolet (UV) exposure and their self-reported use of sunscreen and sunglasses. Four hundred and fifteen members completed a survey of items that were previously validated against observational measures (Oh et al., 2004) and recommended by expert consensus for use in epidemiological studies of sun-protective behaviors (Glanz et al., 2008). Respondents reported that they believed UV exposure was posed an 80 % risk to their eyes and an 83.6 % risk to their skin. Most did not wear sunblock, with 83 % reporting using sunblock half the time or less, including 59 % of the sample reporting “never” using sunblock. Sunglasses use was reported as “always” by 49 % of respondents and only 27 % reported use of sunglasses at half the time or less. Sun-protective behaviors were highly correlated with each other ($p < .01$), and the percent of perceived risk of UV to the eye and skin were significantly ($p < .01$) correlated with the sun-protective behaviors. Results suggest that improving the availability and ease of use for sunglasses and sunblock, as well as education regarding the risk of UV exposure may increase adherence to sun-protective behaviors in the population.

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Paper Session 17 3:45 PM–4:03 PM 3120

MULTIPLE BEHAVIOR CHANGE IN VETERANS WITH PTSD

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Behavioral comorbidities of PTSD impact veterans' health and recovery. In this feasibility study, a multiple behavior computerized, tailored intervention (CTI) based on the TTM was adapted for veterans, and then tested with those who screened positive for mild to moderate PTSD (mean PCL-M score=55.6, SD=9.4) and depression (mean PHQ-8 score=12.0, SD=4.0). The CTI intervened at baseline, 1, and 3 months, and targeted smoking, depression, and stress. Participants selected a minimum of 2 behaviors and completed self-guided programs for 1–2 hours per month. In addition to behavioral and affective change, the study examined co-action effects associated with the intervention—whether interventions on targeted behaviors could improve PTSD and other behaviors such as sleep, alcohol use, exercise, and diet. Participants ($n=57$) had a mean age of 40.5 (SD=11.2), 74 % were male, 70 % White, and 56 % married, with 86 % reporting at least some college. Significant positive change was observed for behavioral and clinical outcomes. At 3-months, 27 % of those who smoked cigarettes at baseline had quit ($\chi^2(1)=23.5$, $p < .001$); 72 % of those in pre-action stages for stress were practicing effective stress management at criteria ($\chi^2(1)=6.2$, $p = .013$); and 67 % of those “at risk” for depression reported they were in the action or maintenance stage of change ($\chi^2(1)=8.8$, $p = .003$). Scores for depression (PHQ-8) decreased 17 % (mean=9.9, SD=5.8; $t(56)=2.5$, $p=0.15$), perceived stress (PSS) decreased 19 % ($t(56)=3.7$, $p < .001$), and quality of life (QOLS) increased 11 % ($t(56)=-3.4$, $p < .001$). Finally, PTSD symptoms decreased by 12 % (mean=48.8, SD=15.8; $t(56)=3.6$, $p < .001$). In addition, 30–40 % of veterans in pre-action at baseline moved to action for Exercise, Healthy Eating, Alcohol Use, and Sleep Management behaviors. These findings are noteworthy; particularly, since the intervention was self-guided, required minimal time commitment, and required no additional personnel.

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Paper Session 17 4:03 PM–4:21 PM 3121

PORTABLE MANTRAM REPETITION IMPROVES SPIRITUAL WELLBEING IN VETERANS WITH PTSD

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Objective: Few spiritually-based, complementary therapies for posttraumatic stress disorder (PTSD) have been empirically tested. This study explored the efficacy of a portable, private meditation-based mantram (sacred word) intervention on levels of existential spiritual well-being in a sample of Vietnam era Veterans with chronic posttraumatic stress disorder (PTSD) Method: A prospective, single-blind randomized clinical trial with cross-over design was conducted with 146 outpatient Veterans diagnosed with military-related PTSD. Subjects were randomly assigned to either: (1) medication and case management alone (i.e., treatment-as-usual [TAU]) or (2) TAU augmented by a six week group Mantram Repetition Program (MRP-TAU). Secondary analyses were done to assess the levels of existential spiritual well-being using the 23-item version of the Functional Assessment of Chronic Illness Therapy Spirituality (FACIT-Sp-Version 4 expanded).

Results: A total of 146 Veterans (71 in MRP-TAU and 75 in TAU) participated in the study. An intent-to-treat analysis indicated significantly greater improvements in self-reported total spiritual well-being in the MRP-TAU compared to TAU alone ($p < .0001$). Similarly, all three subscales of meaning/peace, faith/assurance and other spiritual concerns all improved significantly more ($p < .01$) in the MRP-TAU group than TAU. Similar results of improvement were also shown in cross-over control group.

Conclusion: The MRP with medication and case management demonstrated improvement in levels of existential spiritual well-being in a sample representing Vietnam era Veterans with chronic PTSD. Veterans may seek this type of treatment because it does not focus on trauma. More research is needed using a longitudinal, effectiveness design to determine whether treatment gains are sustained over a follow-up period.

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Paper Session 17 4:21 PM–4:39 PM 3122

A CONTROL ENGINEERING APPROACH TO SCHEDULING BEHAVIORAL INTERVENTIONS FOR POSTTRAUMATIC STRESS DISORDER

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Posttraumatic stress disorder (PTSD) is an acute anxiety disorder that afflicts more than one-fifth of veterans returning from conflicts in Iraq and Afghanistan. A recent study found that only a fraction of those suffering from PTSD receive adequate care. This care could be improved by optimizing behavioral intervention scheduling to better accommodate patients' needs. In this work, we employ principles of control theory, including mathematical modeling and model predictive control, to design optimized psychotherapy schedules to reduce PTSD symptomatology and the presence of comorbid conditions, such as depression and anxiety. The mathematical model provides a quantitative description of the dynamic relationship between four psychotherapy interventions (prolonged exposure, cognitive processing therapy, eye movement desensitization and reprocessing, and counseling) and four commonly-employed PTSD assessment scales (Clinician Administered PTSD Scale, Beck Depression Inventory, Trauma-Related Guilt Inventory, State-Trait Anxiety Inventory). The model supports a model predictive control strategy in which psychotherapy treatments are scheduled to achieve a therapeutic objective in one or more assessment scales while weighing exogenous factors such as treatment cost, preference, and tolerability. While all testing is done via computer simulation, previously published data from eight clinical studies is used to support the model and controller design. The simulated treatment results indicate that the proposed approach could provide insight toward designing optimized psychotherapy schedules that could increase treatment adherence, lower treatment costs, and provide PTSD patients with more effective care. More generally, the results suggest that taking a quantitative, predictive approach to understanding the effects of behavioral treatments could help guide the design of future clinical studies and treatment strategies, serving to accelerate discoveries in behavioral medicine.

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Paper Session 17 4:39 PM–4:57 PM 3123

THE ROLE OF HEALTH CONCERNS AND SLEEP IMPAIRMENT IN RECOVERY FROM POSTTRAUMATIC STRESS DISORDER

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Health-related concerns and significant sleep impairment are commonly observed in traumatized individuals suffering from posttraumatic stress disorder (PTSD; as assessed by the Clinician Administered PTSD Scale). The presence of health concerns and global sleep impairment may complicate the course of trauma-focused treatment. The present study aimed to examine the impact of impaired sleep (using the Pittsburgh Sleep Quality Index) and health concerns (using the Pennebaker Inventory of Limbic Languidness and Short Form Health Survey) on the course of treatment for PTSD in a sample of 69 survivors of interpersonal assault. Utilizing a variable length of Cognitive Processing Therapy, treatment ended between 4 and 18 sessions, dependent upon participant progress. Examination of treatment outcomes within the intent to treat (ITT) sample revealed that dropout status was associated with higher overall PTSD symptoms at pre-treatment, $t=-3.03$, $p=.004$, as well as greater general sleep impairment, $t=-2.69$, $p=.009$, worse perception of general health, $t=2.55$, $p=.013$, and a greater frequency of reported health concerns, $t=-2.07$, $p=.046$. Among treatment completers, baseline levels of sleep-related daytime dysfunction, $r=.45$, elevated health concerns, $r=.35$, and poorer functioning, $r=-.32$, were associated with a longer course of treatment, even after controlling for pre-treatment PTSD symptom severity. Despite the relationship between sleep impairment and health concerns and a longer course of treatment, overall, participants reported significant improvements in health and sleep, including increases in general health perceptions, $F=15.12$, $p<.0001$, $p2=.24$, a lower frequency of reported health concerns, $F=21.77$, $p<.0001$, $p2=.34$, and improvement in overall sleep outcomes over the course of treatment, $F=21.30$, $p<.0001$, $p2=.30$, with gains maintained at a 3-month follow-up. These findings highlight influence of physical health factors on rates of change in PTSD, as well as the potential for trauma-focused treatment to positively impact physical health.

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Paper Session 17 4:57 PM–5:15 PM 3124

REMEDIATING SLEEP IMPAIRMENT IN POSTTRAUMATIC STRESS DISORDER: THE ADDITIVE BENEFITS OF SLEEP-DIRECTED HYPNOSIS TO EVIDENCE-BASED PSYCHOLOGICAL INTERVENTION

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Sleep impairment is the most often reported of the 17 PTSD symptoms and is one of the most refractory to treatment. Hypnosis provides deep relaxation, possibly targeting PTSD hyperarousal (theorized to contribute to sleep impairment). This study assessed the additive benefit of sleep-directed hypnosis administered prior to Cognitive Processing Therapy (CPT) in a sample of 92 female survivors of interpersonal violence suffering from PTSD (assessed by Clinician Administered PTSD Scale). We hypothesized that the addition of hypnosis would specifically target sleep impairment beyond the benefits of CPT alone. Individuals were randomized to either the hypCPT (3 weeks of hypnosis prior to CPT) or ssmCPT (3 weeks of symptom monitoring prior to CPT). The PSQI and ISI assessed non-trauma-specific sleep impairment. Fixed effects models incorporating treatment condition as a moderator of change revealed that CAPS sleep, sleep latency, and insomnia severity showed significant moderation of the change parameters ($ts>|2.0|$; $ps<.05$). Additionally, two sleep outcomes had marginal interactions: sleep meds ($t=1.93$, $p=.055$) and daytime dysfunction ($t=1.80$, $p=.07$), and four sleep outcome models showed no significant moderation: sleep quality, sleep duration, sleep efficiency, and sleep disturbances ($ts<|1.3|$; $ps>.1$). Treatment appeared to specifically target trauma-related sleep impairment, with large effect sizes (1.08) on CAPS sleep item favoring hypCPT. Medium to large effects were also noted on measures of general sleep impairment; insomnia (ISI; .67) and sleep latency (PSQI; .83), also favoring hypCPT. Interestingly, when effect sizes were generated at the post-CPT assessment, the PSQI continued to show a small effect favoring hypCPT, but ssmCPT matched hypCPT in reported improvements in insomnia. A large effect favoring hypCPT at post-treatment was maintained on sleep latency. Augmenting trauma-focused interventions to target trauma-related sleep impairment may prevent the development of comorbid insomnia.

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Paper Session 18 3:45 PM–4:03 PM 3125

CAN A TABLET-BASED BOOK CLUB IMPROVE PHYSICAL ACTIVITY (PA) AND SELF-WORTH (SW) IN WOMEN?

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The purpose of this study was to determine the feasibility of a tablet computer (iPad) as a means of implementing a book club intervention for increasing PA and SW in a small sample of women.

Women aged 30–64 were randomized to the 12-week Fit Minded iPad Book Club (iPG) or Standard Face-to-Face Book Club (CG). Both interventions were guided by Social Cognitive Theory, and iPG was also guided by technology adoption theories (Technology Acceptance Model and Media Richness). Women assigned to iPG were loaned iPads for video conferencing, eBooks, Fit Minded Workbook, shortcut to the Fit Minded website (www.fitminded.com), email, and iMessages. Women participated in weekly iPad-based meetings via live video conferencing. Women assigned to CG participated in the standard face-to-face book club weekly and received print versions of materials. All participants wore accelerometers for one week and completed questionnaires (PA, SW, PA benefits/barriers, social support, self-efficacy, self-regulation) at baseline and post-intervention. Women were invited to participate in a phone interview at post-intervention.

Twenty women participated in the study. Positive trajectories were observed in PA, physical SW, PA benefits/barriers, social support, and PA goal-setting in both groups. Positive trends in global SW, PA self-efficacy, and PA planning were observed in CG only. Themes, including increased awareness and altered perceptions of PA and the utility of the book/s/facilitators as key contributors to change, emerged in the 13 post-intervention interviews (niPG=7, nCG=6). Women in iPG reported that they learned from the other women, but the lower media richness (e.g., background noise, reduced eye contact) of the iPad and technical difficulties limited their ability to fully connect with the other women.

Testing of tablets for improving PA in middle-aged women is warranted. Approaches may need to include efforts to “train” women to use technologies employed and/or provide women the option of using technologies they already own and with which they are familiar.

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Paper Session 18 4:03 PM–4:21 PM 3126

EFFICACY OF AN INTERNET-DELIVERED PHYSICAL ACTIVITY PROGRAM PLUS PORTABLE PEDAL EXERCISE MACHINE FOR REDUCING DAILY SEDENTARY TIME

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It's estimated that sedentary behavior is responsible for 9 % of premature deaths worldwide. Therefore, adults working in sedentary, desk-dependent occupations are at increased risk for death. Objective. The purpose of this study was to test the efficacy of an intervention that combines an internet-delivered physical activity intervention with a portable pedal exercise machine for reducing daily sedentary time amongst full-time sedentary employees. Methods. Forty, full-time, sedentary, employees working at desk dependent jobs were randomized to either: 1) an intervention group (N=23; 47.6+9.9 yrs; 94.1 % female; 33.2+4.5 kg/m²); 2) or wait list control group (N=17; 42.6+8.9 yrs; 86.9 % female; 31.7+4.9 kg/m²). Participants in the 12-week intervention group received a portable pedal exercise machine to be used at work, a pedometer, and access to a theory-based, internet-delivered program designed to reduce daily sedentary time. Intervention participants received three motivational emails per week, were encouraged to self-monitor their daily physical activity (pedal use, steps) and encouraged to participate in a social networking website that included a group physical activity challenge, group discussions and social news feed. Results. The intervention group significantly reduced their percent daily sedentary time ($P=0.03$) compared to the control group from baseline to 12 weeks. Intervention compliance data indicate participants logged on to the website 52 % of all intervention days, pedaled 38 % of all work days and pedaled an average of 29.4 minutes/day on days they used the pedal machines. Discussion. These findings suggest the intervention was efficacious at reducing daily time spent sedentary amongst full-time sedentary employees. These findings hold public health significance due to the growing number of sedentary jobs in the U.S. and the potential of these technologies in large-scale work site health programs.

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Paper Session 18 4:21 PM–4:39 PM 3127

AN ADAPTIVE GOAL SETTING AND FEEDBACK INTERVENTION FOR PHYSICAL ACTIVITY

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Physical activity (PA) interventions typically include fixed components or doses. Adaptive interventions are dynamic; components change in response to variations in participants' performance. Emerging technologies allow for repeated measures, and theoretical developments make adaptive interventions feasible. This study tested an adaptive intervention based on behavioral economics. Methods: Two studies tested an adaptive algorithm that sets daily step goals and feedback based on a moving window of performance. The feasibility study recruited 5 inactive adults (all women, M=36.6±5.0 years, 60 % non-white) into a 6-week PA intervention using N-of-1 designs. Program components included: a) email communication, b) brief educational materials, c) adaptive goals and feedback, and d) small financial incentives for meeting goals. A Lifecorder accelerometer measured steps/day and MVPA min/day simultaneously. The 2nd study, an RCT, increased the rate of change in goals, extended the intervention to 6 months, and used Omron HJ-720ITC pedometers. Inactive adults (N=20, 85 % women, M=36.9±9.2 years, 35 % non-white) were randomized into either 1) "low intensity intervention" with a fixed goal (i.e., 10,000 steps/day), or 2) "personalized goal intervention" with adaptive algorithm. Results: Among feasibility participants, a pooled multilevel regression showed a mean increase of 551 steps/day (SE=258, p=.03) and 2.7 MVPA min/day (SE=1.1, p=.02) over baseline, after adjusting for covariates. In the RCT, the personalized group increased from 4,555 (±843) steps/day during baseline to 6,760 (±1,078) steps/day during treatment (ie, 2,205 steps/day or 48 % improvement) on average, while the low intensity group increased from 5,364 (±1,145) steps/day during baseline to 6,348 (±671) steps/day during treatment (ie, 984 steps/day or 18 % improvement); a medium-to-large effect (Cohen's d=.74; p<.05). Conclusions: Two studies provided 'proof of concept'. The adaptive algorithm is a "behavior change technology" that could be incorporated into e-Health technologies for various behaviors and scaled to reach large populations.

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Paper Session 18 4:39 PM–4:57 PM 3128

"YOU ARE THE WEAKEST LINK...": MOTIVATING FREE-LIVING PHYSICAL ACTIVITY AMONG COLLEGE STUDENTS USING VIRTUAL PARTNERS

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Recent laboratory research has shown that exercising with a moderately-superior virtual partner can motivate one to exercise longer and harder than when alone, especially in conjunctive tasks (when the performance of the group depends on the group's weakest link). It is not clear whether the same principles can be harnessed to increase normal daily PA under free-living conditions. The purpose of this study was to examine group dynamics principles of motivation for increasing PA under free-living conditions. Participants were 35 (M=20.98 y, SD=1.47) college students in a 2 (gender) x 3 (condition: individual, coactive, conjunctive) x 8 (weeks) factorial design. After a 1-week assessment of amband-assessed baseline PA, participants had a brief orientation on how to increase their PA. Participants were then randomly assigned to a condition and given the task of increasing their PA over the remaining 7-weeks. Participants returned to the lab once per week and, shortly after leaving, received feedback on their energy expenditure (cal/d) for the previous week via email and text message. Participants in the partner conditions also received feedback on their partner's energy expenditure, which was manipulated to be always greater than the participant's. Results: PA decreased across weeks in all conditions (p<.001). Planned contrast showed a marginally significant (p=.073) difference between the individual (estimated marginal M=2554.91 cal/d, SE=59.31) and partner conditions (M=2752.63 cal/d, SE=59.12). There were no differences in PA between the partner conditions (p=.69). Decreases in PA were evident in both the individual and coactive conditions around the middle (Thanksgiving) and end of the study (finals week), but remained stable in the conjunctive condition. Increasing physical activity among college students may be facilitated by the presence of a superior partner under conjunctive conditions during routine-disrupting events.

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Paper Session 18 4:57 PM–5:15 PM 3129

INCREASING ENGAGEMENT IN WEB-BASED INTERVENTIONS USING RELATIONAL AGENTS

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The Web represents the most commonly-used communication channel for technology-based behavioral medicine interventions. However, retention and adherence remain significant problems for these sites. Relational Agents, animated conversational characters that build long-term social-emotional relationships with users, can be used as adjuncts to conventional web sites to significantly increase engagement with and long-term retention of users. These agents use a range of simulated social behavior to increase rapport, trust and therapeutic alliance with users, including empathic exchanges, social chat, meta-relational communication, storytelling, and self-disclosure. They also maintain an explicit model of their relationship with each user and plan dialog acts designed to improve the relationship over time. We have demonstrated the ability of these agents to increase engagement and retention in a series of studies. In the first, participants took part in a 30-day walking promotion intervention, in which 33 interacted with a Relational Agent and 27 interacted with an equivalent agent that did not use relationship-building behavior, with Relational Agent participants rating the agent significantly higher on the bond dimension of the Working Alliance Inventory compare to the non-relational group. In a second study, 26 older adult participants were randomized to interact with a Relational Agent walking promotion coach that told autobiographical stories about itself, or to an equivalent agent that told the same stories but in third-person format (as if they were about someone else), with those in the autobiographical group completing significantly more interactions with the agent. A final study directly compares a year-long state-of-the-art web-based behavioral intervention with the same website augmented with a Relational Agent. A national sample of 914 participants were randomized to the two conditions, with those in the Relational Agent group completing significantly more interactions per week (0.142 vs. 0.048). Relational Agents have the potential to significantly increase retention and use of web-based interventions.

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Citation and Meritorious Paper

Paper Session 19 3:45 PM–4:03 PM 3130

GPS-MEASURED TIME SPENT IN VEHICLE, NEIGHBORHOOD WALKABILITY AND BMI IN ADOLESCENTS

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Time riding in a motorized vehicle is associated with obesity and lower neighborhood walkability in adults, but no studies have investigated these associations in adolescents. We used GPS to identify adolescents' vehicle time (VT) and investigate whether it was related to neighborhood walkability and adolescent BMIz.

Adolescents (N=786) aged 12–16 (M age=14; 51 % female; 69 % white non-Hispanic) wore DG100 GPS and Actigraph accelerometers for 1–7 days (M=5.4; SD=2.1). Height and weight were self-reported and BMIz and overweight/obesity scored using CDC growth charts. Objective neighborhood walkability was characterized by residential density, land use mix, retail floor area ratio and intersection density within a 1 km street-network buffer around participants' homes. The Personal Activity Location Measurement System was used to derive average minutes/day VT for each participant by identifying 1) trips, defined as a moving ≥90 seconds and covering ≥100 meters, and 2) mode of trip, where VT was defined as speed ≥25 kilometers/hour and accelerometer counts ≤500 per 30-second epoch. Mixed-effects regression models controlled for age, gender, vehicles in household and census block group. Participants had an average of 2.3 vehicle trips/day (SD=1.2) and 27.2 min/day (SD=22.7) of VT. Lower walkability was associated with more VT (β=-0.09; CI=-0.18,-0.01; p=.021). Mean VT for the lowest through highest quartiles of walkability was 30.7, 28.6, 26.6, and 25.5 min/day, respectively. VT was not associated with BMIz (β=0; CI=-0.08,0.07; p=.915) or being overweight/obese versus not (OR=0.98; CI=0.82,1.16; p=.773).

Walkability and VT findings were consistent with those in adults. Adolescents had over 5 more min/day of VT in the lowest vs. highest quartile of neighborhood walkability (19 % difference). Accumulation of VT over time could have negative health impacts. However, VT was not associated with adolescents' weight status.

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Paper Session 19 4:03 PM–4:21 PM 3131

THE OPEN PARTNERSHIP: OBSERVING PARK ENVIRONMENTS IN NEVADA

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Background There is a growing emphasis on translational research that engages stakeholders in providing evidence to impact health policies and procedures. Community parks are salient locations for physical activity (PA), but are seldom viewed as public health resources and assessed relative to PA. We describe OPEN (Observing Park Environments in Nevada), a partnership between UNLV, City of Las Vegas, and Clark County Comprehensive Planning Department to assess park use and PA.

Methods: UNLV provided leadership and conducted focus groups and observer reliabilities; City/County officials selected 6 parks in low-income areas and assigned 22 staff who were trained to use the System for Observing Physical Activity and Recreation in Communities (SOPARC). Park staff completed observations and intercept interviews as part of their workload. They observed all activity areas (N=238) in the parks for user (i.e., number, gender, age, PA levels) and area characteristics (e.g., accessible, usable, organized, supervised, equipped) 4 times a day during 2 week and 2 weekend days over 3 temperature seasons in 1 year (12 days/park).

Results: Assessors made 11,424 area visits and observed 33,362 individuals. There were differences in use by park location (geography, population density), time of day, day, season, and facility type. Most were adults (37%), with 26% being children, 21% teens, and 6% seniors. More males than females at all age levels were seen (overall, 61 vs. 39%) and they were more physically active. Overall, 48% of users were sedentary (i.e., lying down, sitting, or standing), 36% walking, and 16% vigorously active. Areas were usually accessible (98%) and useable (94%), but rarely supervised (4%) or organized (5%). Most patrons (93%) reported parks to be 'safe' or 'very safe.'

Conclusions: The OPEN Project illustrates the value of building research partnerships and has received high visibility among state and local policy makers. Park staff accrued objective data on patron facility use and these data inform policy, program, and facility design changes.

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Citation Paper

Paper Session 19 4:21 PM–4:39 PM 3132

LIFESPACE APPROACHES TO EXAMINE ASSOCIATIONS BETWEEN THE BUILT ENVIRONMENT AND PHYSICAL ACTIVITY

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New technologies for the collection of location and physical activity data offer an opportunity for examining dynamic relationships between the built environment and physical activity. The purpose of this study was to examine methods for assessing lifespaces (i.e., set of locations that an individual comes into contact with while engaging in usual daily activities), built environment exposures therein, and their relationship to objectively-measured physical activity. Location data from global positioning system (GPS) units and physical activity data from accelerometers were collected from a sample of 148 adults (mean age 44±13 years, 73% White, 51% female) in eastern Massachusetts. Lifespaces were assessed using three geographic information system (GIS) methods: convex hull polygon, standard deviational ellipse, and line-based buffer. Objective measures of area, land use mix, and population density were created for each lifespaces. Associations between daily lifespaces characteristics, individual demographics, weekday vs. weekend days, and daily minutes of moderate-to-vigorous physical activity (MVPA) were examined in multilevel linear regression models. Similar patterns of associations between lifespaces characteristics and individual demographics, weekend days, and MVPA were found for the three GIS methods. White race was associated with larger lifespaces area ($P < .01$). Male gender, White race, and weekend days were associated with lower land use mix and population density ($P < .05$). Land use mix and population density were positively associated with MVPA in models that adjusted for demographics and weekend days ($P < .01$). Findings of relationships between lifespaces built environment and physical activity were consistent with those in the neighborhood built environment literature. Daily lifespaces approaches may be promising methods for examining dynamic relationships between the built environment and physical activity.

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Paper Session 19 4:39 PM–4:57 PM 3133

ADOLESCENTS' SEDENTARY TIME IN RELATION TO NEIGHBORHOOD WALKABILITY & INCOME

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Background. Neighborhood walkability has been inconsistently associated with sedentary behaviors in adults but has not been reported for adolescents. The present study examined this association among adolescents.

Methods. N=928 youth (460 boys; 468 girls) aged 12–17 years were recruited from neighborhoods that met criteria for cells in a 2 X 2 matrix defined by high/low walkability X high/low median income. Youth reported time spent on school days in 6 sedentary behaviors: watching television/DVDs; playing sedentary computer games; using the internet/other electronic media for leisure; doing homework; reading NOT for school; and riding in a car or bus. Items were examined separately and summed for total min/day. Actigraph accelerometers objectively measured average sedentary min/day (<100 counts/min). Mixed model regressions examined outcomes in relation to neighborhood walkability and income, adjusting for demographics and clustering within block groups.

Results. Accelerometer-measured sedentary time was not related to walkability or income, but total self-reported sedentary time was related to both walkability ($p = .051$; 26 min difference between high and low) and income ($p = .019$; 31 min difference). Time spent watching television was the only significant individual sedentary behavior related to both walkability ($p = .007$; 13 min difference) and income ($p = .046$; 10 min difference). Time riding in a car or bus showed a trend ($p = .079$) for a walkability X income interaction, with youth in high-walk/high-income areas having the least riding time (43 min/day vs. 52 min/day in other groups).

Conclusion. Adolescents living in walkable neighborhoods reported less total sedentary time and television time, possibly because of more opportunities for physical activity. Lower-income youth were at higher risk for more sedentary time.

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Paper Session 19 4:57 PM–5:15 PM 3134

DOES MORE MAKE MORE? SINGLE PURPOSE VERSUS MULTI-PURPOSE SCHOOL-YARD AREAS AND ELEMENTARY SCHOOL CHILDREN'S PHYSICAL ACTIVITY

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Improving the environment influences physical activity (PA) levels in children. Research shows that renovated schoolyards encourage greater levels of PA. However, urban areas are limited by space and other resources emphasizing the need for optimal utilization of PA areas. This study examines differences in PA between single-purpose schoolyard areas (e.g. basketball court) and multipurpose areas (e.g. tetherball and four-square court). At 24 schools in urban Denver, CO, SOPLAY (System for Observing Play and Leisure Activity in Youth) observers recorded momentary PA in single or multipurpose zones (n=396; 78.3% single purpose zones; cumulative 37,143 children counted; 48.0% female). PA was quantified as the total energy expenditure rate (EER in kcal/kg/min) for each zone (overall and by gender) by multiplying the number of active children at each PA level by a constant (sedentary*.051 kcal/kg/min; walking*.096 kcal/kg/min; and very active*.144 kcal/kg/min) and summing the results. The two sample Wilcoxon rank-sum test reveals that overall there were no significant differences ($p = .73$) in EER between single purpose areas (EER=0.29, SD=0.25) and multipurpose areas (EER=0.23, SD=0.21). However, boys were more active in multipurpose areas (EER=0.40, SD=0.37) than in single purpose areas (EER=0.29, SD=0.27), $p = .033$, while girls were more active in single purpose areas (EER=0.29, SD=0.25) than in multipurpose areas (EER=0.23, SD=0.21), $p = .038$. Both types had an important role in promoting PA on schoolyards and should be made available to children. Future research should consider gender differences in play preferences in tandem with differences schoolyard utilization to design schoolyards which target optimal PA in both boys and girls.

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Citation Paper

Paper Session 20 3:45 PM–4:03 PM 3135

ONLINE INTERVENTION ENGAGEMENT PREDICTS SMOKING CESSATION

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Objective: While previous studies have focused on individual differences of smokers as predictors of quitting (“Who they are”), the present study focusses on self-regulatory actions (“What they really do”). The purpose is to predict smoking abstinence in internet users who may become involved in numerous social activities within the virtual community.

Method: Data of 13,174 users of a non-commercial web-based smoking cessation coach were available for a post-hoc evaluation study. Data included self-reported abstinence rates for particular time periods (1 day, 2 days, 1 week, 2 weeks, 3 weeks, 4 weeks, 8 weeks, 10 weeks) as well as automatically recorded online activities such as a) posting a bulletin board entry after the first smoke-free day, b) offering a donation, and c) posting messages throughout the course. Such activities reflect intervention engagement that may lead to behavioral maintenance.

Results: Survival analyses for 70 days of self-reported non-smoking documented higher success rates for those who made use of one or more of the virtual community activities. Moreover, the effect of making an initial bulletin board entry on 10-week abstinence was mediated by offering a donation and posting messages throughout the course ($R^2=.125$).

Conclusions: As intervention engagement is a proximal predictor of success, and as internet use to change behavior becomes more prevalent, the present study offers some ideas for further research into web-based smoking cessation. Shifting the research focus from personality characteristics towards behavioral process variables might add more substance to smoking cessation studies. This means, at the same time, a shift in focus from motivational towards volitional variables, as one’s effort invested in non-smoking attempts reflects volitional strength.

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Paper Session 20 4:03 PM–4:21 PM 3136

USING TECHNOLOGY TO MONITOR RELAPSE RISK IN RECENT QUITTERS

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Background: Interactive voice response technology (IVR) is capable of monitoring individuals after a quit attempt to identify those at risk of relapse. This study is part of a larger randomized controlled trial to test the efficacy of IVR technology for enhancing quitline treatment (Alere’s Quit for Life® program). The IVR system screens for six indicators of relapse including smoking lapse, craving, depressive symptoms, perceived stress, decreased self-efficacy for quitting, and decreased motivation to quit.

Methods: Study participants were randomized to receive either 10 (twice a week for the first two weeks, then weekly) or 20 (daily for the first 2 weeks, then weekly) automated calls placed over 8 weeks immediately post-quit. Logistic regression models with the generalized estimating equation method were used to make comparisons between the two groups on positive screen for any relapse risk, and lapse (i.e., smoking even a puff since the last call).

Results: We analyzed data collected on 17,102 IVR daily calls made to 909 participants in the two intervention arms. The two arms did not differ significantly on demographics or comorbid conditions. 1,569 out of 7,511 (20.9 %) IVR assessments indicated a positive screen for relapse risk; 727 participants were positive for craving (46 %), 561 smoking lapse (36 %), 392 depressive symptoms (25 %), 285 low confidence (18 %), 171 stress (11 %), and 104 low motivation (7 %). Logistic regression models with GEE estimation showed that compared to the 10-call group, participants in the 20-call group were less likely to have a positive screen for any relapse risk ($OR=.6$; 95 % $CI=.5-.7$; $p<.001$) and less likely to have smoked (lapsed) ($OR=.6$; 95 % $CI=.4-.7$; $p<.001$).

Conclusions: These results indicate that frequent IVR monitoring during the immediate post-quit period may have a positive effect on relapse risk. The impact of IVR relapse risk monitoring on longer term abstinence is not known at this time.

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Paper Session 20 4:21 PM–4:39 PM 3137

A PILOT STUDY TESTING SMS-TEXT DELIVERED SCHEDULED GRADUAL REDUCTION TO PROMOTE SMOKING CESSATION AND REDUCTION AMONG PREGNANT SMOKERS

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Background: Smoking during pregnancy causes multiple perinatal complications; yet the smoking rate among pregnant women has remained stagnant in the past decade. Interventions to help pregnant smokers quit or reduce their smoking have had only modest success. Innovative and disseminable interventions are needed.

Method: We recruited 31 pregnant smokers from prenatal clinics. We assessed feasibility, acceptability, and preliminary efficacy of an SMS-text based intervention. We compared an intervention that delivered SMS support messages only to an intervention that delivered SMS support messages plus a scheduled gradual reduction program (SGR) to help women reduce their smoking. We sent women in the SGR arm “alert texts” instructing them when to smoke. These messages decreased weekly over three weeks. We asked women not to smoke unless they received an alert text.

Results: Most women (86 %) reported reading most or all of the texts. On a seven-point scale with “7” being most helpful, women in both arms rated the program as helpful ($M=6$, $SD=1$ vs. $M=5$, $SD=2$, SGR vs. support only, respectively). Compared to women in the support messages only arm, women in the SGR arm had a higher rate of biochemically-validated 7-day point-prevalence abstinence at follow-up: 13.4 % vs. 7.5 %. Of women still smoking, they reduced substantially, and more so in the SGR arm (cigarettes/day: SGR arm: $M=16$, $SD=11$ vs. Support Messages only: $M=12$, $SD=7$).

Discussion: We developed an easily disseminated and highly penetrable intervention that has potential for helping pregnant women with SMS texting ability to quit or reduce their smoking. Women in this pilot were enthusiastic about the program, particularly those in the SGR arm. This program needs to be examined on a larger scale.

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Paper Session 20 4:39 PM–4:57 PM 3138

AN OBSERVATIONAL STUDY OF MESSAGE FRAMEWORK AMONG SMOKING CESSATION TWITTER ACCOUNTS

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Introduction: Twitter has the potential to reach a large number of smokers, yet little is understood regarding smoking cessation tweets. We conducted a content review of smoking cessation-targeted Twitter accounts. We assessed the association of account content and number of followers achieved.

Methods: We identified 18 Twitter accounts whose title or keywords related to smoking cessation, had tweeted in the past 24 hours, and had at least one tweet per day over the account’s duration. The most recent 50 tweets were extracted from these accounts for semi-quantitative coding. Accounts were classified as individuals or organizations (i.e., CDC). Content was coded using a Roter Interaction Analysis System (RIAS) schema, adapted for “tweets.”

Results: Twelve (67 %) of the 18 accounts were organizations; 6 were individuals. Information giving (43 %) was the theme of most tweets. Of the rest, 14 % were personal remarks or social conservation, 13 % promoting a product, 10 % encouraging tweets, 10 % orientation giving, 4 % open-ended questions, and 6 % unrelated. Accounts with a higher proportion of information tweets had fewer followers ($r=-0.527$, $p=0.025$). Content associated with a higher number of followers higher proportions of reassuring/encouraging tweets ($r=0.625$, $p=0.006$) and also higher social/emotional support ($r=0.691$, $p=0.001$) content. Social/emotional content was more prevalent in organizational tweets. Organizations tweeted half as frequently as individuals, but accrued substantially more followers and interactions.

Conclusions: Organizational accounts had more reassurance/emotional tweets, content that was associated with more followers (a measure of influence on Twitter).

Key Words: Twitter, smoking cessation, quit smoking, social network

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Paper Session 20 4:57 PM–5:15 PM 3139

INTERACTIVE VOICE RESPONSE SYSTEMS: HIDDEN COMPLEXITIES OF UTILIZATION

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Background: Interactive voice response (IVR) telephone systems are a promising way to deliver brief, standardized health-related messages. Patient acceptance of automated calls, however, can be less than ideal, and researchers and IVR providers have little collaborative experience. This presentation describes two ongoing NIH-funded studies that are using IVRs to enhance smoking cessation interventions.

Methods: The Inpatient Technology-Supported Assisted Referral (ITSAR) study is recruiting patients into a smoking cessation trial during a hospital admission. Intervention participants receive four distinct, tailored IVR calls post hospital discharge, assistance enrolling in outpatient smoking cessation programs, and help obtaining outpatient cessation medications. IVR calls include a brief update on quit status and encouragement regarding resource use. The Technology Enhanced Quitline (TEQ) study is a randomized three arm relapse-prevention study (usual care, usual care+10 IVR calls, usual care+20 IVR calls). IVR calls screen and flag participants in the Quit For Life Program for relapse risk. Flagged participants are automatically connected to a Quit Coach for counseling. Each study was reviewed and approved by the respective IRB.

Results: The average rate of completion of IVR calls in the ITSAR study is 48 %, with 58 % of participants completing call 1 and 31 % completing call 4. In the TEQ study, the average rate of completion across all IVR calls in both study arms is 56 %. Of these calls, 21 % were flagged as at-risk, and 23 % of those accepted the automated transfer for counseling with a Quit Coach. We also address challenges with quality control, IVR vendor fit with the research team, and costs of implementing this technology into practice.

Conclusion: The expanded reach and expert messaging IVR systems provide may be attenuated by patient preferences for personal contact and data needs for research.

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Paper Session 21 3:45 PM–4:03 PM 3140

PROCESS ANALYSIS OF A BIDIRECTIONAL PERSONALIZED TEXT MESSAGING ADHERENCE INTERVENTION FOR RURAL HIV+DRUG USERS

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Bidirectional text messaging could reach nonurban patients to assess HIV nonadherence and respond in real time to improve adherence. Our personalized text messaging application includes automated queries of substance use daily using a simple coded message for privacy, twice daily queries of mood, and queries about medication taking. When patients respond, the application sends a self-designed personalized message, such as an affirming message for adherence, good mood, or abstinence, and an encouraging message for nonadherence, low mood, or substance use. We are testing the feasibility and efficacy of the intervention in a pilot RCT, comparing it to usual care delivered over 12 weeks. Here we present an analysis of process data to determine whether patients report drinking, drug use, low mood, and/or nonadherent behaviors. Among the first 9 patients randomized to the text messaging condition, the system recorded 2941 sent & 1153 received messages. Participants responded to 76 % of adherence, 63 % of substance use, and 58 % of mood queries. Participant-initiated messages were rare. Medication responses were 59.6 % positive and 8.5 % negative, with nonresponse to 32 %. Mood responses were 57 % positive and 43 % negative. Participants reported no drinking/drug use in the past 24 hours to 40.3 % of queries, and reported substance use to 36 % of queries. The most common substances were alcohol (18 %) and marijuana (17 %); cocaine/crack use or other drug use were reported in <1 % of responses. Non-adherent people living with HIV in non-urban settings responded to medication, mood, and substance use queries, but initiated few messages. Participants responded to over half of all types of queries. Patients will report poor mood and substance use, but just-in-time reporting of non-adherence is uncommon. Nonresponse may indicate nonadherence or episodes of drug use.

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Paper Session 21 4:03 PM–4:21 PM 3141

MEDICATION USE, ADHERENCE AND CONDOM USE IN HIV-SEROCONCORDANT COUPLES

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Introduction: The use of antiretroviral (ARV) therapy as treatment for prevention requires both HIV literacy and optimal adherence. HIV-concordant couples on ARVs remain vulnerable to re-infection with resistant virus when non-adherent to ARVs or condoms. To explore patient comprehension of the risks of non-adherence, this study examined the relationship between ARV use, adherence and condom use among couples. It was hypothesized that individuals in ARV-discordant couples would report greater condom use in comparison with those in which both or neither member was on ARVs.

Methods: HIV seroconcordant couples (n=204) were recruited from 6 community health centers in Lusaka, Zambia. Assessments included demographics, medication use and adherence, and condom use.

Results: Participants ranged from 18 to 62 years old (m=38). Couples were divided into ARV concordant (n=92), ARV discordant (n=79) and non-ARV users (n=33). Self-reported condom use was 70 % in the past week and 80 % in general. Dyadic analyses were used to examine condom use by ARV status, controlling for reproductive intentions, time since HIV diagnosis, and intimate partner violence. There was no difference in weekly or general condom use between couples who were ARV discordant or concordant and non-ARV using couples. Among those on ARVs, 191 individuals (74 %) reported never skipping their medication. Those reporting 100 % adherence to ARVs demonstrated a modest trend toward 17 % increased weekly condom use, and 7 % higher general condom use than those who were non-adherent [(t(154)=1.8, p=.08); (t(230)=2.1, p=.04)].

Discussion: Surprisingly, ARV use was not associated with condom use in this sample; however, ARV adherent participants did report more condom use. Results suggest that Zambians living with HIV may be unaware of the risks of reinfection associated with lower levels of adherence. Future public health initiatives promoting treatment as prevention should emphasize the importance of ARV and condom adherence to prevent HIV-reinfection.

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Paper Session 21 4:21 PM–4:39 PM 3142

TESTING THE IMB MODEL OF HAART ADHERENCE WITH MODERATING FACTORS

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Introduction: HIV remains a major public health issue, despite advances in highly active antiretroviral therapy (HAART) to slow disease progression. Strict adherence to HAART is necessary, as insufficient adherence is associated with increases in HIV viral load, the development of drug resistant strains of HIV, and increased mortality. The Information-Motivation-Behavioral Skills (IMB) model of antiretroviral adherence has demonstrated efficacy in early studies (Fisher & Fisher, 2006). However, the impact of proposed moderating variables, including alcohol/drug use severity, depression, and stable housing, have not been rigorously tested.

Methods: We recruited a sample of 300 HIV-positive patients from an HIV clinic, and tested the IMB model using path analytic modeling. We then assessed the role of moderators using regression models. Items significant in bivariate analysis were included in the regression.

Results: The IMB model demonstrated good fit ($X^2[2]=2.70$, $p=0.260$; CFI=0.993; RMSEA=0.038). Consistent with the hypothesized model, information and motivation are significantly associated with behavioral skills, which are in turn associated with adherence. The effects of information and motivation were mediated by behavior skills. Among moderating factors, stable housing and alcohol use severity were not associated with adherence, though relationships were found between drug use severity and depression on adherence. Behavior skills remain significantly associated with adherence (OR [95 % CI]: 1.09 [1.04-1.14], $p<0.001$), when controlling for all other factors.

Discussion: Information and motivation were significantly related with behavior skills, which were in turn significantly related to adherence. Though depression and drug use severity are associated with low adherence, behavioral skills remained the strongest predictor of adherence. Interventions focusing on the IMB model of adherence should include a heightened focus on behavior skills, while not neglecting the moderating factors.

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Paper Session 21 4:39 PM–4:57 PM 3143

RISK AND PROTECTIVE FACTORS FOR RETENTION IN HIV CARE

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The importance of retention in care for HIV is well recognized; however, factors that may confer risk or protection for adherence to regular HIV care are less well understood. The present study therefore tested the effects of health literacy, neurocognitive functioning, social support and patient-provider relationship on attendance to routine HIV medical care appointments among 210 HIV infected patients recruited from publicly-funded HIV care clinics in South Florida. Data were collected at baseline and 28-week follow-up. Routine medical and laboratory visit data were abstracted from medical records. Median medical and laboratory appointment adherence was 83 % and 82 % respectively. Greater medical appointment adherence was associated with older age ($p=0.005$), traveling a greater distance to the clinic ($p<0.001$), better control of violent behaviors ($p=0.04$), use of available social supports ($p=0.005$), and not being married ($p=0.0005$). Greater use of social support was protective for those with poorer neurocognitive functioning ($p=0.02$); the less one used social supports the more negative the impact neurocognitive functioning had on appointment adherence. Higher rates of attending laboratory appointments were related to lower reported pain levels ($p=0.04$), no suicide attempts ($p=0.05$), undetectable baseline viral load ($p=0.01$), and being of the same race/ethnicity as the provider ($p=0.02$). Participants with a detectable viral load were marginally ($p=0.09$) more likely to keep their lab appointments when they were more health literate. In addition, when engaged with one's provider, individuals who reported higher levels of pain were more likely to attend a greater proportion of their lab visits ($p=0.02$). Future studies can build upon these findings through developing social support based or provider based interventions aimed to improve attendance at HIV care appointments among those who may be at particular risk for non-adherence. Supported by R21MH084814.

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Citation Paper

Paper Session 21 4:57 PM–5:15 PM 3144

INDIVIDUALIZED TEXTING FOR ADHERENCE BUILDING (iTAB) IMPROVES ANTI-RETROVIRAL DOSE TIMING AMONG HIV+PERSONS WITH BIPOLAR DISORDER

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Background: HIV+persons with co-occurring bipolar disorder (HIV+/BD+) have significant antiretroviral therapy (ART) adherence difficulties (Moore et al., 2011). Text messaging interventions have been identified as a tool for improving ART adherence among HIV+ individuals (Horvath et al., 2012). The present study evaluated a text message intervention (i.e., individualized texting for adherence building: iTAB) to improve both medication adherence and medication dose timing among HIV+/BD+ individuals.

Methods: Fifty HIV+/BD+ participants were randomized to iTAB ($n=25$) or an active comparison intervention (CTRL) ($n=25$). Both groups received education on the importance of taking ART medications and a daily text message evaluating depressed mood. The iTAB group also received personalized medication reminder texts at a self-identified time of intended medication taking. Medication was tracked using an electronic monitoring system for 30-days and adherence was calculated as the proportion of prescribed doses taken. Additionally, the absolute value of the actual time from the planned dosing time was calculated.

Results: Both the iTAB (mean adherence=92.0 %) and CTRL (mean adherence=86.9 %) had high rates of ART adherence. While there were no significant differences in overall adherence rates between iTAB and CTRL, participants assigned to iTAB had superior dose timing (an average of 90 mins from target dose time) as compared to CTRL (an average of 168 mins from target dose time; $p<0.05$).

Conclusions: Study findings suggest that HIV+/BD+ persons participating in a 30-day text messaging intervention show good adherence rates regardless of the intervention arm; however, personalized reminders (i.e., iTAB) significantly improved medication dose timing of ART. A text messaging intervention, such as iTAB, is a low burden, potentially high payoff, approach to improving medication-taking behaviors among difficult-to-treat HIV+/BD+ persons.

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Paper Session 22 3:45 PM–4:03 PM 3145

PARENTAL CORRELATES IN CHILD AND ADOLESCENT PHYSICAL ACTIVITY: A META-ANALYSIS

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Critical examination of the underlying determinants of child and youth physical activity (PA) behaviour is needed to advance future interventions. This meta-analysis extends the work of prior reviews by examining the parental correlates (e.g., parental role modeling and parental social support) and the potential of maternal and paternal roles on child PA. Five major databases were used to identify relevant articles published prior to June 2012. Studies were eligible if they included: 1) participants between ages of 2–18 years and 2) appropriate statistical information to calculate an effect size between a parent variable and child PA. Of the 1726 potential studies, 68 passed the eligibility criteria. A random effects meta-analysis with correction for sampling bias was used. Sample-weighted average effect sizes showed that parental modeling ($r=.11$, 95 % CI .08-.15) and support ($r=.21$, 95 % CI .18-.24) were associated with children's PA. No differences were found between mother-child and father-child interactions for modeling or support ($p>.05$). Role modeling was the most influential in preschool years ($r=.19$, 95 % CI .06-.32) and decreased in subsequent years. Parental support had the weakest association in childhood years ($r=.13$, 95 % CI .03-.23) compared to preschool ($r=.21$, 95 % CI .18-.24) and adolescent years ($r=.19$, 95 % CI .13-.25). Providing transportation ($r=.20$, 95 % CI .09-.32), encouraging child to be active ($r=.19$, 95 % CI .11-.27), availability of PA equipment ($r=.16$, 95 % CI .13-.19), paying for fees ($r=.14$, 95 % CI .09-.19), and playing with child ($r=.11$, 95 % CI .07-.15) were associated with child PA. Supportive behaviours such as providing information, monitoring activity, praising, and watching child activities remains inconclusive and further investigation is required. These preliminary results suggest that parents likely function as PA advocates and liaisons by encouraging and facilitating PA opportunities (e.g., providing transportation and equipment).

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Paper Session 22 4:03 PM–4:21 PM 3146

UNDERSTANDING THE LINK BETWEEN PARENT AND CHILD PHYSICAL ACTIVITY LEVELS: THE ROLE OF PARENTAL INFLUENCES

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While studies have found that children's physical activity (PA) mirrors their parents' PA, an equal number of studies show no correlation between parent-child PA, indicating inconsistencies in research. The current study attempts to elucidate parental factors that may amplify or attenuate the relationship between parents' and children's PA. The sample consisted of 622 parent-child pairs. Parents were, on average, 39 years old ($SD=6.01$), 51 % Hispanic, and 80 % female. Children were, on average, 11 years old ($SD=1.51$), 42 % Hispanic, and 53 % female. This cross-sectional study used self-report surveys to measure parents' perceived influence on child PA (e.g. Parent's PA can have a lot of influence on children) and parental modeling of PA (e.g. How often did your child see you do something physically active?). Parent and child's daily moderate-to-vigorous PA (MVPA) was measured by accelerometer over 7 days. Generalized linear regression models were conducted on each measure, adjusting for child gender, household income, parent ethnicity, and child's body mass index (BMI).

Results indicated that parent MVPA was significantly associated with child MVPA ($\beta=0.26$, $p<.0001$). Tests of interactions revealed that this relation was significantly stronger among parents who perceived that they had a greater influence on child PA ($\beta=.005$, $p=.01$) yet weaker among parents who reported more modeling of PA ($\beta=-0.11$, $p=.04$). The association between parent and child MVPA did not differ by child age.

The relationship between child-parent PA resulted in a positive correlation that was moderated by both parental modeling and parental perceived influence. Parents who believed their PA could influence their children's PA may have been more likely to put a conscious effort towards regulating child PA, but without directly modeling. The association between parent-child PA did not weaken as children aged, potentially due to the sample's lack of age diversity. Future interventions can show parents that they may influence their children's PA, regardless of direct participation in their child's PA.

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Paper Session 22 4:21 PM–4:39 PM 3147

PHYSICAL ACTIVITY AND SEDENTARY BEHAVIOR TRAJECTORIES ACROSS 12 MONTHS IN COHORT SAMPLES OF COUPLES WITHOUT CHILDREN, AND EXPECTANT PARENTS

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Background: The onset of parenthood has been reported as a reason for steep declines in moderate-vigorous intensity physical activity (MVPA), but also increases in light activity. Prior research on this topic has typically compared parents to non-parents in cross-sectional designs, used self-reported data, and failed to account for couples as a dyadic relationship. **Purpose:** To examine the activity profiles of three cohorts of couples (couples without children, and first-time parents and second time parents) across 12 months. **Methods:** Participants were 314 adults (102 not expecting a child, 136 expecting their first-child, 76 expecting their second child) who completed baseline demographics and seven-day accelerometry, followed by assessments at six months and one-year post-partum. **Results:** Hierarchical linear modeling showed that parents who were expecting their second child had lower MVPA (standardized effect = -.23; $p < .05$); yet were less sedentary (standardized effect = -.33; $p < .05$) and had higher light intensity activity (standardized effect = .26; $p < .05$) compared to the other couples at baseline. First-time mothers' changed to match the profiles of parents who were now parenting two children across the first 12 months of child-rearing (MVPA standardized effect = -.16; light activity = .21; sedentary = -.15; all $p < .05$). Changes across 12 months, however, were dependent on the couple, with couples tending to change their physical activity profiles in tandem (slopes $r = .49 - .70$). **Conclusions:** Findings support MVPA interventions targeting new mothers, and parents compared to non-parents overall. Parents may not need to be targeted related to sedentary time. Physical activity interventions at the level of the couple may be more efficacious than at the individual parent.

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Meritorious Paper		
Paper Session 22	4:39 PM–4:57 PM	3148
EFFECT OF CHILDREN IN THE HOME ON EXERCISE BARRIERS, PHYSICAL ACTIVITY AND WEIGHT LOSS IN A BEHAVIORAL WEIGHT LOSS INTERVENTION		
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<p>Background: Behavioral weight loss interventions generally result in significant weight losses after 6 months, but participants with children living in the home lose less weight than participants without children in the home. The goal of this study was to examine the relationship between having children under the age of 18 in the home, barriers to exercise, physical activity (PA), and weight change over time. Data from a 6-month behavioral weight loss intervention were analyzed that compared a standard intervention to a stepped-care approach (N=363, 42.2±9.0 yrs, BMI=33.0±3.6). Weight and PA were objectively measured at 0 and 6 months. All analyses were adjusted for gender, race, marital status, site, treatment group, and age.</p> <p>Adults with children in the home (N=158) had significantly lower percent weight loss (PWL) at 6 months than adults without children in the home (N=166; 7.7% vs. 9.4%, $p < .01$) and reported more barriers to exercise than adults without children in the home ($p < .05$). Baseline minutes of moderate-to-vigorous physical activity (MVPA) did not significantly differ between adults with and without children in the home ($p = .38$), but those with children had a smaller increase in minutes of MVPA after 6 months ($p < .05$). Bootstrapped mediation analyses showed that change in MVPA mediated the effect of having children in the home on PWL (95% CI: 0.08, 1.24). Exercise barriers were then explored as a mediator of the relationship between children and change in MVPA and it was found that exercise barriers mediated this relationship (-16.31, -0.85). Adults with children in the home have barriers to exercise that may inhibit their ability to follow PA recommendations. Weight loss interventions may need to assess exercise barriers at study entry and provide tailored strategies to adults with children in order to improve weight loss outcomes.</p>		
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Paper Session 22 4:57 PM–5:15 PM 3149

SPOUSE OUTCOMES FROM A SPOUSE-ASSISTED INTERVENTION TO LOWER PATIENT CHOLESTEROL

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Objective: In spouse-assisted interventions, the role of spouses is to encourage and reinforce patient behavior change. Unclear is whether spouses merely support behavior change or make similar behavior changes. In a telephone-delivered, spouse-assisted lifestyle intervention to improve patient cholesterol levels, patients improved diet and physical activity. We conducted secondary analyses to determine whether spouses demonstrated similar improvements in these health behaviors. **Method:** 255 outpatient, married veterans with LDL-C > 76 mg/dL and their spouses were randomized to usual care or an intervention comprising eight monthly goal-setting telephone calls to patients and separate support planning calls to spouses. Outcomes for this analysis included spouse (1) frequency and duration of moderate intensity physical activity and (2) dietary intake (total calories, total fat, saturated fat, cholesterol, fiber, and percentage of calories from fat and saturated fat) at baseline and 6- and 11-month follow-up time points. For analysis of the food frequency questionnaire (FFQ) dietary outcomes, we fit linear mixed models (LMM). For the frequency and duration of physical activity outcomes, we fit generalized LMMs using a negative-binomial distribution with a log link function. Primary predictors included a common intercept, indicator variables for follow-up time points, and treatment group by time interaction. **Results:** Spouses were 6% male, 64% White, and averaged 58.8 years in age. No significant differences were found at 11-months between intervention and usual care for moderate intensity physical activity frequency ($p = .84$) or duration ($p = .92$) or dietary intake (total calories, $p = .65$; total fat, $p = .27$; saturated fat, $p = .31$; cholesterol, $p = .87$; fiber, $p = .69$; % calories fat, $p = .16$; % calories saturated fat, $p = .26$). **Conclusion:** To improve spouse outcomes, interventions need to be family-centered, focusing on spouse behavior change goals and including provision of support to spouses.

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Paper Session 23 3:45 PM–4:03 PM 3150

IMPACT OF FOOD PRICES ON CONSUMER DEMAND: DIFFERENCES ACROSS INCOME LEVELS AND ETHNIC GROUPS IN NEW ZEALAND

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Background: There is interest in many countries in targeted food pricing policies to improve population diets. Understanding the impact of wider policies with differential impact on food pricing is also important. In order to estimate effects of such policies on health, it is necessary to determine how price changes impact on consumer demand. To assess their impact on inequalities, it is important to assess responsiveness to pricing across income levels and ethnic groups. **Objective:** Our goal was to estimate the effects of price changes on consumer demand for major commonly consumed food groups, with particular attention to differences in price effects across income levels and ethnic groups. **Design:** We used food expenditure data from two national Household Economic Surveys in 2006/07 and 2009/10 and Food Price Index data from 2007 and 2010. Adopting an Almost Ideal Demand System approach, own-price and cross-price elasticity estimates were derived for 24 food categories, household income quintiles, and two major ethnic groups (Maori and non-Maori). **Results:** Own-price elasticity estimates for New Zealand foods and non-alcoholic beverages (with two exceptions) ranged from -0.53 to -1.78, with poultry, pasta, and ice cream being most responsive to price changes, and pastry products least responsive. Cross-PE estimates were small, generally less than 0.10, except in a few key instances such as between fruit and cakes/biscuits (-0.32). Low-income and Maori households demonstrated greater responsiveness to price changes. **Conclusions:** Food pricing policies have the potential to alter population diets and health. The greater sensitivity of low-income households and Maori to price changes suggests that the beneficial effects of such policies on nutritional health would be greatest for these groups.

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Paper Session 23 4:03 PM–4:21 PM 3151

WEIGHT DISCRIMINATION IS ASSOCIATED WITH OBESITY OVER FOUR YEARS

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The etiology of obesity is complex, with genetic, physiological, and psychological factors implicated in weight and weight gain. Social factors may also contribute to weight. Obesity is stigmatized in American society and the prevalence of weight discrimination is estimated to be roughly similar to that of race and sex discrimination. Weight discrimination has been associated with negative psychological outcomes; we examine whether it is associated with longitudinal changes in Body Mass Index (BMI). Using participants from the Health and Retirement Study (N=6,157), we tested whether experiencing weight discrimination was associated with becoming obese (BMI \geq 30) and remaining obese over a 4-year period, controlling for demographic factors (age, sex, ethnicity, education). Among adults who were not obese at baseline, those who experienced weight discrimination were about 2.5 times more likely to be obese by follow-up than those who had not experienced weight discrimination (OR=2.54, 95 % CI=1.58-4.08). Among adults who were obese at baseline, those who experienced weight discrimination were over three times more likely to remain obese four years later than those who did not experience weight discrimination (OR=3.20, 95 % CI=2.06-4.97). Both effects held after controlling for baseline BMI (OR=1.72, 95 % CI=1.01-2.95 and OR=1.69, 95 % CI=1.06-2.61, respectively) and both effects of discrimination on obesity were specific to weight: the reported experience of discrimination based on race, ancestry, sex, age, physical disability, appearance, and sexual orientation was unrelated to either becoming obese or remaining obese over this time period. The present research suggests that the effect of weight discrimination is not limited to psychological outcomes; weight discrimination also has a significant effect on physical health.

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Paper Session 23 4:21 PM–4:39 PM 3152

DIFFERENCES IN PERCEIVED WEIGHT DISCRIMINATION BY RACE, SEX, AND WEIGHT STATUS

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Background: Bias and discrimination against obese individuals is common, although comparisons of perceived weight discrimination across race and sex have yielded mixed results. Further, previous studies lack adequate representation of racial minorities.

Objective: To examine self-reported weight discrimination and differences based on race, sex, and BMI in a biracial cohort of community-based middle-aged adults. Methods: We report on 3,466 participants (mean age=50 years, mean BMI=30 kg/m², 21 % with BMI>35 kg/m²) of the Coronary Artery Risk Development in Young Adults (CARDIA) Study who completed the 25-year examination of this epidemiological investigation in 2010–11. By design, CARDIA participants are balanced across race (African American vs. White) and sex. Participants completed a self-reported measure of perceived weight discrimination across several settings (e.g., school, work, home).

Results: Reported weight discrimination across any setting was lowest for White men (10.1 %) and highest for African American women (22.8 %). Within each above-normal BMI category, however, White women reported more discrimination than the other three groups. The adjusted odds ratio (95 % CI) for reporting weight discrimination in the severely obese (BMI>35 kg/m²) versus the normal-weight was most pronounced: African American men, 4.65(2.28-9.47); African American women, 4.33(2.41-7.77); White men, 14.15(5.91-33.91); and White women, 14.09(8.61-23.04). Being overweight (BMI=25-29.9 kg/m²) vs. normal weight was associated with discrimination in White women only: 2.23 (1.35-3.67). Discussion: While those with BMI>35 kg/m² were more likely to report weight discrimination across all four race-sex groups, White women reported experiencing weight discrimination at all levels of overweight/obesity. Psychosocial mechanisms potentially responsible for these differences deserve exploration.

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Paper Session 23 4:39 PM–4:57 PM 3153

POOR KIDS, RICH KIDS: OBESITY-RELATED BEHAVIORS DURING SUMMER BREAK BY INCOME

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Background: Income disparity in youth academic achievement has been hypothesized to widen during the summer because of discontinued learning among children from lower-income households. Little is known on whether obesity-related behaviors, including dietary quality, physical activity, and screen time, also demonstrate a widening difference by income during the summer and could partly explain observed income disparity in childhood obesity.

Methods: Data from children enrolled in first through twelfth grade in the National Health and Nutrition Examination Study (NHANES) 2003–2008 (N=6,796) were used to estimate calories consumed, hours of screen time (television and computer), minutes of moderate-to-vigorous physical activity, vegetables consumed (with and without potatoes), and amount of added sugar consumed. Linear regression was used to compare these behavioral patterns among children of households <130 %, 130-300 %, and >300 % poverty. Income differences were compared for children surveyed during the school year and those surveyed while on summer vacation.

Results: Overall, children consume more calories (especially elementary school children, +71 kcal/day), less vegetable (-0.2 cups/day) and more added sugar (+2.2 teaspoons/day), are more active (+0.5 % exercised 30+ minutes), and watch more television (+13 min/day) during the summer break. Compared to their higher-income peers, low-income students watch significantly more television but use computer significantly less. The interaction between summer and income is significant for computer use, vegetable consumption and percent calories from added sugar. However, the direction indicates that the income gap in fact narrowed during the summer for most obesity-related risk factors.

Conclusion: While there is a higher prevalence of obesity risk factors during the summer and among lower-income youths, summer break does not exacerbate the income disparity in these behavioral indicators. This may suggest that the role of schools in promoting healthy eating and physical activity is more prominent in higher-income communities.

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Meritorious Paper

Paper Session 23 4:57 PM–5:15 PM 3154

NEIGHBORHOOD DEPRIVATION AND THE RETAIL FOOD ENVIRONMENT IN A US-MEXICO BORDER URBAN AREA

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The prevalence of obesity has increased rapidly in the United States, and is the result of an imbalance where caloric intake exceeds energy expenditure. Obese individuals are at greater risk for coronary artery disease, high blood pressure, and diabetes, which is increased among the Hispanic population. Individual and neighborhood conditions contribute to the risk for obesity. Among neighborhood factors, researchers have focused on neighborhood deprivation and its relationship with availability of large grocery stores. The typical finding is that high neighborhood deprivation is negatively associated with availability of quality supermarkets.

The primary aim of this study was to examine the association between neighborhood deprivation and the retail food environment within El Paso County.

The site for the study is in El Paso, Texas, which is located adjacent to the U.S. Mexico Border. Census tracts served as the proxy for neighborhoods in this study. A total of 126 census tracts were identified by the U.S. Census Bureau- American Fact Finder (2010). Data from the U.S. Census was used to develop indices of neighborhood deprivation at the tract level. The retail food environment was assessed by classifying, enumerating, and geocoding retail food store data purchased from InfoUSA.

The results indicated that grocery stores (r^2 's=.27* to .49*) and specialty stores (r^2 's=.23* to .29*) were consistently related to indices of neighborhood deprivation, but in the direction opposite that found in other studies. Similar but less pattern of associations was found in convenience stores (r^2 's=.17* to .20*). In contrast, neighborhood deprivation was unrelated to large chain supermarkets or liquor stores. In this largely Hispanic community, the availability of small grocery and specialty stores may enable individuals in deprived neighborhoods to maintain traditional diets that have been associated with healthy eating patterns.

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Paper Session 24 3:45 PM–4:03 PM 3155

REDUCING INFORMATION AVOIDANCE

Jennifer Howell, MS and James Shepperd, PhD

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Although screening for medical problems can have health benefits, the potentially threatening nature of the results can lead people to avoid screening. We examined the effectiveness of two different methods for reducing avoidance in six studies. Our first three studies examined whether affirming a person's overall sense of integrity reduces avoidance of screening feedback and our second three studies examined whether prompting people to contemplate their reasons for seeking v. avoiding information reduces avoidance of screening feedback. In all studies, participants completed an online risk calculator for a medical condition and then were offered a choice to learn or not learn their risk feedback. Our results showed that affirming participants decreased avoidance of risk feedback (Study 1) and remedied the increase in avoidance typically seen when test results obligate people to undertake unwanted behavior (Study 2) and when a disease is uncontrollable (Study 3). They also showed that prompting people to consider their reasons for seeking v. avoiding information can reduce avoidance (Studies 4–5) but only when seeking appears to be the rationally superior decision (Study 6). These findings suggest that both affirmation and contemplation may be effective strategies for increasing medical screening, but that the contexts in which they do so may be very different.

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Citation Paper		
Paper Session 24	4:03 PM–4:21 PM	3156
PERSONAL HEALTH RECORD ADOPTION VARIES BY DIAGNOSIS: THE VA EXPERIENCE		
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<p>Background: Tethered Personal Health Records (PHRs) connect patients with their clinicians and health data. Little is known about use of PHRs by patients with specific diagnoses.</p> <p>Methods: My HealtheVet, the Veterans Health Administration (VA) PHR, has been nationally implemented. We combined data on PHR adoption, doctor-patient secure messaging, and PHR medication refills with ICD-9 diagnostic coded data for veterans who obtained care from VA between 10/2007 - 3/2012. We identified 26 diagnostic groups of high priority to the VA and ranked adoption of the PHR by condition.</p> <p>Results: Among the 6,949,207 veterans, 6.4% were women, 81.2% were White, and 16.5% were African-American. Most (78.6%) were urban, of ages 18–44 years (16.4%), 45–64 years (36.7%), over age 65 (47.0%). Of these veterans, 16.5% were registered, 8.7% were authenticated to have access to all PHR features, and 1.4% had actually used secure messaging. Almost 10% had refilled their prescriptions through the PHR.</p> <p>Overall, patients with major depression, Post-Traumatic Stress Disorder and anxiety had the highest rates of authentication (15.5–18.3%), were most likely using (2.7–3.2%) and refilling prescriptions (17.2–19.7%). Patients with schizophrenia (7.4%) and schizoaffective disorder (9.3%) had the lowest authentication rates and were less likely to refill prescriptions (7.5–9.5%) or use secure messaging (0.8–1.1%). Medical conditions with high rates of adoption included HIV and diabetes (12.8–15.5%). Authentication was lower among patients with other conditions such as stroke (10.0%), coronary artery disease (10.4%), and congestive heart failure (10.4%).</p> <p>Conclusions: PHR use varied by clinical condition. Patients with chronic health or mental health conditions may be amenable to behavior change interventions delivered through a PHR.</p>		
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Paper Session 24 4:21 PM–4:39 PM 3157

A CONCEPTUAL FRAMEWORK FOR THE DESIGN OF CONSUMER HEALTH INFORMATICS APPLICATIONS

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We present a conceptual framework for designing patient-facing chronic disease self-management information systems. Our framework integrates the constructs of psychological theories that address learning, motivation, self-regulation, and planning into functional groups. The functional groups are intended to reflect the essential self-regulatory processes of chronic disease self-management. Our premise is twofold. First, consumer health informatics applications that provide support for these self-regulatory processes will demonstrate greater efficacy than those that do not. Second, since these self-regulatory processes are inter-related and iterative procedures, systems that address each of the six main types of self-regulatory processes described by the framework (monitoring, feedback, goal-related processes, comparative processes, simulation processes, and planning processes) will be more effective than those only address a subset.

As evidence of conceptual coverage of the framework we show that the conceptual framework accommodates 27/40 Behavior Change Techniques included in Michie's CALO-RE taxonomy of Behavior Change Techniques. As evidence of the efficacy of constructs in the framework when implemented in CHI applications, we compare the list of the 15 most effective behavior change techniques, identified in Webb's 2010 meta-analysis of CHI behavior change interventions, with those accommodated by the framework, and show that 13/15 are accommodated in the framework. We then describe a list of nine design principles for consumer health informatics applications that are based upon evidence from the psychological literature underlying the framework. We conclude with a discussion of the potential use of the CHI framework in the design of CHI applications and related research questions.

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Paper Session 24 4:39 PM–4:57 PM 3158

PATIENT CENTERED PRESCRIPTION LABELING: FUNCTIONAL UNDERSTANDING AND ADHERENCE RESULTS FROM A RANDOMIZED CONTROLLED TRIAL

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To develop and test the efficacy of an evidence-based, enhanced prescription drug label design to improve patients' understanding and use of medications. A 2 arm, randomized controlled trial was conducted at a central-fill pharmacy serving 11 community health centers in the Washington D.C. area. 429 patients, taking multiple prescription drugs, and with diagnoses of diabetes and/or hypertension were recruited. Those in the intervention received their medicines with a label design including a Universal Medication Schedule (UMS) to provide explicit medication instructions, and those in usual care received a standard label. Baseline, 3 and 9 month assessments of functional understanding and use of actual medicines was the primary outcome, followed by adherence (self-report, pill count, and pharmacy claims). Those in the intervention were better able to demonstrate understanding of their medications by 9 months (OR 2.08, 95% CI 1.09–3.98, p=0.03) and immediate improvements were shown at baseline with regard to understanding times per day medicine was to be taken (OR 1.77, 95% CI 1.04–3.00, p=0.04). Those with limited literacy showed greater benefit with 73.3% demonstrating proper use compared to 48.3% in the control (p=0.05). At 3 months, those in the intervention showed better adherence to their regimen by pill count (48.7% vs. 30.3%, p=0.01), although the effect subsided by 9 months (38.6% vs. 31.0%, p=0.40). Those with limited literacy showed greater adherence benefits had a near threefold greater likelihood of being adherent at 3 months (>80% pills taken/pills prescribed) in the intervention arm (OR 2.56, 95% CI 1.48–4.41, p<0.001). We show strong evidence that enhanced labeling on prescription containers, can improve understanding and at least short-term sustained use of multi-drug regimens.

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Paper Session 24 4:57 PM–5:15 PM 3159

LOOKING GOOD VS. FEELING GOOD: AN EXAMINATION OF ATTENTION TOWARDS HEALTH- AND APPEARANCE- RELATED PHYSICAL ACTIVITY ADVERTISEMENTS

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Health messaging is a popular medium for encouraging individuals to engage in recommended health behaviours such as physical activity. The content of these messages may play a key role in the persuasiveness of the message by attracting different levels of attention. While commercial physical activity advertisements often focus on appearance-related content, the public health sector focuses more on health. However, it is unclear which type of content best attracts attention and whether it is the text or image components of these ads that facilitate greater levels of attention. The current study examined differences in attention towards health- and appearance-related physical activity advertisements. Sixty moderately active women, aged 18–35 viewed 10 health-related, 10 appearance-related and 5 control ads promoting physical activity while their eye movements were recorded via eye tracking technology. Attention was measured by examining eye fixations, dwell time and the proportion of dwell time directed to either the text or image components of the ads. RM ANCOVAs comparing attention to the health- and appearance-related ads revealed that the ad content significantly affected the amount and pattern of attention directed towards the ads. The health ads had significantly more fixations ($p < 0.05$) and longer dwelling times ($p < 0.05$) than the appearance related ads. Additionally, the health ads had a greater proportion of dwell time directed towards the text component of the ads ($p < 0.001$), while the appearance ads had a greater proportion of dwell time directed towards the image component ($p < 0.001$). These findings demonstrate the greater effectiveness of health content in facilitating attention, and may help practitioners develop more effective physical activity ads.

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Friday
March 22, 2013
6:30 PM–8:00 PM

Poster Session

C-001

EFFECTS OF STRESS ON FINDING MEANING FROM CANCER IN THE FAMILY

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Post-traumatic growth theory posits that greater stress from an event leads people to search for meaning out of that adversity. Less known are (a) the unique contribution of stress to personal growth during cancer caregiving, independent of demographic and psychosocial effects and (b) the degree to which stress facilitates finding meaning from cancer in the family. This study addressed these research questions.

From a nationwide study, 816 family cancer caregivers provided complete data for study variables. Age, gender, education, and income were self-reported. Perceived availability of social support (ISEL), perceived caregiving stress (Stress Overload subscale of Pearlin Stress Scale), and the 6 domains of benefit finding of caregiving (Benefit Finding Scale) were measured.

Hierarchical general linear modeling revealed that older, female, less educated, and less affluent caregivers, and those with greater social support were more likely to report finding meaning out of cancer caregiving in various domains ($ps < .05$). Above and beyond these effects, caregiving stress was significantly related to 3 of 6 benefit finding domains. The greater stress caregivers reported, the more likely the caregivers came to appreciate life (linear effect, $p = .008$). However, moderate levels of caregiving stress related to greater likelihood, as opposed to low or high levels of caregiving stress related to less likelihood, of the caregivers reporting increases in positive self-view and reprioritizing values as a result of their caregiver role (curvilinear effects, $ps < .02$).

Findings suggest that stress may promote caregivers to experience growth in appreciating life. Findings also suggest only moderate degrees of stress have beneficial effects by helping caregivers increase positive self-view and reprioritizing values. Therefore, cancer caregivers may benefit from interventions that enhance their ability to fully apprehend the stress that cancer imposes as well as properly manage greater levels of caregiving stress for increasing personal growth experience out of cancer in the family.

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C-002

CANCER CAREGIVERS' DEPRESSION PREDICTS DEVELOPMENT OF MORBIDITY

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Depression is a potent predictor of morbid conditions, including CVDs, diabetes, and cancer. As caregivers' depressive symptoms fluctuate across the caregiving trajectory, this study examined whether increased depressive symptoms over time predicts increased number of morbid conditions among cancer caregivers, above and beyond risk explained by other correlates of disease development.

Cancer caregivers completed surveys at 2 (T1) and 5 years (T2) after their care recipients' cancer diagnosis (N=491; age M=55.78). Caregivers' age, gender, ethnicity, level of education, and household income and their patients' cancer severity were assessed at T1. Depressive symptoms (CES-D) and whether the caregiver had ever received treatment for any of 40 morbid conditions (MICCI) were assessed at T1 and T2. Caregiving status (current or bereaved) was measured at T2. At T1, caregivers reported an average of 3.32 morbid conditions, which increased to 4.09 by T2. The three most commonly reported conditions at both T1 and T2 were hypertension (33.6 % to 55.4 %), high cholesterol (31.8 % to 54.0 %), and chronic back pain (29.3 % to 42.8 %). Hierarchical regression revealed that older age (B=.073, p<.001), greater T1 depressive symptoms (B=.053, p=.003), and higher morbid conditions at T1 (B=.229, p<.001) were significantly associated with increased morbidity at T2. Former caregivers whose patient was still alive as opposed to a bereaved caregiver (B=-1.037, p=.053) and lower income (B=-.758, p=.056) marginally related to increased morbidity at T2. Independent of these effects, increased depressive symptoms from T1 to T2 was associated with a rise in morbid conditions in caregivers from T1 to T2 (B=.043, p=.034).

Findings highlight the significant contribution of change in depressive symptoms from the mid- to long-term caregiving trajectory to increased caregiver morbidity. Findings suggest that interventions targeting caregivers' depressive symptoms during the transit into the long-term survivorship phase will benefit cancer caregivers preventing from premature morbidity and poor quality of life

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C-003

BARRIERS TO USE AND SATISFACTION WITH AN INTERNET SITE FOR HEMATOPOIETIC CELL TRANSPLANTATION (HCT) SURVIVORS DISSEMINATED IN A COMMUNITY-BASED RCT

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As health information technology interventions for cancer survivors are developed and tested, little is known about their dissemination, satisfaction and barriers to use. We developed an internet site for HCT survivors to address cancer-related distress, depression, fatigue and to offer a survivorship care plan. Four emails were sent by BMT InfoNet, a patient resource and advocacy site. Eligibility included ≥18 years old, more than two years post-HCT, communicate in English, and with internet and email access. Participants were randomized to immediate internet site access or delayed access after six month assessment. Of 493 registering survivors, 386 (78 %) were eligible and randomized. Of those randomized, 82 % (N=316/386) completed the six month follow-up assessment. Most were from the U.S. (94 %, N=361). Participants were largely Caucasian and non-Hispanic/Latino (95 %), on average 9 years post-HCT (SD=6); 70 % received allogeneic HCT, 20 % were on treatment for chronic graft versus host disease (cGVHD). Mean age was 54 (SD=12). Of the participants randomized to the internet site, 87 % were 'satisfied' with their participation, 89 % found the site 'easy' to use, and 97 % found the material 'useful', though only 61 % indicated they used the website information. Those not using the site information were more likely to be ≥10 years after HCT (OR=2.4, P=.01). Age, gender, active cGVHD, allogeneic HCT type, and elevated scores on the targeted problems did not predict use. Among 18 potential barriers to using the site, four reasons occurred for more than 10 %. These were: "forgot" (35 %), "too busy" (31 %), "get all the support elsewhere" (23 %), and "saw all I needed on the first visit" (22 %). Overall, survivors found the site easy to use, but more could be done to make it useful and accessed by more diverse survivors. Ongoing updates of information with mobile and social media may facilitate use and reduce barriers.

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C-004

BENEFIT FINDING AND HEALTH BEHAVIOR CHANGE AMONG CANCER SURVIVORS

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Advances in the treatment of cancer in recent decades have led to a substantial increase in the number of cancer survivors. In addition to the challenges associated with survivorship, many cancer survivors also report finding benefits as a result of their experience. These benefits may include perceived changes in relationships, personal strength and coping skills, but can also include changes in health behaviors. In the current study, participants were recruited to complete the online 2010 LIVESTRONG Survey for People Affected by Cancer. The current analyses focus on the 3682 post-treatment cancer survivors living in the United States who completed a minimum of 75 % of relevant items. On average, participants were approximately 50 years of age, and represented a wide variety of cancers, treatment types, and length of survivorship. Benefit finding was assessed with seven items from the Constructed Meaning Scale (Fife, 1995) and the "benefits of cancer" subscale from the Quality of Life in Adult Cancer Survivors (QLACS, Avis et al., 2005). In addition, physical health behavior benefits were assessed with three items that addressed improvements in diet, physical activity and overall healthy lifestyle. On average, post-treatment survivors indicated that they perceived benefits from the cancer experience (QLACS mean=3.10, SD=.61) and felt that they had derived meaning from the experience (Constructed Meaning Scale mean=2.85, SD=.54). The majority of survivors also indicated that they had made improvements in health behavior as a result of their cancer diagnosis (78 % improved overall healthy lifestyle, 74 % improved physical activity, 75 % improved diet). Positive lifestyle changes were linked to finding increased benefits and meaning in the cancer experience (p-values<.01). Further work should determine whether the linkage between health behaviors and other benefits represent a single underlying process or multiple causal pathways.

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C-005

STRUCTURED ALGORITHM FOR ERROR REDUCTION IN CHEMOTHERAPY ADMINISTRATION SAFER PROJECT

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Background. In spite of available technology and known factors resulting in medication errors, chemotherapy errors remain the major cause of iatrogenic patient morbidity in hospitals. A major risk factor for chemotherapy errors is lack of standardization in administration. Failure to identify necessary staff skills/aptitude required to prevent errors may also be problematic.

Methods. A comprehensive review of literature related to Chemotherapy Administration and medication errors was performed. Search included the following: Science Direct, CINAHL, Pub Med, MEDLINE, Expanded Academics. Search limits included publication within 10 years, peer reviewed journals, English.

Findings. Several sources support chemotherapy error reduction is achievable through use of evidence based strategies. Standardizing formats through procedures/protocols reduces potential for medication errors. Integration of information systems elements such as Computer Prescribing Order Entry, Bar-coded medication administration, Electronic medication administration records, Automated dispensing machines and IV PumpGuardrails decrease errors in medication administration. Other strategies that enhance error reduction for chemotherapy were Standardized Ordering Forms, Infusion-related Hypersensitivity Reaction information and Adverse Reaction guidelines, Extravasation Management Protocols, Verification Grids, and Standardized Patient Identifiers. A decision-tree algorithm incorporating all aspects of this evidence was developed.

Implications to practice. The practical implication of this project is that standardized protocols for medication administration, information systems strategies, and a variety of other techniques aimed at specific points in the error process may reduce error rates and assist in improved outcomes related to medication safety, in particular, chemotherapy administration. Recommendations. The utilization of an algorithm should be tested in clinical practice to determine the effect on chemotherapy error rates.

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C-006

EXAMINING PATTERNS OF ASSOCIATION ACROSS LEVELS OF DEFENSIVE INFORMATION PROCESSING ABOUT COLORECTAL CANCER SCREENING

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Objective: Individuals do not always rationally process threatening information such as cancer risk, and they may engage in defensive information processing using a variety of strategies. Defenses help reduce negative psychological affect from real or imagined threats to the self. Our previous research developed and evaluated measures of four levels of defensive information processing: attention avoidance, blunting, suppression, and counter-argumentation. More research is needed to determine the independence of these defenses.

Methods: Patients age 50–75 years from a university clinic for mostly underserved populations completed a single survey by mail. Ineligible patients had a history of cancer, Crohn's disease, ulcerative colitis, or inflammatory bowel disease, or could not complete the English-language, self-report survey. Bivariate associations were examined.

Results: We report preliminary results ($p < .05$) from an on-going study ($N=100$, 63 % female, 80 % non-white). Cronbach's alpha was slightly higher for all measures of defenses compared with our previous study. Defenses were consistently related to lower ratings of perceived relevance of colorectal cancer screening (CRCS), dispositional optimism, and greater use of avoidant coping strategies. Perceived pros of CRCS were more strongly associated with less counter-argumentation, cons were strongly correlated with greater suppression, self-efficacy for CRCS was associated with less suppression, and cancer fatalism was associated with more counter-argumentation.

Conclusion: The consistent patterns of associations between psychological dispositions and avoidant coping across levels of defenses suggest an underlying defensiveness trait. However, support for the independence of the levels of defenses was found in their different patterns of associations with CRCS-related measures. Future studies should examine the relative influence of different defenses (vs. an aggregate defenses measure) on negative affect and performance of recommended health behaviors such as CRCS.

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C-007

COGNITIVE-BEHAVIORAL STRESS MANAGEMENT AND DEPRESSION IN A 5-YEAR FOLLOW-UP STUDY OF BREAST CANCER SURVIVORS

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Objective: Women undergoing active treatment for early breast cancer (BCa) experience depressive symptoms leading to poor quality of life (QOL). Depression may persist years after treatment cessation. Group-based cognitive behavioral stress management (CBSM) following surgery for non-metastatic BCa was associated with less depression and improved QOL over a 12-month follow-up. Less is known about whether women who received the CBSM benefited years into long-term survivorship. **Methods:** Women ($N=240$) with non-metastatic stage 0-III BCa were initially recruited 2–10 weeks post-surgery and randomized to either a CBSM intervention group or a psycho-educational control (PE) group. Five years later, demographic, health-related, and psychosocial data were collected from 130 women (CBSM=70; PE=60). The only differences in women who participated in the 5-year follow-up were age and days elapsed from surgery to the baseline assessment. Univariate ANOVA was used to test for differences in depression on the Center for Epidemiologic Studies Depression Scale (CES-D) at the 5-year follow-up in women who had received the CBSM intervention vs control conditions. Analyses were conducted with and without theoretically supported covariates. **Results:** Women assigned to CBSM had significantly less CES-D depression ($M=9.99$, $SD=5.71$) than those in the control group ($M=12.75$, $SD=9.50$), ($F[1,127]=4.12$, $p=.04$). **Conclusions:** In this subgroup of women with non-metastatic BCa, those who received CBSM had less depression than controls. Given that depressed BCa patients have worse long-term health outcomes, implementing psychosocial interventions in the early phases of treatment may be crucial to buffer and influence long-term psychological and physical well-being.

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C-008

EFFECTS OF UNMET NEEDS ON BEREAVED FAMILY CAREGIVERS' QUALITY OF LIFE 5 YEARS AFTER THE RELATIVES' CANCER DIAGNOSIS

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Although cancer is a chronic disease and the 5-year survival rate has improved to 67 %, a substantial number of family caregivers become bereaved 5 years after the initial cancer diagnosis of the relative, yet their unmet needs and quality of life (QOL) remain unknown. This study aimed to identify unmet needs specific to bereaved family caregivers at 5 years post-diagnosis and to determine the extent to which unmet needs relates to QOL. A total of 178 family caregivers (age $M=61.4$) were identified as bereaved 5 years after their relative's cancer diagnosis (average 2.7 years since the death) and provided valid data for the study variables. A subset of the Needs Assessment of Family Caregivers-Cancer (NAFC-C) scale that is relevant to bereaved caregivers (29 items) was used to assess unmet needs. Mental and physical health (SF-12), spiritual adjustment (FACIT-Sp), and psychological distress (POMS-SF) were measured as QOL indicators. Exploratory factor analysis yielded 4 factors (43.7 % variance accounted): Psychosocial, Daily Activities, Experiential/Informational, and Medical unmet needs. Over 40 % of bereaved caregivers reported that various needs were not being met. Hierarchical regression revealed that younger and spousal caregivers reported greater experiential/informational and daily activities unmet needs ($ps < .05$). After controlling for demographics, psychosocial and daily activity unmet needs predicted greater psychological distress and poorer spiritual adjustment ($ps < .002$). In addition, psychosocial unmet needs predicted poorer physical health, whereas daily activity unmet needs predicted poorer mental health ($ps < .002$). Findings suggest that family caregivers bereaved during the mid- to long-term survivorship phase experience diverse elevated unmet needs, which negatively impact their quality of life. Bereavement programs and interventions designed to address caregivers' psychosocial and daily activities needs years after the death of the patients will benefit bereaved family members by improving their quality of life.

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C-009

CAREGIVER SELF-CARE: EVALUATION OF A RESOURCE FOR CANCER CAREGIVERS

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Research has shown that caregivers are at risk for a wide range of problems, specifically in the physical and mental health domains. To address priority needs in these areas, a printed caregiver guide, *Caring for a Loved One with Cancer - and Yourself*, was developed for cancer caregivers. The aim was to provide information and education about specific actions that can lower common physical and mental health risks associated with caregiving. The guide includes topics such as caregiver role, understanding cancer, communicating effectively, anxiety and depression, emotional support, and resources. The caregiver self-care section addresses the need for caregivers to take time for themselves, manage stress, and engage in specific behaviors to promote health and reduce risk. The guide was pilot tested in focus groups held in 2010 (results presented at the 2011 SBM Conference).

An evaluation was designed to assess 1) Caregiver perceptions of the content and format of the guide; 2) Caregiver satisfaction and utilization; 3) Preferences for delivery; and 4) Impact of the guide on caregiver knowledge, self-efficacy, and implementation of target self-care behaviors.

The evaluation was conducted in the New England area. Volunteers from 8 oncology centers were trained on delivery of the guide. Caregivers were followed up by telephone to assess their satisfaction and use of the guide.

A total of 1596 guides were distributed and 255 caregivers responded to the follow up telephone survey (16 %). Of these, 226 completed the entire survey (87 %).

Results suggest that the guide was well received, with over 75 % reporting that the topics and content were useful. Respondents reported satisfaction with the guide design, and suggested that the mode of delivery increased the likelihood that they would use it. For those reporting having utilized the guide, positive changes in self-efficacy, attitudes and behaviors related to both caregiving activities and self-care were reported. Plans for expanded dissemination and evaluation are now underway.

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C-010

MEDICAL SYMPTOMS, PERCEIVED SOCIAL SUPPORT, AND AFFECT IN ADOLESCENT PATIENTS WITH CANCER

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Treatment for cancer among adolescents is often more intense and lasts longer than treatment for older or younger patients. It typically causes pain, fatigue, and nausea and impacts social and emotional well-being. This study examined the relationships among demographics, physical symptoms, perceived social support from friends and family and affect (positive and negative) in 102 adolescents (age 13–19) with cancer using correlational analyses. Additionally, perceived social support was explored as a mediator and moderator of the relationship between medical symptoms and affect using regression. Females reported significantly lower friend support and higher negative affect compared to males ($t=2.66$, $p=.00$ and $t=-2.62$, $p=.00$, respectively). Minority participants were more likely to endorse medical symptoms and less negative affect compared to Caucasian respondents ($t=-1.94$, $p=.03$ and $t=-2.00$, $p=.02$, respectively). Higher report of physical symptoms was significantly related to greater negative affect ($r=.48$, $p<.00$), while higher perceived social support from friends was related to higher positive affect ($r=.26$, $p=.00$). Adolescents consistently reported high levels of social support from family and friends. Additionally, adolescents tended to report high levels of positive affect and low levels of negative affect. No significant mediation or moderation effects were found. This research highlights that females and minorities, and those with greater physical symptoms, may be more vulnerable to poor adjustment to cancer during adolescence. However, overall this study lends support to the notion that adolescents with cancer are an especially resilient population, as these patients endorsed generally high levels of social support and positive affect, with low levels of negative affect.

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C-011

CANCER-RELATED SELF-DISCLOSURE AMONG ADOLESCENT AND YOUNG ADULT CANCER SURVIVORS

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Background: The number of adolescents and young adults (AYAs) surviving cancer has been steadily increasing. Late effects that interact with normative development and how AYAs integrate their cancer experience into relationships and identity posttreatment are important elements of their psychological growth. Self-disclosure (SD), the sharing of thoughts, feelings, and experiences, is a hallmark of AYAs' relationships. Additionally, social support has been identified as a salient need for AYAs survivors. This study utilizes a mixed method design to investigate cancer-related SD, and its role in the relationship between social support and posttraumatic growth (PTG). **Method:** As part of a larger study, qualitative analyses were conducted using semi-structured individual interviews to describe cancer-related SD ($n=26$; 62 % female; M age=19.6; SD=2.8; age at diagnosis M=15.6; SD=1.3; time since treatment M=3.2 years; 65 % multi-modal treatment). Most common diagnoses were lymphomas (31 %) and leukemias (19 %). These analyses informed design of quantitative SD measures administered as part of an ongoing survey of 150 AYA survivors (41 % female; M age=21.3; age at diagnosis M=16.8; 75 % multi-modal treatment). Most common diagnoses were lymphomas (34 %) and sarcomas (25 %). **Results:** Inductive thematic content analysis (Inter-rater reliability >80 %) revealed three themes and eight subthemes of SD: decision making (don't ask/don't tell, shared experience, relationship potential), views of others' response (perceived apprehension, neutral/positive responses), and methods of SD (verbal, written, behavioral). No significant gender differences emerged though females identified greater number of SD experiences. Survey data analyses will examine the relationship between cancer-related SD, perceived social support, and PTG. Analyses will control for gender, treatment type, and age at diagnosis. **Conclusion:** As one of the first studies to investigate this relationship among AYAs, results will target ways SD can be used to promote growth and facilitate relationships for survivors.

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C-012

EMOTIONAL TIES TO THE AD AND THE SPONSOR: AN ANALYSIS OF HOW RELIGION IMPACTS BREAST CANCER SCREENING INTENTION AMONG AFRICAN AMERICAN WOMEN

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Thousands of women in the U.S. die from breast cancer each year. The number of breast cancer cases is declining according to the American Cancer Society (2011) however the mortality rates of breast cancer among ethnic groups continue to persist. While White women are more likely to be diagnosed with breast cancer compared to Black women, Black women are more likely to die from this cancer. Given the number of mortality and morbidity rates of breast cancer among all women, considerable attention is directed to preventing its onset through various health communication efforts. African American women are at particular risk and in some cases are not knowledgeable about new treatments and do not participate in preventative activities such as mammograms and CBE. The purpose of this study was to investigate the impact of religiously targeted breast cancer screening ads on breast cancer screening behavior intention among African American women ($N=60$). Breast cancer screening intention measures were taken before and after exposure to six breast cancer screening ads; the sponsor of the ads was a fictional faith-based organization. While the analyses show that there was no significant change from pre to post for breast cancer screening intention, there were significant findings for how participants viewed the sponsor. Women in this sample were more likely to remember the name of the sponsor, viewed the sponsor as credible and indicated that they would seek additional information about breast cancer screening from the sponsor. Given the religiousness of many African Americans in the United States (Pew, 2009) and also the trust in faith-based organizations such as the church, the findings can be used to further strengthen breast cancer screening promotion among ethnic minorities in the United States.

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C-013

PERCEIVED MELANOMA RISK AND WORRY IN CONSUMERS USING MOBILE TELEDERMOSCOPY

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Background: Mobile teledermoscopy (MT) may aid in melanoma early detection. MT consists of an iPhone® coupled with a dermatoscope and app to create a mobile teledermatoscope; taking/sending highly-magnified skin lesion images using the device, and remote dermatology review and feedback. MT has not been tested in consumers.

Aim: This feasibility study assessed consumer MT use. We report on perceived melanoma risk and worry when using MT.

Methods: 22 adult subjects (13 men, 9 women) enrolled from a melanoma high-risk clinic completed a baseline survey with 10 worry and 3 perceived risk items and received a booklet with lesion exam instructions and a body chart to map skin lesions. Subjects were randomized to an intervention (I) group ($n=10$; received booklet plus mobile teledermatoscope) and a control (C) group ($n=12$; received booklet only); all self-examined their skin within a week and mapped suspicious lesions. The I group photographed 3–5 lesions with the mobile teledermatoscope and sent the images for telediagnosis. All subjects completed a follow-up survey. Data were analyzed using descriptive statistics.

Results: At baseline, the majority of I and C subjects perceived lifetime melanoma risk from 50–50 chance to very likely and comparative risk as above average. 100 % worried about recurrent melanoma; two-thirds reported that melanoma worry rarely-to-never affected their mood or performance of daily activities; most rarely-to-never worried that skin spots, feeling sick, or a visit to their healthcare provider signaled melanoma. Perceived melanoma risk and worry did not significantly change in the I or C group from baseline to follow-up; worry scores were higher (but not significantly) in the I group at follow up.

Conclusion: In this feasibility study, perceived melanoma risk in high-risk consumers using MT was stable, but the MT process could augment worry. Future larger studies will further evaluate the relationship of these factors with MT.

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C-014

DO CURRENT DEPRESSIVE SYMPTOMS AFFECT THE USEFULNESS OF COGNITIVE EMOTION REGULATION STRATEGIES IN WOMEN WITH BREAST CANCER?

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The first aim of the study was to determine the feasibility and acceptability of conducting a distraction intervention during a chemotherapy infusion. Second, we investigated the use of two forms of distraction, a neutral word task and a recall of positive memories, in decreasing sad and anxious mood among women with breast cancer undergoing chemotherapy. Finally, we examined current depressive symptoms as a potential moderator of the relationship between type of distraction task and change in mood, given research indicating current depressive symptoms influence the efficacy of distraction tasks in repairing mood. Results demonstrated that completing distraction tasks during a chemotherapy infusion was feasible, evidenced by the majority of patients approached consenting to participate and almost the entire sample completing the task once started. Acceptability was high, as participants rated both tasks as interesting, helpful, and physically easy to complete. Many women requested more time and reported a desire to use the tasks again in future medical settings. There were no differences in the efficacy of the two distraction tasks in improving sad or anxious mood during chemotherapy. However, individuals with higher depressive symptoms showed greater decreases in sad mood after partaking in the neutral task versus the positive memories task (medium effect size, $d=.51$), while they evidenced greater decreases in anxious mood when partaking in the positive memories task as compared to the neutral task (medium effect size, $d=.56$). In contrast, individuals endorsing lower depressive symptoms had greater reductions in anxious mood from the neutral task as compared to the memories task (small effect size, $d=.34$). Neither task reduced sad mood in this group. Findings indicate that women with breast cancer are eager to participate in a distraction task while receiving chemotherapy infusions, and the degree of current depressive symptoms may be an important consideration when tailoring distraction interventions for this population.

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C-015

CANCER CAUSAL ATTRIBUTIONS IN A DIVERSE SAMPLE OF WOMEN: GENETICS AS A CAUSAL AGENT

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What women perceive causes cancer may affect their use of preventive strategies and contribute to increasing cancer rates. Causal attributions may be shaped by factors such as family history (FH) of cancer or educational background. Prior research has focused on cancer survivors' beliefs about their etiology of disease; however, less is known about beliefs of women without cancer from a diverse community sample. This study sought to identify cancer causal attributions of women with a FH of cancer. We focused on types of cancer that can have a significant genetic component, such as breast cancer and colon cancer. We examined sociodemographic differences between women who identified genetics as a causal attribution and those who did not. 230 women recruited at a women's health clinic reported demographic data and the 3 most important factors they believed caused cancer in their family. 47 % of women were African American and mean age was 35 years. Responses were coded and analyzed regarding whether or not women listed genetics as a cause for cancer in her family. 10 % of women were unable to identify any attribution and only 33 % of women identified genetics as a causal attribution. Women with a higher education level (42 %) were more likely to endorse genetics as an attribution than women with lower education levels (24 %), $\chi^2(1, N=194)=7.01, p<.01$. No significant differences were found for race and age in genetics endorsement. Results showed that two-thirds of women with a FH of breast, colon, ovarian, uterine, melanoma, or pancreatic cancer did not endorse genetics as a causal attribution (67 %). Although no race or age differences were seen, women with high education levels were more likely to endorse genetics as a cancer causal attribution. These differences could help to inform genetic awareness and cancer prevention messages. Future studies of cancer prevention behaviors could benefit from studying participants' causal attributions, particularly among persons with diverse educational backgrounds.

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C-016

PHYSICAL FUNCTIONING CHANGES IN WOMEN WITH AND WITHOUT BREAST CANCER: A MATCHED COMPARATIVE STUDY OF MEDICARE BENEFICIARIES

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Purpose: To examine changes in physical function before and after breast cancer diagnosis, stratified by treatment type (breast-conserving surgery [BCS], BCS and radiation therapy [BCS+RT], or mastectomy), compared to women without cancer.

Methods: Data from the Surveillance, Epidemiology, and End Results (SEER) population-based cancer registry were linked to the Medicare Health Outcomes Survey (MHOS) and used to identify female Medicare beneficiaries ages 65+. A random subset of Medicare beneficiaries within each managed care plan annually complete the MHOS including the Veterans Rand-12 (VR-12) and a 2-year follow-up. A VR-12 change ≥ 2.5 is clinically significant. Women with breast cancer who had an MHOS both prior to and after diagnosis were included. Propensity score matching was used to match 5 beneficiaries without cancer ($N=2,710$) to each breast cancer case ($N=542$) on demographics, SEER region, and cohort year. Analysis of covariance models were used to examine changes in functional status controlling for demographics.

Results: After adjusting for baseline functioning and managed care plan, women with breast cancer receiving BCS (mean change: $-3.98, p=.049$), BCS+RT (mean change: $-3.25, p=.03$), or mastectomy (mean change: $-4.16, p<.01$) had significantly worse decline in physical functioning over a 2-year period than women without cancer (mean change: -1.79). Related factors for worse functioning included older age, Hispanic ethnicity, and comorbidity burden. At follow-up, breast cancer patients were 1.47 times more likely to report difficulty carrying groceries (95 % CI: 1.13-1.92) than matched controls. Beneficiaries with and without breast cancer did not differ for emotional health. Conclusion: Findings provide support for more significant decline in physical functioning for Medicare beneficiaries with breast cancer than matched beneficiaries without cancer. Future research should examine whether these decrements can be remediated with rehabilitation therapy.

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C-017

EVALUATION OF AN INTERVENTION TO INCREASE USE OF A TEACHABLE MOMENT COMMUNICATION PROCESS FOR SMOKING CESSATION COUNSELING

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Objective: Informed by previous research on naturally-occurring opportunities for health behavior change, the Teachable Moment Communication Process (TMCP) enables clinicians to leverage patients' own concerns into a tailored, partnership-oriented and efficient health behavior change discussion. This paper evaluates a randomized trial of an educational intervention that trained clinicians to use the TMCP for smoking cessation counseling.

Methods: Community-based, primary care clinicians ($n=31$) were randomized to either an attention control or the TMCP training intervention. The TMCP directs clinicians to: 1) link smoking to a patient's salient concern, 2) provide brief advice in a spirit of optimism and partnership, 3) elicit the patient's readiness to quit, and 4) align responses to the patient's readiness. Routine visits with 840 self-reported adult smokers were audio recorded and coded to determine the frequency with which elements of the TMCP were used by clinicians.

Results: Clinicians in both groups were similar at baseline across all TMCP elements. After the intervention, TMCP-trained clinicians were more often observed advising patients to quit while effectively linking to a patient's concern (58 % vs. 44 %, $p=0.01$), expressing optimism (36 % vs. 3 %, $p<0.001$), expressing partnership (40 % vs. 12 %, $p<0.001$) and engaging the patient (52 % vs. 22 %, $p<0.001$) than clinicians in the control group. TMCP-trained clinician responses were in greater alignment with patient expressed readiness than control group clinicians ($p<0.001$).

Conclusions: Intervention training changed the content of clinician's smoking cessation communication in ways that are consistent with the TMCP model for health behavior change. The TMCP approach is feasible in real world settings. Future analyses will test associations between the TMCP approach and smoking cessation.

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C-018

THE EFFECT OF INITIAL INDOOR TANNING WITH FAMILY ON TANNING DEPENDENCE

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Epidemiologic data show a dramatic rise in melanoma incidence among women under age 44, reflecting recent trends in indoor tanning (IT) in that population. Nationwide, white women aged 18–25 exhibit the highest rates of IT. Evidence suggests that young adults may become dependent on the behavior, with prevalence estimates of tanning dependence ranging from 5.4 % in a general college sample to 41 % among current indoor tanners. Previous research indicates that women who begin IT with their mother are 4.6 times more likely to become habitual tanners by young adulthood. This study explored whether initial IT with a family member would influence future tanning dependence, assessed via the Structured Interview for Tanning Abuse and Dependence (SITAD). Women (N=285) ranging in age from 18 to 30 (mean=20.3 yrs, sd=2.3 yrs) were recruited through a psychology department research subject pool and completed a battery of assessments, including the SITAD, in April 2012. 70 % of participants (n=200) reported ever use of IT; 52.3 % (n=149) had indoor tanned in the past year. More participants experienced IT for the first time with a family member (n=126) than went alone (n=29) or with a friend (n=45). Using SITAD criteria, 13.3 % were classified as tanning dependent. Participants who reported IT with a family member during their initial experience were 2.5 times more likely to be classified as dependent than those who initiated IT alone or with a friend (OR=2.47, p<.05). They were also more likely to report IT to reduce stress, feel better, and improve their mood (p<.05) and to report feeling physical discomfort when unable to tan on their regular schedule (p<.05). The results of this study indicate a positive relationship between familial initiation into IT and later development of tanning dependence in young women. Similar associations have been reported with other substance use disorders (i.e., nicotine dependence). These findings extend previous research, indicating the need to engage parents in skin cancer prevention programs.

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C-019

THE ROLE OF PERSONAL CHOICE IN PROMOTING COLLEGE MEN'S SUN PROTECTION COGNITIONS

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Young adult men engage in fewer sun protection behaviors than women (Kasparian et al., 2009), which likely contributes to older White men having higher skin cancer rates than women (e.g., Skin Cancer Foundation, 2012). However, sun protection interventions designed for men are limited. The present study involved a preliminary examination of one way that informational interventions for men may be designed to have a maximum impact on sun protection cognitions. Specifically, we examined the effects of sun protection information that promotes feelings of personal choice, based on past research on the importance of individual choice and autonomy in health, as well as masculinity literature suggesting that health promotion efforts for men include themes of independence and choice (Sloan et al., 2010). White male undergraduates (N=68) were randomly assigned to read information on sun protection behaviors which framed them as either recommendations to follow or personal choices to make. This information was presented either in an electronic brochure or in a way that required an active response from participants. ANCOVAs, controlling for past sun-related behaviors, showed that those who received choice-promoting information reported greater perceptions of choice, $F(1, 62)=3.86, p=.05$, and autonomy support $F(1, 62)=8.56, p=.005$. However, these effects of choice-promoting information were only significant for men who received the more active format ($ps<.04$). Further analyses with this group showed that men who received the active format choice-promoting information also reported higher willingness to protect their skin, $F(1, 30)=5.87, p=.02$. Autonomy support and/or perceptions of choice were positively correlated with sun protection willingness, intentions, and prototypes of the typical male who protects his skin ($ps<.05$). Findings demonstrate that perceptions of choice over sun protection can be manipulated with brief informational manipulations, are positively associated with men's sun protection cognitions, and should be considered in future sun protection interventions for men.

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C-020

OUTCOME EXPECTATIONS AND PHYSICAL ACTIVITY LEVELS OF BREAST AND COLORECTAL CANCER SURVIVORS

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Background: Strong evidence suggests that engaging in physical activity after a breast or colorectal cancer diagnosis may improve survival times and reduce the risk of recurrence. Little is known about how well these findings have been disseminated to breast and colorectal cancer survivors and if they influence physical activity levels. The purpose of this study was to assess the relationship between physical activity outcome expectations (including expectations related to cancer recurrence and death) and physical activity, and compare expectations related to cancer recurrence and death to other outcome expectations.

Methods: Participants were recruited from various online cancer groups and organizations. Participants completed the Godin Leisure Time Exercise Questionnaire, Multidimensional Outcome Expectations for Exercise Scale, and additional items concerning expectations and beliefs concerning physical activity and survival outcomes for cancer.

Results: A total of 47 breast and 44 colorectal cancer survivors completed the survey. Significant positive correlations were found between physical activity level and Physical Outcome Expectations ($r=.29$), Self-Evaluative Expectations ($r=.30$), the expectation that physical activity will reduce risk of recurrence ($r=.28$), and the expectation that physical activity will reduce risk of cancer-related death ($r=.23$; all $p's<.05$). Participants indicated higher Physical Outcome Expectations compared to expectations that physical activity will reduce the risk of recurrence ($t=6.22, p<.001$) and cancer-related death ($t=7.98, p<.001$).

Discussion: These findings suggest that expectations about the benefits of physical activity for reducing risk of recurrence and cancer-related death may motivate breast and colorectal cancer survivors to be physically active. However, participants held lower expectations about physical activity for reducing breast and colorectal cancer recurrence and death compared to Physical Outcome Expectations.

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C-021

EXAMINING BLADDER CANCER SURVIVORS' BURDEN AND UNMET NEEDS ACROSS DIFFERENT PHASES OF THE ILLNESS TRAJECTORY

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Purpose: For patients diagnosed with muscle invasive bladder cancer (MIBC), radical cystectomy followed by a urinary diversion procedure is the standard treatment. To date, no study has examined systematically patients' unmet informational, psychological, and health care needs across the disease trajectory. This study examines patients' unmet needs and explores gender-, age-, treatment-related, and early- versus long-term survivorship differences in unmet needs.

Method: We have conducted 60–90 minutes Focus Groups (FG) and individual in-depth interviews with MIBC survivors recruited from a urological oncology clinic and a national BC advocacy network (BCAN). We used purposeful and stratified sampling to ensure balanced treatment, gender and age representation. FG/interviews were semi-structured. FG/interviews were audiotaped, transcribed verbatim and coded. Qualitative data analyses were used to examine, compare, and cluster data to develop substantive common themes and conceptual categories.

Results: Significant unmet needs exist across a number of domains. All participants (N=30; 78.57 % male) felt inadequately prepared for treatment and post-treatment health-care. A significant proportion (53.57 %) reported unmet information needs following diagnosis and treatment. Other important themes emerged include unmet health-care needs (difficulty using stoma appliances), psychological need (change in body image), sexuality and intimacy needs especially among patients<60 years old (erectile dysfunction, lack of support with sexual dysfunction), and social support and communication needs.

Conclusion Our findings attest to the prevalence of unmet needs among MIBC survivors. It is imperative that health care providers focus efforts towards gaining better understanding of the consequences of MIBC and its treatment for patients and how to appropriately meet the patients' needs.

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C-022**EXAMINING PREDICTORS AND OUTCOMES OF SURVIVORS' UNMET RECOVERY EXPECTATIONS OVER 36 MONTHS FOLLOWING PROSTATE CANCER TREATMENT**

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Purpose: To a) profile prostate cancer (PrCa) patients with unmet recovery expectations based on pre-treatment clinical and demographic characteristics, sexual and urinary function, and treatment decision-related conflict, and b) examine associations among unmet expectations and decisional regret, worries about recurrence, and quality of life over 36 months following treatment.

Methods. Patients with PrCa (N=717; Mean age=61.7 years) were recruited from a comprehensive cancer center. Patients were treated with surgery (16.8 %), brachytherapy (27.6 %), or external beam radiation (EBRT; 55.6 %). Clinical and demographic characteristics, decisional conflict, and sexual and urinary function were assessed at baseline; 6 types of recovery expectations were assessed at 24 months; recurrence worries, quality of life, and depressive symptoms were measured at both 24 and 36 months.

Results. 86 % of patients reported at least 1 unmet expectation (median=3). Reported unmet expectations at 24 months were in the domain of sexual (62 %) and urinary function (52 %), recovery rate (54 %), fatigue (44 %), treatment side effects (38 %), and depression (24 %). Unmet expectations were reported by younger patients and those who reported decisional conflict and low levels of sexual and urinary function at baseline ($p<.05$). Surgery patients reported higher unmet expectations in the domains of sexual and urinary function, side effects, and depression compared to EBRT and brachytherapy patients ($p<.05$). Unmet expectations were associated with low levels of QOL and high levels of recurrence worries, decisional regret, and depressive symptoms at both 24 and 36 months ($p<.05$).

Conclusions: Unmet expectations are common among PrCa patients and are significantly associated with post-treatment adjustment and wellbeing. Health care providers need to explore and address unrealistic expectations to properly prepare patients for the recovery process and to counter negative psychological consequences.

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C-023**EXAMINING THE ACCEPTABILITY OF AN INTERVENTION TO ENHANCE TREATMENT DECISION MAKING AND QUALITY OF LIFE AMONG BLADDER CANCER PATIENTS**Nihal Mohamed, PhD,¹ Phapichaya Chaoprang Herrera, MA,¹ Shawna Hudson, PhD,² Simon J. Hall, MD¹ and Michael Diefenbach, PhD¹

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Purpose: Radical cystectomy followed by a urinary diversion technique is the standard therapy for patients with muscle invasive bladder cancer. There is no consensus on the best clinical management of MIBC as each of the diversion methods has clear advantages and disadvantages. We have designed and pilot tested the acceptability of an educational and training experiential intervention to enhance patients' treatment decision making and quality of life. The intervention is designed to provide information about treatment options, elicits patients' values, and improve skills essential for post-treatment health care.

Method: We have conducted 90–60 minutes Focus Groups and individual in-depth interviews with MIBC survivors recruited from a urological oncology clinic and a national BC advocacy network. The semi-structured in-depth FG/interviews include questions to evaluate the educational and training components of the ETE intervention. Qualitative data analyses were used to examine participants' acceptability of the educational and training components of the ETE intervention.

Results Participants (N=30) expressed acceptability of the intervention components and recommended it for newly diagnosed patients (71.43 %) and family caregivers (57.14 %). The majority (67.86 %) indicated that receiving full information about treatment options and side effects before treatment is helpful, 64.8 % thought that seeing drawings of stoma appliances and catheters will enhance treatment decision making, and 57.14 % rated learning skills needed for post-treatment health care before surgery as very important. Although 46.43 % considered wearing stoma bag for 24–48 hours before surgery, only 10.7 % felt comfortable trying stoma appliances before surgery.

Conclusion Our study findings provide evidence for the acceptability of an educational intervention for bladder cancer patients.

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C-024**SYNDEMIC RELATIONSHIP BETWEEN DIARRHEA AND URINATION CHANGES TO RADIOTHERAPY TREATMENT DURATION**

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Radiation exposure to the pelvic region during radiotherapy (RT) may lead to gastrointestinal (GI) and genitourinary (GU) tract injury, as healthy fast-dividing cells in this region are also affected by RT. This injury results in well-recognized symptoms such as diarrhea and urination changes in GU cancer patients. However, the association of these symptoms with factors such as treatment duration and their interdependence has not been yet examined. This area requires further investigation as diarrhea and urinary effects can persist, affect quality of life, and induce associated psychological distress; thereby, requiring intervention.

The purpose of this study was to examine the effects of treatment duration on diarrhea and urination changes and the correlation between them. Further, we investigated the influence of these symptoms on feelings of distress. Analyses were performed on 250 GU cancer patients (mean age 67, 96 % male) who underwent up to 8 weeks of RT treatment (mean total dose 54 Gy) and had completed a validated Symptom Inventory (SI). The SI scale ranged from 0="no symptom" to 10="as bad as you can imagine". Longitudinal linear mixed model analyses showed that there was an increase in diarrhea by 0.4 (SD=0.1; 95 % confidence interval: 0.2-0.6; $p<0.001$) and an increase in urination changes by 0.34 (SD=0.07; 95 % confidence interval: 0.2-0.5; $p<0.001$) per 2 weeks of treatment. In addition, a significant association was seen between diarrhea and urination changes with distress ($p<0.001$) across all weeks and the effects of diarrhea and urination changes on distress were multiplicative, not additive ($p=0.016$).

This study indicates that diarrhea and urination changes increase in severity over the course of RT and lead to distress. The syndemic correlations uncovered in this study between diarrhea, urination changes, RT treatment duration, and psychological distress demonstrate the importance of developing interventions that are multi-targeted leading to better quality of life for cancer patients.

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C-025**SLEEPING QUALITY, NEGATIVE EMOTIONS AND THE AWAKENING CORTISOL LEVEL IN FEMALE BREAST CANCER PATIENTS UNDERGOING RADIOTHERAPY TREATMENT**Rainbow T. H. Ho, PhD,^{1,2} Irene K.M. Cheung, Master,¹ Cecilia L.W. Chan, Professor,² Paul S.F. Yip, Professor,² Phyllis, H. Y. Lo, Master¹ and Mai Yee Luk, MBBS³

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Sleep disturbance is one of the common side effects experienced by cancer patients during treatment. Poor sleeping quality and sleepiness are not only affecting daily functioning of patients, it affects their immune system. In this study, we examined the sleeping quality of 156 Chinese breast cancer patients undergoing radiotherapy using the Chinese Pittsburg Sleep Quality Index (C-PSQI). Participants were recruited from local hospital and community cancer support centers. Psychological distress was measured with Chinese Hospital Anxiety and Depression Scale (HADS) and Chinese Perceived Stress Scale (PSS). Morning saliva sample at awakening was also collected. Based on C-PSQI result, 65 % met or exceed the standard cut-off score for sleep problems (>5) and 51 % reached the higher cut-off score ($>=8$). Participants with poor sleep quality also reported higher anxious and depressive emotions in the HADS ($t=-5.22$; $p<.001$) and higher stress level in PSS ($t=-4.395$; $p<.001$). Moreover, the mean awakening cortisol level of participants with better sleep quality is 9.68–6.25 nmol/l, while the participants with poor sleep quality mean awakening cortisol level is 8.57–4.69 nmol/l. Results suggest that poor sleep quality may relate to the psychological stress and negative emotions as well as Hypothalamic-Pituitary-Adrenal (HPA) axis functioning.

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C-026

THE RELATIONSHIP BETWEEN SMOKING STATUS AND CHANGES IN DEPRESSIVE SYMPTOMS IN CANCER PATIENTS RECEIVING TREATMENT

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Background: Little is known about the effect of smoking status on symptom development in cancer patients undergoing treatment and how these symptoms may change over the course of treatment. We conducted exploratory analyses on a previously published descriptive study examining the occurrence and severity of symptoms during treatment to determine the differences in symptom changes during treatment between ever and never smokers.

Methods: Patients who had ever smoked (n=102) were matched to patients who had never smoked (n=102) based on age (<7 years), gender, race, diagnosis, and treatment type. Patients completed the Symptom Inventory (SI) before and after radiation and/or chemotherapy treatment. The SI assesses the presence and severity of physical and cognitive symptoms on a 1 to 10 scale. The symptoms evaluated were pain, fatigue, sleep disturbance, depression, memory, and concentration difficulties. Change scores in symptom severity were calculated by subtracting baseline from post-treatment, and independent t-tests were used to determine differences in change scores based on smoking status.

Results: There were no significant differences in changes of pain, fatigue, or memory between patients who ever or never smoked (p>0.05). Patients who had ever smoked showed significantly greater increases in depression (smokers: M=1.67, SE=0.39; non-smokers: M=0.62, SE=0.35, p=0.05), sleep disturbance (smokers: M=2.13, SE=0.45; non-smokers: M=0.89, SE=0.33, p=0.03), and concentration difficulties (smokers: M=2.24, SE=0.42; non-smokers: M=0.76, SE=0.34, p=0.01) over time compared to patients who never smoked.

Conclusions: Depression, sleep disturbance, and difficulty concentrating increase significantly more across treatment in smokers than non-smokers. Additional research is needed to determine the effect of smoking, as well as the effect of successful smoking cessation during treatment, on symptom development.

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C-027

WOMEN NEWLY DIAGNOSED WITH HEAD AND NECK CANCER EXPERIENCE HIGHER LEVELS OF TRAUMATIC STRESS SYMPTOMS AND ANXIETY THAN MEN

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Background: Worldwide, more than half a million individuals are diagnosed with head and neck cancer (HNC) each year and more than 300,000 die of the disease. Despite the life-threatening nature of HNC, little attention has been paid to the development of traumatic stress and other emotional symptoms in this patient population. Although half as likely to be diagnosed with HNC as men, women have been reported to experience higher levels of traumatic stress symptoms and anxiety following other types of traumas, making it of interest to explore gender differences in this population.

Method: Consecutive patients (n=104; 67 men and 37 women; mean age 57.8; majority white) were recruited at a single medical center within 3 months of diagnosis of stage I-IV HNC. All participants provided signed informed consent and completed the Impact of Event Scale (IES), the Spielberger State-Trait Anxiety Scale (STAI), and the Beck Depression Inventory (BDI).

Results: Consistent with study hypotheses, women had higher levels of intrusive thoughts about HNC compared to men [mean 10.5±6.9 v. 7.1±6.7; F(1, 92)=5.536; p=.021]. Women also had significantly higher levels of state anxiety [mean 50.4±14.5 v. 40.8±13.4; F(1, 97)=11.046; p=.001], but did not differ from men with regard to levels of trait anxiety, or depressive symptoms.

Conclusion: Anxiety reactions to a diagnosis of HNC, as indicated by scores on the IES and STAI, were stronger in women than men. Although these differences need to be replicated in a larger study with a more diverse patient sample, the findings are consistent with a growing appreciation of gender differences in vulnerability to such anxiety reactions following trauma. Findings also suggest the need to explore possible means of prevention, and/or early intervention at the time of diagnosis to reduce potential long-term negative consequences on quality of life for HNC survivors.

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C-028

LIFESTYLE BEHAVIORS AND INTERVENTION PREFERENCES OF AFRICAN AMERICAN BREAST CANCER SURVIVORS: A SISTERS NETWORK, INC., COLLABORATION

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Background: African American (AA) breast cancer survivors are underrepresented in studies promoting positive health behaviors. The purpose of this study was to characterize the lifestyle habits of AA breast cancer survivors and determine their preferences for health promotion interventions.

Methods: A total of 470 AA breast cancer survivors (Mean age=54 years) participated in a web-based needs assessment survey. All survey participants completed surveys assessing medical and demographic characteristics, physical activity and sedentary behavior. Chi-Square test for association and non-parametric test were used to assess associations between descriptive factors and lifestyle characteristics.

Results: Few women met current guidelines for physical activity (47 %), many were obese (47 %), and many reported high blood pressure (HBP, 53 %) or diabetes (21 %). The prevalence of HBP, diabetes, and high cholesterol increased by age (range 34 % to 70 %, P<0.001) and obese women had a higher prevalence of HBP (44 % vs. 63 %) and diabetes (12 % vs. 21 %) than non-obese women (all P<0.05). Television viewing and computer usage did not vary by age group or obesity status, but obese (100 minutes/week) women participated in significantly fewer total minutes of physical activity per week than non-obese (150 minutes/week) women (P<0.05). Many (58 %) women expressed interest in receiving information about physical activity and many (48-50 %) were extremely or very interested in email- or web-based interventions.

Conclusion: Obesity among AA breast cancer survivors is coupled with diabetes, HBP, and lower levels of physical activity. Our results provide evidence that lifestyle interventions among obese AA breast cancer survivors are needed and such interventions may shield them from subsequent vulnerabilities following a cancer diagnosis.

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C-029

MECHANISMS & CAPACITY TO REDUCE DISPARITIES: THE ABUNDANT LIFE HEALTH MINISTRIES INITIATIVE

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The UCSF ALHMI is part of a collaboration whose mission is to foster African American church health ministries as a means to reduce health disparities. ALHMI focuses not on delivering health messages via the church but on enhancing the capacity of churches to promote health through disseminating or developing evidence-based interventions designed for the Black church. The purpose of this study is to clarify the mechanisms of and capacity for health interventions by health ministries in San Francisco Area Black churches who are conducting Body & Soul, an evidence-based intervention to increase intake of fruits and vegetables. Our mixed methods study has 3 parts: cross-sectional surveys given at 6-month intervals to measure changes in fruit and vegetable intake, BMI, and Body & Soul awareness among church members; comparative case studies, including interviews with pastors, health ministry leaders, and health ministry members at each church; and process evaluation procedures to measure program implementation. Eleven churches of varying sizes and denominations participated. Data from the first 2 surveys show members exposed significantly more to health messages at church, but no change in intake of fruits and vegetables. Process evaluation data show that churches regularly conducted health events for church and community members. Preliminary analyses of case study interviews with health ministry personnel indicate that most health ministries focus on providing health information and short-term goals rather than behavior change. It has become axiomatic that the church is the setting for reaching African Americans to reduce health disparities. This study reveals complex dynamics that describe health ministries and the challenges to impacting health behavior in this context.

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C-030

EXPERIENCES WITH TESTS USED TO FIND COLORECTAL CANCER

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Background: Racial and ethnic minorities have a disproportionately high burden of colorectal cancer (CRC) largely due to lower use of CRC screening. The extent to which failure to adhere to a regular schedule of screening and re-screening contributes to diagnosis with CRC has not been well-studied.

Methods: One-time one-hour audio-taped open ended qualitative interviews and medical chart reviews are conducted with a convenience sample of patients recently diagnosed with CRC (AJCC IIb or higher) to explore patients' experiences with the health care delivery system specific to CRC screening. Assessments of stressful life events and poor adjustment to disease are also conducted by adapting items of the Impact of Events Scale - Revised (IES-R), and the Brief Measure of Religious Coping Scale (RCOPE). Preliminary Findings: Findings from 7 interviews conducted thus far indicate that failure to adopt recommended CRC screening guidelines is due in part to both micro and macro level factors including system issues (lack of provider recommendation) and cognitive issues (unaware of personal risk of getting CRC). Preliminary findings also indicate that the study patients do not have poor adjustment to their diagnosis and rely on religious mechanisms to cope with their diagnosis.

Conclusion: Cultural specific barriers and enhancers to CRC screening and theoretical implications for understanding why people don't adopt recommended CRC screening guidelines are discussed.

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C-031

INFORMATION EFFICACY AMONG POST-TREATMENT CANCER SURVIVORS

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Background: In the rapidly evolving and increasingly technological health information environment, cancer information is key to post-treatment survivorship. Promoting information efficacy may empower survivors. Here, we examine characteristics associated with information efficacy and the relationship between information efficacy and technology-mediated patient-provider communication and perceived changes in health.

Method: Data are from 2489 adult post-treatment cancer survivors who completed the 2010 LIVESTRONG Survey for People Affected by Cancer. Multivariate linear regression examined associations between information efficacy and sociodemographic characteristics; time since diagnosis; receipt of a treatment summary; and receipt of follow-up care instructions. Multivariate logistic regression was used to examine the relationship between information efficacy and emailing a health care provider and perceived changes in post-treatment health concerns adjusting for sociodemographic and medical characteristics.

Results: Less than half (46 %) of post-treatment survivors were "completely confident" they could get cancer information if they needed it. Survivors who were older, had higher income, received a treatment summary, or received follow-up care instructions reported higher information efficacy (all $p < 0.05$). After adjusting for sociodemographics and time since diagnosis, survivors with higher information efficacy had higher odds (OR=1.6 for "very;" 1.7 for "completely" confident; both $p < 0.01$) of emailing a health care provider and of reporting that their post-treatment health concerns had improved over time (OR=1.7 for "very" ($p < 0.05$); 2.3 for "completely" confident; $p < 0.01$).

Conclusions: Information efficacy is associated with engagement with information technology and perceived improvements in health status. Provision of information tools, including treatment summaries and follow-up care instructions, may benefit cancer survivors by promoting information efficacy in the post-treatment period.

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C-032

LABOR FORCE TRANSITIONS IN THE CHILDHOOD CANCER SURVIVOR STUDY

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Childhood cancer survivors report higher levels of unemployment due to health problems than unaffected comparisons. Yet, no studies have examined whether survivors increasingly leave the labor force over time due to health limitations. We investigated unemployment at two cross-sectional questionnaire time-points, T1 and T2, among survivors from the Childhood Cancer Survivor Study. Survivors ages ≥ 25 years at T1 (2003–2005; N=7223) or T2 (2007–2010; N=7400) were eligible. We created an outcome variable to indicate unemployment due to illness or disability in either year. Multivariable generalized linear models generated relative risks (RR) and 95 % confidence intervals (95 % CI) for this outcome. Models incorporated correlation structures for repeated measures with robust standard errors and were adjusted for gender, age and race as relevant, and treatment era.

Average age at T1 was 34.0 years (SD=6.2) and 49 % were female. Most common diagnoses were leukemia (31 %), Hodgkin lymphoma (HL; 16 %) and central nervous system (CNS) tumors (12 %). A total of 10.1 % were unemployed at T1 compared to 10.3 % at T2 ($p=0.68$). In multivariable models, female survivors were more likely to be unemployed at T2 (RR 1.09, 95 % CI 1.01-1.86) than T1, as were male survivors (RR 1.17, 95 % CI 1.07-1.29). Models stratified by age group (ages 25–34 and ages 35–58) did not differ in unemployment risk. Within cancers, only HL survivors were at higher risk for unemployment at T2 (RR 1.46, 95 % CI 1.18-1.82) than T1. Childhood cancer survivors' risk of health-related unemployment moderately increases over time. While the economic downturn of 2007 may explain some of this increase, by examining health-related unemployment, we focused on survivors experiencing job loss due to health problems. Programs to assist survivors at risk for exiting the labor force due to health problems are needed.

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C-033

SYMPTOM CLUSTERS IN LUNG CANCER PATIENTS

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Introduction: Lung cancer patients experience a higher symptom burden than many other cancer types, and studies suggest that many symptoms co-occur in clusters. Little is known about the relationship between symptom clusters and psychological functioning in this population. The purpose of the present study was to identify distinct symptom clusters in those with lung cancer and evaluate the relationship between clusters and markers of psychological functioning. Methods: 230 individuals with lung cancer (Mage=67.06 years) were recruited from two cancer centers in Southern California. Participants completed self-report measures of symptom bother (MSAS) and psychosocial factors (CES-D, POMS, IES). Results: Fatigue was the most prevalent symptom (88.7 %), followed by shortness of breath (72.2 %). Principle axis factor analysis revealed 3 symptom clusters ($\alpha's > .65$): nutrition-related symptoms (weight loss, lack of appetite, change in food taste, & difficulty swallowing), respiratory symptoms (shortness of breath, lack of energy, cough, & dry mouth), and physical symptoms (nausea, pain, difficulty sleeping & constipation). Depression was positively correlated with all three factors ($p's < .01$). For those reporting no burdensome symptom clusters, the prevalence of depression was 6.8 %, compared with 24.1 % for those who had problems in 1 symptom cluster, 52.6 % for those with 2 symptom clusters, and 72.5 % for those with 3 symptom clusters. Patients who have severe symptom burdens in each cluster also reported significantly higher rates of tension, intrusive thoughts, avoidance of cancer-related stimuli, and use of avoidance coping strategies ($p's < .01$) relative to those with lower symptom burdens. Discussion: Burdensome symptoms co-exist in distinct clusters in those with lung cancer. A better understanding of underlying symptom clusters has the potential to lead to more carefully targeted pharmacologic and non-pharmacologic treatments. Longitudinal studies are needed to better clarify the temporal relationship between symptom cluster burden and psychological functioning.

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C-034

PREDICTORS OF CANCER-SPECIFIC STRESS AMONG HUSBANDS OF BREAST CANCER SURVIVORS

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Objective: Our research demonstrates that cancer-specific stress is related to impaired physical health and immunity for husbands of breast cancer survivors. Others suggest the emotional impact of cancer on the patient may “spill-over” to the spouse, i.e., a husband’s level of distress is tied to the patient’s. The present study sought to examine this relationship and explore variables that might moderate it, specifically patient disease burden, partners’ perceived stress, and patient/partner access to social support resources. **Methods:** Cross-sectional data were obtained from 32 patient/partner dyads. Hierarchical multiple linear regression examined predictors of partner cancer-specific stress (Impact of Events Scale [IES-partner]). Due to the exploratory nature of these analyses, separate models examined: patient disease burden (KPS; recurrence status [REC]), patient social support (perceived support from family [PSS-FAM]; friends [PSS-FR]), partner social support (social engagement), and partner perceived stress (Life Distress [LD]; Perceived Stress Scale [PSS-10]). Variables were entered as follows: 1) sociodemographics; 2) patient cancer-specific stress (IES-patient); 3) variable of interest; 4) variable of interest X IES-patient interaction. **Results:** IES-patient was consistently positively associated with IES-partner ($p < .05$). Significant effects ($p < .05$) were also observed for patient disease burden (KPS; REC), social support (PSS-FR) and partner perceived stress (PSS-10; LD) in the expected directions. One significant interaction was observed ($\beta = -.42, p = .04$); in dyads with high IES-patient, low KPS was associated with higher IES-partner; in dyads with low IES-patient, KPS was not associated with IES-partner. **Conclusion:** Patient and partner cancer-specific stress were correlated. Social support did not appear to buffer the relationship and partner perceived stress did not appear to exacerbate it. However, clinicians should be alert to partners of survivors who are both stressed and have self-care limitations, as this may increase a partner’s cancer-specific stress.

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C-035

PSYCHO-SOCIAL BARRIERS TO FOLLOW-UP ADHERENCE AFTER AN ABNORMAL PAP SMEAR RESULT AMONG LOW-INCOME MINORITY WOMEN

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Women of racial and ethnic minorities bear a disproportionate burden of cervical cancer in both incidence and mortality rates. This disparity appears to be largely due to the low adherence rates to follow-up medical care after an abnormal test result, especially since cervical cancer is preventable if detected in the precancerous stage. The goal of the present study was to better delineate the barriers underlying these persistent low adherence rates, in a theory-guided and systematic manner. Based on the Cognitive-Social Health Information Processing (C-SHIP) model, five categories of barriers were assessed: Encoding, Beliefs and Expectancies, Affects, Goals and Values, and Self-regulatory competencies. In collaboration with an urban university hospital, participants were low SES minority women ($N = 210$) who were scheduled for initial colposcopy (diagnostic follow-up). The assessment tool was a telephone-delivered 23-item questionnaire, rated on a 5-point scale: 1 (not at all) to 5 (extremely), indicating the extent to which the barrier item applied to the participant. Ratings of ≥ 3 on an item indicate a barrier. Encoding barriers (i.e., knowledge about the disease, meaning of results, and colposcopy) were most often endorsed (68 %, $M = 3.22$), followed by affective barriers (i.e., worries about the disease and the procedure) (64 %, $M = 3.09$) and self-regulatory barriers (i.e. behavioral skills for coping and enacting scripts) (36 %, $M = 2.36$). Lower education and being unemployed were positively correlated with encoding barriers ($p < .0001, p < .01$; respectively) and self-regulatory barriers ($p < .05, p < .05$; respectively). Less educated and unemployed women may not have sufficient resources to understand their risk and follow through with adaptive action scripts. Being younger than 30 years old was positively correlated with affective barriers ($p < .05$), suggesting that younger women process the information in a more threatening way. Personalized interventions to improve knowledge and actions, as well as manage worries, are needed to reduce disparities in cervical cancer outcomes.

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C-036

EXAMINING MENTAL HEALTH RELATED QUALITY OF LIFE IN SURVIVORS OF COLORECTAL CANCER AND THEIR PARTNERS

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Introduction: Many colorectal cancer survivors and their partners report various levels of distress following a cancer diagnosis and its treatment. Research has found an interdependent relationship between the cancer survivor’s quality of life and the quality of life experienced by their partner. The purpose of this study was to examine socio-demographic, psychosocial, and family level variables (e.g., family cohesion and hardiness) in both survivors of colorectal cancer and their partners and to examine their effects on both individuals’ mental health related quality of life. **Methods:** This pilot study was conducted with 19 colorectal cancer survivors (M time since diagnosis = 5.65 years, $SD = 1.77$), and their partners. The Actor-Partner Interdependence Model (APIM) was utilized to examine the independent and interdependent relationships between the selected variables and mental health related quality of life (measured using the Mental Component Summary of the SF-36) in both survivors and partners. **Results:** Results suggest that partner’s perceived stress (Estimate = 1.13, $p = .005$) was positively related to the survivor’s mental quality of life, and the partner’s perception of family hardiness (Estimate = -1.09, $p = .041$) was negatively related to the survivor’s mental quality of life. Additionally, the survivor’s constructed meaning (Estimate = -.717, $p = .049$) was found to be positively related to the partner’s mental quality of life. **Discussion:** The findings of this pilot study show both independent and interdependent effects of survivor and partner’s psychosocial health on the mental health related quality of life following diagnosis and treatment for colorectal cancer. The partner’s perceived stress and perception of family hardiness is an important predictor of the survivor’s mental health related quality of life. These findings exemplify the importance of considering the impact of partner’s psychosocial health on the quality of life of both partner and person living with cancer.

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C-037

ACCEPTANCE AND MINDFULNESS: KEYS TO FUNCTIONAL OUTCOME IN WOMEN CANCER PATIENTS AND SURVIVORS?

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Many cancers (CA) are now regarded as chronic illnesses (CI). With improvements in detection and treatment, CA survivorship has become associated with greater longevity. CA survivors are increasingly getting health care information and support through online groups. We explored the predictive relationship of Acceptance and Mindfulness on functional outcome indicators in women identified as survivors/receiving CA tx ($N = 142$; M age = 49.35, $SD = 12.11$) in online CI groups. Our sample was primarily Caucasian (88.7 %), married/partnered (59.1 %) and well-educated ($M = 15.47$ yrs, $SD = 2.6$). Over half (52.1 %) had more than one add’l CI and 40 % had chronic pain. Ppts completed demographic/medical history items, Chronic Illness Acceptance Questionnaire (CIAQ), Mindful Attention Awareness Scale and Acceptance and Action Questionnaire. Multiple regressions were conducted to ascertain most salient predictors among Experiential Avoidance, CIAQ factors [Activity Engagement (AE) and Willingness (W)] and Mindfulness. The first model accounted for over one-quarter of total variance ($F(2,81) = 15.34, p < .0001, Adj R^2 = .257$) with higher levels of AE ($\beta = -.394, p < .0001$) and W ($\beta = -.232, p < .05$) (e.g., “I lead a full life despite having an illness.” $r = -.477, p < .0001$) predicting higher perceived health status. The second model accounted for almost one-third of total variance ($F(2,82) = 20.454, p < .0001, Adj R^2 = .317$) in ratings of physical health or emotional problems interfering with social activities, with higher levels of Mindfulness ($\beta = -.394, p < .05$) and AE ($\beta = -.232, p < .0001$) predicting less life interference. Key items included “I find it difficult to stay focused on what’s happening in the present” ($r = .420, p < .0001$), “It’s a relief to realize that I don’t have to change my illness to get on with my life” ($r = .357, p < .0001$). Notably, despite our hypothesis, Experiential Avoidance was not retained in either of the models. CA survivors, and those receiving tx, who exhibit higher levels of Mindfulness and are more actively engaged in valued life activities, show higher perceived health status and less life interference.

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C-039

EFFECTS OF A SPIRITUAL INTERVENTION FOR HEART FAILURE PATIENTS: THE DENVER SPIRITED HEART PILOT STUDY

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Meaning and spirituality are related to greater well-being in heart failure (HF) patients, a population that experiences many symptoms and psychological distress due to the typically chronic nature of the illness. However, no interventions aimed at improving quality of life among HF patients have incorporated meaning or spirituality. This study's purpose was to assess the preliminary effects of a low-cost intervention to address HF patients' psychosocial and spiritual needs. HF patients ($N=42$; 88 % male, mean age 61 years, 75 % NYHA 2–3) were randomized (2:1) to the 12-week intervention or usual care (UC). Each week intervention patients received a phone call and a mailer that included information addressing a different psychosocial topic (e.g., stress management), a spiritual component related to the topic, reflection questions, and suggested activities to practice skills. Participants completed pre- and post-study questionnaires on health status, meaning, spiritual well-being, and symptoms. Over time, intervention patients reported a significant improvement in health status, *Cohen's* $d=.56$, and a mild decrease in depressive symptoms, $d=.46$. Intervention patients reported less need to search for meaning, $d=.57$, but there was no change in presence of meaning or spiritual well-being. Although the intervention group reported more moderate to severe symptoms than UC at baseline, $d=.44$, and end of study, $d=.81$, intervention patients reported significantly less symptom distress, $d=.66$, over the course of the intervention. Results from this pilot study suggest that the intervention is promising, with intervention patients reporting better health status, less symptom distress, and less need to search for meaning at follow-up. Future research will test a revised intervention with a larger sample.

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C-040

IMPACT OF SCHOOL-BASED YOGA CLASSES ON ADOLESCENTS' BLOOD PRESSURE LEVELS

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Yoga programs have shown reductions in blood pressure among hypertensive adults. Little is known with regard to the impact upon normotensive or pre-hypertensive youth. A quasi experimental 3-month trial conducted on 30 seventh-grade 12 to 13 year-olds (17 African Americans, 13 Whites, 12 females) with an average BMI of 20.7 +/- 4.2 were recruited from a Charleston, South Carolina middle school. Complete data were not obtained in 4 of the students (2 per group, 1 White, 1 female). Participants enrolled in either a Vinyasa-Hatha yoga class ($n=13$) or an art or music class ($n=13$) that met every other school day. None of the students had previously taken yoga programs. Resting BP was evaluated prior to and following the 3-month study. Nine pre-hypertensive students were identified during the baseline assessment (systolic blood pressure (SBP) 75th-95th %ile for age, sex and height). Change score analyses showed a reduction of $-3.38/-2.62$ mmHg (SBP/diastolic BP (DBP)) in the yoga group, and a $+1.2/-1.4$ mmHg change in the control group (SBP $p=0.07$; DBP $p=0.56$). Additional between-group comparisons did not show significant changes for waist circumference ($p=0.19$), BMI ($p=0.70$), or resting HR ($p=0.34$). The pre-hypertensive yoga ($n=4$) and control ($n=5$) subgroups showed changes of $-8.8/-8.3$ mmHg and $+1.4/+0.2$ mmHg, respectively (SBP $p=0.03$; DBP $p=0.04$). These preliminary findings suggest that yoga programs may help improve BP control among pre-hypertensive adolescents. Further research is needed to identify underlying neurohormonal mechanisms responsible for the BP changes, potential influence upon other cardiometabolic syndrome indices, and whether these beneficial reductions are sustained over time. If such is the case, yoga may become part of school-based primary prevention programs for cardiometabolic diseases.

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C-041

BASELINE AND POSTURE-RELATED DIFFERENCES IN BLOOD PRESSURE AMONG YOUNGER INDIVIDUALS WITH AND WITHOUT POSTTRAUMATIC STRESS DISORDER

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Objective: This study evaluated group differences in baseline and posture-related blood pressure among a young study cohort (18–39 years) of military veterans and community individuals with and without posttraumatic stress disorder (PTSD). Method: The sample consisted of 182 participants: 76 with PTSD (with and without MDD) and 106 without PTSD. Participants were 53 % male and 29.29 years old ($SD=5.55$) on average. Smoking status and demographic information was self-reported. Direct measurements were obtained for body mass index and for supine and standing systolic blood pressure (SBP) and diastolic blood pressure (DBP). PTSD status was determined through a structured clinical interview. Analyses were conducted to compare values for the PTSD+MDD, PTSD only and control groups. Results: After controlling for factors associated with BP (i.e., age, BMI, smoking status), multilevel models revealed an interaction for SBP posture change such that individuals in the PTSD+MDD group demonstrated a 39.50-mm Hg increase from lying down to standing (compared to a 4.33-mm Hg and 2.49-mm Hg increase for the PTSD only and control group, respectively). Conclusions: Higher postural changes in SBP (both increases and decreases) have been associated with thicker carotid artery intima-media thickness (IMT) and greater lacunar stroke incidence (Yatsuya et al., 2011). Results suggested that younger individuals with PTSD and MDD demonstrate blood pressure baseline and physical posture changes that have been associated with increased CVD risk measures. Further clarification of the psychiatric comorbidity effects are needed as both PTSD and MDD have each been shown to be associated with increased CVD risk.

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C-042

MEDICATION ADHERENCE AFTER STROKE AMONG VETERANS

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We targeted providers and patients for medication and lifestyle modification to reduce stroke risk factors after stroke. The specific aim was to conduct a randomized trial of the implementation of a stroke prevention program at two VAMCs on medication adherence. Program sessions targeted stroke risk factor self-management: 1) hypertension; 2) diabetes; and 3) hypercholesterolemia. Medication possession ratios based upon medication refills were calculated to evaluate medication compliance using Pharmacy Benefits data pre (6 months prior) and post (6 months after the event). Based upon the literature standard of 80 % compliance, we used this rate to dichotomize and model the data using logistic regression. Results: Final sample included 174 veteran with an acute stroke/TIA who were randomized to receive either the intervention ($n=87$) or control program ($n=87$). In the intervention group, odds of compliance with diabetes meds post stroke were significantly larger than the odds of compliance prior to the stroke (odds ratio=3.45 (1.08, 10.96) $p<0.04$). The control group saw a decrease in the likelihood of compliance from pre to post stroke hospitalization (odds ratio=0.51 (0.10, 2.70), $p<0.42$). The comparison between groups was marginally significant (odds ratio=6.74 (0.88, 51.21), $p=0.06$) which indicates an intervention effect on compliance of DM drugs. For compliance to hypertension medications, the intervention group showed significantly greater odds of compliance post intervention than pre intervention (odds ratio=3.68 (1.81, 7.48), $p<0.0004$) but no difference in the control group. Conclusion: We observed a threefold increase in diabetes medication adherence among stroke survivors who were diabetic and assigned to the intervention group, and we observed a significant decrease in diabetic medication adherence among those assigned to the control group suggesting that a self-management format may enable adherence to prescribed medications. Funded by VHA HSRD IIR IAB 05-297-2

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C-043

HISPANIC MIGRATORY AGRICULTURAL WORKERS' ATTITUDES TOWARDS MOBILE PHONE BASED TELEHEALTH TO MANAGE CHRONIC HEALTH CONDITIONS

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Background: Approximately two million migratory agricultural workers (MAWs) work in the US. Uncontrolled hypertension (EH) is highest among Hispanics, especially among MAWs, given lack of consistent exposure to healthcare. Innovative strategies are needed to provide routine healthcare for MAWs, such as mobile health (mHealth) technology. However, limited access, skepticism, and concerns about security are suspected barriers to mHealth approaches in MAWs. The current study examined these issues in a sample of Hispanic MAWs.

Methods: A demonstration of mHealth devices (electronic medication tray, Bluetoothed BP device interfaced with phone) and survey were administered to 80 Hispanic adult MAWs. They also had a BP exam by healthcare provider. The survey, read in Spanish, evaluated cell phone usage, knowledge and attitudes toward mHealth, health history, and medication adherence.

Results: 21.3 % of MAWs had EH, all were uncontrolled. None reported taking previously prescribed medications. Cell phone ownership was 81.3 %. Smartphone ownership was 39 %. Types of usage varied: 77.5 % text messaged, 35.0 % e-mailed, 40.0 % accessed the internet, and 47.5 % downloaded applications. Willingness to use mHealth care was 87.3 % (likely/very likely on 5 point scale). 85.2 % endorsed mHealth as helpful/very helpful in treatment and 75.9 % reported having minimal concerns about security. There were no differences in willingness between those with vs without EH.

Conclusions: Hispanic MAWs have access to mobile phones and are willing to utilize mHealth devices. These findings led to development of a mHealth medication adherence and EH control program guided by MAWs and healthcare providers. Preliminary findings will also be presented indicating high acceptability and efficacy in sustaining BP control across 6 months.

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C-044

ASSOCIATIONS OF LIFE STRESS AND MEDICATION ADHERENCE ON BLOOD PRESSURE (BP)

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While adherence rates to BP medications are generally low, black Americans are less likely to adhere than whites and are more likely to have poorly controlled BP. Some explanations for these disparities are differences in health-behaviors and beliefs about medication and BP. However, stress may also play a role in adherence. We used a biopsychosocial stress model to examine associations of life stress and adherence on BP among black women. The sample included baseline data from 307 women (65 % African American) who participated in the SisterTalk Adhere study and had a medical diagnosis of hypertension/high BP. BP was obtained using an automated cuff. Participants reported life stress (1=not stressful at all to 10=extremely stressful). We assessed medication adherence as participant reported days per week took medication as prescribed and how often followed physician's treatment plan. The two adherence measures were not significantly correlated. We examined cross-sectional mediation models to test the direct/indirect pathways of life stress, on BP, mediated by medication adherence. We used the mediation procedures of Preacher and Hayes and probability was set at $\alpha < .05$. Covariates were waist circumference and self-reported moderate-to-vigorous physical activity, low-salt diet, ethnicity and income. Descriptive results are presented by tertiles of stress (low, moderate and high). Medication adherence and treatment plan adherence significantly differed by stress group ($p < .05$). The mediation models indicate that life stress was negatively associated with medication adherence ($p < 0.001$) and with treatment plan adherence ($p < 0.047$). Neither the independent variables nor the mediators were associated with systolic/diastolic BP. The findings suggest that while self-reported life stress may relate to adherence to medication and physician recommended treatment plan, these differences do not necessarily result in BP differences. However, the long-term consequences of these relationships and the potential effects on BP warrant further attention. Funded by NHLBI 69379.

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C-045

INITIAL VALIDATION OF A BRIEF PSYCHOSOCIAL INTERVENTION TO IMPROVE TREATMENT ADHERENCE AND DECREASE DEPRESSIVE SYMPTOM IN DECOMPENSATED HYPERTENSIVE PATIENTS

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Adherence problems remain a significant issue for Hypertension treatment. In Chile, only 16,49 % of hypertensive patients have effective control. It also has been established that cardiovascular patients have a higher prevalence of depressive symptoms and this can be associated to higher adherence problems and worst health results. We developed a brief psychosocial intervention that can be incorporated to usual Primary Care Cardiovascular Program, based on Cognitive, Behavioral and Motivational elements. For the early validation of our intervention we used a Randomized Clinical Trial with: an intervention group and a control group with blood pressure monitoring. Our sample included 91 hypertensive patients from a Primary Care Centre of a low income area in Santiago. All patients were decompensated (≥ 140 SBP and/or ≥ 90 DBP), had adherence problems measured by Morisky-Green & Levine's scale and depressive symptoms in the Beck Depression Instrument - II. Exclusion criteria were having: organic damage or physical impairment, depression treatment, another chronic disease with treatment of more than 3 medications, or being pregnant. Subjects had a mean age of 63,07 ($\pm 12,53$) years old; most had decompensated Systolic BP (84,21 % patients) and only 21,05 % had decompensated Diastolic BP. The sample was composed by 78,9 % of women and 21,1 % of men. We measured Medication Adherence, Depressive Symptoms, Blood Pressure and demographic variables, previous to intervention, immediately after and one month later. Analysis was made with Repeated Measures Anova and Simple Regression. Main results showed that Intervention Group had lower Systolic BP than Control Group and higher Medication Adherence. Intra and inter group effects were observed for Systolic BP and Medication Adherence, while Depressive Symptoms showed intra group but no inter group effect. Regression analysis showed that Medication Adherence had a mediation effect on the relation that Intervention has over SBP decrease. Increased Medication Adherence had an effect on Depressive Symptoms decrease.

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C-046

EXAMINING SOCIAL SUPPORT AND MEDICATION ADHERENCE WITHIN A COHORT OF BLACK MEN WITH HYPERTENSION

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Approximately 26.5 % of Black men in the US have hypertension (HTN). Adherence to antihypertensive medication is essential for HTN control and preventing HTN-related complications. HTN is a condition that requires constant management through diet, exercise, and adherence to medication. Black men with HTN often report low adherence to antihypertensive medication, yet we do not fully understand the factors that promote better adherence. Therefore, we examined the relationship between social support and medication adherence among Black men with HTN. Data were obtained from the Counseling African Americans to Control Hypertension Study. Medication adherence was measured with the Morisky Scale (Range: 0-4) and reverse coded so that lower scores indicate poorer adherence. Social support was measured using the Social Support Survey from the Medical Outcomes Survey. The Social Support survey measures 5 dimensions of support (e.g. emotional, tangible, positive interaction, affection, total) with a higher score indicating greater social support. Associations were quantified using ordinal logistic regression and adjusted for income, education, insurance, and age. The sample included 251 males with an average age of 56.5 years. In the multivariate model emotional (OR: 1.24; 95 % CI: 1.00-1.53) and positive social interactions (OR: 1.11; 95 % CI: 1.00-1.23) measures of social support were associated with better medication adherence. Total social support was negatively associated with better adherence (OR: 0.61; 95 % CI: 0.36-1.00). Within our cohort of Black men with HTN, medication adherence was associated with higher levels of emotional and positive social support. This research suggests potential avenues for intervention to promote better medication adherence.

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C-047

GENDER DIFFERENCE IN STATIN TREATMENT IN PATIENTS WITH METABOLIC SYNDROME

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Objective: Metabolic syndrome in U.S. adults is highly prevalent, and is associated with an increased risk of cardiovascular diseases (CVD) morbidity and mortality. To reduce the risk of CVD, statin therapy to lower LDL level is indicated for many patients with metabolic syndrome. The National Cholesterol Education Program's Adult Treatment Panel III guidelines advocate starting lipid-lowering therapy at moderate risk for 10-year CVD risk score >10%. However, the risk of CVD and the need for statin therapy are frequently underestimated, particularly in women. This study evaluated statins treatment among patients with metabolic syndrome.

Methods: Baseline data from 239 obese individuals with metabolic syndrome [72% female, average age 51 years old, and body mass index (BMI) was 35 kg/m²] participated in a dietary intervention trial was used for this investigation. The Framingham CVD risk score was calculated based on age, sex, diabetes and smoking status, treated and untreated systolic blood pressure, total cholesterol, and HDL cholesterol. Chi-square tests were used to compare differences between groups. **Results:** There are 35.6% of participants with the Framingham 10 years risk score ≥10%. However, only 24.4% of women with risk score ≥10% received statin treatment, versus 54.5% in male (p<0.001). Similarly, in patients with elevated hs-CRP (≥2 mg/L), an independent marker for CVD, only 14.2% of women received statin treatment, compared to 43.3% in men (p<0.04). **Conclusions:** Our study showed that statin therapy is underutilized among patients with metabolic syndrome. Furthermore, the rate of treatment among high risk woman is significantly lower than that of men. More studies are needed to determine the cause of this discrepancy.

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C-048

SYSTEMATIC REVIEW OF ASSOCIATIONS OF SEDENTARY BEHAVIOUR WITH THE METABOLIC SYNDROME

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Purpose: In recent years a number of studies have provided evidence that sedentary behavior is associated with the metabolic syndrome, however this evidence has not been synthesised across the lifespan. This review addressed three questions: 1) Do associations differ across the lifespan? 2) Do associations differ between genders? 3) Which components of the metabolic syndrome are associated with sedentary behaviour? **Methods:** Medline, EMBASE, and CINAHL were searched using medical subject headings and key words related to sedentary behavior and the metabolic syndrome for articles to September 2012. Inclusion criteria were a measure of sedentary time, and an outcome measure of metabolic syndrome or clustered metabolic risk. Odds ratio and 95% confidence intervals for metabolic syndrome comparing the highest and lowest levels of sedentary behavior were extracted, along with information on study characteristics; studies were rated for quality. **Results:** Of the 20 studies included in this review, 4 were conducted in youth (≤19 years), 13 were conducted in general adult or middle aged populations, and 3 were conducted in older adults (≥60 years). All studies reported significant associations of sedentary behavior with the metabolic syndrome. Strength of association was similar across age groups and type of sedentary behavior. In adults, associations were generally lower and not statistically significant in men, compared to women. Sedentary behavior was more often associated with obesity, HDL-C, triglycerides and glucose levels than blood pressure. **Conclusions:** This review found consistent associations of sedentary behavior with the metabolic syndrome across the lifespan. Interventions targeting the reduction of sedentary behavior may be useful in the prevention and management of metabolic syndrome.

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C-050

PSYCHOLOGICAL STRESS AND DIABETIC FOOT ULCER CHRONICITY

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Research indicates that psychological stress (PS)-induced immunomodulation delays acute wound repair. Here we explored the potential role of PS in the more complex diabetic foot ulcer (DFU)-healing paradigm. Ninety three type 2 DM patients (84% male; mean age 57 yrs) with plantar neuropathic DFU (University of Texas Classification: 69% grade 1A; 11% 1B; 16% 2A; and 4% 2B) completed baseline self-report measures of generalized (Perceived Stress Scale, PSS; Hospital Anxiety and Depression Scale, HADS; and State-Trait Anger Expression Inventory, STAXI) and DFU-specific PS (NeuroQoL-Interpersonal Burden (NeuroQoL-IP) and Patient Interpretation of Neuropathy (PIN) Scales: PIN-Amputation Worry and PIN-Anger at Docs). DFU-specific biomarkers (IL-6, IL1-beta, MMP2, MMP9 and enzyme involved in local cortisol synthesis, CYP11B1) were determined via quantification of immunohistochemical tissue localization and/or normalized biopsy gene expression. Systemic biomarkers (IL6 and IL-1beta) were measured from patient serum via ELISA. Bivariate analyses revealed multiple measures of increased generalized and DFU-specific emotional distress were associated with: a) decreased local IL-1beta at baseline: HADS-Depression (r=-.27; p<.001) and NeuroQoL-IP (r=-.38; p<.01); b) decreased MMP9, HADS-Depression (r=-.29; p<.05); PIN-Worry (r=-.34; p<.05) and PIN-Anger (r=-.37; p<.01); c) increased MMP2, PIN-Worry (r=.32; p<.05) and STAXI (r=.31; p<.05). STAXI was associated with higher levels of baseline systemic IL6 (r=.32 p<.01). Intriguingly, >80% DFU area reduction at 6 weeks was less likely in patients reporting more severe PIN-Worry (r=-.36; p<.01) and PIN-Anger (r=-.30; p<.01), linked to increased systemic IL6 (r=-.29; p<.05) and local MMP2 (r=-.32; p<.05). These preliminary data identify potential psychological stress-induced biomarkers linking it to DFU chronicity. (Funding Source: 5-R01-DK07-1066-05)

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C-051

PREVALENCE OF DEPRESSIVE SYMPTOMS AMONG LOW-INCOME ADULTS WITH IMPAIRED GLUCOSE TOLERANCE

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Depression and diabetes are relatively common conditions with debilitating effects. Adults with diabetes experience increased risk of depressive symptomatology that can interfere with health-promoting behaviors such as exercise and healthy eating, both of which are crucial for diabetes management. Research demonstrates that people with diabetes are twice as likely to have depression compared to people without diabetes. Prevalence rates of depression vary depending on the assessment method utilized; it is estimated that anywhere between 11% (based on standardized diagnostic interviews) to 30% (assessed by self-report questionnaires) of individuals with diabetes have comorbid depression. However, this comorbidity is not well understood among low-income and medically underserved populations. As lower socioeconomic status has been associated with increased depressive symptomatology in community and general medical settings, a more accurate estimate of depression prevalence is needed to understand this comorbidity. The present study sought to estimate the prevalence of clinically significant depressive symptoms among low-income adults with prediabetes or type 2 diabetes mellitus (T2DM). Participants (N=284) completed the World Health Organization Five-Item Well-Being Index (WHO-5) during their initial diabetes management health education class at a federally qualified health center. A majority of participants (58.5%) self-reported clinically significant depressive symptomatology, with 65.6% of women and 49.2% of men scoring below the screening cutoff. Of those diagnosed with prediabetes (n=46), 60.8% endorsed clinically significant symptoms of depression, compared to 57.9% of those diagnosed with T2DM (n=238). Results suggest higher rates of depressive symptoms than previously demonstrated, which may be due in part to poorly studied socioeconomic, gender, and ethnic variables. As depression can negatively impact chronic disease self-management, it becomes critical for providers to routinely screen for depression throughout the disease process.

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C-052

USING TECHNOLOGY TO CONNECT TEENS WITH TYPE 1 DIABETES: A WEB-BASED INTERVENTION

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Type 1 diabetes affects approximately three million people in the United States. The onset of this disease occurs typically in children and youth under the age of 30. One of the goals of Healthy People 2020 is to "reduce the disease and economic burden of diabetes mellitus (DM) and improve the quality of life for all persons who have, or are at risk for, DM." Complications of diabetes include heart disease, kidney failure, lower limb amputations, and blindness. Compliance to a strict treatment regimen may greatly reduce the risk of complications, yet adolescents have up to a fifty percent noncompliance rate in some domains. A web-based intervention utilizing blogs, discussion forums, and chat rooms, was utilized to connect adolescents with type-1-diabetes. The intervention was driven by Bandura's Social Cognitive Theory. Weekly activities centered on topics affecting adolescent compliance to their diabetes treatment regimen. Topics included frustrations with diabetes, benefits of good control, family, friends, body image, community, and worries about diabetes. Fifty adolescents ages 13–18 participated in either a control or an experimental group. Participants completed pre- and post- surveys on the following mediators of compliance: diabetes-related self-efficacy, quality-of-life, and outcome expectations. This preliminary study was not powered for significance; however, a marginal combined effect of group between subjects was found: $F(3,46)=2.281, p=.092$. Results from an exit survey were promising. Sixteen of eighteen participants completing the survey indicated they were more willing to comply with their treatment regimen following the intervention. Qualitative findings demonstrated the effects of diabetes on relationships with peers, family, and teachers, and anxiety from worries over diabetes-related complications. These are all factors which may interfere with an adolescents' willingness to comply with blood-glucose monitoring, insulin injections, and monitoring of diet and exercise.

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C-053

BMI CHANGE TRAJECTORY BEFORE THE DEVELOPMENT OF DIABETES FOR A TAIWANESE ELDERLY POPULATION :AN 18-YEAR FOLLOW-UP STUDY

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Background. Obesity and aging are well-recognized risk factors for diabetes. However, little is known about weight changes preceding diagnosis of diabetes in the elderly. Objectives. To examine long-term trajectories in BMI of those who do and do not develop diabetes, and to discriminate the differences between younger and older elderly, men and women, as well as individuals with different BMI at baseline. Methods. Data for this analysis were from Taiwan Longitudinal Study of Aging (TLISA), a nationally representative longitudinal study. We examined participants aged 50 and above from the TLISA who were non-diabetic at baseline, and followed the participants to the incidence of diabetes or the study finished ($n=4,382$). Hierarchical linear modeling was used to analyze the data. Results. There is an overall trend of increasing BMI for adults getting old ($\beta_{time}=0.08, p<.001$), and the trend slowed down toward older adulthood ($\beta_{time2}=-.002, p<.001$). This pattern was especially evident in men and individuals with higher BMI ($>=25$ kg/m²) at baseline. Adults who eventually developed diabetes have an average of 1.5 (kg/m²) and 2.2 (kg/m²) higher level of BMI, for men and women respectively, than their counterpart without diabetes. However, BMI increase at a slower rate of change in elderly who developed diabetes than in those who did not ($\beta_{time*diabetes}=-0.07, p=.011$). In addition, an undulatory BMI trajectory was observed in the younger group who developed diabetes, as opposed to a steady rise in those who remained diabetes-free. Conclusion. Higher level, but not faster rate of increase, in BMI, is a risk factor for diabetes development in Taiwanese middle-aged and older adults. In addition, an undulatory BMI trajectory in middle-aged adults (50–64 yrs) may also be a risk factor for the development of diabetes.

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C-054

THE IMPACT OF A TRANSLATIONAL, COMMUNITY-BASED DIABETES PREVENTION INTERVENTION ON HEALTH-RELATED QUALITY OF LIFE IN PATIENTS WITH PREDIABETES: THE HEALTHY LIVING PARTNERSHIPS TO PREVENT DIABETES STUDY (HELP PD)

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The purpose of this study was to examine the impact of a community based translation of the Diabetes Prevention Program lifestyle weight loss intervention (LWL) on health-related quality of life (HRQL) compared to an enhanced usual care condition (UCC) in adults with prediabetes. Three hundred and one volunteers (Mean (SD) age=58 (9.5) years; BMI=32.7(4.0) m/kg²; fasting blood glucose=105.5 (11.3) mg/dL) were randomly assigned to either the LWL or UCC. The goal of the LWL was $\geq 7\%$ weight loss achieved through physical activity and caloric intake goals. The LWL consisted of weekly group meetings for 6 months and monthly meetings for the next 18 months led by Community Health Workers (CHWs). The UCC comprised of two individual meetings with a RD and a monthly newsletter. HRQL was assessed using the physical component scale (PCS) and the mental component scale (MCS) of the SF-36 at baseline and 12 months. Interestingly, change in PCS was significantly different between groups ($p=0.004$), but change in MCS was not significantly different between groups ($p=0.1075$). The results of this study demonstrate that a community-based LWL program led by CHWs positively influences the physical component of HRQL compared to UCC in pre-diabetic adults.

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C-055

PSYCHOMETRIC ANALYSIS OF THE CHILDREN'S DEPRESSION INVENTORY SHORT FORM FOR ADOLESCENTS WITH TYPE 1 DIABETES

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Introduction: The Children's Depression Inventory short form (CDI-S) may be a more feasible alternative to the longer CDI for depression screening; however its factor structure hasn't been empirically tested in adolescents with type 1 diabetes mellitus (T1DM). Methods: Adolescents with T1DM presenting for routine diabetes care ($N=230$; AgeM=15.39,SD=1.26; Females=111,48.1 %; DM duration=5.92 yr.,SD=3.97; HgbA1c=8.89 %,SD=1.76) responded to the instrument at 3 consecutive quarterly visits. Confirmatory factor analyses (CFA;the 10 items are regressed onto the latent variable) was conducted for each administration. Latent trajectory analysis (LTA) was used to 1) determine model fit, 2) test whether the same-item factor loadings and thresholds were invariant, and 3) trend across time. The LTA responses from each administration were regressed onto a unique latent variable, and same-item factor loadings and thresholds were constrained to equivalence across time. Values were derived using a mean- and variance-adjusted weighted least squares estimator, and 2 criteria were used to judge fit; comparative fit index (CFI>.95) and the root mean square error approximation (RMSEA<.08). Results: Data were heavily skewed resulting in nonconvergence, thus the 3-point Likert scale was dichotomized (no symptoms vs. symptoms). Unaltered CFAs demonstrated good fit at each time (CFI \geq .98, RMSEA \leq .06). An 8-item LTA demonstrated good fit (CFI=.96, RMSEA=.04) and an average latent mean of .88, .77, and .67, across the 3 time-points. Items assessing negative body image and feeling unloved were dropped due to poor fit. Conclusions: The CDI-S is brief and appropriate for routine clinical use in adolescents with T1DM. It is unidimensional, generally invariant, and responses indicate a linear, slightly descending trajectory over a year. The clinical impact of the 2 non-invariant items is not clear. For longitudinal research, we recommend comparing the results of models that include the 10- and 8-item versions of the measure.

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C-056

DIET ADHERENCE AND READINESS TO CHANGE IN UNDERSERVED ADULTS WITH TYPE 2 DIABETES

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Aims: Despite empirical support for Staged approaches to dietary interventions, the transtheoretical model (TTM) has not been widely incorporated into studies of diabetes diet. Different diabetes-related characteristics have been found across stages of readiness for healthy eating. However, studies have yet to examine use of this model in a sample of medically underserved adults with type 2 (T2) diabetes (DM). Understanding receptivity to dietary behavior change is particularly relevant in Kentucky (KY) with rates of T2DM (10 %) above and receipt of diabetes education (49 %) well below US averages. **Methods:** Participants were 253 adults with T2DM (44.8 % African-American; 60.5 % female, 19 % below poverty threshold) attending DM care clinics in KY. Ss completed validated self-report measures assessing DM and medical Hx, perceived barriers to and stage of diabetes diet change, diet knowledge and skill behaviors (PDQ), dietary adherence (SDSCA) and diabetes self-efficacy (DSES). **Results:** 39 % Ss had never seen a dietician and only 43 % were actively following a specific diet plan. 51 % were in the Action stage (AS) of TTM, of whom 83 % were on a diet plan. Stage comparisons (ANOVA) found: Ss in the AS experienced fewer behavioral dietary barriers ($p < .001$), more frequent dietary self-management practices ($p < .001$) and greater self-efficacy ($p < .001$) than those in the Contemplation (CS) and Preparation (PS) stage (Tukey's post-hoc). Ss in the PS perceived more barriers to their diet than those in AS and CS ($p < .001$). Diabetes knowledge, BMI, gender, insulin use and duration of DM did not differ between TTM groups. **Conclusion:** The TTM distinguished Ss by perceptions of dietary barriers, diet adherence and self-efficacy, all of which are important to sustain dietary changes over time. In this underserved clinical sample with T2DM, our data support the TTM and suggest that the PDQ reflects the TTM staged assessment approach. The low percentage following a diet plan highlights the need for clinicians to provide self-management education in dietary change and to monitor diet adherence.

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C-057

IDENTIFICATION OF RISK GROUPS DEVELOPING DEPRESSION AFTER DIABETES DIAGNOSIS: GROUP-BASED TRAJECTORY MODELING APPROACH

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This study seeks to characterize psychological distress patterns following adults newly diagnosed with diabetes, to identify predictors associated with different patterns of the trajectories, and to predict year-10 physical function. Using data from Taiwan longitudinal study of Aging, this retrospective cohort study identified 487 patients aged 50+ who received a new diabetes diagnosis between 1996–2007. We estimated 10-year depressive symptoms trajectories using group-based trajectory modeling. The depressive symptom trajectory groups were defined as low stable depression ($n=313$; 64.2 %), high stable depression ($n=46$; 9.5 %), increasing depression ($n=61$; 12.5 %), and decreasing depression ($n=67$; 13.8 %). Women, lower education, not married/partnered, lower self-rated health, hospitalized in past 1 year, more limitations in physical function, comorbid with heart disease, and lower exercise were factors associated with increasing or high stable depression trajectories. Those who experienced high depressive symptoms, no matter at the beginning of the diagnosis, accumulated overtime, or persistently high, were more likely than those who have lower stable depression to have physical limitation in subsequent follow-ups. We concluded that mood changes in middle-aged and older adults newly diagnosed with diabetes did not follow a single pattern. Although the majority of adults did not have significant depression during the first ten years after diabetes diagnosis, more than one in three adults experienced high depressive symptoms sometime during the first 10-year follow-ups after diabetes diagnosis. Risk groups identified in the present study may be used for personalized diabetes care addressing the special needs associated with distress and future disability in diabetes patients.

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C-059

THE BEHAVIOR CHANGE TECHNIQUE TAXONOMY (V1) OF 93 HIERARCHICALLY-CLUSTERED TECHNIQUES: TESTING RELIABILITY OF THE TAXONOMY

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Background: To increase effective implementation and replication of behavior change interventions, behavioral medicine needs to improve methods of specifying and reporting 'active ingredients'. An on-going internationally supported project has developed a hierarchically structured taxonomy of behavior change techniques (BCTs). This study aimed to test its reliability. **Method:** n round one, five researchers coded 45 intervention descriptions by BCTs. Discrepancies were used to refine the taxonomy. Reliability of the refined taxonomy was assessed by six researchers coding 40 descriptions. In both rounds, each description was coded independently by two researchers. Descriptions were selected using quota sampling of articles published 2009–2010 in three international journals that represented a spread of interventions addressing prevention, illness management and health professional behaviors. Agreement by BCT was assessed by adjusted Kappa for BCTs observed more than five times. **Results:** For the 22 BCTs occurring >5 times, Kappa scores ranged from 0.38 to 0.85; three scores <0.60. Following addition of five, and removal of one, BCT, 15 BCTs were assessed in round two. Scores ranged from 0.60 to 0.90. Following the addition of three, division of one BCT and refinement of labels/definitions, 24 of the 27 BCTs assessed had scores of 0.60 or above. **Conclusion:** This work produced the 93-item hierarchically-structured BCT Taxonomy v1 of consensually agreed, clear and distinct BCTs for specifying components of behavior change interventions. Results indicated good reliability for the most frequent BCTs. We are currently evaluating two training methods (one-day workshops; group tutorials) to improve usability of v1, the findings of which will be discussed at the end of the presentation.

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C-060

RCT TO INCREASE PROVISION OF ADOLESCENT VACCINES IN PRIMARY CARE

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Objective. Each year, a quarter of the nation's federally funded vaccine providers receive in-person AFIX (Assessment, Feedback, Incentives, and eXchange) visits to improve their childhood immunization rates. We sought to evaluate whether modified AFIX visits could also boost adolescents immunization rates, which remain low nationally. **Methods.** We randomly selected 91 high-volume primary care clinics in North Carolina serving 107,443 adolescents ages 11–18. We randomly assigned each clinic to receive no visit or an in-person or webinar AFIX visit focused on adolescents. The state's immunization registry provided 5-month-post-intervention coverage data. In logistic regressions stratified for younger and older adolescents, we examined differences among the study arms in vaccination coverage. Three vaccines are recommended for routine administration to adolescents ages 11–12 (tetanus, diphtheria, and pertussis [Tdap]; meningococcal; and human papillomavirus [HPV, >1 dose, females]) with catch-up through age 18, and 3 other vaccines are recommended as catch-up for unvaccinated adolescents ages 11–18 (measles, mumps, and rubella; hepatitis B; and varicella). **Results.** In-person AFIX visits increased coverage among adolescents ages 11–12 for Tdap (OR=1.50, 95 % CI, 1.36-1.65) and meningococcal vaccine (OR=1.22, 95 % CI, 1.13-1.33), but not HPV vaccine, as compared to no visits. Webinar AFIX visits led to higher coverage among adolescents ages 11–12 for Tdap (OR=1.80, 95 % CI, 1.47-2.21), meningococcal (OR=1.29, 95 % CI, 1.17-1.42), and HPV vaccine (OR=1.12, 95 % CI, 1.03-1.23). AFIX visits did not affect coverage for catch-up vaccination. **Conclusions.** Webinar AFIX visits modestly increased coverage of vaccines recommended for adolescents ages 11–12. Expanding AFIX nationally to address low adolescent vaccination rates is promising, but the program needs improvements to have greater impact on HPV vaccine initiation and catch-up vaccination.

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C-062

SEXUAL COMMUNICATION AMONG HIV+COUPLES IN LUSAKA, ZAMBIA

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Background. HIV prevention interventions are designed to facilitate protected sex within sexual dyads using various strategies. This study examined the impact of a sexual risk reduction intervention on couples' communication, and the relationship between sexual communication and condom use. It was hypothesized that the intervention would enhance problem solving communication, thereby resulting in increased condom use. Methods. Zambian HIV sero-concordant and -discordant couples (n=218) were randomized to intervention or enhanced standard of care conditions. Couples were videotaped discussing their difficult general and sexual problems at baseline, 6, and 12 months. Mixed multilevel modeling was used to examine the effects of gender and condition on communication and the effects of communication on condom use. Results. At baseline, couples in the intervention engaged in more positive communication than those in the standard of care, and men used more problem solving communication than women [(F(1,215)=4.8, p=.03); (F(1,216)=57.02, p<.001). Condition did not impact general or sexual communication over time. The percentage of negative communication by women increased at follow up. Positive communication decreased from baseline to follow up (F(2,431)=36.51, p<.001) and higher levels of positive communication were associated with decreased condom use. The use of problem solving decreased at follow up, more so among men (F(2, 431)=5.4, p=.01). Discussion. The intervention did not impact couples' communication, though it was associated with increased condom use and communication was also associated with condom use. Results suggest that the opportunity to discuss sexual problems may have initially stimulated problem solving, especially among men, but this stimulation was not maintained. Social desirability may also have enhanced baseline communication. Communication patterns within couples may become relatively entrenched and require more time or more focused strategies to change with regard to problem solving difficult issues.

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C-063

PARTNERING WITH CHURCHES TO PROVIDE HIV RELATED SERVICES - A PROVIDER'S PERSPECTIVE

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The purpose of this pilot study was to assess the facilitating factors and barriers associated with providing HIV prevention services (e.g., outreach, testing, and education) to predominantly African American churches in the Mid-South region of the U.S. Taking a participatory approach, community and academic partners from Connect to Protect Memphis worked collaboratively to design a qualitative project, culturally-appropriate interview questions, and recruitment materials. HIV service providers (n=15), representing a total of seven different HIV service organizations, participated in 15 in-depth interviews. Data were transcribed verbatim and analysis involved coding data text across interviews into categories to identify key themes using a constant comparative approach. All respondents reported providing services to faith communities as part of their existing employment responsibilities as well as stemming from a personal, altruistic drive and motivation. Providers cited several benefits of collaborating with churches including the ability to reach a diverse group of people for HIV testing, the opportunity to dispel myths around HIV through education and awareness, and to address stigma. Facilitating factors included the recognition of the intersection between faith and health among the church leadership, the need for pastors' support, and a history of previous working relationships. Respondents discussed the difficulty of discussing taboo issues such as sexuality and HIV-related risk behaviors in the church as the main barriers to providing HIV services to churches. Despite the barriers, HIV providers actively collaborate with and provide HIV services for faith communities, and are integral to advancing knowledge of Mid-South community-, faith-, and academic partnerships.

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C-064

SYNDEMIC INDICATORS PREDICT POOR MEDICATION ADHERENCE AND INCREASED HEALTH CARE UTILIZATION FOR URBAN HIV-POSITIVE SEXUAL MINORITY MEN

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Research on the health status of sexual minority men has revealed a high incidence of co-occurring psychosocial problems: the mental health problems of depression and substance abuse, and interpersonal violence victimization including partner abuse and childhood sexual abuse (e.g., Stall et al., 2003). Further, there is some evidence of an additive (or "syndemic") effect, such that endorsing each additional factor is associated with increased odds of poor health, including HIV acquisition (Mustanski et al., 2007; Stall et al., 2003). While much attention has been paid to Stall's use of the syndemics framework on HIV-negative sexual minority men, the same has not been true for HIV-positive men. Thus, in the present study, we explore the additive effect of the empirically derived syndemic indicators (partner abuse, depression, childhood sexual abuse, & polysubstance use) on HIV health, sexual risk behavior, and health care utilization in a cross-sectional sample of urban HIV-positive sexual minority men engaged with medical care in Seattle, WA (N=166). Men filled out CASI surveys and agreed to have data extracted from their electronic medical records. Logistic regression revealed that endorsing more than one indicator was significantly associated with HIV medication non-adherence ($\chi^2(3, N=119)=8.22, OR=3.57, p<.05$) and past year inpatient hospitalization ($\chi^2(3, N=147)=6.49, OR=4.93, p<.05$). These findings suggest an additive effect of co-occurring psychosocial problems on HIV health behaviors and health care utilization. Existing interventions typically focus on one problem area; novel intervention development that focuses on addressing multiple targets simultaneously appears to be needed.

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C-065

HIV TESTING AND SURVIVORS OF INTIMATE PARTNER VIOLENCE WHO ARE AFFILIATED WITH AFRICAN AMERICAN CHURCHES

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Studies suggest that survivors of Intimate Partner Violence (IPV) are at an increased risk for HIV due to their engagement in other risky behaviors (e.g. alcohol, drug use, and inconsistent condom use) compared to those who have never experienced IPV. However, limited research has been conducted on IPV survivors' receipt of HIV testing. Surveys were administered to church members and community members who used church outreach services (e.g. social services) in four African American churches in the Kansas City metropolitan area. Participants completed surveys on health beliefs and behaviors related to HIV, including HIV testing, HIV knowledge, social and medical support to get tested for HIV, and sexual and drug behaviors as well as questions regarding religiosity. Overall, 91 % of participants (N=538; 193 males and 345 females, mean age=42.35, SD=13.47) were African American, 36.33 % were Baptist, and 32.8 % were married. Among these participants, 133 (25 %; 39 males and 94 females) indicated that they had been victims in an abusive relationship. IPV survivors were significantly more likely to have taken an HIV test in the past 6 months (31.6 % vs. 20.4 %), $t[201.89]=-2.48, p=.014$, and to have felt supported by their doctors to get an HIV test (74.6 % vs. 64.8 %), $t[268.468]=-2.48, p=.014$ than those who had not experienced IPV; however, there was not a significant difference in perceived social support between the two groups. Yet, IPV survivors were more likely to strongly believe that condoms should be available at their churches (25.6 % vs. 10.5 %), $t[529]=-3.304, p=.001$. HIV knowledge between groups was not significant; neither were condom use nor the desire for further health and HIV screenings to be offered through their churches. Future research should investigate community based HIV testing, access, and support for IPV survivors, particularly in African American churches.

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C-066

HIV-RELATED STIGMA AS A FUNCTION OF AGE AND HIV-KNOWLEDGE IN A LATINO CHURCH SAMPLE

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Stigma continues to be a major barrier to HIV testing. Churches may be ideal locations for HIV prevention interventions, but there is limited research on HIV-related stigma in the Latino church context. This secondary data analysis sought to explore the relationship between age, HIV knowledge, and three types of HIV-related stigma: 1) religious, 2) general, and 3) social distance, among church going Latinos. Participants (n=205) ages 18–78 years (M=40.13, SD=12.90) completed questions about demographics, HIV-related stigma, and HIV-testing intentions in two Midwest Latino Catholic churches. Three independent multiple regression analyses were used to determine if age, HIV knowledge, or their interaction were predictors of religious, general or social stigma. None of the variables were significant predictors of religious stigma (F [3, 185]=1.079, p>.05). Age was a significant predictor ($\beta=0.160$, p<.05) of general stigma accounting for 2.4 % of the total variance (F [3, 184]=4.82, p<.05), but HIV knowledge ($\beta=0.038$, p>.05) and the 'age by knowledge' interaction ($\beta=0.554$, p>.05) were not. HIV knowledge was a significant predictor ($\beta=-0.513$, p<.05) of social distance stigma accounting for 4.7 % of the total variance (F [3, 184]=4.08, p<.05), but age ($\beta=-0.331$, p>.05) and the 'age by knowledge' interaction ($\beta=0.422$, p>.05) were not. Results suggest that older Latino church members have higher levels of general HIV stigma and individuals with less HIV knowledge desire more social distance from HIV+people. These findings suggest that future HIV-stigma reduction strategies in the Latino church context should target older individuals and those with less HIV knowledge. This research was supported by the National Institute Mental Health F31 MH090927.

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C-067

HIV PREVALENCE AND BEHAVIORAL RISK AMONG MEXICAN MIGRANT FLOWS TRAVELING THROUGH THE U.S.-MEXICO BORDER

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Background: The U.S.-Mexico border represents an intermediate point in the trajectory of Mexican migrants to and from the U.S. Objective: 1) To estimate the prevalence of HIV infection and related behavioral risk factors; and 2) to compare prevalence rates across different migrant flows traveling through the US-Mexico border region.

Methods: A cross-sectional, population-based survey was conducted in key crossing sites in Tijuana, Mexico. Probability samples of four Mexican male migrant flows completed a computer-based questionnaire and were tested for HIV (N=2872).

Results: The overall HIV prevalence was 1.36 %, with highest rates for migrants arriving from other border cities (3.89 %), followed by northbound migrants without US migration experience (1.00 %), deportees (0.71 %), southbound migrants returning from the U.S. (0.18 %), and northbound migrants with a previous history of migration (0.08 %). Compared to northbound migrants without migration history, deportees reported significantly lower prevalence of anal sex with same-sex partners (1.1 % vs. 5.1 %), but higher rates of sex with intravenous drug users (6.4 % vs. 1.5 %) and lifetime rates of STIs (21.8 % vs. 13.2 %). Deportees (21.3 %), northbound migrants with migration experience (19.3 %), and southbound migrants (14.8 %) reported significantly higher rates of illicit drug use compared to northbound migrants without migration experience (4.3 %). Significant differences in other risk factors were found across migrant flows.

Conclusions: HIV infection rates and behavioral risk patterns vary across Mexican migrant flows travelling through the US-Mexico border region. HIV prevention and treatment efforts targeting Mexican migrants in communities of origin, the U.S.-Mexico border region, and the U.S. are warranted.

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C-068

EFFECTS OF WORRY ON PRELIMINARY MOTIVATIONAL OUTCOMES OF A SEXUAL RISK REDUCTION INTERVENTION AMONG DETAINED ADOLESCENTS

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Juvenile justice-involved youth are at high risk for substance use and related risky sexual behaviors compared to their mainstream peers. The current investigation tested the extent to which worry about consequences of risky sexual behavior and trait worry moderated preliminary posttest outcomes of motivation to use condoms in an on-going intervention in detained youth. Adolescents (14–18; 76.3 % male) were randomly assigned to one of three sexual risk reduction interventions targeting 1) sexual risk behaviors (SRRI; N=98), 2) sexual risk behaviors and alcohol use (SRRI+ALC; N=111), or 3) targeting sexual risk behaviors and alcohol and marijuana use (SRRI+ALC+MJ; N=111). At baseline, participants completed assessments of trait worry and worry about consequences of risky sexual behavior. Immediately after receiving an intervention, intentions, attitudes, norms, and self-efficacy towards condom use were measured. Change scores for each motivational construct was regressed on worry, intervention (dummy coded such that SRRI was the reference group), and the worryXintervention interactions. Greater worry about the consequences of risky sexual behavior predicted greater change in attitudes towards condoms (p=.10) and self-efficacy (p=.04). Compared to the SRRI condition, youth in the SRRI+ALC condition reported greater change in self-efficacy (p=.10) and youth in the SRRI+ALC+MJ condition reported greater change in norms (p=.02). WorryXintervention interactions occurred for attitudes (ps=.006 and .07), intentions (p=.09), self-efficacy (ps=.007 and .03), and norms (ps=.07). Trait worry did not significantly predict any motivational constructs nor did it interact with intervention. Findings suggest that the degree to which worry motivates risky sexual behavior change may be dependent on worry specific to the situation versus a general tendency to worry.

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C-069

RELIGIOSITY AND HIV KNOWLEDGE AS PREDICTORS OF AIDS-RELATED STIGMA IN A LATINO CHURCH SAMPLE

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Latinos are 16 % of the population, yet account for almost 20 % of new HIV infections each year. Churches have the potential to reach many using faith-based HIV prevention strategies tailored to Latinos, however AIDS-related stigma among congregants may be a major barrier. This study explored the relationship between religiosity, HIV knowledge, and AIDS-related stigma in a Latino church sample. Participants completed a questionnaire that included demographics, the Religious Background and Behavior Questionnaire, and measures of religious and social distance stigma. Participants included 205 church members in a large Midwestern city (98 % Latino, 66 % female, 83 % heterosexual, mean age=50 years [SD=13], and 71 % had a high school/GED education or less). Bivariate analyses evidenced a significant negative correlation between religious stigma and HIV knowledge ($r=-.147$; p<.05) and significant negative correlations between social distance stigma (SDS) and both religiosity ($r=-.26$; p<.01) and HIV knowledge ($r=-.26$; p<.01). In a multiple regression analysis, religiosity ($\beta=.077$; p>.05), HIV knowledge ($\beta=-.120$; p>.05), and the religiosity by knowledge interaction ($\beta=-.718$; p>.05) failed to predict religious stigma. A second multiple regression revealed that HIV knowledge ($\beta=-.194$; p<.05) and the religiosity by HIV knowledge interaction ($\beta=.872$; p<.05) predicted SDS, but religiosity ($\beta=-.136$; p>.05) did not. This final model accounted for 6.3 % of the total variance in SDS (F [3, 158]=4.566, p<.01). Results indicate that individuals with less HIV knowledge desire more distance from HIV+individuals, and this desire is stronger for those who are more religious. These findings suggest that faith-based HIV prevention interventions may benefit from addressing AIDS-related stigma, specifically social distance stigma. This research is supported by the National Institute of Mental Health F31 MH090927.

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C-070

EXPLORING RELIGIOSITY AND AIDS-RELATED STIGMA USING AN EXPERIMENTAL PRIMING TASK

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Researchers are examining the utility of delivering HIV prevention strategies in churches because churches reach so many people each week. One major barrier may be AIDS-related stigma among religious congregants, however outside of explicit reports little is known. This study explored the relationship between AIDS-related stigma and religiosity using an experimental priming task. Participants were randomly assigned to either: an experimental group that received priming with religious words in a scrambled sentence task, or a control group that completed the same sentence task but without religious words. Participants then completed a demographic questionnaire, the Religious Background and Behavior, the Marlowe-Crowne Social Desirability SF scale, and three different AIDS-related stigma measures (general stigma, social distance stigma, and religious stigma). In total 83 participants completed the study, but only 65 participants (mean age 23, SD=8.1; 83 % female; 65 % White) were included in analyses, as those that noticed the religious words in the sentence task were excluded. Religiosity was significantly associated with social desirability ($r=0.27$, $p<.05$) and religious stigma ($r=0.28$, $p<.05$), but not with general or social distance stigma. Regression analyses indicated that group ($\beta=.252$, $p<.05$) and religiosity ($\beta=.339$, $p<.05$) were independent predictors of religious stigma, whereas social desirability was not ($\beta=.009$, $p>.05$). The group by religiosity interaction was not significant ($\beta=.489$, $p=.07$) and the final model accounted for 15.8 % of the total variance in religious stigma ($F [4,63]=3.966$, $p<.01$). Results indicate that participants primed with religious words and those that are more religious report more religious stigma. Church-based HIV prevention interventions should consider the impact of religious stigma, which is likely higher among the most religious congregants when approached in the church.

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C-071

NEUROTICISM MODERATES THE RELATIONSHIP BETWEEN PERCEIVED HIV-RELATED STIGMA AND DEPRESSION IN LATINO MEN WHO HAVE SEX WITH MEN (MSM) LIVING WITH HIV/AIDS

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Data suggest that people living with HIV/AIDS are subjected to pervasive stigma that has deleterious effects on mental health, and that in the U.S., HIV-related stigma is relatively pronounced among Latino populations. Neuroticism, as a personality trait, has been identified as a diathesis for the development of depression. We hypothesized the association between perceived HIV-related stigma and depression to be moderated by trait levels of neuroticism. We administered the Patient Health Questionnaire-9 (PHQ-9), Latino HIV/AIDS Stigma Scale (LHASS), and Big Five Inventory Neuroticism subscale (BFI-N) to 82 HIV+Latino MSM at an outpatient clinic in El Paso, Texas. On average, patients were 44.4 years of age (SD=12.3) and had been living with HIV/AIDS for 10 years (SD=7.8). Median household income in this sample was \$11,188 (SIQR=\$4900). Average depression scores ($M=7.1$, $SD=6.8$) show that our sample met criteria for "mild" symptoms of depression. Both BFI-N and LHASS scores were positively correlated with the PHQ-9 ($r=.25$, $r=.39$, $ps<.05$). In regression models, stigma alone accounted for 17 % of the variance in depressive symptoms, while the interaction term added 5 % unique variance ($R^2\Delta=.05$, $p<.05$). The Johnson-Neyman Technique (JNT), revealed that the effect of perceived stigma becomes conditioned on neuroticism for any scores above the 25th percentile. Results show that neuroticism moderates the relationship between perceived HIV-related stigma and depression. The data suggest that even at low trait levels, neuroticism may exacerbate the negative mental health effects of HIV-related stigma. Thus, it may be possible to identify individuals who are at increased risk of depression with exposure to HIV-related stigma, and interventions may be informed from further study of low-neuroticism individuals who are less prone to depression even in the face of perceived stigma.

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C-073

IT'S NOT JUST HOW YOU FEEL IT'S HOW YOU DEAL: PREDICTORS OF HEALTH CARE UTILIZATION IN CHRONIC ILLNESS PATIENTS IN ONLINE SUPPORT GROUPS

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Chronic illness (CI) is associated with increased health care utilization (HCU). Understanding factors influencing HCU is necessary to establish when and how utilization may be lowered without negatively impacting patient care. While psychological distress is a strong predictor of HCU it remains unclear if individual differences in response to distress impacts HCU. Mindfulness and experiential avoidance may affect the consequences of distress on HCU. While the present focused awareness of mindfulness may mitigate the experience of distress and decrease HCU, the emotional reactivity associated with experiential avoidance may paradoxically increase distress and HCU. This project aims to investigate mindfulness and experiential avoidance as potential pathways explaining distress and HCU relations. Our online support group sample ($N=278$) with a range of CI including chronic pain, diabetes, and heart disease completed measures of negative affect (PANAS-NA), mindfulness (MAAS), experiential avoidance (AAQ), and HCU. Then HCU variable summed the number of visits to primary care and specialty providers, emergency departments, and inpatient stays in the past six months. Negative affect accounted for 5.3 % of the variance in HCU ($F(1,277)=16.35$, $p<.001$). Mindfulness and experiential avoidance were investigated as potential mediators of negative affect on HCU in two separate models. Both mindfulness (Sobel test, $z=3.04$, $p=.002$) and experiential avoidance (Sobel test, $z=3.26$, $p=.001$) were identified as potential pathways for the effect of negative affect on HCU. Results suggest examining distress and HCU relations alone may not be sufficient. Individual differences in mindfulness and experiential avoidance may explain whether negative affectivity (i.e., aversive internal stimuli) leads to increased HCU. Further research is necessary to clarify how mindfulness and experiential avoidance may relate to one another and how to best intervene in distress and HCU pathways to reduce HCU and health care costs.

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C-074

PREVIOUS DEPRESSIVE SYMPTOMS PUTS INDIVIDUALS AT HIGHER RISK OF PTSD WHEN EXPOSED TO NATURAL DISASTERS

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It has been extensively documented that exposure to natural disasters is associated with greater risk of developing Post Traumatic Stress Disorders Symptoms, however most of studies have been conducted after individuals have been exposed to the event and very few studies have examined the role of previous mental health status. In the present study we examined whether exposure to an earthquake predicted PTSD symptoms controlling by previous depressive symptoms. Participants included 768 Chilean adults (18 years of age and older, 65 % females) who had been part of a study in 2009, in the months previous to the 8.8 earthquake that hit Chile in February 27th in 2010. Data was collected using a telephone interview that was conducted by trained interviewers. All data were collected within three months after the earthquake. The questionnaire evaluated PTSD, depressive symptoms, exposure to stressors, coping strategies and some health behaviors. We found that previous depressive symptoms were associated with higher risk of PTSD ($OR=4.314$, $p<.01$), when controlling for sex, exposure to the earthquake (intensity of the earthquake based on the area they were when the earthquake hit) and fear. Our findings show that previous mental health status predict PTSD symptoms later on. These findings also suggest that they should be target of preventive interventions.

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C-075

A MULTIPLE HEALTH BEHAVIOR CHANGE INTERVENTION AMONG PEOPLE WITH PSYCHOTIC DISORDERS: RESULTS FROM A RCT

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This RCT compared a multi-component intervention (focusing on smoking, diet and activity) delivered face to face with a largely telephone delivered intervention (focused on smoking) among smokers with severe mental disorders (SMD). Participants with SMD residing in the community and smoking ≥ 15 cigarettes/day (CPD) were randomly assigned to either condition. At baseline, participants (N=235, Age, M=41.6 years, 59 % male) were smoking on average 28.6 (SD=15.3) CPD. CO verified point prevalence abstinence (last 7 days) was 16 % (n=13) at 15 weeks and 13 % (n=9) at 12-months for the face-to-face condition and 17 % (n=15) and 13 % (n=9) for the telephone condition. At 15 weeks and 12-months, participants still smoking reduced their mean CPD in both the face-to-face (10.8 (14.6) and 6.5 (12.1)) and largely telephone delivered interventions (11.4 (12.1) and 6.0 (11.4), $p < .001$) at both time points. Of the 131 subjects who had data at baseline and 12 months, 55 stayed in the same activity category, 54 improved their activity category, and 24 went to a lower activity category, $p < .05$. There were no significant differences between conditions in terms of fruit and vegetable serves/day or sitting time. No significant differences were found in smoking and other outcomes between the face-to-face and a largely telephone delivered intervention. Face-to-face and largely telephone-delivered interventions are feasible and effective among people with severe mental disorders.

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C-076

TRACKING THE IMPACT OF NEGATIVE AFFECT ON COGNITIVE PERFORMANCE

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Executive functioning plays an important role in the regulation of emotion and allocation of cognitive resources. Notably, when executive functioning is compromised, cognitive performance may suffer. Similarly, previous research has suggested that the experience of negative affect (i.e. stress) can also have a detrimental impact on performance. The present study examined the association between several measures of negative affect and cognitive performance on a computerized target detection task. During this task, participants responded to the positioning of a target (small dot) following the brief presentation of a distractor stimulus (arrow) that was either congruent or incongruent with the position of the target. 22 (9 Female) participants completed a baseline period, the Simon Effect task and a recovery period as well as post-study questionnaires. Preliminary results revealed that women had slower reaction times (RT) on both congruent and incongruent trials compared to men ($p < .05$). Additionally, women scored significantly higher on the Penn State Worry Questionnaire (PWSQ) and the Perceived Stress Scale (PSS) ($p < .05$) and reported marginally greater scores on the Ruminative Responses Scale (RRS) ($p = .07$) compared to men. Furthermore, higher scores on the RRS, PSS, and PSWQ are associated with longer RTs on incongruent trials across both gender groups ($p < .05$). These preliminary results are consistent with previous research in indicating that negative affect may influence performance on cognitive tasks; a relationship with major implications for both cognition and mental health.

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C-077

THE EFFECT OF DEPRESSION AND DIABETES COMPLICATIONS ON DISABILITY IN ADULTS WITH SCHIZOPHRENIA

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Depression and diabetes have a negative synergistic effect on disability. People with schizophrenia (SZ) are at increased risk for diabetes (DM), its complications, depression, and disability. Purpose: (1) Assess number of diabetic complications (DC) and depression as predictors of disability, while controlling for risk factors for disability and (2) evaluate depression as a mediator of the relationship between DC and disability in a sample of 63 adults with SZ and DM. Methods: A three-step hierarchical linear regression model was used to evaluate depression and the number of DC as predictors of disability. Path analysis with bootstrapping was used to evaluate depression as a mediator of the relationship between DC and disability. Results: The majority of the sample was male (n=37; 57 %) and had a mean age of 52.6 (SD=8.91) years. The first block of the regression model, which included gender, age, positive symptoms severity, and negative symptom severity, accounted for a significant amount of variance in disability scores, $R^2 = .218$, $p < .01$. The second block, which added number of DC to the model, was associated with a significant increase in explained variance in disability scores, $\Delta R^2 = .183$, $p < .001$. Depression scores, added in block 3, also resulted in a significant increase in explained variance in disability scores, $\Delta R^2 = .129$, $p < .001$. Only depression scores, in the final block, significantly predicted disability scores. The full-model accounted for 53.1 % of the variance in disability scores. Path analysis revealed a significant indirect effect of DC on disability through depression scores, $t = 3.23$, $p = .001$. Results demonstrated that, while controlling for risk factors, depression predicted disability above and beyond DC. Depression scores accounted for the significant relationship between number of DC and disability scores. Relative to DC, depression may present a more tractable target for interventions aimed at reducing disability in people with SZ and DM.

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C-078

PHYSICAL ACTIVITY & DEPRESSIVE SYMPTOMS AMONG KOREANS IN LA

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Mitigating depression among US Koreans may be challenging due in part to health system and cultural barriers to clinical treatment. Physical activity (PA) may be a promising means of addressing symptoms experienced by US Koreans. This study is among the first to examine PA and depression in this rapidly growing group. Participants were recruited from two Korean churches and completed interviewer administered Korean language questionnaires on site. This study includes those who provided complete depressive symptoms data indicating \leq moderate depression [N=250; 59 % female, mean age 51 yrs, 96 % immigrants, 58 % \geq college, 56 % uninsured, 37 % diagnosed with hypertension, heart disease or diabetes (chronic disease)]. The 8 Item Patient Health Questionnaire (PHQ-8) and the International PA Questionnaire (IPAQ-SF) were used to measure depression and PA respectively. PA, chronic disease, insurance status and demographics were examined in relation to continuous PHQ-8 scores. Symptoms indicating mild-moderate depression (PHQ-8: 5-14) were reported by 48 % of participants. Mean symptom levels (4.85, SD 3.23) were greater among women (5.28 vs 4.26) and the uninsured (5.3 vs 4.27). Gender stratified analyses revealed greater symptoms among uninsured women (5.73 vs 4.63) but not men. No independent relationships were observed between study factors in multivariate analyses among women or men, but interactions were detected among men: PA X chronic disease ($\beta = -2.77$); uninsured X chronic disease ($\beta = 2.86$). Among men diagnosed with chronic disease, meeting PA guidelines was associated with fewer symptoms whereas being uninsured was associated with more symptoms. ($ps < .05$) That relationships between PA and depressive symptoms were limited to men with chronic disease was surprising. The relationship between PA and depression among US Koreans merits further research. Findings point to the potentially important role of insurance status in depressive symptoms experienced by US Korean men diagnosed with chronic disease and women more generally, additional study is needed to identify reasons underlying this relationship.

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C-079

SPIRITUALITY PREDICTS EMOTIONAL DISTRESS IN WOMEN WITH FAMILIAL RISK OF BREAST CANCER

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Familial risk for breast cancer is a major life stressor associated with emotional distress and prior studies have demonstrated that spirituality and coping is associated with distress in cancer populations. Further, women who receive routine surveillance and screening in high-risk clinics may demonstrate heightened risk for distress as coming to a high-risk clinic can provoke a confrontation with latent feelings about vulnerability and risks; yet few studies have focused on this group. Utilizing tenets from models of coping with the threat of illness, this cross-sectional study sought to test the independent contributions of spirituality on emotional distress and the associations of emotion-focused coping methods on emotional distress among women who were first-degree relatives of breast cancer patients. Methods: Forty-one, mostly White (86.5%), women (mean age=40.30 years; SD: 13.9 years) who were seen in the UCLA Revlon Breast Center High Risk Clinic completed a socio-demographic questionnaire, the Profile of Mood States (POMS), the Functional Assessment of Chronic Illness Therapy - Spiritual Well-Being scale (FACIT-SP), and the Emotional Approach Coping scale. Regression analysis with a total index score indicating emotional distress as the outcome was conducted. Results: Higher levels of spirituality were associated with decreased emotional distress ($p < .0001$). Emotional expression and emotional processing did not contribute to emotional distress ($\beta = .61$; $p < .0001$; $\beta = .22$; $p < .0001$). Conclusion: Although additional, larger studies are needed, these preliminary findings underscore the need for future research to further examine the mechanisms that underlie these associations. Clinicians are encouraged to consider spirituality in developing prevention interventions for women with familial breast-cancer risk.

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C-080

TOXIC EMOTIONS: TEACHER'S NEGATIVE BEHAVIORS ON PUPIL'S PSYCHOLOGICAL HEALTH

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Negative effects of certain leadership behaviours are defined as 'toxic emotions' in the organization, that are a new source of work-related stress (Frost, 2003). We have developed a Toxic Emotions Scales (TES) to assess these behaviors. It contains 10 subscales: Intention, Incompetence, Infidelity, Fairness, Hostility, Insensitivity, Arrogance & Corruption, Intrusion, Institutional Forces and Inevitability, with an alpha range of 0.81-0.97 and a CFA construct validity of 0.92.

Our previous studies have confirmed the negative effects of the TES dimensions along with authoritarian leadership and traditional Chinese personality as three major sources on the subordinates' poor psychological health. The present study investigated the relationship between head teacher's TES behaviors and the school children's psychological health as measured by the General Health Questionnaire (GHQ). A sample of 505 secondary school students in Taiwan, 269 males and 236 females in Grades 7 ($n=229$) & 9 ($n=276$) participated.

Except for the correlation pairs for Incompetence vs. Social Dysfunction and Infidelity vs. Severe Depression, all other inter-correlations among all the TES scales and the GHQ scales were highly significant mostly at the 0.01 level and only several at the 0.05 level. The findings reflected a serious state of the children's health problem.

As regression analyses revealed, the Institutional Forces predicted Somatization ($\beta = .179$; $p < .01$), Anxiety-Insomnia ($\beta = .184$; $p < .01$), and Social Dysfunction ($\beta = .135$; $p < .01$); whereas Infidelity predicted Severe Depression ($\beta = .177$; $p < .01$) negatively. The results indicated that (1) the head-teachers in this study indeed exhibited serious TES behaviors in their day-to-day interactions with their pupils, and that (2) these TES behaviors affected the pupils' psychological health to an alarming degree in the schools. The two predictive TES dimensions, the schools' Institutional Forces and the teacher's Infidelity, were found most salient and discomfoting. Implications of the findings and conclusions will be discussed.

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C-081

CALLIGRAPHIC HANDWRITING & THE SHAPING OF CHILDREN'S PERSONALITY

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Background: Kao and his associates (2006; 2011) have found that practicing Chinese brush handwriting, can help facilitate one's cognitive functioning, calm down emotions, relax physiological conditions, and activate perceptual and cognitive processing. Successful applications of these findings have been documented for treating a host of behavioral, psychosomatic and cognitive illnesses, emotional disorders and work-related stress.

On the basis of these facilitative effects as well as a cybernetic theory of motor-sensory-cognitive system of handwriting and tool-using behavior, we hypothesized the likely of this calligraphic writing act as a potential contributor to changing and shaping of children's temperament and traits of personality as a result of its sustained practice and training. This prediction was put to an empirical testing in a sample of secondary school children in Beijing. Method: The sample of 553 participants was divided into a low-practice (LP) group and high-practice (HP) group. The LP group had less than two years of brushwriting experience, with 145 males and 104 females for a total of 249 children and an age range of 12-25 years. The HP group comprised 172 males and 132 females for a total of 304 participants and a similar age range.

A Calligraphy Practice Questionnaire explored the duration of the children's brushwriting exposure and experience. In addition, the Chinese version of the Cattell 16 Personality Profile-Chinese (16PF-C) was adopted for assessing children's personality.

Results & discussion: The HP group scored significantly higher than the LP group in 15 of the 24 16-PF subscales at $p < 0.05$. They were found to be more intelligent, emotionally stable, sober, conscientious, shy, persevering, practical, self-sufficient, controlled, creative and better in learning abilities, all given at a significant regression level of $P < 0.02$ or better. The results lend overwhelming support to the stated hypothesis. The implications of practicing calligraphic handwriting in shaping children's personality will be discussed.

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C-082

THE USE OF TEXT MESSAGES TO ENHANCE PARENTAL ADHERENCE IN A GROUP TREATMENT PROGRAM FOR CHILDREN WITH ADHD

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Previous research on parent training groups for the treatment of ADHD in children suggests that parental adherence tends to diminish over the course of treatment. Factors such as low parental motivation or lack of support can contribute to low rates of parental adherence in the treatment of their child's ADHD. There has also been a demonstrated link in increasing a participant's connectedness to the group/investment in treatment and positive treatment outcomes. eHealth technology, such as cell phone text messages, may offer a cost-effective and efficient way to supplement health care. While the majority of the research on eHealth interventions has been done in medical populations; the use of eHealth in mental health research is beginning to surge. The present study assessed the effectiveness of text message reminders in enhancing treatment adherence and improving behavioral outcomes among children (Mean Age=7.6 years old) enrolled in a parent-focused group ADHD intervention. Weekly text message reminders were sent to parents ($N=27$) who were randomly assigned to receive the text messages or treatment as usual. The text messages contained reminders of weekly group content, activities parents need to complete and weekly goals. Parents completed the Disruptive Behavior Stress Inventory and the Eyberg Child Behavior Inventory at pre- and post-intervention. Participants also completed the Client Satisfaction Questionnaire and a Post Group Questionnaire at the end of the treatment. T-test analyses revealed that although the text messages did not significantly improve adherence rates per se, significant behavioral improvements were reported among those parents receiving the text reminders ($p = .027$; $p = 0.45$ & $p = 0.39$). Participants receiving the text messages rated the addition to their treatment as favorable and 61.5% of the participants receiving text messages reported feeling connected to the group. Clinical implications and suggestions for future research are discussed.

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C-083

AN INTERDISCIPLINARY APPROACH: MANAGING HOARDING WITHIN A SKILLED NURSING FACILITY

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The majority of literature on hoarding is focused on the general population; there is limited research on hoarding within the geriatric population, and even less addressing geriatric residents living in skilled nursing facilities (SNF). Establishing an effective protocol to manage hoarding within a SNF is necessary due to the health and safety risks that come about for this environment.

The San Francisco Veteran Affairs medical Center (SFVAMC), Community Living Center (CLC) is developing and implementing a policy to manage hoarding behaviors within its SNF. This poster will illustrate the development of a hoarding policy within a SNF and will provide attendees with ways of providing hoarding psychoeducation to interdisciplinary SNF teams, and gain tools to address the management of hoarding within their own facilities. The aim is to help attendees gather information in order to help them develop a hoarding policy within their own facilities. This presentation will emphasize the necessity of using an interdisciplinary team approach (physicians, psychologists, social workers, all levels of nursing, recreation and occupational therapists, and environmental management services, amongst others) to address the management of hoarding within a SNF. The poster will also discuss obstacles and barriers encountered in the process of developing a hoarding policy within a SNF.

The presentation will share our policy and interdisciplinary team approach illustrated through a qualitative review of a case example from the SFVAMC CLC. The clinicians used the Clutter Image Rating Scale as an objective measure to monitor progress; results indicate a decrease in clutter. The poster will bring greater awareness to the importance of addressing problematic hoarding behaviors within SNFs.

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C-084

SOCIAL SUPPORT MEDIATES THE RELATION BETWEEN HEALTH LITERACY AND DEPRESSION

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Nearly half of U.S. adults have poor health literacy (HL), which interferes with the ability to obtain, process, and understand health information. Low HL is associated with depression. While mechanisms underlying the relation between poor HL and depression are unclear, greater social support is associated with better psychological well-being and lower depressive symptoms. Those with low HL may perceive less available social support, which might increase depression. This study investigated whether social support mediated the relation between HL and depression among 200 low socioeconomic status (SES) racially/ethnically diverse smokers enrolled in cessation treatment (58 % female, 45 % Black, 68 %>high school diploma/GED, 48 % unemployed, 58 %<\$30,000/year income). Participants completed the Short Test of Functional Health Literacy in Adults (S-TOFHLA), the Center of Epidemiologic Studies Depression Scale (CES-D), and the Interpersonal Support Evaluation List (ISEL). Lower HL was associated with being Black, lower education and employment, lower perceived social support, and higher depressive symptoms ($p < .05$). A nonparametric bootstrapping procedure was used to assess mediation, controlling for demographics and SES variables (age, gender, race/ethnicity, education, employment, income, relationship status). Social support (ISEL total and subscale scores [Appraisal, Belonging, Tangible]) significantly mediated the effect of HL on depressive symptoms, such that lower HL led to lower perceived social support, which led to higher depressive symptoms ($p < .01$). Results suggest that social support plays a critical role in the relation between HL and depression among predominantly low-SES racial/ethnic minorities attempting smoking cessation.

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C-085

GENDER CONGRUENCE MODERATES BELIEFS ABOUT THE CAUSES OF ALCOHOL DEPENDENCE AND MAJOR DEPRESSION

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Etiological beliefs about the causes of common mental health conditions can influence stigmatizing attitudes toward individuals with mental illness. Some of these beliefs may be subject to intergroup membership bias based on gender, as depression is more prevalent in women whereas alcohol dependence is more prevalent in men. In this study, GSS respondents were asked how likely they believed vignette characters' depression or alcohol dependence symptoms were due to the following causes: X's bad character, the way X was raised, stress, genetics, and the normal ups and downs of life. Results revealed that respondents endorsed bad character and the way X was raised as a more likely cause of alcohol dependence ($M = 70.59$, $SD = 23.35$) compared to depression ($M = 51.64$, $SD = 21.75$) [$F(1, 1064) = 150.23$, $p < .001$], but this was significantly stronger for women than men [$F(1, 1064) = 6.71$, $p < .05$]. Men were significantly more likely to endorse bad character as a cause of depression than women [$F(1, 758) = 25.65$, $p < .001$]. A trend suggested that the overall tendency for alcohol dependence to be attributed to genetics more than depression was stronger for men than women [$F(1, 1064) = 3.23$, $p = .07$], whereas women endorsed genetics as a more likely cause of depression than men [$F(1, 758) = 21.54$, $p < .001$]. Finally, men ($M = 72.41$, $SD = 21.77$) were significantly more likely to attribute characters' symptoms to the normal ups and downs of life than women ($M = 68.17$, $SD = 22.75$) [$F(1, 1064) = 5.27$, $p < .05$]. These patterns suggest gender differences in attitudes about the causes of alcohol dependence and depression consistent with intergroup membership bias. Anti-stigma interventions aimed at reducing bias toward individuals with these common, gender-typical disorders should consider adapting strategies to target intergroup membership bias.

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C-086

ATTENTION DEFICIT AND HYPERACTIVITY DISORDER (ADHD) AND BINGE DRINKING BEHAVIOR AMONG CHINESE ADOLESCENTS

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Attention deficit and hyperactivity disorder (ADHD) is one of the most common diagnoses of childhood neurobehavioral disorders, and its influence can last into adolescence and adulthood. Several studies have reported the association between increasing risks of substance abuse, including heavy intermittent smoking, binge drinking, and drug dependence, and ADHD symptoms among children and adolescents in the Western countries. However, this relationship is rarely demonstrated among Asians. The purpose of this study is to identify the possible association between binge drinking among Chinese adolescents and their symptoms related to ADHD with data collected from 6168 high school students from 24 schools (12 academic and 12 vocational professional high schools) in Chengdu, China. Binge drinking was assessed by using a universal standard of having 4 or more drinks of alcohol in a row, considering the relative lower body mass index (BMI) among Chinese. A self-report scale containing 18 items derived from the DSM-IV diagnostic criteria was adopted for assessment of ADHD symptoms. Logistic regressions were employed to investigate the targeted associations. The effect of interaction on school type (academic or vocational) was significant ($P = 0.01$). Consequently, analyses were carried out with stratification on school type. After controlling for gender, age, academic performance, parents' highest education and weekly allowance, participants from academic schools with ADHD were found to have significantly increased risk of engaging in binge drinking ($OR = 1.55$; 95%CI: 0.876-2.724; $p < .0001$). The effect was even greater among students from vocational schools ($OR = 4.99$; 95%CI: 2.956-8.425; $p < .0001$) with a significant interaction for school type (academic or vocational schools, $p = 0.01$). These findings underscore the influence of ADHD symptoms on the risk of binge drinking behavior in a population of Chinese high school students, and reveal an increased vulnerability of binge drinking for adolescents suffering from ADHD symptoms.

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C-088

PSYCHOMETRICS OF A BRIEF MEASURE OF ETHNIC IDENTITY

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The Multigroup Ethnic Identity Measure-Revised (MEIM-R; Phinney & Ong, 2007) assesses two components of ethnic identity: examining what it means to be a member of one's ethnic group (exploration) and one's attachment to that group (commitment). Ethnic identity has mainly been associated with positive behavioral health among ethnic minorities, e.g., well-being (Smith & Silva, 2011) and less drug/alcohol use (Marsiglia et al., 2004), and may protect against disordered eating (Rogers Wood & Petric, 2010). The 6-item MEIM-R is a promising methodological advance in this literature. However, research has not confirmed whether its measurement properties are equivalent across racial/ethnic groups—a necessary prerequisite to legitimately compare those groups. We examined a) the psychometric properties of the MEIM-R, including measurement invariance and internal consistency, and b) differences in ethnic identity in a large sample of women with gestational diabetes (N=1531; age 32.6±4.9 years) across five racial/ethnic groups: Asian (n=631), Black (n=59), Hispanic (n=303), multiethnic (n=160), and White (n=378). Multiple-groups confirmatory factor analysis (CFA) indicated measurement invariance, i.e., equal two-factor structure, equal factor loadings, and equal item intercepts across racial/ethnic groups. Internal consistency was good for the exploration subscale (Cronbach's $\alpha=.76-.87$), commitment subscale ($\alpha=.80-.90$), and the overall scale ($\alpha=.85-.91$). Multiple-groups CFA tests for equal factor means indicated that ethnic identity differed across groups; Asian and Black women had significantly higher mean levels of exploration and commitment (range: 3.32-3.99, SD .79-1.01) than White and multiethnic women (range: 2.78-3.33, SD .93-1.04). In sum, the MEIM-R demonstrated strong psychometric properties in this large sample of young women, including measurement invariance across five racial/ethnic groups. Results support future use of the MEIM-R in diverse samples to clarify relationships between ethnic identity and behavioral health.

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C-089

CAPTURING WAYS THAT TEENS COMMUNICATE WITH PEERS ABOUT RISK BEHAVIORS: A FEASIBILITY STUDY USING AN INTEGRATED SMARTPHONE

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Studies of teen communications about risk behaviors are crucial as such communications could influence behaviors that impact health. Existing research in this area has limited ecological validity because of the use of laboratory designs; suffers from recall bias and intentional misreporting because of the inherent limitations of retrospective recall; and is limited in scope because most studies only examine communications within a single media channel (e.g., speech or text, but not both). Given the rapidly evolving ways in which teens communicate, research is needed to assess the multiple ways teens communicate about risk behavior in an unbiased, ecologically-valid way. We conducted a series of 12 focus groups with teens (n=30; 48 % female, ages 14–18) and parents (n=27) to better understand the feasibility and acceptability of using a single, integrated smartphone to assess two ways that teens communicate about risk behavior (e.g., sex, drugs and alcohol): text messaging and speech. Data were analyzed with ATLAS.ti. Although a majority (77 %) of teens liked the phone and thought that a study using a smartphone to collect health risk communications was “doable,” a few challenges were identified. These included concerns about competing activities that could interfere with protocol adherence (e.g., summer jobs, sports), access to other device features (e.g., music and games), and “wearability” of the apparatus (i.e., Bluetooth vs. microphone earbud) to capture spoken conversations. Few teens and parents expressed concerns about privacy and most were satisfied once they learned about the data protections that would be in place (e.g., software to filter ambient noise and other voices in the conversation, password protected devices, assurances of confidentiality, and the option to delete information before researchers see it). This research begins to lay a foundation for future studies comparing teen communications across traditional and new media channels.

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C-090

UTILITY OF THE DAILY PHONE DIARY FOR MEASURING ADOLESCENTS' ADHERENCE TO ASTHMA MEDICATION

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Adherence to daily, long-term asthma control medication is important for effective asthma treatment and has been linked to a variety of health outcomes. However, there are few well-established measures of pediatric asthma adherence, and existing measures are costly, time-consuming, or are susceptible to self-report bias. This study examined the utility of the Daily Phone Diary (DPD) for measuring adolescents' adherence to asthma controller medication. The DPD is a 24-hour cued recall diary that elicits respondents' behaviors over the past 24 hours. It is designed to limit recall errors and reduce social desirability bias, and takes about 15 minutes to administer. The DPD was originally developed for use with parents of children with cystic fibrosis, and has not been validated among adolescents with asthma. Participants were 168 African American adolescents with moderate to severe persistent asthma and their primary caregiver. Adherence to asthma controller medication was measured with the DPD (adolescent report) and the FAMSS semi-structured interview, the only self-report measure of asthma adherence in the literature with established psychometrics. FAMSS asthma knowledge, environmental control, and adolescent response to symptoms subscales were also assessed, as well as adolescents' self-management confidence and importance. FEV-1, a measure of pulmonary functioning, was obtained from adolescents using a portable calibrated recording spirometer. In an OLS regression model, DPD adherence was a better predictor of asthma health status (FEV-1) than the FAMSS adherence subscale: DPD ($p<.05$), FAMSS ($p=.10$); r (DPD, FAMSS)=.11, $p>.05$. In a subsequent model, DPD adherence remained significantly associated with FEV-1 after controlling for age, height, confidence, environmental control, adequacy of adolescents' response to symptoms ($ps<.05$), gender, weight, importance, and asthma knowledge ($ps>.05$); $R^2=.24$. Results suggest that the DPD is a valid measure of adherence to asthma controller medicine, appropriate for use with adolescents, and should be considered for use in future research.

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C-091

ACTIVITY ENGAGEMENT AND COGNITION IN OLDER ADULT WOMEN

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The activity engagement hypothesis predicts that cognitively stimulating activities (CSA) prevent, reduce or delay age-associated deterioration of cognitive abilities. The effect of self-reported CSA on cognitive performance was investigated using structural equation modeling (SEM). Participants in the Women's Health Initiative Memory Study (WHIMS) Extension who continued annual neuropsychological assessments by telephone and completed a concurrent questionnaire of CSA were included (Mean age=84 years; N=428). Cognition was measured by tests of attention, working memory, verbal fluency, executive function, and memory. CSA was measured by self-reported frequency (less than once a month to daily) in a variety of cognitive activities (e.g., reading books, playing games, computer activities; N=11 items) during the last 12 months. SEM demonstrated a significant association between one-factor latent variables of CSA and Cognition (.60; $p<.001$), and the structural model fit the data (Chi-square=100.09, $df=82$, $p=.09$) (Root Mean Square Error of Approximation=.02; Standardized Root Mean Square Residual=.04; Comparative Fit Index=.97). The association remained significant after modeling covariates (age, education, WHIMS intervention assignment). Direct effects of education on game playing and age on computer activities indicated that more educated older women play fewer games and the oldest old have less exposure to computer activities (all $p's<.001$). An indirect effect of education on CSA demonstrated that older women with more education have higher frequencies of CSA ($p<.001$). Consistent with our hypotheses, CSA may have positive effects on Cognition unaccounted for by age and education in older women.

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C-092

MIXED METHODS USABILITY TESTING OF A PATIENT-REPORTED OUTCOME DATA COLLECTION SOFTWARE APPLICATION

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Background: Assessment Center (AC) is a web-based patient-reported outcome data collection software application. A comprehensive review of usability (ease with which users can learn and use software) was warranted given the increased complexity of the application through incremental feature development. Due to the multifaceted components of usability, we conducted three types of testing (end-user survey, focus group, usability testing).

Methods: An end-user survey of a modified Computer System Usability Questionnaire (CSUQ) and modified Questionnaire for User Interface Satisfaction (USE) was distributed to 1700 AC users. Both instruments used a 1 (Not at all) to 5 (Very much) scale. The focus group included six experienced AC users. A facilitator reviewed areas of the application followed by a semi-structured interview of functionality, user-interface design, and ease-of-use. Difficulty ratings (0=not at all difficult to 10=as difficult as I can imagine) were captured. Usability testing was done with six naïve users who completed tasks in AC under observation. A note taker recorded comments, task completion time, and success.

Results: The survey was completed by 180 people. CSUQ scores were moderate (System Usefulness mean=3.3, SD=0.93, Information Quality mean=3.2, SD=0.82, Interface Quality mean=3.3, SD=0.84). Similar feedback was provided on USE items. Focus group difficulty scores varied substantially by functional area with selection/creation of instruments (mean=6.7, SD=1.9) rated most difficult followed by creating a data collection website (mean=3.6, SD=1.2). Most comments addressed improving ease-of-use and error messages. In usability testing, some participants were unable to create instruments (33 %) or set up a data collection website (17 %). These areas had task completion times that exceeded expectations (83 % and 67 % of participants respectively).

Conclusions: By quantifying areas of weakness and addressing differences between experienced and naïve users, all three usability activities provided unique information to inform improvements.

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C-093

A LATENT PROFILE ANALYSIS OF THE MULTIDIMENSIONAL HEALTH LOCUS OF CONTROL SCALES

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The Multidimensional Health Locus of Control (MHLC) scales are widely used to assess health locus of control (HLC), or the extent to which individuals believe various sources control health. The MHLC scales evaluate Internal (I), Chance (C), Powerful Others (P), and God (G) HLC. Many studies have examined the relationships of individual subscales with health outcomes; however, limited research has considered the combined impact of varying types of HLC. This study used latent profile analysis (LPA) to identify homogenous, orthogonal belief profiles based on simultaneous consideration of four forms of HLC. A community sample (N=436) of Hispanic Americans completed surveys in English or Spanish. Overall sample means of the MHLC scales were: I=26.4, C=15.8, P=21.4, G=14.3. A four-profile solution fit the data best, yielding the groups Internally Oriented-Moderate (Ms: I=26.4, C=16.5, P=22.0, G=16.6), Internally Oriented-Weak (Ms: I=26.0, C=19.5, P=22.2, G=23.2), Internally Oriented-Strong (Ms: I=26.4, C=13.4, P=20.5, G=7.8), and Externally Oriented (Ms: I=27.6, C=21.9, P=24.1, G=32.0). Analyses of variance compared profiles on demographic, psychosocial, and behavioral variables. Significant differences ($p < .05$) were found for age, computer familiarity, religiosity, cancer fatalism, equity health attributions, optimism, and alcohol consumption. Of note, the Internally Oriented-Strong group had less cancer fatalism, religiosity, and equity health attributions, and more alcohol consumption relative to all other groups. The Externally Oriented group had more equity health attributions and less alcohol consumption. No significant differences were found for physical/mental health, compliance with colorectal cancer screening guidelines, or tobacco consumption. These findings support the use of LPA as a parsimonious way to evaluate the interactive impact of HLC on health.

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C-095

USING THE WEB TO ENHANCE DIETARY ASSESSMENT: THE AUTOMATED SELF-ADMINISTERED 24-HOUR DIETARY RECALL (ASA24)

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Within the context of the obesity epidemic, much attention is focused on the identification of effective interventions for promoting healthy behaviors, including healthy diets. Evaluation of potentially fruitful interventions requires careful measurement of such behaviors. The 24-hour recall is among the preferred assessment tools for measuring diet, but has traditionally been prohibitively expensive because of the need for trained interviewers and labor associated with coding and calculating intakes. The National Cancer Institute's Automated Self-administered 24-hour dietary recall (ASA24) applies technological advancements to provide a low-cost means to obtain high-quality intake data. ASA24 is a freely available web-based tool that employs a dynamic user interface with audio and visual cues to guide respondents in reporting eating occasions and foods, drinks, and supplements consumed during the previous day. Detailed questions about food preparation and portion size enable nutrient and food group intakes to be calculated. Modules to enable researchers to investigate influences on dietary behaviors query where meals were eaten, whether meals were eaten alone or with others, and television and computer use during meals. ASA24 was initially developed for use with the US English-speaking adult population and has been adapted for Spanish speakers and children aged 10 years and above. Efforts are underway to tailor the tool for use in other countries. Since the release of a Beta version in 2009, ASA24 has been used in not only clinical and epidemiologic but also behavioral research to collect over 60,000 recalls. Examination of data collected by researchers has shown calorie, nutrient, and food group estimates that are consistent with data from the National Health and Nutrition Examination Survey. By making it feasible for researchers to collect high-quality dietary intake data, ASA24 has the potential to contribute to the rigorous evaluation of interventions aimed at improving diet and health.

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Citation and Meritorious Poster

C-096

DIET IS ASSOCIATED WITH REAL-TIME MEASURES OF MOOD IN CHILDREN

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Dietary intake has been associated with mood in adolescents and adults. However, our understanding of this relationship could be enhanced by using repeated real-time measures, which reduce recall biases and can capture within-person variability. This study collected real-time data to examine the association of dietary intake with mean levels and within-person instability of positive affect (PA) and energetic physical feeling state (EPFS) in children.

Repeated-measures of PA and EPFS were assessed by ecological momentary assessment (EMA) over 4 days via 3–7 random prompts per day in a sample of 110 children (mean age=11±1, mean BMI percentile=63±31, 48 % female). Dietary intake was assessed using the Block Kids Food Screener. Mixed regression analysis was used to examine if intake of fruits, vegetables, whole grains, saturated fat, added sugar, glycemic index, and glycemic load were associated with mean levels of PA and EPFS. Mixed effects location scale models were used to explore the association between the dietary variables that were significantly associated with PA and EPFS in the mixed regression models and within-person instability of PA and EPFS.

After adjusting for age, sex, and BMI percentile, there was a positive association between PA and whole grain intake ($\beta=0.49$, $p=0.03$). EPFS was negatively associated with added sugar intake ($\beta=-0.06$, $p=0.03$). Further analysis showed more whole grain intake was associated with less variability in PA ($\tau=-3.13$, $p<0.01$).

Mean levels of PA and EPFS and instability of PA were associated with dietary intake. Though we cannot infer causality, the findings highlight the importance of the association of positive affect and mood instability with health-related patterns of eating at an early age. Future research should aim to elucidate the causal nature of these associations.

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C-097

ROLE OF MEAL TIMING IN CALORIC INTAKE AMONG AVERAGE AND LATE SLEEPERS

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The relationship between meal patterns and weight regulation has long been of interest to both researchers and the public. In addition, there is a growing literature seeking to understand the role of sleep in weight regulation. The goal of this study was to evaluate the relationship between meal timing with caloric intake and BMI among individuals with average and delayed sleep timing. Fifty-two healthy individuals were recruited from the community and completed 7 days of wrist actigraphy to evaluate rest/activity patterns and 7 days of food logs to measure caloric intake. Data were analyzed using Pearson correlations and multiple regression analyses. Results demonstrated the timing of sleep and caloric intake were associated with overall energy intake but were not associated with BMI. In multivariate models controlling for age, gender, sleep duration and sleep timing, meal pattern attributes associated with higher caloric intake were a greater number of meals, a later end of caloric intake, a shorter duration between the end of caloric intake to sleep onset and a longer eating period. In a mediational model, the relationship between eating closer to sleep onset and greater caloric intake was mediated by number of meals. Results suggested that late eaters may consume more calories due to a greater frequency of meals and more meals over a longer eating period. Strategies to reduce evening eating may be a possible weight management intervention.

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C-098

ETHNOGRAPHIC STUDY OF SHOPPERS' EXPERIENCES AT AN URBAN FARMER'S MARKET

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The recent growth of farmers' markets (FM) presents an opportunity to promote healthful nutrition. However, factors that enhance and detract from shoppers' FM experiences - which may inform targeted intervention and social marketing strategies - are not well understood. We conducted a consumer intercept, ethnographic study of shoppers entering an urban FM in a large metropolitan US city. We utilized the Stanford Healthy Neighborhood Discovery Tool, a computerized, tablet-based assessment tool that collects geo-coded photographs and audio narratives. Shoppers were asked to use the device during their regular shopping to identify factors that enhanced or detracted from their FM experience. A systematic content analysis of the photographs and audio narratives was conducted by 8 independent coders. Shoppers (N=38) were primarily women (65%), 18-35 years of age (54%), non-Hispanic (81%) and white (73%), had some college education (70%), and visited the FM at least 1-2 times per month (71%). Shoppers captured 291 photographs (7.9±6.3/participant), 171 audio narratives (5.3±4.7/participant), and 91 linked photograph-audio narrative pairs (3.8±2.8/participant). In total, 10 unique coded elements emerged from the data that either enhanced the FM experience (56%), detracted from the experience (5%), or were neutral (42%). Agreement between coders was substantial (mean prevalence- and bias-adjusted kappa=0.73). Most frequently noted elements were freshness/abundance of produce (28%), product presentation and associated print material (17%), social interactions (16%), and FM attractions (e.g., live entertainment, dining offerings; 13%). While produce quality (i.e., freshness/abundance) was of primary importance, other contextual factors also appeared important to the FM shopper experience. These findings may inform social marketing strategies to increase FM utilization and community building efforts that target FM locales.

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C-099

CALFIT: USING SMARTPHONE VIDEOS TO ASSESS DIETS IN CHINA

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As obesity epidemic continues to spread worldwide, developing an efficient and effective diet assessment method is necessary. Traditional methods such as 24/72-hour recalls and food frequency questionnaires have considerable limitations including subject fatigue, inaccurate reporting, and cost. Diet assessments of various ethnic groups with diverse eating habits pose even more challenges. This study aims to test the feasibility of using smartphone-based voice-annotated videos to assess diets, and compare this method with traditional paper-based 72-hour recall in a 21-subject (aged 18-86) cohort in China. Upon recruitment, subjects were trained on how to estimate portion sizes of common food, use smartphones to take voice-annotated videos before and after their meals, and record these meals on paper forms. Subjects were instructed to record videos and complete paper forms on two weekdays and one weekend day within a week. All videos were coded by two groups of trained staff (2 per group) and paper forms were entered. Inter-rater reliability between two groups of coders was checked via kappa statistics. Coded video data and entered paper forms were then analyzed in terms of total calories and macronutrient groups using a Chinese diet-specific nutrient analysis software. Nutrient analysis results were compared via Student t-test between the two methods, and subjects were interviewed regarding the usability of both methods. We found no significant differences (P>0.05) between two methods in the intakes of total calories, carbohydrate, protein and fat, suggesting both methods generate similar results. However, paper forms yielded higher total calories (360kcal), carbohydrate (74 g), protein (11 g), fat (2 g) than video method. Inter-rater reliability between two groups of coders was strong (>0.61). Subjects reported preference of using video method and limitations of using both methods. Because of its several advantages (limited subject fatigue, reduced recall-bias and relative cost), researchers should explore this method more in different settings.

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C-101

REDUCING VARIABILITY OF AEROBIC FITNESS PARAMETERS AND SELF-EFFICACY IN OBESE ADOLESCENTS USING A PEER MODELING INTERVENTION

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There has been a dramatic increase in the prevalence of childhood obesity. This trend is a driving factor to develop effective and accurate strategies for physical activity and fitness assessment. Considerable clinically diagnostic and prognostic knowledge have the potential to be obtained from cardiorespiratory fitness testing, or peak VO₂, a non-invasive but effort-dependent assessment. However, testing is compromised when individuals volitionally terminate the assessment prior to reaching their true, maximal physical capacity. Eliminating such inconsistencies is necessary to interpret data in an accurate and reliable manner. The objective of this study was to examine the effect of a peer modeling (PM) intervention on reducing variability of cardiorespiratory fitness parameters (i.e., peak VO₂, duration, heart rate (HR), respiratory exchange ratio (RER)) and self-efficacy (SE) in obese Canadian youth. Using a stratified (age and sex) RCT, 49 obese (BMI ≥95th percentile for age and gender) youth (26 male, 10-17 years) were assigned to a control (CG) or intervention group (IG). Two maximal treadmill assessments were completed (one week apart). Following the first and before the second assessment, the IG viewed a PM DVD that offered strategies to cope with maximal effort and overcome the associated discomfort experienced during the test, while the CG viewed a nutrition DVD. SE was measured at both visits before the maximum test. Analyses involved repeated measure ANOVAs of mean standard deviation scores. Overall, results show that from baseline to follow-up, differences in variability were found, favoring the IG, for duration (p=0.09, n₂=0.06), heart rate (p=0.07, n₂=0.07) and RER (p=0.02, n₂=0.12), compared to the CG. No significant differences were found for peak VO₂ or SE. Hence, the peer modeling intervention was effective in improving the accuracy of cardiorespiratory fitness assessments by reducing the variability of the physiological responses, thereby attaining values that are reflective of the experimental group's true physical fitness.

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C-102

THE ABILITY OF CHILDREN TO RECOGNIZE GRADUAL WEIGHT CHANGE

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Background: Many interventions aim to prevent obesity in children, yet little is known about longitudinal changes in body image perception during these interventions. The aim of this study was to evaluate changes in body image that accompanied weight change in children enrolled in the WiseMind study, a two-year environmental obesity prevention intervention. Methods: Body image, measured with the Body Image Assessment for Children (BIA-C), and body mass index (BMI percentile) were collected in 620 second through sixth grade children at Baseline, Months 6, 12, and 18. Participants were categorized according to change in BMI percentile during the study: weight losers (downward change ≥ 3 percentiles), weight maintainers (change within ± 3 percentiles), and weight gainers (upward change ≥ 3 percentiles). BIA-C scores (current and ideal body size) were quantified as change from baseline. Results: Participants were 9.1 ± 1.5 years and at the 60.3 ± 30.4 BMI percentile at baseline. Despite marked increases and decreases in body mass among weight gainers ($n=186$; 12.1 ± 8.1 BMI percentiles) and losers ($n=200$; -10.9 ± 8.1 BMI percentiles), current and ideal body size selections did not change from baseline to month 18 for weight gainers (weight maintainers; $n=234$, $-.03 \pm 1.4$ BMI percentiles, also had no change on these variables). All values are mean \pm SD. Conclusions: Although the children in this study experienced weight change, current body size selections did not change. These data suggest that gradual weight change may be difficult for children to detect.

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C-103

RELATIONSHIPS BETWEEN SELF-OBJECTIFICATION AND PERSONALITY TRAITS TO PSYCHOSOCIAL OUTCOMES AMONG WEIGHT LOSS TREATMENT-SEEKING ADULTS

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Self-objectification (SO), valuing one's body for appearance rather than performance, often results in negative psychosocial outcomes. Research has primarily examined SO in normal-weight women, a major limitation given the rise in obesity rates as well as the susceptibility men may have to this view of their bodies. Objectification theory distinguishes between SO as transient state and persistent trait, yet scant research has examined SO with regard to personality. This study sought to determine whether SO is a subtype of or is distinct from other personality traits (i.e., perfectionism), as well as examine psychosocial correlates of SO and perfectionism among overweight/obese (OW/OB) adults.

Method: 45 OW/OB adults participating in a behavioral weight loss program (BWL) completed measures of trait SO, perfectionism, and psychosocial outcomes (i.e., appearance control beliefs, experiential avoidance/psychological flexibility, binge eating, depression). All analyses were conducted at baseline prior to participants' randomization into the BWL; treatment outcome was not examined.

Results: Analyses show SO is related to the personality trait of perfectionism, while differentially predicting psychosocial outcomes. Both SO and perfectionism predicted appearance control beliefs and experiential avoidance/psychological inflexibility, while only perfectionism positively binge eating and depression. Regression analysis demonstrated perfectionism accounts for a significant amount of variance in both appearance control beliefs and experiential avoidance/psychological inflexibility above and beyond SO.

Conclusion: These findings suggest that while SO and perfectionism are likely relevant constructs in the lives of OW/OB women as well as men, it's likely SO exists as a subtype of perfectionism in terms of personality traits. Further study of these constructs is necessary as without interventions directed at this way of viewing one's body, continued negative outcomes may result.

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C-104

REASONS AND STRATEGIES USED TO LOSE WEIGHT: A COMPARISON OF AFRICAN-AMERICAN AND WHITE PARTICIPANTS RECRUITED TO A COMMUNITY-BASED WEIGHT LOSS INTERVENTION

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African Americans are often underrepresented in weight loss programs, and few studies compare their reasons for weight loss with other subgroups. Understanding reasons and previously used methods to lose weight can enhance the development of culturally relevant weight loss interventions. This study examined the relationship between race and reasons for and strategies used to lose weight in the past.

Participants ($n=189$) were adults ($M=46.3y$, 53 % African American, 90 % female, 49 % college graduates) who completed an online questionnaire at baseline of a randomized trial of a 4-month, Internet and mobile-delivered, community-based weight loss program in North Carolina. We conducted regression analyses to compare African-American and White participants on reasons and previous strategies used for trying to lose weight.

African-American participants had higher BMI ($M=39.7 v 36.1$; $p<.01$) and were more likely to be single ($p<.001$) and report lower income ($p<.001$) compared to White participants. Among both African Americans and Whites, the most important reasons for trying to lose weight were: 1) health concerns; 2) wanting to feel better about yourself; 3) improved energy; and 4) improved appearance. Adjusting for differences in BMI, marital status and income, African Americans were more likely to endorse improved social life (17 % v 6 %; $p=.03$) and improved work performance (20 % v 10 %; $p=.09$) as extremely important reasons to lose weight. African Americans were less likely to have used their own approach to lose weight (59 % v 78 %; $p<.01$) and more likely to have used medication (50 % v 33 %; $p=.09$). Previous use of an Internet weight loss site was comparable between African Americans and Whites (21 % v 25 %; $p=.67$). Further development and delivery of weight loss programs that consider reasons and preferred strategies for weight loss among African Americans are necessary to maximize their potential for successful weight loss.

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Meritorious Poster

C-105

PARENT-ADOLESCENT COMMUNICATION MODERATES THE EFFECTS OF A FAMILY-BASED PARENTING INTERVENTION ON SEDENTARY BEHAVIOR IN AFRICAN AMERICAN ADOLESCENTS

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This study examined the moderating effects of parenting variables (communication, monitoring) on a family-based intervention for improving sedentary behavior (SB) in African American adolescents. The intervention ("Project SHINE: Supporting Health Interactively through Nutrition and Exercise") integrated Social Cognitive, Self Determination, and Family Systems Theories (e.g., behavioral skills, autonomy-support, communication, monitoring) to develop a positive parenting climate for health promotion in youth. African American adolescents ($n=73$; 12.5 ± 1.4 yrs; 61 % girls; 53 % overweight/obese) and caregivers were randomized to a 6-week parenting intervention or general health program. Intervention participants were provided with choice on self-monitoring tools, given feedback on goals to meet national guidelines (e.g., ≤ 2 hours screen time), and participated in activities to promote positive parenting skills (e.g., monitoring, communication). Adolescent SB and parental monitoring of youth health behaviors were self-reported using validated scales. A scale was developed to assess parent-adolescent communication specific to health behaviors ($\alpha=.91$). Preliminary analyses were conducted with participants from 4 of 5 cohorts. The overall model was significant ($F(11, 51)=4.96$, $p<.05$) and accounted for 52 % of the variance in adolescent SB after controlling for key covariates (e.g., baseline SB). There was a significant main effect of treatment ($B=-6.76$, $se=3.27$, $p<.05$) and a significant treatment by communication interaction effect on SB ($B=-16.11$, $se=6.15$, $p<.05$). Intervention families with higher communication scores showed lower adolescent SB than those with lower communication scores or those in the general health program. No effects were found for parental monitoring on SB. Findings suggest parent-adolescent communication may be a novel and effective component to integrate into health promotion programs for African American adolescents.

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C-106

THE INFLUENCE OF FRIENDS ON OBESITY IN LOW-INCOME ADOLESCENTS

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Purpose: Ecological models of obesity, which incorporate physical and social contextual variables, have gained increased support. Evidence of weight homophily within peer groups indicate social networks influence weight gain over time. This study examines if teens' perceptions of their friends' body sizes predict how they evaluate their own weight and if they report dieting or exercise.

Methods: 420 low-income, ninth-grade students participated in self-report surveys (mean age = 14.92; 50 % Latino, 22 % African American; 38 % obese/overweight.) Variables included demographics, BMI, contour figure rating scale (FRS) for self and peers, view self as overweight, and recent dieting and exercise. To assess perceptions of friends' body sizes, adolescents rated friends' figures on the FRS. Highest and lowest ratings were used to reflect heaviest and thinnest friends.

Results: Adolescents' FRS rating of self and friends were significantly correlated (r 's between .19-.35). 27 % said they were overweight, 45 % diet, and 41 % exercise. Logistic regressions tested if peer FRS ratings predicted these three variables, controlling for gender, race of self and friends, BMI, and FRS self-rating. Overall models were significant: said overweight: $\chi^2(7, N=367)=181.33, p<.001$, dieting: $\chi^2(7, N=365)=154.50, p<.001$; and exercise: $\chi^2(7, N=367)=311.73, p<.001$. The thinnest friend rating predicted viewing one's self as overweight (AOR =.62, $p<.01$) and dieting (AOR=.71, $p<.01$). The larger an adolescents' thinnest friend, the less likely they were to judge themselves as overweight or diet, regardless of their own shape and weight. Moderation tests indicated no race differences, but stronger effects for girls than boys.

Conclusion: Results suggest that the body sizes of adolescents' closest friends influence how they view their own weight. Specifically, if their thinnest friend is relatively big, they are less likely to see themselves as overweight or engage in dieting. Among low-income youth, close friends may influence weight norms, which in turn may contribute to the obesity epidemic in this population.

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C-107

A PICTURE IS WORTH A THOUSAND WORDS: USING STEREOTYPE CONGRUENT AND INCONGRUENT IMAGES TO ASSESS WEIGHT BIAS

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Introduction: Implicit weight bias is an unconscious, automatically activated negative evaluation of overweight and obese individuals acquired from repeated messages in the environment. Implicit anti-fat attitudes are often independent predictors of prejudiced behavior and are commonly assessed using the Implicit Associations Test (IAT). The wide majority of research using the IAT to assess weight bias has been conducted with the target categories Fat and Thin being represented by words or using silhouettes or head shots of thin and obese individuals. The present study sought to examine a remaining question in weight bias research using real photos of obese and thin individuals: Is implicit weight bias stronger when obese and thin people are pictured engaging in stereotype consistent behaviors as opposed to the converse?

Method: A computerized IAT was administered to a sample of overweight/obese adults ($N=52$) prior to beginning weight loss treatment. The photo stimuli depicted obese individuals engaging in stereotype consistent 'unhealthy' behaviors (watching TV and eating junk food) and stereotype inconsistent 'healthy' behaviors (exercising or preparing fruits and vegetables), along with photos of thin individuals engaging in complementary behaviors.

Results: Implicit weight bias was evident regardless of whether participants viewed stereotype consistent or inconsistent pictures. However, there was significantly greater weight bias when participants responded to stereotype consistent images compared to stereotype inconsistent images, $t(53)=-3.6, p<.01$.

Conclusion: Findings suggest that implicit anti-fat attitudes are connected to the way in which people with obesity are portrayed. Knowledge that weight bias decreased when individuals with obesity were shown engaging in non-stereotypical activities (e.g., exercising) suggests that changing media practices, such as depicting people with obesity as active, capable, and health-oriented, should be studied further as an avenue for public attitude change.

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C-108

THE DISTINCT LINK BETWEEN ANXIETY AND BINGE EATING DISORDER: FINDINGS FROM A WEB-BASED STUDY

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Negative affect has been theorized as an important factor in binge eating. According to cognitive-avoidance models, binge eating may serve to mitigate the impact of anxiety on psychological distress. Despite support for the role of negative affect in binge eating disorder (BED), little is known regarding the unique contributions of anxiety. The current study hypothesizes anxiety will emerge as a distinct predictor, independent of the effect of depression, of binge eating symptomology. Participants ($N=438$) responded to an online advertisement posted in several geographic regions. The Depression Anxiety and Stress Scales and the Eating Disorder Diagnostic Scale were used to assess depression, anxiety, and binge eating symptoms, respectively. Demographics were as follows: 65 % Caucasian, 15.3 % African American, 7 % Asian American, 1 % American Indian/Alaska Native, 6.5 % Hispanic/Latino, 5 % Biracial/Multiracial, 0.2 % Native Hawaiian/Pacific Islander; M age = 33.4, $SD=13.5$, 38 % male, 61 % female, 1 % transgendered.

Anxiety ($M=7.9, SD=8.2$) and depression ($M=11.1, SD=11.1$) scores were within the mild range. Approximately 6.8 % of the sample met criteria for BED; 6.5 % endorsed subclinical symptoms. As hypothesized, significant positive correlations were observed between binge eating and anxiety ($r=.30, p<.001$), and binge eating and depression ($r=.17, p<.01$). A hierarchical regression examined the effect of anxiety on binge eating, controlling for depression. Depression was entered first and demonstrated a significant main effect ($\beta=.17, p<.01, f^2=.03$). Anxiety was entered second ($\beta=.29, p<.001, f^2=.06$). After anxiety was entered, depression showed a reduction in beta weight and was no longer a significant predictor ($\beta=-.003, p=.96$). The final model was a good fit to the data $F(2,312)=14.8, p<.001$. These data show that anxiety is a distinct influence in binge eating. Additional research is needed regarding the temporal patterns of anxiety, depression, and binge eating. Further investigation is needed to determine if enhanced treatment of anxiety may affect the course of BED.

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C-109

PROCESS EVALUATION OF A FAMILY-BASED INTERVENTION FOR IMPROVING PHYSICAL ACTIVITY, SEDENTARY BEHAVIOR, AND DIET IN AFRICAN AMERICAN ADOLESCENTS

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This study describes the development of a novel climate-based process evaluation method to monitor the implementation fidelity of a family-based intervention ("Project SHINE: Supporting Health Interactively through Nutrition and Exercise") for improving physical activity (PA), sedentary behavior (SB), and diet in African American adolescents. The intervention integrated Social Cognitive, Self Determination, and Family Systems Theories to develop a positive parenting climate for youth health promotion. Adolescents ($n=89, 12.5\pm 1.4$ yrs, 61 % girls, 53 % overweight/obese) and caregivers were randomized to a 6-week parenting intervention or general health program. Outcomes included PA (7-day accelerometry), SB (self-reported sitting, screen time), fruit/vegetable and fat intake (3 random 24-hour recalls). An independent process evaluator assessed fidelity- the extent to which essential elements (behavioral skills, communication, autonomy support, social support) were delivered as planned. Fidelity ratings were made using a 4-point scale ranging from low to high implementation, and an average was calculated across 5 cohorts. Achieving fidelity was defined a priori as a value of ≥ 3 for each essential element. Attendance data were also collected to determine reach. Overall, fidelity ratings indicated goals were met for all essential elements (behavioral skills = 3.88 ± 0.36 ; communication = 3.97 ± 0.17 ; autonomy support = 3.96 ± 0.21 ; social support = 3.69 ± 0.47), and 69 % of families attended ≥ 75 % of sessions. Preliminary outcome analyses conducted with data from 4 of 5 cohorts showed significant main effects of the treatment on reducing adolescent SB ($\beta=-8.70(-3.25), p<.05$) and fat intake ($\beta=-15.48(7.93), p=.05$). Findings indicate Project SHINE was implemented with adequate fidelity resulting in improvements in youth SB and fat intake. Future family-based health promotion interventions in minority adolescents should consider targeting and measuring essential elements based on the intervention climate.

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C-110

DO MEN HAVE DIFFERENT REASONS AND WAYS TO LOSE WEIGHT THAN WOMEN?

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Men are underrepresented in weight loss programs. Qualitative research suggests that men perceive having different reasons for weight loss than women and desire personalized weight loss programs. The present analysis examined gender differences, reasons for weight loss and prior use of weight loss strategies.

Data for this analysis comes from three RCTs of Internet delivered behavioral weight loss programs with minimal in-person contact. Prior to randomization, reasons for wanting to lose weight were assessed using a nine-item scale. Participants rated the importance of each reason. A total score summed the nine responses. Adjusted means for each reason were used to rank order reasons by gender. Participants reported if they previously used any of eight weight loss strategies. Analyses were conducted that controlled for race, marital status, education, and study.

Men (n=96) were more likely than women (n=572) to be white (70 % v 49 %; p<.01); married (74 % v 59 %; p<.01); and college educated (67 % v 54 %; p=.02). Age (M=44.3) and BMI (M=35.7) did not differ by gender (p's>.11). The total score for reasons for weight loss was lower among men than women (adjusted M=31.0 v 33.5; p<.01). The most strongly endorsed reasons for men were: improving health, energy, and appearance. For women, improving health, feeling better about themselves, and improving energy were highest rated. Men reported using fewer prior strategies for weight loss than women (1.9 v 3.0; p<.01), but were more likely to report following their own program (OR=1.70; p=.03). Women were more likely to use commercial programs, self-help groups, structured exercise, medications, and diet books (p's<.05).

Despite men's perceptions, men and women rated improving health and energy as important reasons for weight loss. Men rated improved appearance as relatively more important than women and were more likely to use self-guided programs. Emphasizing personalization within organized programs may increase men's participation.

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C-111

MULTI-COMPONENT ACCESS TO A COMMUNITY-BASED WEIGHT LOSS PROGRAM: 12 WEEK RESULTS

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BACKGROUND: The current study examined weight loss between a comprehensive lifestyle modification program (Weight Watchers PointsPlus® program) that included 3 ways to access and a self-help (SH) condition.

METHODS: A total of 293 participants were randomized to either a Weight Watchers condition (WW) (n=148) or a self-help condition (SH) (n=145). Participants in the WW condition were provided with 3 ways to access the treatment: 1) weekly meetings, 2) WW mobile application, and 3) WW online tools. Measured heights and weights were obtained at baseline and 3 months. Additionally, self-report of use for accessing each component was collected at 3 months.

RESULTS: Data were available for 258 subjects at the 12-week point (drop out: 13.5 %). A significant interaction of time and condition for BMI (F=71.1, p<.001) was found, indicating that participants in the WW condition significantly decreased their BMI at 3 months compared to participants in the SH condition. Mean weight loss for the WW and SH groups was 3.9±3.3 kg and 0.8±2.7 kg respectively. Those in the WW group were 9.8 times more likely to achieve a 5 % reduction in baseline weight at 3 months. In a secondary analysis, the use of the access options for the WW treatment were examined. Those using all three access routes to a high degree had the greatest weight loss (p<.001) and those using two to a high degree had significantly more weight loss (p<.05) than those using one or no components to a high degree.

CONCLUSION: Use of the comprehensive lifestyle modification program yielded significantly greater weight loss and likelihood of achieving a 5 % loss within 12 weeks than a self-help approach. Further, high usage of the multiple ways in which to access the structured program was associated with greater weight loss results.

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C-112

EXAMINATION OF THE RELATIONSHIP BETWEEN OBESITY AND SUICIDALITY

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Objective: The relationship between obesity and suicidality is not well-understood, and conventional suicide risk factors do not adequately explain the associations observed. Thus, the current study aimed to examine the relationship between body mass index (BMI; kg/m²) and suicidal ideation as well as potential mechanisms of this relationship, including the constructs of perceived burdensomeness (feelings of being a burden to others) and thwarted belongingness (perceptions of low social support) from the interpersonal theory of suicide.

Methods: Two hundred seventy-one adults (n=151 undergraduates; n=120 obesity treatment participants) completed self-report questionnaires assessing relevant variables, including suicidal ideation, perceived burdensomeness, thwarted belongingness, and current height/weight used to calculate BMI. Given mixed findings observed previously, examination of linear and quadratic relationships was planned to determine the most appropriate model to describe associations between suicidality and BMI. **Results:** Participants' mean age=32+17 years; mean BMI=30.1+10.4 kg/m²; 67 % Caucasian. There was a significant, quadratic relationship between BMI and suicidality (b=.001, t=2.21, p=.03, partial r=.14) and between BMI and perceived burdensomeness (b=.003, t=2.50, p=.013, partial r=.16), such that as BMI increased, these positive associations became more pronounced. Additionally, perceived burdensomeness partially mediated the relationship between BMI and suicidality. **Conclusions:** Individuals with a higher BMI demonstrated an increased risk of suicidal ideation as well as greater feelings of perceived burdensomeness. These results provide novel information regarding potential mechanisms explaining the obesity-suicidality association. Future research should include longitudinal designs to examine temporal relationships between constructs and include additional outcomes (i.e., suicide attempts and mortality).

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C-113

EXAMINING RELATIONSHIPS BETWEEN SEDENTARY LIFESTYLE, PHYSICAL LIMITATIONS, BMI AND DEPRESSIVE SYMPTOMS WITHIN A BARIATRIC SURGERY POPULATION

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Sedentary lifestyle and physical inactivity have been shown to increase the risk of developing numerous medical conditions (e.g. cancer, hypertension, diabetes, coronary and cerebrovascular disease, and obesity), all of which may lead to mortality. The most aggressive approach for treating obesity is bariatric surgery, which requires individuals to modify eating habits and increase physical activity. Traditionally, patients seeking bariatric surgery have low physical activity levels and spend 80 % of their time in sedentary behaviors. Individuals in this population also tend to report significant physical barriers or medical conditions that make physical activity less feasible. Complicating this relationship is an increased risk of depression in obese populations and an increased risk of obesity in those who are depressed. However, the bidirectional model between increasing rates of depression and obesity is not well understood. In addition, little is known about how physical limitations may impact activity levels and contribute to a sedentary lifestyle. The present research examines a pre-surgical bariatric population and the relationships between precluding medical comorbidities, self-reported activity level, and depression scores. As part of a comprehensive pre-surgical psychological evaluation, 79 participants completed the Weight and Lifestyle Inventory (WALI) and the Hospital Anxiety and Depression Scale (HADS). Participants reporting physical problems limiting their ability to exercise indicated significantly lower levels of physical activity (t(77)=1.93, p<.01) and higher levels of depression (t(74)=-3.17, p<.001) than individuals who denied the presence of significant physical barriers. In lieu of these results, patients with significant physical conditions presenting a barrier to exercise may benefit from interventions that recognize physical limitations and the impact of medical comorbidities. Patients may also benefit from further education about the relationship between physical activity and depression.

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C-114

PSYCHOSOCIAL FUNCTIONING OF CLASS III OBESE ADULTS: RESULTS FROM THE HEADS UP STUDY

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In the weight control literature, psychosocial functioning has been associated with success. However, few studies have examined psychosocial functioning among the extremely obese receiving non-surgical treatment. The Heads Up Demonstration Project is evaluating an intensive medical intervention (IMI) for people with BMI 40–60 kg/m². The first phase of the IMI consists of a 800–900 kcal liquid low calorie diet for 16 weeks. The present study examined the predictive relationship between baseline psychosocial functioning and weight loss at the end of the 16-week LCD.

Participants (n=40, 80 % female, 65 % Caucasian, BMI=46.23+5.35 kg/m²) are insured by the Louisiana Office of Group Benefits, a state-managed health insurer and sponsor of this study. Quality of life (Impact of Weight on Quality of Life), depressive symptoms (Beck Depression Inventory-II), and the emotional influence of food (Three Factor Eating Questionnaire and Power of Food Scale) were administered at baseline. Correlation analyses revealed significant associations between percent of weight lost after 16 weeks and level of disinhibition for eating ($r=0.46$, $p<0.003$), level of hunger ($r=0.38$, $p<0.01$), level of restraint for eating ($r=-0.33$, $p<0.04$), and feeling controlled by food ($r=0.40$, $p<0.01$). Preliminary stepwise regression analyses revealed a significant interaction between race and disinhibition for eating ($p<0.04$).

These results suggest psychological dimensions of eating behavior are significantly related to weight loss after a 16-week LCD. This study is on-going and accruing participants. Additional analyses will continue to explore the influence of these psychosocial variables on treatment outcomes and predictors of success.

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C-115

APPLICATION OF A MULTI-CHANNEL MARKETING STRATEGY TO RECRUITMENT OF YOUNG ADULTS INTO A TECHNOLOGY-BASED WEIGHT LOSS BEHAVIORAL INTERVENTION RCT

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Participant recruitment is an essential component of every clinical trial. Significant time and resources can be spent to reach targeted enrollment goals. The web, social media, and mobile technologies provide additional opportunities for recruitment into clinical trials but evidence is sparse about the effectiveness of such methods. We used a multi-channel marketing strategy (MCMS) to recruit 404 18–35 year old overweight or obese participants into a clinical trial with a goal of doing so within a 12-month period and for less than \$5,000, excluding personnel costs. A combination of media—web, social (Facebook), mobile, email, electronic, print, and word of mouth (WOM)—were used to raise awareness of the study. Individuals were directed to a study website to express interest and assess eligibility via an online form. Google Analytics were used to track website metrics, origin of visitors, and usage behaviors. Efforts yielded a total of 11,864 visits to the study website; 68 % were non-bounce visits (e.g., visitor viewed more than one page on the site) and 65 % were new visitors vs. 35 % returning visitors. Among total web visits 59 % came from manually entered URLs, 27 % were referrals from Facebook and other websites (e.g. specific university websites), and 14 % came from search engine traffic. Approximately 15,000 emails and 40,000 printed flyers may be responsible for the high direct traffic. Facebook, with a reach of 274,323 friends via 648 direct friend “likes,” provided the most referral traffic. 20 % of the visits were from mobile devices. Of the 5,692 unique non-bounce visitors, 34 % (1,941) completed the online interest form. Recruited participants were predominantly (70 %) women, mean age=22 (+/-4) yrs, 58 % were non-white and 31 % were Hispanic/Latino. Research recruitment using an MCMS that leveraged both digital and analog media helped maximize reach at minimal cost and allowed us to reach recruitment goals on time and within budget.

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C-116

MIRROR, MIRROR: DO PEOPLE ACCURATELY ESTIMATE THE WEIGHT OF FAMILY MEMBERS?

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Objective: It is widely reported that people tend to underestimate their own weight; however, it is not known whether people can accurately report the weights of family members. With increased attention on the social context of obesity, it is important to determine whether people can accurately report the weights of others in their home and to elucidate factors that may influence this accuracy. Method: Participants entering into a weight loss study (N=51; 47.4±10.5 years; 64.7 % women) self-reported their weight and estimated the weight of another adult living in their home (partner). Objective anthropometric data was then collected from both the participant and partner; self- and partner- weight predictions were considered accurate if the estimations fell within ±5 pounds (lbs) of the weight recorded. Frequency of self-weighing was examined as a possible correlate of weight reporting accuracy. Results: 49 % of participants did not accurately report their own weight (39.2 % were inaccurate between 5–9 lbs, 7.8 % between 10–19 lbs, and 2 % were inaccurate >20 lbs). Errors in self-report estimations ranged from -27 lbs to +15 lbs (3.1±6.8). Participants were even worse at reporting their partner's weight with 70.7 % being inaccurate (11.8 % between 5–9 lbs, 27.5 % between 10–19 lbs, 31.4 % were inaccurate >20 lbs), with estimation errors ranging from -49 lbs to +138 lbs (-1±31.9). Overall, only 25.5 % of participants accurately estimated both self- and partner- weight and 45.1 % inaccurately estimated both self- and partner- weight. Accurate reporters engaged in more frequent self-weighing than inaccurate reporters ($p=.001$); and were also more likely to be older and female. Conclusion: Self-reporting weight appears to be difficult when estimating one's own weight and the weight of others, particularly if a person does not engage in regular self-weighing. Inaccurate perception and estimation of weight may significantly impact motivation to lose weight and engage in healthier behaviors over time.

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C-117

ASSOCIATIONS BETWEEN FAMILY STRUCTURE, BLOOD PRESSURE, AND BODY MASS INDEX AMONG AFRICAN-AMERICAN PARENTS

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African-Americans have the highest age-adjusted rates of obesity and related chronic disease in the U.S. Family structure (number of people in the home) and stress may contribute to disparities in disease risk, with biopsychosocial theories positing that increased stress and family disorder negatively influence obesity and chronic disease risk. This preliminary study examined associations between family structure and stress on health outcomes related to overweight/obesity, and blood pressure (BP) in African American parents. Objective measures of height, weight and resting BP were taken by trained staff on 45 African-American parents (91 % female, mean BMI=37.2±9, mean age=42±9 yrs). Three resting BPs were averaged based on standard clinical guidelines. Parents completed the Family Relationships Index (FRI) and reported the number of people in their household as indicators of familial emotional stress and family structure, respectively. Parents reported a mean FRI of 19.8, mean systolic BP (SBP) of 126.9±18 mmHg, mean diastolic BP of 80.5±11 mmHg and an average of 4.0 people in each household. SBP was positively correlated with BMI ($r=0.43$; $p<0.01$). Having more people in a household was also positively correlated with BMI ($r=0.12$; $p=0.02$), however, FRI scores were not significantly correlated with BMI ($r=-0.11$; $p=ns$), although the pattern of means was in the expected direction. These results indicate that overweight and obese African-Americans, particularly those with larger family households, showed higher levels of BP and BMI. Family structure may be an important factor to consider in developing future interventions for disease prevention and health promotion in African American parents. Future investigations should replicate these findings in larger samples and across more diverse populations.

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THE MEDIATING ROLE OF EXECUTIVE FUNCTION ON PARENTAL PRACTICES AND CHILDREN'S NEGATIVE EATING BEHAVIOR

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Over 12 million children in the US are considered obese. A well-established risk factor is high caloric food intake. Fortunately, positive family interactions may buffer against unhealthy eating practices by helping children to develop strong executive function (EF) skills. EF, responsible for higher-order tasks such as decision making and self-regulation, is beneficial when making positive dietary choices. The purpose of this study was to explore pathways to negative eating practices by testing the hypothesis that EF mediates the relationship between two important parenting practices and negative eating behavior (NEB). The participants (N=1005) were 4th grade students (48 % male) from an ethnically diverse Southern California area (mean age=9.3 yrs). This paper-based, cross-sectional study measured negative eating behaviors, executive function, participation in family dinner nights and regular play with an adult. Significant positive correlations were found among family dinner nights, regular play and EF. Conversely, EF was negatively associated with negative eating behavior. A mixed model approach, adjusting for the similarities among students and controlling for age, gender, ethnicity and SES, found that EF fully mediated the relationship between family dinner nights and NEB (Sobel's $z=-2.92$, $p=.003$), and between regular play with an adult and NEB (Sobel's $z=-4.4$, $p<.0001$). Family dinner nights allow children to engage in social interactions that strengthen executive function skills. Similarly, regular play with an adult activates regions in the brain also associated with cognitive performance. In turn, these higher cognitive functions buffer against harmful eating practices. With billions of dollars spent each year towards weight-related medical care, prevention is the most cost-effective strategy in the fight against obesity. The findings suggest that these efforts may best be utilized if focused during key EF developmental periods, and includes the participation of the entire family.

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C-120

RELATING SELF-EFFICACY TO STAGES OF CHANGE FOR PHYSICAL ACTIVITY AND FRUIT AND VEGETABLE CONSUMPTION WITH 5-8 YEAR OLD CHILDREN

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Physical activity (PA) and healthy nutrition in children is related to positive physiological and psychological health outcomes. Thus, it is important to understand the correlates of the children's health behavior that could be used to inform intervention strategies. An approach that has been successful in adults and school aged children is the stages of change approach from the Transtheoretical Model. Similarly, self-efficacy is one of the strongest predictors of health behaviors in adults and school aged children. However, less is known about these variables in younger children. Therefore, the relationship of self-efficacy and stage of change was investigated for PA and for fruit and vegetable (FV) consumption in 85 children (5-8 years old; 62 % female; main ethnicities Japanese, White, Hawaiian, Filipino, and Chinese). The PA stage distribution was: 13 % Precontemplation (PC), 5 % Contemplation (CO), 13 % Preparation (PR), 15 % Action (AC), and 42 % Maintenance (MA). The FV stage distribution was: 28 % PC, 5 % CO, 46 % PR, 0 % AC, and 21 % MA. PA self-efficacy means across stage were in the expected direction but not significant: PC=4.09 (SD=1.30), CO=4.25 (SD=.96), PR=4.55 (SD=.69), AC=4.15 (SD=1.28), and M=4.59 (SD=.78) [one-way ANOVA: $F(4, 80)=1.03$, $p=0.40$]. FV self-efficacy means across stage were significant and in the expected direction: PC=3.38 (SD=1.50), CO=2.75 (SD=.1.71), PR=4.33 (SD=.96), and MA=4.61 (SD=.61) [$F(3, 81)=7.06$, $p=0.0003$]. Tukey follow-up tests revealed that for FV self-efficacy PC, CO<PR, MA. PA exhibited a ceiling effect with every stage averaging over 4 on a 5 point self-efficacy scale and PA Stage prevalence was also high. Even for children of this young age, self-efficacy and stage are viable variables to inform interventions especially for FV consumption, suggesting importance of tailoring FV interventions to stage.

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APPETITE MONITORING AND BMI IN A SCHOOL-BASED, ONLINE HEALTHY WEIGHT REGULATION PROGRAM

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Easily disseminable, cost-effective programs that address overweight in adolescents are necessary to reverse the rise in obesity. Encouraging eating in response to moderate (rather than strong) appetite cues may be effective in promoting weight management.

This study tested the effectiveness of an internet-delivered, school-based healthy weight management intervention that teaches participants to monitor internal appetite cues.

The program was adapted from a pilot version to include appetite monitoring, which is an integral component of non-dieting and intuitive eating approaches to weight management. All students in a 9th grade class were offered a 9-week healthy habits program and completed baseline and post measures. Measures included self-report height and weight (used to calculate BMI) and appetite ratings on a 0 to 10 Likert scale for a typical meal pre-and-post eating. Analyses only included students with parental informed consent (47 %).

At baseline, participants who stopped eating in response to strong fullness (ratings of 9 or 10) after eating a typical meal had significantly higher BMI than those who stopped due to moderate fullness (ratings of 6-8) (23.40 vs. 21.65, $p<.05$). At post-test, more participants stopped eating in response to moderate (6 to 8) rather than strong (9 or 10) cues compared to baseline ($p<.001$). Although not significant, participants who began eating when experiencing strong hunger (0 or 1) had lower BMI than those who ate in response to moderate hunger (2 to 4). Consumption of fruits, vegetables and low calorie foods increased significantly and BMI was maintained from baseline to post-test.

A universal, online program may be effective in teaching adolescents to finish eating in response to moderate fullness cues, which in turn is correlated with lower BMI.

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C-122

A HOLISTIC HEALTH INTERVENTION FOR CLERGY: RATIONALE AND DESIGN OF THE SPIRITED LIFE STUDY

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Clergy suffer from high rates of obesity, chronic disease, and depression, and simultaneously underestimate the toll these take on their daily functioning. Health interventions likely need to be tailored for clergy and their occupational context and theological beliefs. Few studies have sought to improve clergy health and no prior studies have utilized a randomized design. Spirited Life is a randomized multiple baseline design study funded by The Duke Endowment that offered enrollment to nearly all United Methodist Church clergy in North Carolina in fall 2010. A total of 1,129 clergy (response rate=64 %) enrolled and, using a multiple baseline design, were randomized to begin the health intervention in one of three consecutive years. The design builds in a randomized waitlist control group to compare to the first group, while allowing us to examine outcomes for each group. The two-year Spirited Life intervention consists of: 1) a theological underpinning for health stewardship based on incarnation, grace, and response; 2) Williams LifeSkills, an evidence-based stress management program; 3) Naturally Slim, an online weight loss program; 4) monthly phone contact with a Wellness Advocate; and 5) \$500 small grants to apply to health goals. The primary endpoint is metabolic syndrome diagnosis and the secondary endpoints are stress and depressive severity, each measured before, twice during, and at the end of the two-year intervention. Study outcomes will provide evidence of the efficacy of the combined intervention components of Spirited Life for clergy. If successful, the intervention may be considered for use in other populations.

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WHY ARE WOMEN POLICE OFFICERS MORE BURNED-OUT AND WHAT WOULD HELP THEM?

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Women police officers rely less on physical force and more on communication skills; they are more likely to effectively respond to calls regarding violence against women, the single largest call category nationwide. Women comprise <10 percent of law enforcement officers (LEOs), and increasing their recruitment/retention has had limited success. Gender differences in burn-out vary when assessed in different occupations. Understanding burn-out and its correlates might allow developing programs to enhance/extend women LEOs' careers. METHODS: We evaluated burn-out in LEOs from three large policing agencies in the Pacific NW. 320 LEOs (250 males, 70 females) were assessed by confidential surveys and simple biometric indices at baseline of a NIOSH-funded prospective randomized wellness/safety intervention. Genders were compared by t-test; women were stratified by a validated burn-out emotional exhaustion construct, and the top and lowest tertiles similarly compared. RESULTS: Women and men were similar in age (mean [SD]) (42 [9] y) and years on the force (15 [8]). Women were significantly more burned-out ($p < .0005$), despite healthier lifestyles ($>$ fruit & vegetable intake [$p < .0005$], and similar physical activity and sleep measures) and lifestyle's typical correlates (similar BMI, lower LDL-cholesterol [$p < .01$]; lower BP and fasting glucose [$p < .0005$ for each]). Among women LEOs, those more burned-out were more depressed and felt greater stress among peers ($p < .0001$ for each), but were similar in age, years in service, work schedule, marital status, and children at home. CONCLUSION: Findings indicate greater burn-out among women LEOs despite healthier habits and physical measures. Comparisons among women LEOs indicate coping/resilience skills and supportive peers rather than lifestyle issues and job restructuring may be steps to reduce burn-out. (Supported by CDC/NIOSH RO1OH009676)

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ADHERENCE MEDIATES THE LINK BETWEEN DYADIC EFFICACY AND WELL-BEING AMONG COUPLES MANAGING CHRONIC ILLNESS

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Dyadic efficacy refers to couple members' confidence in their abilities to work together as a team to manage chronic illness. Few studies have examined dyadic efficacy, although research indicates that confidence is critical to enacting health-related behaviors and treatment adherence. We examined the affect of dyadic efficacy on patients' adherence and mental, social, and physical well-being, using structural equation modeling (SEM) with baseline and one year follow-up survey data from 139 couples in which one spouse had an autoimmune condition. We examined adherence as a mediator of the impact of dyadic efficacy on patient well-being. Inclusion criteria were being married, one spouse having a diagnosis of vasculitis or lupus for at least 6 months, and English proficiency. Average age of participants was 53 years and 86 % were white. Among patients, 45 % were male, and 70 % had vasculitis. An SEM examining patient perceptions of dyadic efficacy fit well (CFI=0.97, TLI=0.96, RMSEA=0.05). White patients and those with lupus had lower dyadic efficacy at baseline. Greater baseline patient dyadic efficacy was significantly associated with greater adherence, which in turn was associated with improved general health, pain, depression, life satisfaction, and social functioning one year later. The model examining spouse dyadic efficacy and patient adherence revealed similar associations, but a lower fit (CFI=0.92, TLI=0.98, RMSEA=0.08). Model fit improved when patient demographics were omitted (CFI=0.98, TLI=0.95, RMSEA=0.07), suggesting that these variables are less relevant for spouses' dyadic efficacy than they are for patients. This study provides evidence for adherence as a mediating mechanism between couples' dyadic efficacy and patient mental, social, and physical well-being and highlights the importance of teamwork in coping with illness.

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C-126

EFFICACY OF AN INTERNET INTERVENTION FOR PEDIATRIC ENCOPRESIS

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Background: Barriers to receiving health care, including geographic and financial barriers, have far-reaching medical and economic ramifications. Given increasing challenges to obtaining care, many families are turning to self-help options to manage their children's medical problems.

Objectives: Encopresis is a fecal soiling disorder affecting 1.5 % to 7.5 % of children. When left untreated, it can lead to numerous health and psychological consequences. However, specialty treatment is difficult to obtain. Our group previously showed that an Internet intervention for encopresis could reduce fecal accidents when added to standard clinical care. However, as a way to increase dissemination, this study tests the efficacy of the program without adjunctive clinical care yet also tests a stepped care arm of the study, whereby graduated levels of support are provided based on increasing levels of nonadherence to the program.

Methods: The RCT is a 3 Group (UCanPooToo+Stepped Care vs. UCanPooToo vs. Static Patient Education Website) X 3 Assessment (Pre, Post, 1 Year Follow Up) design. We recently completed data collection, and ITT analyses will be presented on the 290 subjects who completed pre-assessment. Seven days of online prospective daily symptom diaries will be used to evaluate change in fecal accidents.

Results: We hypothesize that the Internet intervention will be more effective than a static website at 6 weeks and 1 year post treatment in terms of encopretic symptoms. We also predict that while the stepped care arm, as compared to the standard program, will produce greater website use and lead to reduced accidents, this will come at a higher cost. We will explore whether cost-benefit analyses show that this increased cost is acceptable. Although outcome data is not available at time of submission, this talk will present complete findings from the 5-year trial.

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C-127

SUBJECTIVE SOCIAL STATUS AND HEALTH IN HISPANIC AMERICANS

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Researchers have long examined the importance of social status as it relates to health. Through the use of objective measures such as annual household income, education, and employment, investigators have repeatedly demonstrated that individuals with low socioeconomic status (SES) are more likely to experience poor health status. Researchers have also suggested that individuals' perceptions of their own social standing, also known as subjective social status (SSS), may be an important predictor of health in addition to more traditional SES indicators. This could be especially relevant to those in low SES populations; a significant proportion of whom are Hispanic American (HA). However, to date few studies have examined differential relationships of subtypes of SSS and health outcomes, and studies of SSS in HAs are particularly limited. The present study examined the association of SSS to self-reported physical and mental health in HAs. A community sample of 364 HAs with Spanish- or English-language preference completed the MacArthur Scale of SSS, which asks participants to indicate their SSS relative to the U.S. as a whole, as well as to others in their community. Participants also completed the Health-Related Quality of Life Scale (physical health) and the Patient Health Questionnaire-9 (mental health). Hierarchical linear regression analysis revealed that both U.S. SSS and community SSS were significant predictors of general and mental health status in HAs, after controlling for objective measure of SES (e.g. income, education). U.S. SSS accounted for additional variability in health status when controlling for community SSS; however, community SSS did not account for additional variability when controlling for U.S. SSS. This indicates that perceptions of social standing in society relative to others in the U.S. may be more indicative of health status than community SSS. Overall, these findings highlight the value of investigating the role of social perception as it relates to health status.

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C-128

ASSESSING THE ACCEPTABILITY AND FEASIBILITY OF SELF-REPORT ELECTRONIC DATA COLLECTION ABOUT HEALTH RISKS FROM PATIENTS ATTENDING AN ABORIGINAL MEDICAL SERVICE

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Introduction: Indigenous Australians experience significantly poorer health than other Australians. There is considerable potential to reduce the Indigenous disease burden by targeting change in common health risk behaviours. Opportunities for health care providers to identify patient's risks and deliver preventive care can be restricted by a range of factors including incomplete medical records and lack of time to discuss preventive health. Electronic data collection is a potentially efficient means of collecting health risk data which has not been tested in the Australian Indigenous health setting. **Aims:** To examine the acceptability and feasibility of an electronic health risk survey administered on a touch screen laptop computer for patients attending an Aboriginal Medical Service (AMS). **Methods:** Adult patients attending an AMS completed a health risk survey on a touch screen laptop computer while waiting for their GP appointment. The touch screen survey included visual cues to improve response accuracy and minimise literacy barriers. **Results:** 185 participants completed the health risk survey, with a consent rate of 70 %. The mean time taken to complete the survey was less than 12 minutes. Over 85 % of participants agreed that: the survey instructions were easy to follow; touch screen computer was easy to use; they had enough privacy; the questions were easy to understand; they felt comfortable answering all the questions. **Conclusion:** The use of a touch screen survey to collect information from patients about risk factors affecting Indigenous Australians is both feasible and acceptable in the AMS setting.

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CHILD PARTICIPATION IN BEDSIDE ROUNDS: CONSIDERATIONS FOR ENHANCING CHILD PARTICIPATION IN CARE

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Background: Family-centered rounding, with the entire care team and family present, is recommended to ensure family participation in the care of hospitalized children. In pediatrics, prior work has focused solely on parent participation, yet addressing child participation is also critical in impacting health outcomes. To facilitate child participation in family-centered rounds, this work investigated child, parent and healthcare team member perspectives on barriers and facilitators to this participation.

Methods: Through stimulated recall using the interviewee's own rounds video as stimuli, 39 interviews of hospitalized children, their parents and health care team members were conducted. Directed content analysis was used to sort the interview content into related themes to describe factors that influence child participation during these rounds.

Results: Parents and health care team members favored child participation in rounds, while children were more ambivalent about their interest in attending. Ten factors related to child participation in rounds were found, including child characteristics, children's reactions to the content and context of rounds (e.g., feeling invisible or excluded, embarrassed), parent roles in the interaction, as well as health care team behaviors and characteristics. Specific actions that support participation included setting an agenda, attending to child's comfort, and explicit invitations to participate.

Discussion: To support children's participation in rounds, both health care team members and parents can advocate for and support the child in this role. In addition, specific actions by adults can help the child feel included in the rounding process.

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C-130

TESTING THE URINARY INCONTINENCE-DEPRESSION LINK USING A NEW MEASURE

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Urinary Incontinence (UI) is defined by the International Continence Society as any involuntary loss of urine; this condition affects numerous older adults. Some of the deleterious consequences of UI include major depression (above all comorbid conditions), stress, diminished quality of life, sexual dysfunction, and familial discord. The relevant available literature is under-representative of ethnic minority older women. Culture may significantly impact women's perception of their own UI symptoms; thus, it is critical to recruit ethnically and culturally diverse samples when studying UI and its relationship to health-related factors such as depression. The aims of this research were to: 1) determine the prevalence of UI among 140 community-dwelling, ethnically diverse older women (age 60-90) residing in Los Angeles County; 2) test the reliability of a new 3-item UI screener created by the first author to quantify UI frequency as well as its impact on perceived stress and on engagement in social activities, and 3) test whether, controlling for age, continent and incontinent older women differ on depressive symptomatology, with the latter being quantified by using the Center for Epidemiological Studies - Depression Scale (CES-D). Data analyses included frequency and internal consistency analyses. Regarding aim 3, we conducted a two-group, between-subject multivariate analysis of covariance (MANCOVA). The two independent variables were continent status versus incontinent status, and the covariate was age. We used as dependent variables the four subscales of the CES-D, i.e.: depressed affect, positive affect, somatic/vegetative signs, and interpersonal distress. Results showed that 28.2 % of the sample had UI; the reliability of the new measure of UI was adequate ($\alpha=.75$), especially in view of the scale's brevity. Aim 3 was not supported: use of Wilks' criterion demonstrated that there was no significant between-groups effect [$F(3,126)=.439, p>.05$]. The covariate age was not a significant contributor to the overall model [$F(3,126)=.178, p>.05$].

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C-131

IMPLEMENTING AN ONLINE PATIENT-PROVIDER COMMUNICATION SERVICE INTO ROUTINE CLINICAL PRACTICE: UNEXPECTED FINDINGS

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For ehealth interventions shown to be efficacious in clinical trials to impact practice, evaluating their implementation in the real world and assessing external validity is crucial. Using the RE-AIM framework (Reach, Effectiveness, Adoption, Implementation, Maintenance), this study evaluated the implementation of an online patient-provider communication (OPPC) service into four hospital units. Patients could use the OPPC from home to ask questions to nurses and physicians at their treatment unit. The OPPC had previously shown to be efficacious in an RCT as part of a more comprehensive self-management support system. Despite identifying and addressing barriers prior to implementation, evaluation after six months revealed unexpected findings: only 25 % of patients who were offered the OPPC used it, compared to 63 % in the previous RCT. Participation rates ranged from 37-70 %; the unit that had endorsed the OPPC most, had offered it to 10 patients only.

Several factors may explain the results: the OPPC alone may not be as helpful as bundling it with other self-management components and patients may be more reluctant to ask questions to their care provider compared to anonymously as in the RCT. There were no incentives for clinicians to adopt the OPPC and concerns about more work, who pays, who is responsible for patient follow-up and considerable staff turn-over became key issues. The way health care is organized and financed was another obstacle for successful implementation. However, those who had used the system highly recommended it.

This study demonstrates unexpected consequences that can occur when moving an intervention from one context to another.

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MAXIMIZING PERFORMANCE OF ONLINE ADVERTISING USING SEQUENTIAL RANDOMIZED TRIALS

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Background: Online recruitment via social networking sites such as Facebook has potential to be an efficient means to recruit participants for behavioral research studies, but little is known about what forms of content are most effective.

Aim: To determine optimal text and image content for recruitment of participants into an online behavior intervention delivered via Facebook ("Quitomatic").

Methods: Rapid, sequential randomized control trials ("A/B Testing") were conducted of varying advertisement subject lines, text content and images over a period of 4 months for a total of 32 trials. After each trial, subsequent trials compared "winning" combinations to newly developed content. Participants' behavior was recorded at each step of a multi-stage, online enrollment process. Data were analyzed using two-tailed Chi-squared tests.

Results: A total of approximately 15 million ads were displayed, resulting in 5,145 "click-throughs", 441 installations of the application and 188 completed enrollments. A single image (of a small furry dog) significantly outperformed all other images, including those of smokers, throughout all tests. There was limited variation based on either subject line or text content.

Conclusions: Effective advertising in Facebook may not necessarily contain traditional health behavior content, and the choice of image appears to be the driving factor in effect. The use of rapid sequential RCTs is one mechanism to identify effective content and drive recruitment costs.

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C-133

PATIENT & PHARMACIST PERSPECTIVES ON SCREENING FOR INTIMATE PARTNER VIOLENCE IN THE PHARMACY ENVIRONMENT

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Intimate partner violence (IPV) is a public health problem of epidemic proportion; the only known effective health care intervention is routine screening for IPV exposure. Despite professional guidelines, this intervention has been poorly adopted. Expansion of screening efforts to the community pharmacy setting could provide another opportunity to address this public health problem. This investigation is the first to examine IPV screening related to the pharmacy environment. An existing measure of physicians' readiness to manage IPV (PREMIS) was adapted for the community pharmacy environment and validated in a random sample of practicing community pharmacists (n=144). Additionally, a study of female pharmacy patients was conducted to examine the acceptability of IPV screening in pharmacies (n=60). Results indicate that community pharmacists have minimal exposure to IPV education/training (67.4 % have had no training). While pharmacists expressed concern regarding their lack of training about IPV and the time burden of screening patients in the pharmacy, they indicated that conducting screenings may be valuable to patient health. Patients agreed that IPV screening is important for health care providers to do, but were uncertain as to whether pharmacists specifically should engage in screening. Content analysis of a free response item indicated that patients are unaware that pharmacists are trained in patient communication/counseling, suggesting a need for recognition of the skills and capabilities of community pharmacists. The potential for expanding IPV screening to community pharmacies should be prioritized among future studies of methods to address the public health problem of IPV.

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SEVEN MODES OF PIANO MUSIC PRODUCE DIFFERENTIAL PSYCHOPHYSIOLOGICAL EFFECTS

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Procedure Fourteen healthy college students (24.64±7.19 yrs) listened to seven modal piano music pieces (Ionian, Dorian, Phrygian, Lydian, Mixolydian, Aolian, & Locrian; 2-minute-long each) composed by Robert Vandall and their electroencephalogram was measured based on international 10–20 method. FFT was applied to each 30-second-segment of each channel's EEG extracted from the 2-minute-long recordings during each modal music piece. Self-reported 'Basic Emotions' were recorded based on Paul Ekman's definition (1971) before and after each music piece and the difference scores before and after each music piece were submitted for statistical analyses. Results In regards to the EEG beta frequency component, Mixed Design ANOVA was significant at T4 (a temporal lobe location) (p<.01) and post tests of gender difference suggested that men demonstrated significant higher beta power at T4 while listening to Dorian than women (p<.05). Regarding the difference scores of self-reported Basic Emotions, Happiness produced significant main effect of modes regardless of gender and post-test demonstrated significantly higher levels of Happiness while listening to Ionian piece than Dorian (p<.05), Phrygian (p<.05), Aolian (p<.01), or Locrian (p<.01) pieces. Discussion These results suggested that men were more attentive (significantly higher beta power) while listening to Dorian music than women, though both genders reported higher degrees of Happiness while listening to Ionian music than other modal music. Further investigation on the similarities and differences between men and women in response to the modal music will contribute to the logical evaluation of music therapy as a form of alternative medicine.

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C-135

COPING IMAGERY TECHNIQUE PRODUCES GREATER DEGREE OF RELAXATION THAN AUTOGENIC TRAINING - EVALUATION OF AUTONOMIC NERVOUS SYSTEM

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Procedure Seventeen healthy adults (20.53±8.71 yrs) were randomly assigned to 1) coping imagery (CI) (N=8) and 2) autogenic training (AT) (N=9) conditions. All the subjects went through 1) rest (3 minutes), 2) treatment (CI or AT for 10 minutes), and 3) rest (3 minutes) periods and electrodermal activity (EDA), respiration, and pulse wave were monitored. Two three-minute-segments were extracted from the treatment stages (CI or AT) and thus creating four physiological data sets for each subject. Spectral Analysis (FFT) was applied to time-series pulse rate variability at each recording period and autonomic nervous system (ANS) indicators were computed based on the ratio of lower and higher frequency components of its power spectra as proposed by Yamamoto & Hughson (1991) (SNS indicator=Lower Frequency Component / Higher Frequency Component; PNS indicator=Higher Frequency Component / Total Frequency Component). State Anxiety Inventory (Spielberger, et al., 1970) was administered during the rest period before and after each treatment. Results Mixed Design ANOVAs for SNS and PNS indicators demonstrated significant effects of stages and interactions (stage & group). Post-test suggested that only Coping Imagery Group showed significant stage effects in which SNS indicator was significantly lower during the rest period immediately after the treatment (Rest 2) than the earlier stage of Treatment (p<.05) and PNS indicator was significant higher during the rest period immediately after the treatment (Rest 2) than the earlier stage of Treatment (p<.05). State Anxiety was significantly lower after the treatments regardless of the treatment conditions (p<.01). Discussion Results from cardiac ANS indicators suggested that Coping Imagery is capable of producing greater relaxation than Autogenic Training. Further physiological investigation will lead to a deeper insight into its application in Alternative Medicine.

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MUSIC WITH 1/F FLUCTUATION CAUSES SYMPATHETIC NERVOUS SYSTEM SUPPRESSION AND GREATER RELAXATION

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Procedure Seventeen healthy adults (20.53±8.71 yrs) listened to three 2-minute-long computer-generated music pieces with different degrees of randomness (white noise, pink noise=1/f fluctuation, & brown noise) and skin conductance level (SCL), respiration, and pulse wave were monitored. Each 2-minute-long pulse wave file was divided into four 30-second-segments and Fractal Dimensional Analysis was applied to each segment. Self-reported 'Basic Emotions' after each music were recorded based on Ekman's definition (1971). Results Mixed Design ANOVA for SCL demonstrated significant effects of stages. Post-test suggested that SCL during the Pink Noise (1/f fluctuation) was significantly lower than SCL during the White Noise ($P<.01$) as well as Brown Noise ($P<.01$). Mixed Design ANOVA of Pulse Wave Fractal Dimension showed significant effects of stages ($P<.05$) and genders ($P<.05$). Post-test suggested that females had significantly lower pulse wave fractal dimensions than males during Pink Noise. Mixed Design ANOVAs of Basic Emotions demonstrated significant effect of stages in perceived Happiness ($P<.01$) and Sadness ($P<.01$). Post-tests suggested significantly lower degree of Happiness and yet higher degree of Sadness during the exposure to Brown Noise than two other music conditions ($P<.01$). Discussion SCL results indicated that Pink Noise produces significantly lower sympathetic nervous system activity than other music, while Pulse Wave Fractal Dimension results suggested that females may be more relaxed than males during the Pink Noise. Basic Emotions further suggested that Brown Noise produces significantly higher degree of withdrawal emotions than other music. Overall, the present study suggested the possible use of 1/f fluctuation in music therapy while also indicating gender differences.

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C-137

PATIENT EXPECTATIONS IN HERNIA AND GALLBLADDER SURGERY: A DESCRIPTIVE REPORT

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We examined the self-reported expectations of 86 patients at a regional medical center scheduled for either hernia repair or gallbladder removal surgery. Our sample was diverse in terms of gender (47 % F), ethnicity (49 % Hispanic), education (68 % HS diploma), and age ($M=44.4$, $SD=12.7$). Patients responded to an open-ended question about their expectations for their surgical outcomes. A majority of patients expected a reduction or elimination of unpleasant physical symptoms ($n=43$), followed by improvements in physical functioning ($n=26$), improvements in general well-being and quality-of-life ($n=15$), improvements in general health ($n=8$), and reductions in anxiety or other specific emotions ($n=5$). A small number of patients expected another type of effect ($n=4$) or no effect at all ($n=6$). Women were more likely than men to mention symptom reduction (63 % vs. 39 %), whereas men were more likely to mention improvements in functioning (37 % vs. 23 %) and quality-of-life (22 % vs. 13 %). Non-Hispanic patients were more likely than Hispanic patients to mention improvements in functioning (49 % vs. 12 %), whereas Hispanic patients were more likely to mention improvements in general health (17 % vs. 2 %) and no expected effect (12 % vs. 2 %). Furthermore, patients who reported higher levels of health literacy ($r=-.37$, $p<.001$) and had more negative expectations for surgery ($r=-.36$, $p<.001$) tended to list fewer specific expectations for surgical outcomes and were significantly less likely to mention improvements in quality of life ($r=-.22$, $p=.04$ & $r=-.18$, $p=.09$, respectively). Patients with better English fluency were more likely to report expectations for functional improvements ($r=.31$, $p<.01$) and less likely to list expectations for general health improvement ($r=-.23$, $p=.03$) or to expect no effect from the surgery ($r=-.25$, $p<.02$). Understanding patients' expectations for hernia and gallbladder surgery is an important step toward improved healthcare and the successful management of expectations for optimal surgical outcomes.

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C-138

PREDICTORS OF READINESS TO RECEIVE THE HPV VACCINATION AMONG YOUNG ADULT MEN AND WOMEN

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Human Papillomavirus (HPV) is the most common sexually transmitted disease in the world. It is associated with significant morbidity and mortality in both sexes, although more attention is given to risks among women. Receiving the HPV vaccine can substantially reduce the risk of HPV infection and subsequent disease. This descriptive study reports on factors associated with HPV vaccination among a sample of young adult men and women ($N=834$). The majority of young adults had heard of HPV (90.2 %), but only 44.7 % knew that the HPV vaccine had been approved for men. HPV vaccination rates in this sample were high relative to national rates: 73.7 % of women and 26.1 % of men were vaccinated. Those who identified as white and/or Hispanic and participants with health insurance were most likely to have received the vaccine. Gender comparisons indicated women were more likely to have heard of HPV and had higher HPV-related knowledge. Both men and women underestimated HPV prevalence, particularly infection rates among men. Among vaccinated participants, over half (66.2 %) indicated that it was a health-care provider who recommended they receive the HPV vaccine. Mothers were another common source of vaccine recommendation. Other predictors of vaccination included high normative perceptions of vaccine rates among peers and high anticipated regret if one were to forgo vaccination and later become infected with HPV. These findings underscore several important demographic and psychosocial factors associated with HPV vaccination. Increasing awareness of male HPV infection and vaccination are important targets for future education and intervention efforts.

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C-139

REASONS FOR AND AGAINST PARTICIPATING IN GENOMICS RESEARCH: A QUALITATIVE STUDY WITH ETHNICALLY DIVERSE PATIENTS

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Introduction: It is essential for participants from all racial and ethnic backgrounds to be represented in genomics studies to contribute to what we know of disease-genetics in non-European populations, but currently minorities are underrepresented in these studies. Perceived benefits and concerns about genomics research were identified by analyzing reasons given for and against participating in genomics research studies by a predominantly African American and Hispanic population.

Materials/Methods: Structured interviews were conducted with 205 patients in an inner-city hospital outpatient clinic setting. Responses were transcribed and analyzed using thematic analysis.

Results: 69 % participants were female and 29 % were male. 47.8 % participants self-identified themselves as African American, 28.8 % as Hispanic and 10.2 % as white. The mean yearly household income was less than \$20,000. Participants held positive views towards participating in genomic research studies; 170 participants said they would be interested in participating in genomics research studies compared with 35 participants. Reasons given included an interest in helping, a general curiosity or interest in the research, altruism and family or personal benefit. Among reasons against participating in genomics research included a negative perception of research in general, negative attitudes towards research procedure, specifically relating to blood draw, fear of the results or aftereffects of the study.

Conclusions: These findings will help inform researchers on the appropriate ways to recruit study subjects from all ethnic backgrounds in a way that is tailored to these populations; addressing concerns as well as highlighting common interests as they relate to participating in genomics research studies.

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C-140

COMPARISON OF UNINSURED COMMUNITY ORAL HEALTH INTERVENTION PARTICIPANTS IN 2011 AND 2012

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Limited data exist on uninsured children's oral health status and behaviors. Using Community-Based Participatory Research methods, we conducted parent surveys in 2011 and 2012 during annual county-wide one day interventions, Give Kids a Smile (GKAS), that provided free preventive and restorative care to uninsured children aged 3–10 years. Our project assessed parent's report of their child's oral health behaviors, insurance history, and demographics of 173 participating uninsured children in 2011 and 142 children in 2012, a convenience sample of self-selected participants. Comparison of 2011 to 2012 participants: household income <\$20,000/yr increased from 38 % to 55 %; history of previous insurance increased from 65 % to 74 %, with previous public insurance participation dropping from 65 % to 35 %; Spanish as primary language dropped from 32 % to 20 %, with 60 % of repeat attendees speaking Spanish in 2012. Comparison of First Time Attendees (FTA) to Repeat Attendees (RA): In 2011, 76 % were FTA, with 69 % FTA in 2012. Comparison of oral health behaviors between FTA and RA in 2012: dental visit past year 42 % vs. 86 %; fluoride varnish 37 % vs. 81 %; parents aware of fluoride role 43 % vs. 58 %. 92 % of RA never had insurance vs. 76 % of FTA. The GKAS event provides critical preventive services to which a vulnerable population would otherwise not have access to care. Income levels of participants decreased and number of families with a history of public insurance increased, indicating increasing need among this low-income population. The percent of participants with previous insurance may be the result of large manufacturing layoffs in the community. The event appears to meet a need specific to the Spanish language population and translators are used heavily at the event. More RP were more likely to report having had an annual dentist visit and fluoride varnish. RA also reported knowing the importance of fluoride, demonstrating the impact of education at GKAS.

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C-141

INCREASING HEALTHY EATING BEHAVIORS AMONG COLLEGE STUDENTS USING A STEALTH NUTRITION INTERVENTION

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This study analyzed the impact of a stealth nutrition intervention on increasing healthy eating behaviors among college students attending a large university in the United States. A stealth intervention focuses on health behavior change via complementary incentives to engage in the behavior without an explicit emphasis on health-related outcomes. The intervention was delivered through a 15-week, discussion-based seminar (n=29) that used contemporary readings and discourse to explore macro-scale influences on food, nutrition, and eating behavior. Two levels of control were used; a health-based course (n=114), and a non-health based course (n=48). The intervention replicated and built upon a study developed at Stanford University, and used a quasi-experimental, mixed-methods, pre-post design. We hypothesized that intervention participants would experience improved healthy eating behaviors, including an increase in the consumption of fresh produce, whole grains and low-fat meat and dairy, while decreasing the consumption of high-fat meat, processed foods and fast food. Surveys were administered at the beginning and end of the semester to all classes (n=191), and focus groups were conducted with intervention participants (n=29) at the end of the semester. Survey data included demographics, BMI, food consumption habits, and Stages of Change and self-efficacy measures. Quantitative data were analyzed using descriptive statistics and ANOVA. Focus group data were analyzed using constant comparative analysis. Survey findings indicate that intervention participants had statistically significant decreases in high-fat meat consumption ($F(1, 185) = 8.332, p = 0.004$). Results from the focus groups reveal similar findings in reduced meat consumption, with participants relating these decreases to the topics and themes discussed throughout the class. The results suggest that the stealth intervention was successful at increasing healthy eating behaviors among college students.

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C-143

EXPERIENTIAL AVOIDANCE MEDIATES THE RELATIONSHIP BETWEEN PTSD AND PAIN

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Previous literature has documented a high co-occurrence of posttraumatic stress disorder (PTSD) and pain. However, few studies have examined mechanisms that may explain this relationship. Experiential avoidance (EA), defined as the deliberate attempt to avoid or alter negative experiences to regulate unpleasant emotions, is associated with greater PTSD symptom severity and pain symptoms. Our aim was to determine whether EA plays a mediational role in the relationship between PTSD symptoms and pain intensity, as well as with pain interference. Participants (N=120) were recruited through clinics and the community and completed standardized self report measures. The sample was 40 years old on average (SD=13.5); about 54 % were male and 74 % were White. PTSD symptoms were significantly related to pain intensity ($\beta = .548, p = .000$), pain interference ($\beta = .576, p = .000$) and EA ($\beta = -.583, p = .000$). However, when both EA and PTSD symptoms were examined in the regression models predicting pain intensity and interference, EA remained significant (intensity: $\beta = -.209, p = .027$; interference: $\beta = -.219, p = .017$) while the strength of the relationship between PTSD symptoms, pain intensity and pain interference was reduced in both models (pain intensity: $\beta = .426, p = .000$; interference: $\beta = .448, p = .000$). A Sobel test revealed a z-score of 3.16 for pain intensity ($p < .01$) and a z-score of 2.75 for pain interference ($p < .01$), suggesting partial mediation for both pain indicators based on Baron and Kenny's (1986) conditions. Therefore, the relationship between PTSD and both pain intensity and pain interference may be partially explained by experiential avoidance. These findings have implications for addressing experiential avoidance in treatments for PTSD and pain.

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C-144

COMPARISON OF PAIN, DISABILITY, AND PSYCHOLOGICAL DISTRESS IN PATIENTS WITH CHRONIC LOW BACK PAIN BEING EVALUATED FOR SPINAL CORD STIMULATOR IMPLANT OR BEHAVIORAL PAIN MANAGEMENT

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Stress, depression, and anxiety are commonly associated with chronic back pain. These problems adversely affect prognosis and increase medical services utilization. Evaluations of depression, anxiety, and pain coping, may be used to plan treatment and to screen patients at high risk of unsuccessful outcomes with spinal cord stimulation (SCS). In the current study, 202 patients (61 % female, mean age=51, SD=14) with chronic low back pain were evaluated, either as possible candidates for SCS (n=102), or as part of treatment planning for behavioral pain management (BPM) (n=100). These groups were compared on measures of pain, interference, disability, pain-related anxiety, pain coping, pain catastrophizing, depression, post-traumatic stress symptoms, affective distress, and interpersonal distress. We hypothesized the two groups would report similar levels of pain and disability, but SCS patients would report fewer psychological symptoms compared with BPM patients, in order to gain approval for SCS. Comparison of groups showed that both groups had similar levels of pain ($p > .86$), pain duration ($p > .26$), pain interference ($p > .07$), and disability ($p > .66$). SCS patients reported lower levels of pain-related anxiety ($t = 4.1, p < .001$), pain catastrophizing ($t = 2.6, p < .02$), depression ($t = 5.9, p < .001$), post-traumatic symptoms ($t = 5.7, p < .001$), and less affective ($t = 3.3, p < .002$) and interpersonal distress ($t = 2.7, p < .008$) than BPM patients. These findings demonstrate the need to evaluate possible underreport of psychological symptoms in patients being evaluated for SCS and to consider use of separate norms and to understand and effectively manage risk of unsuccessful outcomes in patients being considered for SCS.

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C-145

THE ROLE OF SOCIAL SUPPORT IN PAIN AND PSYCHIATRIC MORBIDITY AMONG AFRICAN AMERICAN PATIENTS WITH SICKLE CELL DISEASE

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Sickle cell disease (SCD) affects 1 in 375 African Americans in the United States. The course of SCD is associated with psychosocial and physical morbidities, like pain and affective disturbance. Previously reported findings from this study pointed to the role of various social support domains in predicting affective disturbance; however the association of total social support on morbidity outcomes are still not well understood.

In the current study sample of 82 African American patients with SCD (54.9 % female; mean age 35.16±12.23), simple regression analyses revealed social support to be predictive of the impact of pain in several areas including affective distress, support from others, distracting responses, social activities, and general activity level as measured by the Multidimensional Pain Inventory 2 (all $ps < 0.05$). Social support was also predictive of psychiatric symptoms as measured by the SCL-90 including obsessive compulsive, interpersonal sensitivity, depression, anxiety, hostility, paranoia, and psychosis (all $ps < 0.05$). Post-hoc simple regression analyses revealed emotional support to be a stronger predictor of psychiatric morbidity than instrumental, informational, or comparative social support. This varied in the prediction of pain outcomes.

These results suggest that social support is related to both pain and psychiatric morbidity of among SCD patients. These results have implications for the development of psychosocial interventions designed to improve the experience of pain and quality of life among SCD patients.

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DEPRESSION IS A STRONGER PREDICTOR OF ADLS THAN PAIN AMONG AFRICAN AMERICAN PATIENTS WITH SICKLE CELL DISEASE (SCD)

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Sickle cell disease (SCD) is a common disorder of the blood affecting 1 in 375 African Americans in the United States. Patients with SCD experience episodes of pain that vary in intensity, severity, frequency and duration and often present with comorbid disorders like depression and anxiety. Little is known about the impact of these experiences on activities of daily living (ADLs) in SCD.

Among the current sample of 52 African American patients with SCD (53.8 % female; mean age 33.79±13.25), simple linear regression analyses revealed that pain experience and severity, as measured by the Short Form McGill Pain Inventory and the Multidimensional Pain Inventory-2, were not significant predictors of total, cognitive, or physical activities of daily living. Depression, as measured by the Beck Depression Inventory (BDI), was predictive of all types of ADLs, accounting for 14.8 % of the variance in total ADLs ($F(1,49) = 9.702, p = 0.003$), 11.9 % of the variance in cognitive ADLs ($F(1,47) = 7.467, p = 0.009$), and 12.2 % of the variance in physical ADLs ($F(1,49) = 7.957, p = 0.007$). Cognitive BDI symptoms were more predictive of cognitive ADLs than somatic BDI symptoms, however both symptom types were equally predictive of physical and total ADLs (all $ps < 0.05$).

These findings underline the influence of depression on all areas of functioning, which may be more predictive than pain. This study highlights the importance of addressing affective disturbance when treating SCD patients. There is a dearth of research on ADLs in SCD patients and more experimental and longitudinal study designs are needed to further explore risk and protective factors in predicting daily functioning.

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C-147

OLDER ADULTS' PERCEPTIONS OF PAIN MEDICATIONS

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Chronic pain is prevalent in older adults and is often untreated or insufficiently managed, which often results in a significantly reduced quality of life and may be a major factor in loss of independence. Research shows that physicians are often hesitant to prescribe pain medications for the elderly, and that older adults are often reluctant to utilize pain medications. Compounding the problem is that older adults often use highly risk-averse emotional heuristics in the decision to use pain medications. The purpose of this research was to identify those heuristics, in particular, the emotional heuristics, utilized by older adults when considering whether and how to take their pain medications.

Participants in this study were an ethnic and socioeconomically diverse sample of eleven community-dwelling older adults (ages 63-86), all under a physician's care for moderate to severe persistent pain. They participated in semi-structured video interviews that focused on their daily pain management strategy, including perceptions and use of their pain medications and use of non-medication approaches. Qualitative data analysis was used to identify key heuristics and to create a 30-minute DVD of participants that highlighted major emergent themes.

Results show that regardless of physician recommendations for how and when to use pain medication, participants crafted highly individual processes for their pain management and use of pain medication. Emotional heuristics were very much in use, with a chief concern being fear of addiction. Other key concerns included side effects and the total pill load consumed each day. Most participants were also consumers of written, broadcast or internet information on pain medications. A key determinant of strategy was socioeconomic status, which determined the kinds of complementary interventions that were possible and utilized. These findings are considered with respect to how older adults manage their chronic pain, implications for practitioner-patient communications regarding pain management, and suggestions for further research.

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CHANGES IN PARENTAL SOLICITOUSNESS MEDIATE EFFECTS OF COGNITIVE-BEHAVIORAL TREATMENT ON PAIN AND DISABILITY IN CHILDREN WITH UNEXPLAINED ABDOMINAL PAIN

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Behavioral interventions improve outcomes for many pediatric conditions, but little is known about mechanisms by which these interventions produce improved outcomes. A randomized controlled trial (Levy et al., 2010; in press) demonstrated the efficacy of a brief 3-session intervention designed to improve outcomes in idiopathic childhood abdominal pain. A primary goal of the intervention was to alter parental responses to children's illness behavior related to their pain. Thus, the goal of the present study was to determine whether changes in parental responses mediated these outcomes.

200 child participants and their parents were randomly assigned to one of two conditions - a cognitive-behavioral treatment targeting parents' responses to their children's pain complaints and children's coping responses, or an educational intervention that controlled for time and attention. Parents completed measures of their own solicitousness, and their child's pain and disability at 3 and 6 months following treatment.

Solicitousness was found to mediate treatment outcomes of pain and disability. However, while reductions in parental solicitousness following treatment mediated reductions in parents' reports of child pain at 3 months ($ab(SE) = -0.13(0.07)$; 90% CI = -0.25, -0.002; Hedges' $g = -0.24$) and child disability at 3 months ($ab(SE) = -0.04(0.03)$; 90% CI = -0.09, -0.002; Hedges' $g = -0.24$), these were not maintained at 6 months.

These findings are consistent with a cognitive-behavioral model in which solicitous responses may reinforce child pain behavior and disability, increasing the likelihood of further pain behavior, thus perpetuating this cycle. A number of factors, including overall low pain and disability levels in this sample, may explain the weakened mediation effects at 6 months.

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ASSOCIATION BETWEEN TEMPORAL SUMMATION OF SECOND PAIN AND SUBCLINICAL BORDERLINE PERSONALITY CHARACTERISTICS

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Borderline personality (BP) has reported to be positively associated with chronic pain. Yet, there is a lack of research investigating the effect of BP features on experimental models of chronic pain characterized by hypersensitivity in central pain pathways known as central sensitization. Thus, the purpose of the current study was to examine whether BP is associated with heightened central sensitization in temporal summation of second pain (TSSP) among individuals with subclinical BP characteristics. TSSP reflects a summation process of peripheral C-fiber nociceptive inputs at spinal dorsal horn neurons. In this study, TSSP was induced by 10 heat pulses (.33 Hz) in three trials. Before TSSP testing, sensitivity tests were conducted to identify a peak temperature (45 to 51 °C) to induce moderate pain using magnitude ratings between 35 and 55 out of a 0–100 scale. While a thermode was applied to the thenar eminence of the non-dominant hand, participants were asked to provide their subjective pain rating after each peak. BP characteristics were assessed by the Personality Assessment Inventory-Borderline scale (PAI-BOR) in 78 healthy and pain-free college students (mean age 19.2, SD=1.1). TSSP was compared between the two groups with the low (<50) and high (≥50 and <70) PAI-BOR T scores using a repeated measures ANOVA (10 ratings of average pain at each pulse in the three trials X 2 groups). The results indicated a significant interaction between group and repeated pulses after controlling for peak temperatures ($F(9, 171)=3.79, p=.02$). The high PAI-BOR group reported significantly higher pain in the later pulse train; the pain ratings after the 6, 7 and 8th pulse were significantly higher and the ratings after the 9 and 10th pulse were marginally higher in the high PAI-BOR group. These findings suggest that BP characteristics are positively associated with enhanced central sensitization in TSSP, and therefore may be a risk factor for developing chronic pain. This finding is consistent with previous clinical evidence for the positive correlation between BP and chronic pain.

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C-150

INTERPERSONAL PROBLEMS, SUBSTANCE MISUSE, AND QUALITY OF LIFE IN OEF/OIF/OND VETERANS WITH CHRONIC PAIN

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Nearly half of OEF/OIF/OND veterans suffer from physical pain, and pain negatively affects both mental and physical quality of life (QOL). No studies to date have evaluated interpersonal problems and substance misuse in relation to QOL in OEF/OIF/OND veterans with chronic pain. Via Internet the mental and physical QOL of 74 OEF/OIF/OND veterans with chronic pain was assessed using the 36-Item Short-Form Health Survey V2. Interpersonal problems and substance misuse were assessed using the Inventory of Interpersonal Problems-32 and the Short Index of Problems-Drug and Alcohol. Two multiple-regression analyses were conducted. Interpersonal problems and substance misuse were the predictor variables, and mental and physical QOL were the predictand variables. As predictors, interpersonal problems and substance misuse account for 13 % of the variance in mental QOL [$F(2, 71)=6.27, p=.003, \text{adj}R^2=.13$] and 20 % of the variance [$F(2, 71)=9.916, p=.001, \text{adj}R^2=.20$] in physical QOL. Greater interpersonal problems were associated with worse QOL, both mental ($B=-.38, p\leq.001$) and physical ($B=-.31, p\leq.001$). While veterans in this sample had highly elevated vindictive and self-centered interpersonal problems, these types of problems were not associated with QOL ($p\leq.05$). A moderate level of self-sacrificing, intrusive and needy interpersonal problems were significantly ($p\leq.05$) associated with better mental QOL. A moderate level of cold and distant interpersonal problems were significantly ($p\leq.05$) associated with better physical QOL. Substance misuse was not associated with worse mental ($B=.94, p\leq.05$) or physical ($B=1.31, p\leq.05$) QOL but was significantly ($p\leq.05$) associated with decreased anxiety, depression, and physical functioning. The associations among interpersonal problems, substance misuse, and QOL indicate that clinical attention to these areas may enhance treatment for veterans with chronic pain.

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C-151

SYMPTOM DISTRESS AMONG UNDERSERVED CHINESE AMERICAN CANCER PATIENTS

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Chinese Americans are the largest Asian subgroup in the US and many are immigrants with high rates of cancer, a major cause of death for this population. While Chinese American patients often present with advanced illness and poorly controlled pain, information on symptom burden is very limited. As part of an ongoing community study to test the effectiveness of a rapid-cycle quality improvement (QI) intervention to enhance symptom control, we evaluated the prevalence and burden of cancer symptoms in a large sample of first-generation, non-English speaking ethnic Chinese patients. A consecutive sample of patients in two large community-based oncology practices and one hospital-based practice in New York were screened for symptoms. Eligible cancer patients who self-identified as ethnic Chinese and spoke Cantonese or Mandarin as their primary language completed translated measures on symptom prevalence, severity and distress administered by bilingual research assistants. Of 1,018 patients screened to date (62.2 % women; M age=64.0 (SD=13.7)), 20.4 % reported persistent cancer pain in the past month. The most common cancers were breast (41.1 %), head and neck (16.2 %) and lung (13.5 %); 38.0 % were in active treatment. The M worst pain intensity on a 0–10 numeric scale was 5.5 (SD=2.2) with 32.9 % reporting severe distress from pain. Many (82.4 %) reported other symptoms, like fatigue (66.0 %), dry mouth (63.5 %) and difficulty sleeping (54.4 %). Overall, 32.7 % rated their symptoms as “quite a bit” or “very much” distressing, with sleep disturbance (33.1 %), lack of appetite (31.3 %) and constipation (29.2 %) causing the most severe distress. Symptom distress is high among community-dwelling, economically-disadvantaged ethnic Chinese cancer patients. Our QI intervention may alleviate the high symptom burden in this population and clarify potential patient, provider, and system-related factors that affect symptom control outcomes.

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PAIN ACCEPTANCE AND CATASTROPHIZING IMPACT ASSOCIATIONS BETWEEN PSYCHOLOGICAL DISTRESS AND PAIN DISABILITY IN CANCER SURVIVORS

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Research suggests that pain acceptance and catastrophizing impact psychological distress and pain disability in many with chronic pain. However, there are few data on their associations with psychological adjustment and functional status in cancer survivors with pain. We evaluated associations among pain, pain interference, acceptance, catastrophizing, depression and anxiety in a random sample of 201 breast and colorectal cancer survivors. Eligible survivors were randomly selected for a telephone survey on pain, psychological distress and other variables. Overall, 56 (28.3 %) had chronic pain (M age=61.4 years; 85.7 % women; 87.5 % Caucasian; M years posttreatment=5.2) including 52.0 % with pain from cancer or cancer treatment and 48.0 % with noncancer pain. Overall M worst pain intensity in the past week=6.2 (SD=2.8); M pain interference=3.9 (SD=2.6). Survivors with any pain type had more depression (M=36.8, SD=8.7; M=19.9, SD=6.1; $t[79]=4.86$) and anxiety than those without pain (M=29.8, SD=6.1; M=15.5, SD=4.5; $t[78]=5.51$, all p 's<.01). Depression and anxiety were positively correlated with pain interference ($r=.35, r=.42$, both p 's<.01). Partial correlation analyses (controlling for the effect of catastrophizing) showed that pain interference's associations with depression and anxiety ($r=.19, r=.25$, both p 's>.08) became insignificant. Partial correlation analyses (controlling for the effect of acceptance) showed that pain interference's association with depression became insignificant ($r=.20, p=.15$) and association with anxiety was reduced ($r=.29, p=.04$). Data suggest that acceptance and catastrophizing may influence the impact of depression and anxiety on pain disability in survivors. Future studies should assess the roles of acceptance and catastrophizing with other covariates of pain disability and clarify whether targeting these processes improves pain outcomes in survivors.

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C-153

DETERMINANTS OF PAIN-RELATED FEAR FOLLOWING TOTAL KNEE ARTHROPLASTY

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Abstract Body: Pain-related fear of movement and (re)injury (or, kinesiophobia) has been identified as an important predictor of disability among individuals with various pain conditions, including people with osteoarthritis (OA) of the knee. Patients with elevated pain-related fear are at particular risk for poor outcomes following Total Knee Arthroplasty (TKA) surgery. However, no research has yet examined what variables impact patients' pain-related fear following TKA intervention. Accordingly, the current study examined predictors of post-surgical pain-related fear (measured by Tampa Scale of Kinesiophobia, or TSK) among 112 patients with OA (47 men, 65 women, mean age 66.9 yrs) undergoing TKA. Both prior to and three months following TKA, participants completed measures of pain-related fear (TSK), depression, and pain self-efficacy, and rated a number of pain variables (pain intensity, stiffness, and functional interference). Repeated-measures analyses of variance revealed significant reduction in patients' level of pain-related fear, as well as significant improvement on measures of depression, self-efficacy, and pain (all $p < .01$). Hierarchical regression analyses controlling for demographic characteristics and initial pain-related fear indicated that changes in depression and self-efficacy predicted unique variance in pain-related fear following surgery (Beta = $-.20$ and $-.24$, $p < .01$, respectively). In contrast, changes in pain variables did not significantly predict pain-related fear following surgery (all Beta $< .05$, $p > .50$). Importantly, participants' initial level of pain-related fear remained most predictive of their pain-related fear following surgery (Beta = $.56$, $p < .001$). These results reinforce the importance of psychosocial variables in surgical recovery and rehabilitation, and suggest that pain-related fear may be a stable variable that is not entirely dependent on change in pain status. Findings are discussed in terms of their theoretical significance as well as implications for pre- and post-surgical interventions.

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C-155

ARTHRITIS PATIENT PERCEPTIONS OF MOTIVATIONAL INTERVIEWING

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Purpose: Only 24 % of the US adult population with arthritis report engaging in physical activity at levels recommended by the Centers for Disease Control and Prevention. Motivational interviewing (MI) has been used successfully in health settings where the client and provider work together to achieve behavior change, but it has not been tested with arthritis patients. The purpose of this study was to evaluate the measurement properties of the new Client Strength of Motivational Interviewing Instrument (CSMI) using Rasch analyses.

Method: The 13-item measure was developed with the advice of MI experts and focus groups of arthritis patients. A pilot study of 30 patients with rheumatoid arthritis and 30 with knee osteoarthritis completed the CSMI after receiving an MI-based intervention promoting physical activity. Rasch analyses using Winsteps software provided person and item reliability, and a variable map hierarchy of the items.

Results: The sample included 78 % women and 67 % of Caucasian race. The sample was highly educated with 57 % having a bachelors degree or higher. Total scores ranged from 15 to 39 with a mean of 35 (sd=4.3). Person reliability was 0.53. Cronbach's alpha was 0.85. The variable map identified "encouraged to talk" as the easiest item to endorse and "encouraged change talk" and "gave information" as the most difficult to endorse.

Conclusions: The instrument would benefit from an increase in rating responses and additional items to improve low person reliability. Rewording of items and the instrument title would better capture patient's perceptions of the MI encounter. Future studies will determine whether stronger patient perceptions of MI processes are associated with more physical activity and whether this effect is explained by changes in motivation, cognitive appraisal, and affective response, as predicted by the Interaction Model of Client Health Behavior.

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C-156

EXERCISE TRAINING INTERVENTIONS IMPROVE HEALTH RELATED QUALITY OF LIFE BUT NOT GLOBAL QUALITY OF LIFE

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For older adults, maintaining quality of life (QOL), physical health, and mental acuity are important outcomes during the aging process. Although cross-sectional studies suggest a relationship between global QOL and physical activity, it is unclear whether such a relationship exists as a function of exercise training. In the present study we examined the effects of two exercise interventions on health-related quality of life (HRQL) and global QOL. Low active, older adults (N=140) were randomly assigned to either a 12-month aerobic walking group or flexibility, strengthening, and balance group. HRQL, assessed with the SF-12, and QOL, assessed with the Satisfaction with Life Scale, were measured at baseline and 12 months. Multivariate repeated measures analysis of covariance with age, sex, and education as covariates indicated no significant main effects or interactions for global QOL, [F(1,174)=1.38, $p > 0.05$, $\eta^2 = 0.01$]. There was a significant interaction for time by exercise condition [F(2,173)=3.62, $p < 0.05$, $\eta^2 = 0.04$] which was driven by a significant change over time in mental health status (MHS), [F(1,174)=6.69, $p < 0.05$, $\eta^2 = 0.04$], but not physical health status (PHS). PHS remained stable across time and MHS significantly declined in the FTB group and increased in the walking condition. In conclusion, maintenance of physical health status across a year's time is encouraging in light of the association of aging with increasing health issues. Exercise in the walking group helped stave off a decline in MHS, which corroborates current literature that aerobic exercise is correlated with improved brain function and structure. The significant descent in MHS in the FTB group also supports current literature defining the inverse relationship between mental health and age. Our findings suggest the need for exercise training interventions that incorporate both aerobic and non-aerobic exercises to maintain health and well-being.

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C-157

EFFECTIVENESS OF A CLINICIAN INTERVENTION TO IMPROVE PHYSICAL ACTIVITY DISCUSSIONS IN UNDERSERVED ADULTS

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Purpose To evaluate the effectiveness of a clinician training intervention on increasing communication about physical activity using the 5As among 326 underserved adults. The 5As (Ask, Advise, Agree, Assist, Arrange) are a clinical tool recommended for health behavior counseling in primary care.

Methods Clinicians (n=13) at an urban federally qualified health center were randomized to early or wait-list communication training groups. Training consisted of four one-hour sessions to teach the 5As and apply them for physical activity discussions. We audio-recorded and transcribed 326 office visits across three time points: baseline, immediately post-intervention and six-months. Two coders, blinded to time point, coded for the presence of physical activity discussions and the frequency and quality of the 5As.

Results Patients' mean age was 43 years, and 75 % were African American, 10 % Hispanic, and 15 % Caucasian. Of the total audio-recorded office visits (n=326), 117 (37 %) had some discussion of physical activity. For the 117 physical activity discussions, the overall frequency of the 5As for Ask was (n=112, 96 %), Advise (n=54, 46 %), Assess (n=21, 18 %), Assist (n=17, 15 %), and Arrange (n=7, 6 %). Though the frequency of the 5As increased from baseline to post-intervention for all of the 5As, only Assess increased significantly ($p < 0.05$). The quality rating for Assist showed a 100 % increase from baseline to post-intervention in the frequency of setting a specific activity goal.

Conclusion A clinician-directed intervention was effective in increasing the frequency of Assess and the quality of Assist discussions about physical activity in underserved patients. Next steps will be to examine the association of 5As discussions and patient outcomes such as subsequent referral and enrollment in physical activity programs.

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C-158

AN ECOLOGICAL ASSESSMENT OF PHYSICAL, SOCIAL, AND TEMPORAL CONTEXTS OF PHYSICAL ACTIVITY PATTERNS OF URBAN HIGH SCHOOL ADOLESCENTS

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Background: To promote adolescents' physical activity, systematic examination of the pattern of physical activity, notably the contextual information in terms of physical location, time of the day, and social interaction is needed.

Purpose: The current study employed a social ecological approach to examine the physical, social, and temporal context of physical activity patterns in a sample of predominately urban African American adolescents. Determining whether such patterns varied between females and males, as a function of time of the day, types of activity, location where physical activity occurred, and social context (e.g., interaction with others or not), were of specific interest.

Methods: A sample of 314 students (9-12th grad, 69.1 % African American and 58.8 % female) participated. Physical activity types, duration and intensity, physical location (e.g. home, school, community), and social interaction (e.g., self, organized) were measured every 30-minutes for five consecutive days. The Generalized Estimating Equation model was used and data was analyzed in 2012.

Results: Average minutes per day spent on sedentary and light activity were significantly more ($p < .001$) for females than for males. Gender differences in physical activity patterns varied as a function of the time of day, activity types, and social context. The average physical activity level measured by METs was significantly lower for females than for males during and after school. Males (52.1 %) and females (58.8 %) spent more time on active transportation than other types of physical activities. Females spent half of the 30-minute block time on recreational physical activity, compared to their male counterparts.

Conclusions: Findings about the location, social, and temporal contexts of physical activity patterns are important because they could serve as a reference in developing policies and intervention strategies to engage at-risk urban minority youth.

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C-159

A BEHAVIORAL INTERVENTION TO INCREASE PHYSICAL ACTIVITY AMONG OBESE OLDER ADULTS: THE MODERATING EFFECT OF SOCIO-DEMOGRAPHIC VARIABLES AND COGNITIONS

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Background: Significant positive long-term effects of behavioral interventions are not frequently reported. However, some conditions might interact with the intervention and the effect might be overshadowed. The aim of this study was to investigate the moderating effect of socio-demographic variables and cognitions on the long-term effect of a physical activity intervention.

Methods: At baseline, 101 obese older adults were randomised to an experimental (implementation intentions) or a control condition. Behavior was self-reported using the Godin leisure-time physical activity questionnaire. Cognitions (intention, perceived behavioral control (PBC), self-efficacy and action and coping planning) were assessed by questionnaire. Measures of behavior and cognitions were obtained at baseline, post-intervention and at six-month follow-up. Seventy-eight participants completed the study.

Results: Mixed model repeated-measures ANOVAs revealed no significant effect of the intervention on physical activity ($ps > .50$). However, significant moderating effects were observed for annual income ($p = .004$), gender ($p = .04$) and PBC ($p = .002$) at six-month follow-up. Results indicated that the mean level of participation in physical activity (MET-unit) in the experimental group was higher at follow-up for men ($M = 20.1 \pm 14.3$), those with higher annual income ($M = 21.9 \pm 14.2$) and individuals with high PBC ($M = 27.9 \pm 17.0$). The corresponding means in this study condition were lower for women ($M = 14.0 \pm 9.7$), those with lower annual income ($M = 13.1 \pm 9.4$), and participants with low ($M = 13.3 \pm 8.2$) and moderate ($M = 15.0 \pm 10.6$) PBC. Interestingly, women ($M = 20.9 \pm 16.5$) and participants with low annual income ($M = 20.2 \pm 13.6$) in the control group were more active at follow-up.

Discussion: Our findings suggest that implementation intentions are more effective when individuals have high levels of behavioral control. Also, this intervention appears to have negative effects on the behavior of women and individuals with low socio-economic status.

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C-160

FEASIBILITY OF AN EXERCISE PROGRAM FOR ADOLESCENT AND YOUNG ADULT (AYA) SURVIVORS OF CHILDHOOD CANCER

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Background: Advances in treatment have led to a growth in the number of childhood cancer survivors in the US, but these survivors are at risk for negative late effects from treatment, including cardiovascular disease and early death. Physical inactivity can exacerbate these risks.

Method: Guided by social cognitive theory, we designed a group-based exercise program for AYA survivors. This 8-week program incorporated the FitBit, a commercially available electronic accelerometer, for self-monitoring. FitBit also provided a companion website for social networking among participants. Nine participants (56 % female, age range=16 to 22, M=18) completed standardized tests of fitness (1-mile run/walk for cardiovascular fitness, 7 days of accelerometry for minutes per day of moderate/vigorous physical activity [MVPA], hand grip for muscle strength), the PedsQL generic core health-related quality of life (HRQL) scale, and the PedsQL Multidimensional Fatigue Scale at baseline and post-intervention. Dependent t-tests were used to examine changes from baseline to post.

Results: On average, participants showed improvements in cardiovascular fitness, $t(6) = -0.68$, $p = .52$, $r = .27$, minutes per day of MVPA (mean change=14.4 min/day), $t(8) = 1.36$, $p = .21$, $r = .43$, muscle strength, $t(8) = 3.41$, $p = .01$, $r = .77$, physical HRQL, $t(8) = 1.87$, $p = .10$, $r = .55$, psychosocial HRQL, $t(8) = 1.19$, $p = .27$, $r = .39$, and fatigue, $t(8) = 2.61$, $p = .03$, $r = .68$. Participants reported high satisfaction with the FitBit device but infrequently used the companion website.

Conclusions: There is evidence of improvements in MVPA, muscle strength, HRQL, and fatigue that warrants further study. Despite moderate increases in MVPA, improvements in cardiovascular fitness were small. In response to these data and participant suggestions, we plan to modify the aerobic exercise sessions and enhance the technological components of the program through a mobile application ("app") to attempt to improve the program.

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EXERGAME USE AS A GATEWAY TO THE PROMOTION OF PHYSICAL ACTIVITY

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Despite increasing the amount of information regarding the need for regular physical activity, rates of activity have not seen a corresponding increase. The aim of the current study was to determine whether exergame use would serve as a gateway to the sport of racquetball, thereby providing a feasible and innovative way to influence physical activity behaviors. The current study randomly assigned participants ($N = 103$) into one of three conditions for racquetball training: a no-exposure control group ($n = 33$), a racquetball videogame (exergame) group ($n = 35$), and a traditional training group ($n = 35$). College aged adults, who reported not being regular exercisers at recruitment and who had no prior experience with racquetball, followed the training method outlined by their group assignment for Weeks 0-4, after which all groups participated in the same, traditional racquetball training for Weeks 5-8. It was expected that the exergame group would have greater levels of skills test performance, levels of accelerometer activity and enjoyment when compared to a control condition, and either be greater than or equal to scores on these measures for the traditional training group. Results revealed that males had greater skills test performance in the exergame and traditional training groups than the control group at the end of the study. The traditional training group did exhibit greater enjoyment than all other groups after Week 4. However, there were no differences between the exergame and traditional training groups for the variables of skills test performance and activity in Weeks 5-8. Additionally, all outcome variables increased over time regardless of group. These results provide partial support for the novel use of exergames as a gateway to physical activity. Exergame use appeared to especially enhance skills test performance among sedentary males and was associated with comparable sports-specific outcomes as traditional training. These findings suggest areas for future exergame research by including gender and background exercise experience.

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PHYSICAL AND EMOTIONAL HEALTH, DEPRESSION AND PHYSICAL ACTIVITY

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Physical activity (PA) is associated with decreased symptoms of depression, improved psychological well-being and physical health. However, people with depression tend to do less PA, and it is unclear how depressive symptoms may impede PA adoption. This study examines associations among baseline depressive symptoms, perceived well-being and PA change following a behavioral intervention. Healthy women (N=410, M BMI=34.7±8.5 kg/m², M age=45.2±9.4 yrs) completed questionnaires assessing demographics, depression and physical or emotional health (PEH) in the past 30 days. Moderate-vigorous PA was assessed at baseline (T1) and 6-months post-intervention (T2) using accelerometry. Correlations examined relationships between demographics, # of days PEH interfered with usual activities, depressive symptoms, BMI, and PA change. Logistic regression examined whether depressive symptoms and # of days PEH interfered with usual activities influenced the likelihood of increasing PA. Many women (39.7 %) reported ≥1 days PEH interfered with usual activities (M=3.6 ±6.1 days) and 24 % had significant levels of depressive symptoms. Half (55 %) of participants increased PA from T1 (M=18.8±19.4 min/day) to T2 (M=20.0±17.7 min/day). Pearson correlations showed no relationship between depressive symptoms or PEH and demographic characteristics, BMI or PA change. Adjusted logistic regression models found that for each day PEH interfered with usual activities, participants were 3 times more likely to increase PA from T1-T2 ($\beta=1.1$, $\text{Exp}(\beta)=3.1$, $\text{Wald}=4.5$, $p=.04$). Depressive symptoms did not influence the likelihood of increasing PA. Women who reported PEH interfered with usual activities in the last 30 days were more likely to increase PA following the intervention. Self-realization that PEH affected daily living may have increased motivation to do PA. Depressive symptoms did not significantly affect the likelihood of increasing PA, suggesting that psychological well-being did not impede PA adoption. Future interventions should address the negative impact of a sedentary lifestyle on PEH.

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DO WOMEN LIVING WITH OSTEOPOROSIS ENGAGE IN SUFFICIENT PHYSICAL ACTIVITY FOR HEALTH?

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Physical activity is a useful adjunct to therapy for chronic health conditions (Chodzko-Zajko et al., 2009) yet limited data is available for this behavior in women living with osteoporosis (Warburton et al., 2010). The aim of this study was to examine the proportion of osteoporotic women reporting sufficient physical activity for health. The secondary aim was to identify factors differentiating sufficiently active from less active osteoporotic women. Data were collected using the Leisure Time Exercise Questionnaire (LTEQ; Godin & Shepherd, 1985) from women diagnosed with osteoporosis (N=1389; Mage=67.41 years). The criterion values proposed by Godin (2011) classified the sample based on LTEQ scores. Most participants were married/common-law (69.10 %), high school graduates (61.00 %), white (84.60 %), and reported living with osteoporosis on average for 7.92 years (SD=5.84 years). Body Mass Index (BMI) values ranged from 15.42 to 60.07 kg/m² (M=27.14 kg/m²). Prevalence estimates indicated most women were classified as insufficiently active (52.10 %) rather than moderately active (16.70 %) or active (31.20 %) per week. Women classified as moderately active or active were more likely to be married, non-white, and more educated compared with those classified as insufficiently active yet effect sizes were small. BMI was negatively correlated with physical activity ($r^2=-0.19$ to -0.16). Neither age nor years living with osteoporosis were correlated with physical activity ($r^2<|.08|$). Overall, most women living with osteoporosis do not engage in sufficient weekly physical activity for health. Key demographic factors may play a role in distinguishing sufficiently active from less active osteoporotic women but the influence of these variables seems minor. Nevertheless, the sensitivity of physical activity behavior to demographic factors across subgroups implies a 'one-size fits all' approach to understanding physical activity in this cohort seems futile.

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C-164

DURATION OF EXERCISE, WORK, AND SEDENTARY ACTIVITIES OF LOW-INCOME PREGNANT WOMEN

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Low-income pregnant women are at risk for adverse outcomes, in part due to disadvantages that hinder them from increasing physical activity (PA). Pregnant women are recommended to spend 30 minutes on moderate PA on most days by ACOG. The feasibility of implementing interventions to help women meet the recommendation depends on the availability of their time. The PURPOSE of this study were to: 1) Describe the duration of daily lifestyle activities among low-income pregnant women, and 2) Compare the lifestyle between those who meet the ACOG guidelines and those who do not.

METHODS: A total of 816 women (25.2±6.1 years old; 29.6±11.4 gest. weeks) who received prenatal care in 13 county health departments in North Carolina participated in the study in 2012. Of the total, 50.10 % were Hispanic, 15.93 % were Black, and 20.5 % were White. Participants completed a questionnaire at prenatal clinics. All participants were Medicaid recipients.

RESULTS: Of the participants, 19.9 % met the ACOG guidelines. Among Hispanics, 24.7 % met the guidelines, but fewer than 14 % of Blacks and Whites did so ($p=.002$). Women who met the guidelines were older (26.7 vs. 24.8 years, $p=.001$) and reported one or more exercise/sport activity besides walking. Of the total, 36 % reported no exercise or sport. The mean BMI (kg/m²) of women who did not meet the guidelines was 28.8, compared to 27.0, adjusted for age and gestation week ($p=.029$).

Women spent on average 4.6 hours (SD=3.1) a day watching TV, using a computer, and engaging in other sedentary recreational activities (reading or talking). Women who met the guidelines spent 40 min. longer on household activities and 1.8 hours longer on occupation-related activities, adjusted for age, than those who did not.

CONCLUSION: Women who met the guidelines worked longer and spent more time on household activities than those who did not meet the guidelines. The duration of sedentary lifestyle activities was similar whether women met the guidelines or not.

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PROBLEM SOLVING AND POSITIVE PSYCHOLOGICAL FUNCTION IN EXERCISING CANCER SURVIVORS MANAGING CANCER-RELATED FATIGUE

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Problem-solving (PS) is frequently examined relative to psychological dysfunction while research about positive psychological outcomes is limited. A recent meta-analysis in *Annals* (2011) links exercise to positive outcomes in cancer survivors (CS), but does not address the existing gap relative to PS and positive psychological functioning (PPF). The Model of Social PS suggests that PS effectiveness is related to outcomes in the face of a problem. Among CS, cancer-related fatigue is a common problem. According to the model, more effective problem-solvers should report more positive psychological outcomes than less effective problem-solvers. We recruited 35 exercising CS (*mean age*=52.5 ± 8.2 years), most of whom were in treatment or 18 months post-treatment and experienced cancer-related fatigue. Our primary goal was to examine PS differences in potential moderators of exercise in CS linked to fatigue (perceived fatigue, fatigue acceptance). Participants responded to all questions relative to their cancer-related fatigue when exercising. Our secondary goal was to examine PS differences in PPF (psychological well-being: PWB and deliberate rumination). More effective problem-solvers were hypothesized to report less perceived fatigue, more fatigue acceptance (hypothesis 1), and greater PWB (hypothesis 2). A between-group difference on strength of PS was confirmed prior to analyses ($p<.05$). MANOVA revealed support for hypothesis 1, $p<.01$, *partial* $\eta^2=.28$ and hypothesis 2, $p<.05$, *partial* $\eta^2=.23$. Univariate ANOVA's revealed significant differences on all variables ($p<.05$) except fatigue acceptance. Findings mainly support theory-based hypotheses in favor of exercising CS with stronger PS skills having positive psychological outcomes despite fatigue. This study is the first to begin to fill an identified gap in the PS and exercise literature among CS.

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C-166

PHYSICAL ACTIVITY IN YOUTH DANCE CLASSES

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Dancing is an opportunity for youth to be physically active, but little is known about the amount of MVPA obtained during dance classes. The present study investigates physical activity during dance classes in children and adolescents.

Methods: ActiGraph GT3X+accelerometers measured physical activity of students in 7 types of dance classes: Ballet, Ballroom, Jazz/Hip-Hop Community Center (CC; lower income), Jazz/Hip-Hop Private (P; higher income), Latin-Flamenco, Latin-Salsa/Ballet Folklorico, and Tap. Data were aggregated to 15 second epochs and minutes of class time in MVPA were calculated using Freedson 3-MET age-specific thresholds. Differences in MVPA across dance types were examined using mixed-effects regression models to account for clustering of students within classes and classes within teachers. Covariates were age, gender, race, class length, class size, and teacher experience.

Results: 291 youth aged 5–18 (mean age=9.9; 90.7 % female; 69.4 % white/non-Hispanic) participated. There were 58 classes, mean class size was 9.8, class length was 49.5 minutes, and teacher experience was 14.0 years. Across all types, 16.8 minutes of class time was spent in MVPA, with 3.5 minutes of MVPA in Flamenco; 11.5 minutes in Salsa/Ballet Folklorico; 14.5 minutes in Ballet; 14.7 minutes in Tap; 18.6 minutes in Jazz/Hip-Hop(CC); 20.5 minutes in Ballroom; and 21.6 minutes in Jazz/Hip-Hop(P). Boys had 2.8 fewer minutes of MVPA than girls ($p=.026$) and younger dancers had more MVPA than older dancers ($p=.003$). Teacher experience was positively related to MVPA ($p=.003$). Ballet ($p=.010$), Salsa/Ballet Folklorico ($p=.017$), Flamenco ($p=.000$) and Tap ($p=.016$) had fewer minutes of MVPA compared to Jazz/Hip-Hop (P). Jazz/Hip-Hop(CC) classes were not significantly different from Jazz/Hip-Hop(P).

Conclusion: While some dance types provided more MVPA than others, dance classes are not providing enough physical activity for youth to meet the 60-minute per day guideline. The most active dance types provided about 20 minutes of MVPA while the least active provided less than 4 minutes.

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EVALUATIVE CONDITIONING INCREASES PHYSICAL ACTIVITY BUT DOES NOT REDUCE SEDENTARY BEHAVIOR

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Attitudes play an important role in behavior change either directly or indirectly (e.g., via effects on intention formation). Evaluative conditioning is a technique for changing explicit and implicit attitudes toward a stimulus. This technique involves repeatedly pairing a conditioned stimulus with affectively-valenced unconditional stimuli to create an association between the conditioned stimulus and a desired affective state. We investigated the potential of a brief evaluative conditioning intervention for modifying physical activity (PA) and sedentary behavior (SB). During an initial lab visit, 111 male and female undergraduate students (BMI: $M=23.7$, $SD=3.4$) rated their PA and SB over the previous week using the International Physical Activity Questionnaire and were randomly assigned to one of four experimental conditions in a 2x2 factorial design. The two experimental factors represented whether participants did or did not complete evaluative conditioning protocols which paired PA with pleasant affective stimuli (factor 1), or paired SB with unpleasant affective stimuli (factor 2). One week later, participants returned to the lab to rate their PA and SB over the previous week. Hierarchical multiple regressions were significant for both post-test PA ($F[6,99]=23.7$, $p<.01$, $R^2=.59$) and post-test SB ($F[6,99]=9.7$, $p<.01$, $R^2=.37$). Post-test PA was associated with pre-test physical activity ($b=0.67$, $\beta=.75$, $p<.01$) and evaluative conditioning for PA ($b=918.6$, $\beta=.14$, $p=.03$) but was not associated with evaluative conditioning for SB ($p>.60$). Post-test SB was associated with pre-test SB ($b=0.62$, $\beta=.56$, $p<.01$) but not associated with either evaluative conditioning protocol ($p>.32$). The interaction between evaluative conditioning factors was not significant in either condition. Both models also controlled for sex and BMI. These results provide the first evidence that evaluative conditioning may be useful for increasing PA. Further work is needed to establish the mechanisms of this effect and the viability of this technique for modifying SB.

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PROACTIVE BARRIER MANAGEMENT MEDIATES THE EFFECT OF MOTIVATION ON PHYSICAL ACTIVITY

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Individuals who are highly motivated are more successful in goal achievement than unmotivated individuals (Bandura, 1977, 2005). However, it is not fully clear how motivation is translated into behavior. Understanding mediating mechanisms is highly important for developing more targeted behavior change interventions (Dishman et al., 2005). Proactive barrier management (i.e., preparatory action to prevent barriers from hindering goal achievement) may be one potential mediator of the motivation-behavior link (Aspinwall & Taylor, 1997; Aspinwall, 2011).

The current pretest-posttest experimental study tested proactive barrier management as a possible mediating mechanism for behavior change, with physical activity as the target behavior (Kramer & Fuchs, 2009). Young adults ($N=61$) reported their outcome expectations for being physically active. After attending a brief 30-minute planning session to increase physical activity, participants wore accelerometers for 24 hours and reported on their use of proactive barrier management strategies in a follow-up evaluation. Based on the Baron and Kenny (1986) model for test of mediation, participants with higher outcome expectancies showed higher moderate-to-vigorous physical activity (total effect in in minutes per day: $\beta_c=9.23$, $p=.007$). This motivation-behavior link was partially mediated by use of proactive barrier management strategies. The total effect of motivation on physical activity was reduced ($\beta_c=5.08$, $p=.16$) when accounting for proactive barrier management strategies as a mediator ($\beta_a=0.71$, $p<.001$; $\beta_b=5.83$, $p=.01$; $\beta_{ab}=4.16$, $p=.03$). Bootstrapping confirmed these findings. Proactive barrier management strategies should be studied in physical activity interventions as they may be an important mechanism for translating motivation into goal-achievement.

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RELATION OF DANCE INSTRUCTORS' BELIEFS TO PHYSICAL ACTIVITY IN DANCE CLASSES

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Background: Dance classes are a common setting for out-of-school moderate-to-vigorous physical activity (MVPA). Little is known about how dance instructors' beliefs may influence children's MVPA in class.

Objectives: To explore how instructors' teaching beliefs are related to instructors' and children's MVPA

Methods: 291 children aged 5–18 (mean=9.9 yrs; 91 % female; 69 % white/non-Hispanic) and 36 dance instructors (mean=32 yrs; 88 % female; 62 % white/non-Hispanic) were recruited at 21 dance studios (private and community centers) offering ballet, ballroom, jazz/hip hop, Latin and tap classes. Dance instructors reported their beliefs about activity during dance class (5 items; e.g., making sure students are always moving), other health behaviors (8 items; e.g., encouraging a healthy body) and commitment to dance (7 items; e.g., advancing students to the next level) on a scale of 1 (not at all important) to 5 (very important). Percent of class time in MVPA was measured objectively with accelerometers. Covariates were instructor and student age and race; class length, and teacher experience.

Results: Mixed effects linear regression demonstrated that dance instructors' beliefs about activity were positively associated with both instructors' MVPA ($F=8.48$, $p<.01$) and children's MVPA ($F=7.13$, $p=0.01$). Beliefs about commitment to dance were positively associated with student MVPA ($F=6.60$, $p=.013$). In the full model, activity and commitment beliefs and instructor MVPA were positively associated with children's MVPA ($F=4.3$; $p=.043$; $F=5.4$; $p=.024$; and $F=4.11$, $p=.047$, respectively). Shorter class length, more experienced instructors, and white/non-Hispanic students and instructors were also positively related to student MVPA ($p<.05$).

Conclusions: These results suggest the importance of dance instructors' teaching beliefs and role modeling of PA. Interventions that encourage dance instructors to adopt goals for active classes and become active role models could increase children's MVPA in dance classes.

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POSITIVE ACTION FOR TODAY'S HEALTH (PATH): SEX DIFFERENCES IN WALKING AND PERCEPTIONS OF THE PHYSICAL AND SOCIAL ENVIRONMENT

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Research indicates that people from low socioeconomic and ethnic minority backgrounds disproportionately fail to meet the weekly national recommendations for engaging in moderate physical activity. Perceptions of environmental factors may be significant barriers to walking in communities with high rates of crime and poverty and may impact women and men differently. The present study investigated sex differences in perceptions of safety, access to places for walking, access to services, aesthetics, and neighborhood satisfaction and their relations to walking in underserved communities in the PATH trial. Participants were 195 women and 95 men (100 % African American, 67 % female, mean age=53.2), were mostly non-working (62.4 %), had a high school diploma or less (64.6 %), and were making less than \$25,000 per year (67.2 %). Cross-sectional data at baseline indicated that women reported greater concerns about safety ($M=2.52\pm 0.70$ vs. $M=2.74\pm 0.72$; $t=-2.45$, $p=.015$), poorer perceptions of aesthetics ($M=2.62\pm 0.95$ vs. $M=2.88\pm 0.95$; $t=-2.18$, $p=.030$), and lower neighborhood satisfaction ($M=3.67\pm 0.62$ vs. $M=3.82\pm 0.62$; $t=-2.02$, $p=.045$) than men. Regression analyses showed that perceptions of access ($B=0.88$, $SE=0.44$, $p=.048$) significantly predicted walking for both women and men and that sex moderated the effect of neighborhood satisfaction on walking such that the relationship between neighborhood satisfaction and walking was positive for men and negative for women ($B=-2.72$, $SE=1.41$, $p=.054$). Neighborhood satisfaction includes perceptions of neighborhood features that women tend to rate more negatively, such as safety, aesthetics, and social climate. It may be, then, that for women, but not men, walking increases attentiveness to the neighborhood and worsens negative perceptions thereof. Overall, these results suggest that high crime communities may benefit from interventions that build accessibility to places for walking while also addressing sex differences in concerns about the physical and social environment through social marketing or other approaches.

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C-171

ARE WE PLACING TOO MUCH EMPHASIS ON SOCIAL SUPPORT DURING AND AFTER CARDIAC REHABILITATION? A PHYSICAL ACTIVITY PERSPECTIVE

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Background: Previous research has suggested that social support may be a key predictor of physical activity (PA) during and after cardiac rehabilitation (CR). However, this relationship was based on self-reported PA. Therefore, the present study examined the relationship between PA (i.e., self-reported and objective) and social support from family, friends, others with heart disease, and healthcare practitioners during and after CR. Participants and Procedure: A total of 355 patients agreed to participate in the study, however, 114 patients dropped out of CR making them ineligible (i.e., because they did not complete the baseline pedometer log at the end of CR) leaving a final sample of 241 patients (mean age=60.99, $SD=9.31$; $BMI=30.06$, $SD=8.42$; male=66 %) at the end of CR, 150 patients at 6 months, 143 at 9 months, and 152 and 12 months. At each assessment, patients were asked to complete a survey that included self-reported PA questions and wore a pedometer for seven days where they recorded their daily steps in a PA log. Results: A series of partial-order correlations controlling for age and gender showed that none of the social support / average steps per day relationships were significant across the four time points. However, social support from friends was significantly related to self-reported PA at the end of CR ($r=.15$). Conclusions: Social support from friends was significantly related to PA at the end of CR, however, this was only evident for self-reported PA. Further, social support was not a significant correlate of PA after CR for either self-reported or objective PA. Therefore, from a quantitative perspective, the importance of social support in heart disease patients from a PA perspective may be disputed.

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ASSOCIATIONS OF PERCEIVED NEIGHBORHOOD PHYSICAL AND SOCIAL ENVIRONMENTS WITH PHYSICAL ACTIVITY AND TELEVISION VIEWING IN AFRICAN AMERICAN MEN AND WOMEN

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Few studies have assessed how attributes of neighborhood environments contribute to sedentary, in addition to active, behaviors. This study investigated associations of perceived social and physical aspects of neighborhood environments with television (TV) viewing and physical activity (PA) in 1,374 African American men and women recruited from a large mega-church in Houston, TX. Outcomes included log-transformed daily TV viewing and participation in medium/high levels of PA, measured by the short version of the International Physical Activity Questionnaire. Neighborhood perceptions were assessed with the Social Cohesion and Trust and the Neighborhood Problems scales. Cross-sectional analyses consisted of multivariable models that controlled for clustering within neighborhoods and potential confounding variables. Exploratory analyses examined the individual conditions comprising the neighborhood problems scale to identify the specific factors most associated with physical activity and TV viewing outcomes. Results showed that among women, reporting more neighborhood problems was significantly associated with greater log-transformed TV viewing ($\beta=0.017$, $SE=0.006$, $p=0.003$), and social cohesion was positively associated with PA ($OR=1.06$, 95 % $CI=1.02$, 1.11 , $p=0.006$). Concerns about litter, walking after dark, and a lack of places to shop were associated with an increase in TV viewing time of 12 %, 11 %, and 10 %, respectively. Among men, neighborhood problems and social cohesion were not significantly associated with either outcome; however, concerns about traffic and walking after dark were associated with an approximately 50-60 % reduced odds of participation in medium/high levels of physical activity. Physical and social neighborhood conditions were associated with TV viewing and PA, particularly in women. Neighborhood-based strategies to reduce sedentary behaviors and enhance PA should include attention to social as well as physical aspects of neighborhood environments.

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OUTCOMES OF A CULTURALLY-ADAPTED WEB-BASED PILOT STUDY PROMOTING PHYSICAL ACTIVITY AMONG AFRICAN AMERICAN FEMALE COLLEGE STUDENTS

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Objective. African American women report low levels of physical activity (PA) and share a disproportionate burden of many health conditions associated with being insufficiently active. The purpose of this study was to assess the PA and associated Social Cognitive Theory (SCT) outcomes of a 6-month web-based pilot study promoting weight loss and PA among African American female college students. Methods. A 6-month single group ($n=34$) pre-post test study design was used. PA and associated SCT constructs of outcome expectations, enjoyment, self-regulation and social support were assessed at baseline and 6-months. Paired t-tests were used to assess changes in PA and the SCT variables between baseline to post-intervention. Bivariate regression analyses were used to evaluate associations between pre-post changes in SCT constructs and PA. Due to the exploratory nature of this study, statistical significance was set at $p=.10$. Results. Participants had a mean age of 21.21 ($SD=2.31$) years and mean BMI of 35.4 ($SD=6.82$). Intent-to-treat analyses showed participants increased moderate-to-vigorous intensity PA from 75.5 minutes/week ($SD=72.9$) to 92.41 minutes/week ($SD=85.3$) ($p=.15$) and had significant increases in self-regulation for PA ($p=.03$) and social support for PA from friends ($p=.03$). Analyses among study completers ($n=15$) showed an increase of 33.23 minutes/week of PA ($SD=97$, $p=.24$) and similar increases for both self-regulation and social support. Changes in the SCT variables were not significantly associated with PA changes. Conclusions. Participants reported significant improvements in social support and self-regulation for PA. While the associations between improvements in the SCT variables and PA were not significant, these relationships were in the expected directions. The promising PA findings call for future studies with larger samples to further explore the applicability of web-based approaches to promote PA in this under-served population.

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RELATIONSHIPS BETWEEN SELF-EFFICACY, SOCIAL ENVIRONMENTAL FACTORS AND PHYSICAL ACTIVITY IN UNDERSERVED AFRICAN AMERICAN ADULTS

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Ecological models may be essential to understanding individual, social and environmental determinants of physical activity (PA) in underserved adults. The present study expands on past research by exploring the relationships between self-efficacy (SE) and social environmental factors on understanding PA in high crime, low-income communities. Specifically, interactions were examined between SE and peer social support (SS; engaging in PA together), social norms (seeing neighbors walking) and neighborhood social interactions (assistance among neighbors) in predicting two forms of PA, moderate-to-vigorous PA (MVPA) and walking. Participants were 434 lower income, African American adults (62 % female, $M=51\pm 16$ yrs) enrolled in the Positive Action for Today's Health (PATH) trial. PATH evaluated the efficacy of an environmental intervention for increasing walking in three underserved communities. SE, SS, social norms and neighbor social interactions were assessed with previously validated surveys. MVPA was assessed by 7-day accelerometry estimates. Self-reported walking was assessed using a 4-week history recall. Regressions tested the interaction between SE and each of the social environmental variables (SS, social norms, neighborhood social interactions) on MVPA and walking while controlling for age, sex, and community. Results demonstrated a significant main effect for social norms ($F(6,427)=26.2, p<.001, R^2=26.9\%$) and neighborhood social interactions ($F(6,427)=26.1, p<.001, R^2=26.8\%$) on predicting MVPA. Higher social norms ($B=6.8, p<.001$) and higher neighborhood social scores ($B=7.9, p<.05$) were significantly associated with a greater minutes of MVPA. There was also a significant main effect for SS in predicting walking ($F(6,427)=2.1, p<.05, R^2=2.8\%$) indicating that higher SS ($B=0.46, p<.05$) was associated with greater minutes of walking. The findings from this study suggest that social environmental factors may be more important determinants of PA outcomes than SE beliefs in underserved adults and should be the focus of future intervention studies.

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THE RELATIONSHIP BETWEEN REASONS FOR EXERCISE AND DISTRESS LEVELS IN COLLEGE STUDENTS

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Exercise helps increase tolerance of stressful life events and buffers against depression. Despite growing evidence that exercise can biologically affect mood, no study to date has focused on the impact that motivations for exercise may have on distress levels. This exploratory study aimed to determine if motivations for exercise predict body mass index (BMI), and determine if specific types of motivations for exercise predict higher levels of distress in college students.

A total of 217 students from an urban university completed the Reasons for Exercise Inventory (REI), a self-report of height and weight (BMI), and the Depression Anxiety Stress Scale-21 (DASS-21) as part of a larger IRB-approved study. Multiple regression analysis was conducted to determine the motivation domains for exercising predictive of BMI. The overall model was positive ($p<.05$), with motivations for exercise accounting for 4.6 % of the sample's variance in BMI. Specifically, "exercising for attractiveness" ($p<.05$) and "exercising to increase tone" ($p=.001$) were predictors, and accounted for the majority of variance significance. A second multiple regression analysis to determine the motivation domains for exercising predictive of depressive symptoms yielded a significant model ($p<.001$), with the REI accounting for 15.1 % of the variance in depression. Specifically, "exercise in order to improve my mood" ($p<.001$) was positively associated with distress, and "exercise in order to improve my health" ($p<.001$) was negatively associated with distress. These results indicate that being motivated by appearance may lead to more weight loss from exercise compared to exercise aimed at increasing muscle tone. Students with more distress tend to use exercise as a coping mechanism, while students with less distress tend to be more health-oriented in their exercise. These results highlight the need to include more exercise-based outreach programs for students who are distressed and particularly vulnerable to developing depression.

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THE EFFECT OF PERCEPTIONS OF BUILT ENVIRONMENTAL CHARACTERISTICS ON VETERANS' PHYSICAL ACTIVITY

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The US Veteran population has poorer health status and more medical conditions than the general population. Greater participation in regular physical activity (PA) could help mitigate these risks. The purpose of this analysis was to learn more about the role of the built environment, particularly urban v. suburban/rural, in supporting PA participation in this high-risk population. Overweight/obese Veterans ($n=480, BMI\geq 25$) at two VA medical centers were enrolled in the ASPIRE-VA randomized clinical trial testing a small changes lifestyle approach for weight management. At baseline, participants completed a questionnaire eliciting perceptions of environmental features in their community and received an Omron HJ-720ITC pedometer to monitor their walking steps. Seven days of pedometer data were uploaded one week after enrollment and again three months later. Logistic regression was performed to ascertain if environmental perceptions varied with site, and linear regression models were employed to determine whether there was a relationship between the change over the three months in daily step counts and these perceptions. Significant differences in perceptions of crime rates ($p<.001$), and the accessibility ($p<.001$) and maintenance ($p<.001$) of sidewalks were found between the two study sites. Participants had more concern about crime but gave higher ratings for sidewalk accessibility and maintenance at the large urban location compared to the suburban/rural location. However, these environmental variables were not a significant predictor of an increase in steps across three months ($p's>0.10$). Further research examining other environmental features is needed to understand how to inform future PA promotion efforts for Veterans.

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APPLICATION OF THE TRANSTHEORETICAL MODEL OF CHANGE EXAMINING OBESITY AND ACTIVITY PATTERNS AMONG LOW-INCOME HISPANIC MOTHERS

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Background: Obesity is a growing public health issue in the United States. Prevention strategies include increasing physical activity (PA). The Transtheoretical Model (TTM) may be applied to explore the process of changing activity patterns in populations. This study describes the prevalence of low-income Hispanic mothers in relation to the stages of change (SOC) for PA. Associations between SOC for PA, self-reported activity, and weight status were also examined.

Methods: Fifty-two Hispanic mothers utilizing services at La Comunidad Hispana, a federally approved health clinic in Kennett Square, PA, completed a self-report survey. Trained staff measured heights and weights. Body Mass Index (BMI) cutoffs determined weight status. Activity patterns were categorized by SOC using a staging algorithm. Relationships between SOC and activity patterns were examined. Data were analyzed using SPSS.

Results: All mothers participating in the study were Spanish-speaking and had low educational attainment (62 % <9th grade education). Nearly three-quarters of the sample were either overweight (42 %) or obese (33 %). Regular PA was reported by 64 % of participants and most (75 %) felt that PA was important in weight management. For SOC for PA, groups included pre-contemplation and contemplation (26.9 %), preparation (19.2 %), and action and maintenance (53.8 %). No significant difference was found between sedentary behaviors ($X=9.79$ hours/week, $SD=7.1$) and SOC ($p=0.858$). However, a significant positive correlation was found between amount of regular PA and SOC ($p<0.001$).

Discussion: The application of the TTM when implementing behavioral interventions for PA is important to consider. The TTM provides a framework for understanding this population's current PA along the TTM continuum. Tailored interventions addressing Latinas in the pre-action stages are needed. Future research of dietary habits will provide a better understanding of obesity in this at-risk population.

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C-178

EVALUATING CALIFORNIA'S SAFE ROUTES TO SCHOOL (SRTS) PROGRAM FOR IMPROVING ACTIVE COMMUTING BEHAVIOR AND CHILD HEALTH

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Over the last three decades, U.S. obesity rates have more than doubled among children, and tripled among adolescents. Meanwhile, the percentage of students who actively commute - walk or bike - to school has declined more than three-fold. Because the relative imbalance between calories incorporated and calories spent is seen as causing the unprecedented numbers of obese children and youth, researchers have investigated the association between commuting behaviors, reduced physical activity, and child obesity and health in societies dominated by motor vehicle transportation. This presentation describes findings from the initial phase (2008–10) of the on-going Safe Routes to School (SRTS) program representing 392 schools in 81 towns in California. First, we offer a snapshot of the commuting behavior of school-age children, the majority of who, as we show, commute to school in their family vehicle, regardless of weather conditions, time of day, or day of week. Second, we report significant and positive associations between parents' favorable views on active commuting and children's active commuting behavior. Third, we report a small and significant, albeit negative, association between children's active commuting behavior and child obesity measures that could be partially explained by low SES. Thus, we conclude that the relationship between active commuting behavior and child obesity remains unclear. This presentation discusses our evaluation in depth and allows time for discussion about barriers to, and facilitators of active commuting behavior among school-age children, with a view to reducing child obesity and improving child health more generally, as well as improving data collection techniques of relevant programs.

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C-178a

EFFECTS OF YOGA IN A MORE ACTIVE LIFESTYLE FOR SEDENTARY ADULTS: A 6-MONTH PILOT STUDY

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The study explored the effects of a mind-body program on the physical activity (PA) level of overweight sedentary adults in a 6-month RCT. We randomly assigned 14 overweight sedentary adults (12 female; 4 minority; mean age: 58.6±5.4 years; mean body mass index: 31.8±5.8 kg/m²) to either a face-to-face yoga group, with weekly yoga sessions lead by a certified yoga instructor (Face Group), or a home-based yoga group, which practiced yoga at home with a yoga DVD (DVD Group). Booster sessions were offered for each group post-program. Measurements included program adherence (class attendance and home practice; minutes/week) and level of PA (Metabolic Equivalent [MET]-hr/week) at baseline, 2, 4, and 6 months. At each time interval (baseline, 2, 4, & 6 months), Mann-Whitney Tests were conducted for between group difference while Wilcoxon Signed Rank Tests were conducted between such intervals for within group difference. Retention rate was 85.7 % at 2 months and 71.4 % at 6 months. There were no significant group differences in sedentary baseline levels (mean of MET-hr/week: 2.51 for Face Group vs. 2.56 for DVD Group). At each time interval, DVD Group showed higher levels of PA than Face Group (12.06 vs. 6.43, 13.78 vs. 4.88, & 12.74 vs. 4.55 MET-hr/week); Only the difference at 4 months achieved statistical significance (p=0.034). PA level significantly changed over 6 months in the DVD Group (p<0.05). Combining the groups showed significant changes from baseline (mean: 2.53; median: 0.44; Interquartile Range [IQR]: 5.05) to 2 months (mean: 9.26; median: 8.49; IQR: 9.76; p=0.005), to 4 months (mean: 9.33; median: 8.33; IQR: 16.99; p=0.034), and to 6 months (mean: 8.65; median: 6.70; IQR: 13.73; p=0.008). The results indicate that a yoga program may increase PA levels among overweight sedentary adults. Research with a larger sample is needed to further evaluate the effects of the program on the level of PA among this population.

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C-178b

SCOPE, DISEASE PROCESSES, AND RESEARCH METHODS EMPLOYED WITH NATIONAL INSTITUTES OF HEALTH FUNDED RESEARCH IN KINESIOLOGY DEPARTMENTS

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The National Institutes of Health (NIH) have played a prominent role in advancing bio-medical, bio-behavioral, and public health research over the past several decades. Each NIH institute has a particular focus that is dynamic and subject to change. An examination of funding trends in the various institutes could provide information about specializations that require additional resources. An analysis of the research methods may also provide critical insights for those seeking grants. The purpose of this study was to evaluate the diseases processes and research methods employed in clinical studies funded by the National Institutes of Health (NIH) within United States based kinesiology departments. The names of all faculty members from 69 doctoral granting departments were entered into RePORT. We identified 207 kinesiology faculty with funding from the NIH between 1969 to 2013. Published studies that resulted from these grants were then located in PubMed and abstracts from 2,227 publications were systematically reviewed. The National Institutes of Aging funded the highest percentage of grants followed by National Institutes of Diabetes, Digestive, and Kidney Diseases, the Center for Research Resources, and the National Heart, Lung, and Blood Institute. Nutritional and metabolic functioning, the nervous system, pathology, and cardiovascular diseases were the primary diseases processes studied with less focus on cancer and mental health. Comparative analyses, randomized controlled trials, development of a tool or measure, review articles, and prospective designs were the most commonly employed clinical research methods. Recommendations for kinesiology departments include the development of collaborative inter-disciplinary teams with faculty from medicine, biology, and public health, the use of community-based participatory methods, multi-center trials, and longitudinal designs.

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C-179

IS CHILDBIRTH MORE EMPOWERING AT HOME?: COMPARING PSYCHOSOCIAL OUTCOMES AMONG WOMEN CHOOSING HOME- AND HOSPITAL BIRTH

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Childbirth is an important event relevant to women's reproductive health, yet there is limited psychosocial research systematically examining women's experiences of different birth venues. A growing number of U.S. women are choosing to give birth at home for a range of reasons, including to have a more positive birth experience. Qualitative studies of women who had homebirths reveal that empowerment and sense of control are central themes in their childbirth narratives, although comparative research is needed to determine whether these outcomes are unique to homebirth. Moreover, these studies are typically cross-sectional and retrospective, and do not account for differences among women before birth, or the possibility of retrospective bias. Utilizing a prospective design, we evaluate the hypothesis that, compared to a hospital birth, homebirth is associated with higher levels of empowerment, perceived health competence, internal health locus of control, fewer postpartum depressive symptoms, lower levels of 'powerful others' health locus of control, and less endorsement of medicalized childbirth. First-time pregnant women completed an online survey during their third trimester and again within two months post-birth (N=70; hospital n=48; home n=22). Using repeated measures ANOVA, we found that compared to women choosing hospital births, those choosing homebirths were significantly less likely to endorse medicalization of childbirth (p<.001) or believe that 'powerful others' influence health outcomes (p=.03). Antepartum differences between the homebirth and hospital groups on these measures remained stable postpartum, suggesting that antepartum attitudes and beliefs predicted postpartum ones, and that the birth experience itself did little to change the attitudes, beliefs and depressive status of the new mothers. Overall, the findings suggest that the relationship between birth venue and the constructs of empowerment, choice, and control, as well as endorsement of medicalization in childbirth, are more complex than prior research findings would suggest.

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C-180

MATERNAL HEALTH BEHAVIORS AMONG HEALTHY START PARTICIPANTS IN EAST SAINT LOUIS, ILLINOIS

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OBJECTIVE: The aim of this study was to compare maternal health behaviors among Healthy Start participants to: (1) comparable data from CDC for Illinois overall, (2) a local comparison group, and (3) associated objectives from Healthy People 2010.

METHODS: Interviews of 360 Healthy Start participants assessed maternal health behaviors before, during and after pregnancy. Data for the local comparison group were gathered by interviewing non-Healthy Start women who delivered at an East Saint Louis hospital where most Healthy Start women also delivered (n=175).

RESULTS: The rate of quitting tobacco during pregnancy was almost three times higher among Healthy Start participants (33 %) than the local comparison group (12 %). The Healthy Start tobacco quit rate also exceeded the HP2010 Objective of 30 %, but was lower than the Illinois quit rate (45 %). Exposure to environmental tobacco smoke among Healthy Start infants (11 %) closely approached the HP2010 Objective of 10 %, but was twice the Illinois rate (5.5 %). Abstinence rates for alcohol use during pregnancy were similar for Healthy Start, PRAMS and the local comparison group (>95 %). Breastfeeding was low (47 %) compared to national PRAMS (77 %), and well below the HP2010 Objective (75 %). The rate of putting infants to sleep on their backs (66 %) was below PRAMS (76 %), but approached the HP2010 Objective of 70 %. Healthy Start mothers exceeded or closely approached HP2010 objectives for several injury prevention practices, including infant car seat and smoke detector use (>95 %).

CONCLUSIONS: The current results may be attributable to the high frequency of participants receiving health education and counseling. Compared to the local comparison group, Healthy Start participants received significantly more advice for 14 of 16 health behavior topics (all >85 %). Moreover, the rates of health behavior advice for Healthy Start significantly exceeded those for Illinois overall for almost every topic.

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C-181

HOW ARE OUTCOMES ACHIEVED IN HEALTHY START? RESULTS FROM IN-DEPTH INTERVIEWS WITH PROGRAM PARTICIPANTS

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Background. Evaluations of Healthy Start that detail program implementation and capture the process of how participants achieve outcomes seem limited. **Objective.** Using qualitative methods, the objective of the current study is to present results from a process evaluation of the East Saint Louis Healthy Start program. **Methods.** Nineteen in-depth interviews were conducted with program participants in May, 2006 (response rate=95 %). During these interviews, participants were asked about their relationship with their case manager, the typical content of case management encounters, their comprehension and use of print and other audio-visual materials, and their experiences with group health education. Moreover, participants were asked to explain how Healthy Start helped them achieve specific outcomes. Of the nineteen completed interviews, two were unusable, leaving seventeen available. These seventeen were transcribed, producing 384 pages of text for content analysis. Results. Sixty-three per cent of the interview participants were multiparous, 68 % had never been married, 26 % had less than a high school education, and 21 % were teenaged. In the content analysis, 120 illustrative transcript text excerpts were linked to twenty qualitative categories nested within five broad themes. About 100 of the text excerpts detailed a range of intermediate and long-term outcomes, including instrumental support, social support, knowledge of infant development, prenatal care utilization, as well as health behaviors, such as breastfeeding, tobacco and alcohol cessation, nutrition, physical activity, SIDS, and home safety. **Lessons Learned.** Qualitative data gathered directly from Healthy Start participants can vividly and richly illustrate the process of how outcomes are achieved.

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C-183

DO RELIGIOUS COMMITMENT AND BEHAVIORAL MOTIVATIONAL TENDENCIES MEDIATE DIFFERENCES IN RISK BEHAVIOR ENGAGEMENT AMONG DIFFERENT RACIAL/ETHNIC GROUPS?

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Racial/ethnic background, religious commitment and motivational tendencies have each demonstrated a relationship to risk behavior engagement in past research. The present study examines whether religious commitment and motivational tendencies mediate the relationship between racial/ethnic background and risk behaviors (e.g., alcohol/substance use, risky sexual behavior, unsafe driving). **Methods.** Participants included 1848 undergraduate students (66 % women). Fifty percent of the sample was white, 29 % Hispanic, 11 % Black, 3 % Asian/PI, 2.1 % American Indian, and 4.6 % classified themselves as Other. Students completed an online survey that included measures of substance use (alcohol, marijuana, tobacco), number of sexual partners, perceived stress, physical activity, and unsafe driving. It also included the Carver & White (1994) BIS/BAS Survey, the Religious Commitment Inventory-10 (Worthington et al., 2003), and basic demographic questions. **Results.** This study found that race/ethnicity, religious commitment and motivational tendencies were all related to engagement in risk behaviors (all p-values <.01). Specifically, religious commitment was negatively related to alcohol use, number of sexual partners, smoking, and marijuana use (r ranged between -.145 and -.297) and positively related to perceived stress (r=.113). With regard to motivational tendencies, Punishment Sensitivity was negatively related to physical activity and number of sexual partners (r=-.16 and -.12, respectively) and positively related to perceived stress (r=.27). Drive and Sensation Seeking were both positively related to alcohol use, physical activity, unsafe driving, and marijuana use (r ranged between .11 and .22). Multivariate analyses revealed racial/ethnic differences across all risk behaviors examined in this study. MANCOVA analyses suggest that neither religious commitment nor motivational tendencies mediate racial/ethnic differences in risk behaviors.

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Citation and Meritorious Poster

C-184

YOU'RE GETTING SLEEPY: THE EFFECT OF TREATMENT CHOICE ON SLEEP QUALITY IN A PLACEBO TREATMENT PARADIGM

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Over the last 30 years, patients have become increasingly involved in their health care decisions, including treatment selection. Recent literature has made it clear that there are both individual and group differences in the desire for an active role in the medical decision process. However, there has been considerably less research into the consequences of these decisions on actual health outcomes. The present study used a placebo sleep paradigm to isolate the direct effect that selecting a treatment has on treatment efficacy. All participants performed the same placebo treatment activity—writing down their thoughts immediately prior to going to sleep. One group of participants selected a treatment from a list of five different treatment options (i.e., five vague descriptions of the same treatment) they believed to be effective methods for improving sleep (expectation/choice group); a second group of participants was assigned a treatment they believed to be an effective method for improving sleep (expectation/no-choice group); finally, a control group performed the same writing activity, but received no placebo expectation. The self-reported sleep quality of the expectation/choice participants was significantly better than the expectation/no-choice participants (p=.04, d=.52) and marginally better than the control participants (p=.07, d=.41). Further, participants in the expectation/choice group reported they were significantly better rested than the expectation/no choice participants (p=.001, d=.91). These findings provide evidence that choice between treatments enhances the placebo component of treatments. Given the active role of patients in treatment decision-making, these findings have important implications for clinical practice and provide a methodology for examining how patient involvement influences treatment efficacy.

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C-185

THE RELATIONSHIP OF SOCIAL COGNITIVE FACTORS WITH SAFER SEX BEHAVIORS IN A SAMPLE OF MEN WHO HAVE SEX WITH MEN

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Even though there have been multiple initiatives orchestrated to educate MSM (Men Who Have Sex with Men) about engaging in safer sex practices, many still engage in unsafe sexual practices (e.g. Hoppers, Molenaar, & Kok, 1994). Research has supported that perceived peer norms, common stressors encountered by the GLB community (e.g., internalized homophobia, stigma, and experiences of prejudice (minority stress; Myers, 1995)), and self-efficacy play a significant role in facilitating an individual's health behaviors, including sexual health behaviors (e.g. Hamilton & Mahalik, 2009). However, researchers have not differentiated the role of perceived norms of different types of peer groups on safe sex behaviors, nor the role of connectedness with the GLB community in predicting safe sex behaviors. This study used a cross-sectional design and multiple regression analysis to examine the potential relationship between gay and straight peer norms, connectedness with GLB community, minority stress, condom self efficacy, and safer sex behaviors. Data were collected via an online survey. Sixty-four MSM participants reported having receptive or insertive sexual intercourse in the past month. Results indicated that the overall model significantly predicted protective sexual behaviors [$R^2=.39$, $F(7, 56)=5.01$, $p<.001$]. Of note, variance accounted for in safe sex behaviors was similar in both straight ($\beta=.28$) and gay ($\beta=.29$) peer norm groups. The findings from this study suggest that the influence of perceived peer norms on safe sex behaviors does not appear to be related to gay or straight identity of the peer, but rather whether or not the person deems those peers as "friends." Furthermore, community connectedness was found to be negatively related to safe sex behaviors ($\beta=-.50$). One reason for this finding could be that with greater exposure to the GLB community there is an increase in opportunities to engage in unsafe sex behaviors.

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C-187

PREDICTING SEXUAL UNWELLNESS IN OLDER ADULTS: A CASE-CONTROL STUDY

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Older adults are engaging in sexual activities and identify sexual well-being as integral to quality of life. Yet, many still experience a decline in sexual well-being as they age, which may be due to several physical, mental, and social factors. In order to target improvement in older adult sexuality, we need to identify factors that impact sexual unwellness in older adults.

Data from the Wisconsin Longitudinal Study were used to conduct a case-control study on the risk factors for sexual unwellness—inability to maintain prior levels of sexual activity—in older adults aged 62–67. A case was defined as decreasing or stopping sexual activity for individual reasons, both physical and emotional in nature (e.g., illness, physical health, lack of interest, emotional health). As there may be different predictors for decreasing or stopping sexual activity due to either physical or emotional reasons, separate logistic regressions were run to test predictive models for decreasing or stopping sexual activity for: a) physical reasons or b) emotional reasons. Predictive factors included background, spouse, physical and mental health variables.

The model predicting inability to maintain sexual activity due to physical reasons was significant, ($X^2(21)=557.59$, $p<.001$, Nagelkerke $R^2=.26$). Significant predictors included: being male, poorer spousal health, poorer physical health, history of diabetes, prostate cancer, and depression, and recent fatigue and sexual pain symptoms. The model predicting inability to maintain sexual activity due to emotional reasons was also significant, ($X^2(21)=176.19$, $p<.001$, Nagelkerke $R^2=.10$). Significant predictors included being female, dissatisfied with spousal support, better spousal health, history of depression, and recent sexual pain symptoms.

Results show the impact of physical and mental health risk factors on the development of sexual unwellness in older adults, with different patterns of prediction depending on the reasons for decreasing or stopping sex, including gender differences. Future considerations for research will be discussed.

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C-188

METHAMPHETAMINE USE AMONG WOMEN ATTENDING STD CLINICS IN LOS ANGELES COUNTY

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Background. Methamphetamine (meth) use is a continuing problem in the U.S. and has been associated with increased risk of HIV and sexually transmitted infections (STIs). However, few studies have examined the meth use/STI risk association in women.

Objectives. To identify demographic and behavioral factors associated with meth use among women at risk for STIs.

Methods. We conducted a cross-sectional study of women attending public health STD clinics in Los Angeles County, CA from 2009–2010. Chi-square tests were used to compare the prevalence of meth use among different demographics/sexual behaviors of women and multivariable logistic regression was used to identify predictors of meth use.

Results. There were 1.4 % ($n=277$) women who reported meth use, with a mean age of 29 years. Prevalence was highest among Whites and those reporting both male and female partners. Most women who reported meth use also reported poly-substance use. In a multivariable model controlling for age, race/ethnicity, condom use, having a new sex partner, and other illicit substance use, we found that women who reported sex with an injection drug user were nearly 10 times more likely to report meth use as compared to those who did not (adjusted odds ratio [AOR]=9.87, 95 % confidence interval [CI]=5.83,16.73). Other factors associated with meth use included sex with a recently incarcerated partner (AOR=3.24, 95 % CI=2.16, 4.86), anonymous partner (AOR=2.47, 95 % CI=1.53, 4.01), and trading sex for drugs or money (AOR=3.26, 95 % CI=1.69, 6.32). Finally, women who tested positive for chlamydia/gonorrhea were 1.48 times more likely to use meth as compared to those who did not. Conclusion. Female meth users are involved in high-risk sexual networks and behaviors that could increase their risk for STIs/HIV. Consequently, this population may benefit from improved STI and substance abuse interventions.

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C-189

ASSOCIATIONS BETWEEN POWER AND CONDOM USE IN A SAMPLE OF YOUNG ADULT LATINOS

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Objectives: Latinos in the US experience disproportionately high rates of STIs and HIV. The purpose of this study was to examine the influence of multiple measures of power on condom use among Latino young adults. Specifically, we investigated whether different measures of power were related, determined whether perceptions of power varied by gender, and examined which measures of power were associated with condom use. We expanded upon previous studies by including measures of individual, interpersonal, and structural power and by including both general and domain-specific measures of power.

Methods: We conducted in-person interviews with sexually active Latino young adults (246 women, 234 men) recruited from community sites in 4 rural Oregon counties.

Results: Spearman rank coefficients indicated that the measures of individual, interpersonal, and structural power were not strongly correlated. Perceptions of power did vary by gender on several measures. Less than one third of the men and women interviewed reported consistent condom use in the previous 3 months. In stratified logistic regression analyses condom use self-efficacy, an individual measure of power, and sexual decision-making, an interpersonal measure of power, were associated with increased odds of consistent condom use among both men and women. Among men only, increasing relationship control, an interpersonal measure of power, was associated with lower odds of consistent condom use. Among women only, increasing medical mistrust, a structural measure of power, was associated with consistent condom use.

Conclusions: We found that measures of individual, interpersonal, and structural power explained variations in condom use among this sample, and that the significant predictors tended to be domain-specific rather than global measures. Future research on power and STI/HIV prevention should include men and specify both the level at which power is experienced or expressed and whether the measure is specific to condom use or a more general measure.

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C-191

THE EFFECT OF MORNINGNESS/EVENINGNESS AND SLEEP QUALITY ON DEPRESSION

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Recent studies have found that morningness/eveningness (whether someone is more of a morning person or a night person) may be associated with mood disorders such as depression. However, few studies have examined factors that may influence this relationship. The current study examined whether sleep quality (Pittsburgh Sleep Quality Index) influenced the relationship between morningness/eveningness (Owl and Lark Questionnaire) and levels of depression (Beck Depression Index) among older adults.

Participants consisted of 54 adults over the age of 45 (mean age=56±6 years) who participated in a larger study focused on promoting health behaviors among chronically stressed older adults (54 % caregivers; 70 % women). Descriptive analyses revealed that 28 % of our sample were classified as morning vs. evening (19 %) people and that 39 % of our sample demonstrated elevated levels of depression (BDI score>13). Hierarchical regression analyses showed a morningness/eveningness by sleep quality interaction, such that older adults who were classified as morning people, but reported poor sleep quality, had elevated levels of depression compared to morning people who reported good sleep quality ($R^2=25$; $p<.05$). These results suggest the need for further investigation into why factors of sleep may be influencing the relationship between morningness/eveningness and depression to be able to predict and prevent mood disorders such as depression in this population.

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C-193

RANDOMIZED TRIAL OF REFERRAL TO A WEB-ASSISTED TOBACCO INTERVENTION - IMPACT ON PATIENT PARTICIPATION AND INTERVENTION-ASSISTED SMOKING CESSATION: A NATIONAL DENTAL PBRN STUDY

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Web-assisted tobacco interventions (WATIs) have been shown to be effective in assisting smokers with quitting and yet are underutilized. Because more than one half of smokers see a dentist each year, the dental visit is an excellent opportunity to engage smokers in cessation efforts. We conducted a randomized controlled trial among 100 community-based dental practices of two methods to refer smokers to a WATI, Decide2Quit (D2Q). Intervention practices used e-referrals and paper referrals ("information prescriptions"), while comparison practices used only paper referrals. Smokers referred via e-referral received motivational emails encouraging participation and providing a link to D2Q. Although total referrals from intervention practices were lower than comparison, the subsequent proportion of registrations among intervention practice smokers was nearly four-fold higher, compared with comparison practices (adjusted mean percentages per practice: 29.5 % vs. 7.6 %, $p<.01$). Due to the higher rates of participation, rates of cessation attributable to D2Q participation were three-fold higher in intervention practices (adjusted mean percentages per practice: 3.0 % vs. 0.8 %, $p=0.03$). Thus, we were successful in implementing an e-referral system that dental practices used to refer smokers to a WATI, and that resulted in supporting smoking cessation in dental patients. Funding: NIH grants U01-DE-16746, U01-DE-16747, and U19-DE-22516.

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C-194

TREATMENT OF CO-MORBID CIGARETTE SMOKING AND PTSD AMONG RESPONDERS TO THE WORLD TRADE CENTER ATTACKS

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Approximately 90,000 individuals participated in rescue, recovery, and support services in response to the attacks on the World Trade Center (WTC). Respiratory problems and PTSD are the signature persisting health problems for WTC responders. Smoking is a significant health behavior related to both respiratory problems and PTSD. Smoking may exacerbate respiratory symptoms and increase risk for mortality. Persons with PTSD report higher rates of smoking, lower quit rates and earlier relapse than those without PTSD. Malleable cognitive vulnerability factors for anxiety affect many aspects of smoking. Specifically, anxiety sensitivity (fear of anxiety-related sensations) and distress intolerance (difficulties tolerating distress) are implicated in smoking relapse and difficulties quitting. Cognitive-behavioral treatments (CBT) that address smoking and anxiety vulnerability factors may be best suited to aid in quitting, anxiety reduction, and improved respiratory functioning.

This paper discusses the theoretical and empirical rationale and treatment components of a novel smoking cessation and PTSD intervention. The new treatment is an 8-week program that targets smoking cessation and PTSD symptom reduction via CBT skills. Skills include psychoeducation, cognitive restructuring, interoceptive and in-vivo exposure exercises, problem solving, and relapse prevention. In addition, initial pilot data is presented from an ongoing CDC-funded study conducted at the World Trade Center Health Program. Participants included WTC responders ($n=4$ Caucasian males) who were regular smokers ($M=25$ cigarettes/day) with significant PTSD symptoms. At baseline, participants all met criteria for PTSD based on clinical interview and self-report [PTSD checklist (PCL); $M=62$]. Three participants completed treatment, 1 quit smoking, 2 reduced the number of cigarettes/day, and the 3 completers experienced a reduction in PTSD symptoms (10point reduction on PCL). Treatment challenges and future research steps will be discussed.

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C-195

RESPONDENT-DRIVE-SAMPLING CHAIN REFERRALS FOR SMOKING CESSATION

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Background: New approaches are needed to engage smokers in cessation efforts. Peer-driven chain referrals used to market products online have not been tested in web-assisted tobacco interventions. We are implementing respondent-driven sampling (RDS) recruitment chains to increase access to Decide2Quit.org.

Methods: RDS begins with an initial set of smokers (seeds) engaged to recruit other smokers; these new smokers are then engaged to continue the chain. RDS best practices employ a combination of small seed number, recruitment quotas, and incentives to reduce referral biases. To determine the optimal number of seeds and recruitment quotas required to reach our sample size (1200), we used cross-sectional online survey data to simulate time required and likely number of recruits per peer-smoker.

Results: Smokers ($n=48$) were mostly female (72 %), of the ages 30-60(82 %). Most had (54 %) or had been referred (46 %) to websites; fewer had referred to health websites (27 %). Estimation of number of smokers in their network: 1-5 (40 %), 6-10 (24 %), and 10-20 (22 %), with mean number of intimate family (2.2, $SD=2.1$) and close friend (3.7, $SD=3.8$) smokers. Most smokers were willing to refer (82 %) to Decide2Quit.org and also had social ties (Mean=5.0, $SD=4.4$, Range=0-20) who would be open to peer-referral. RDS simulations suggest that an average smoker could recruit 5.2 smokers in 9.45 days. Under conservative assumptions about referral acceptance, a sample of 1200 can be recruited after a median of 171 days with 5 % probability of taking over 9 months and 11 % probability of sample die-out.

Conclusions: Smokers are willing to refer. We will use these simulations to test the effectiveness of Share2Quit proactive chain referral tools.

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C-196**LATENT CLASS TRAJECTORIES OF SMOKING AND CRAVING USING GROWTH MIXTURE MODELING**

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Purpose: To examine individual heterogeneity in the joint trajectories of cigarette use and craving among participants in a smoking cessation pilot study in order to predict 6-month abstinence.

Methods: Study participants (n=83) responded to 10 interactive voice response system calls over a 12-week period that included two single-item measures of relapse triggers: lapse (smoked at least a puff since previous call) and craving (scale=1 no craving to 5 worst craving). Longitudinal parallel process growth mixture models were used to identify latent classes of participants defined by trajectories of smoking lapse and craving over time. Model fit was assessed with the BIC index. Distal outcomes (7-day point prevalence abstinence and 30-day prolonged abstinence) were measured at 6 months post quit then imbedded directly into the model to test whether class membership was a significant predictor of abstinence.

Results: A four-class model was the best fitting and most conceptually relevant model. The four classes differed in their trajectory (stable, worse, or improved) with respect their joint distribution on reported lapses and/or cravings and were significantly associated with 6-month abstinence. Specifically, Class 2, which had a markedly high lapse rate (82 %) and persistently high craving over time, showed significantly worse 7-day point prevalence (8 % vs 35-40 %) and 30-day prolonged abstinence (4 % vs 30-33 %) compared to the other classes. Two other classes also had consistently high cravings over time. Therefore, the distinguishing feature of Class 2 was the combination of persistently high craving and initially high lapse rate.

Conclusions: It appears that an initially poor status on two relapse triggers (lapses and cravings) and persistently high craving is associated with significantly lower long term abstinence. Modeling the joint trajectories of lapses and craving during an intervention period appears to be a useful and significant predictor of abstinence.

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C-197**ONLINE RECRUITMENT OF INDIVIDUALS WITH LIMITED ENGLISH PROFICIENCY - A PILOT STUDY OF TOBACCO AND ALCOHOL DEPENDENCE SCREENING AMONG BRAZILIAN IMMIGRANTS**

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Background: 25 million individuals in the US report limited English proficiency (LEP) and face disparities in access to health services, including tobacco cessation and alcohol abuse treatment. Language specific web-based interventions could offer evidence-based support for behavior change to decrease such disparities. However, little is known about ways to recruit LEP individuals for online studies and interventions.

Aim: Compare the effectiveness of recruitment strategies for tobacco and alcohol online screening among LEP Portuguese-speaking individuals.

Methods: Ads were posted in Facebook, Google and three online Brazilian immigrant communities' newsletters; email messages to the customer base of a Brazilian online grocery store were sent to promote the study. The ads and emails were written in Portuguese; when clicking the ads or email, individuals were directed to informed statement and an online anonymous survey assessing demographics, acculturation level, English proficiency, utilization of mobile telephone, text, email and internet, interest in web-based support and tobacco (Heaviness of Smoking Index) and alcohol (AUDIT-C) dependence screening.

Results: In 52 days, 448 responses to the screening were obtained. Most responses came from Facebook Ads and email messages from online ethnic grocery store (37.3 and 36.6 % of respondents, respectively), followed by ads on online newsletters and Google. Facebook and online newsletter's respondents were the most likely to report LEP (75 %) and current smoking (32 %). At-risk drinking was more frequent among individuals recruited through Facebook and Google (42 % and 50 %, respectively).

Discussion: This preliminary study in a single immigrant population suggests that online recruitment of segmented and geographically spread linguistic groups can be done in a relatively short period of time. Future studies should focus on online interventions for health behavior change among LEP individuals.

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C-198**AUTOMATED RELAPSE RISK MONITORING AMONG RECENT CIGARETTE QUITTERS - WHO RESPONDS?**

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Background: Ecological Momentary Assessment (EMA) can inform smoking relapse prevention interventions delivered in real time, at the point of need. These interventions depend on the commitment of recent quitters to respond to EMA. The purpose of this study was to identify characteristics that are associated with response to an interactive voice response (IVR) system for EMA to monitor relapse risk among recent quitters of cigarettes enrolled in telephone-based treatment.

Methods: EMA of relapse risk was based on answers to a brief set of 8 questions. We analyzed data collected on 17,102 IVR relapse risk EMAs made to 909 participants in two treatment arms. For each participant, responsiveness was the percent of completed assessments.

Linear regression models were used to determine which baseline variables (demographic, comorbidity and smoking related factors) were associated with percent of completed assessments, adjusted for study arm.

Results: Participants were mostly White-non Hispanic (83 %), adults (mean age=44; SD=11.7); 53 % were female and 37 % had a high school education/GED or less. 61 % of all participants completed at least half of the EMA calls.

Bivariate models showed that greater percent completion was associated with older age (p < .0001), female sex (p=.0052), and lower baseline measures of stress (p=.0012), depression (p=.0134) and number of cigarettes smoked per day (p=.0005).

A multivariable model showed that after adjusting for age, female sex, education, race and randomization arm, greater percent completion was independently associated with older age (p < .0001), white race (vs. all others, p=.0159), lower depression (p=.0388) and lower number of cigarettes smoked per day (p < .0001).

Discussion: Demographic variables are associated with responsiveness to EMA in individuals who have recently quit smoking. More research is needed to understand reasons of lower response among depressed, heavy smokers and racial/ethnic minorities.

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C-199**PHYSICIAN INTERVENTION TO IMPROVE PARENTS' TOBACCO CONTROL**

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Many children obtain cigarettes from family members without the adult's knowledge (DiFranza & Coleman, 2001; Robinson, et al., 2006). However, no research has evaluated a program designed to encourage parents to restrict their tobacco. A logical point of intervention lies in physicians' practices, given that 90 % of children see a physician each year (CDC, 2012). The purpose of this study was to develop and evaluate a program designed to teach pediatricians how to coach parents to keep their tobacco away from their offspring. Physicians participated in a one-hour training program using modeling and role-playing to develop intervention skills. The intervention for parents was based in motivational interviewing and designed to be delivered in about three minutes by pediatricians. Briefly, the physicians focused on helping parents who smoke to identify methods of restricting their tobacco, just as one might keep alcohol or firearms under control. The physicians noted the parents' ideas for tobacco control on a short handout that they gave the parents.

Sixty-two smoking parents with a child 9 to 15 years old were recruited to complete surveys before the intervention and at a one-month follow-up. Analyses revealed that parents believed it would be easier to keep their tobacco away from their children after the intervention than before, $t(39)=3.56$, $p=.001$. Further, they reported using more ways to limit access to their tobacco after the intervention, $t(38)=2.47$, $p=.02$. For example, parents were more likely to report counting their cigarettes, counting their packs, keeping their tobacco at work, and keeping their tobacco on their person, all $ps < .05$. The parents also reported restricting smoking for adults in their homes, $t(39)=2.48$, $p=.018$, and reducing their children's exposure to smoke, $t(38)=2.06$, $p=.05$. This brief program holds promise as an effective method for reducing children's access to tobacco.

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C-200

SMOKING RATES AMONG SEXUAL MINORITIES: REVIEW OF POPULATION-BASED STUDIES

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Interest in the smoking rates of sexual minorities (i.e., lesbians, gays, and bisexuals) has increased in the past decade. Well over a hundred studies on this topic have been conducted, but most of the research has been based on small samples drawn from places in which smoking is likely to be more frequent (e.g., bars and clubs). Most studies suggest that tobacco use is more common among sexual minorities than among heterosexual individuals. However, it is difficult to determine how representative findings from these studies are, given their small and nonrandom samples. In fact, we found only 16 population-based studies of smoking among sexual minorities.

An additional difficulty lies in the variability of the sampling procedures, methods, and measures in these studies. To define sexual minority status, 37.5 % of the studies measured sexual orientation identity, 31.3 % assessed previous or current sexual experience, 25 % measured a combination of identity and behavior, and 12.5 % measured attraction only. In terms of smoking status, numerous different methods were used to describe tobacco use. Other points of variability included study design and types of comparison groups.

Given the variability in sampling procedures, methodology, and study design, it is not surprising that the smoking rates obtained in this research have varied widely. Among heterosexuals, estimates from 12.6 % to 38.2 % have been obtained. Among sexual minorities, the variability is even greater, ranging from 17.6 % to 64.3 %.

To date, no comprehensive review has explored both the outcomes and the methodological characteristics of this expanding body of research. That is the purpose of the current report. We systematically classified studies by subject variables and methodological characteristics to determine the extent to which smoking rates were associated with these variables. Finally, we made recommendations to standardize research procedures in order to further research on tobacco use among sexual minorities.

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C-201

PEDIATRICIAN INTERVENTION IMPROVES PEDIATRICIAN AND PARENTS' PERCEPTIONS ABOUT TOBACCO INTERVENTIONS

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The clinical guidelines for the treatment of tobacco use recognize physician interventions as key for reducing risk in adults, children, and parents (Fiore et al., 2008). However, a number of barriers hinder physicians' engagement in interventions with parents, such including perceptions that tobacco interventions will harm the provider-parent relationship (Winicoff et al., 2008). The purpose of this study was to examine pediatrician and parent perceptions of a pediatrician-delivered intervention. Sixty-two smoking parents and four pediatricians were assessed before and one month after intervention. The intervention targeted smoking parents and focused on helping them to restrict their children's access to their tobacco in order to reduce their children's odds of starting to smoke.

First, the results indicated that after implementing a parent-directed intervention, pediatricians felt more effective at reducing children's odds of starting smoking, $t(3)=3.0$, $p=.058$. Second, parents' perceptions of pediatrician-delivered interventions focusing on parental smoking were assessed. Parents were more positive about pediatricians discussing their personal tobacco use with them after the intervention, $t(40)=2.97$, $p=.005$. Post intervention, parents were also more likely to believe that pediatricians could be effective at preventing smoking in children and teens, $t(39)=2.06$, $p=.046$.

These data suggest that pediatricians should not fear that addressing parental smoking will harm their relationships with parents. In fact, addressing tobacco use is associated with positive feelings on the part of smoking parents. Further, pediatricians' engagement in the intervention also enhanced their self-efficacy at reducing children's tobacco-related risk. Our results were limited by reduced power but suggest that a brief pediatrician-delivered intervention can improve both parents and pediatricians' perceptions about tobacco interventions.

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Citation and Meritorious Poster

C-202

INVARIANCE EXAMINATION OF ADOLESCENT SURVEY-BASED SMOKING-RELATED BEHAVIORS ACROSS ETHNICITY AND GENDER

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Tobacco-related cognitions and behaviors are often examined using national and state surveys assessing participants' self report of attitudes and actions. However, few studies have examined the psychometric or factorial invariance of various tobacco-related behaviors across ethnic group and gender. The present study examined the factor structure of 3 smoking-related items ("Have you ever smoked a cigarette?", "In the past 30 days, how many days did you smoke cigarettes?", "In the past 30 days, on the days you smoked, how many cigarettes did you smoke per day?") administered as part of the 2009 California Health Interview Survey (CHIS - adolescent version). Factorial invariance was examined across Asian Americans (N=377), Whites (N=1739), African-Americans (N=115), and Latin Americans (N=814). Invariance was also examined across males (N=1612) and females (N=1767). It was expected that the "smoking-related behavior" latent variable that is comprised by the 3 observed variables would be invariant across ethnic group and across gender. However, while all the baseline models were a good fit to the data (all factor loadings were significant: $p<.001$), only one of the metric invariance models (Latin Americans v. African Americans) was a good fit to the data (factor loadings for all observed variables were not significantly different: $p<.05$). Factorial invariance analyses revealed all minority ethnic groups to be significantly different ($p<.05$) from Whites in the factor loadings between the observed variables and the latent variable. The analyses also found males to differ significantly from females. These findings suggest that the types of smoking behaviors that are assessed in the CHIS do not predict the "smoking related behavior" latent variable uniformly across groups. These findings accentuate the significance of evaluating psychometric properties of scales assessing tobacco-related behaviors and behaviors generalized across ethnic and gender groups.

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C-203

PATTERNS OF SMOKING CESSATION BEHAVIOR: A CASE STUDY

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In smoking cessation intervention research, efficacy has traditionally been measured by assessing participants' smoking status using binary, point prevalence indices (i.e., currently smoking/quit) at a limited number of time points. While end of treatment data are crucial for studying treatment efficacy, they may limit the scope of smoking cessation program evaluation by only capturing snapshots of the widely variable, non-linear trajectories of quit behavior. The purpose of the current study is to use a latent class model (LCM) to identify patterns of quit behavior in a longitudinal, community-based, RCT (CTQ-YMCA) and to highlight the advantages of LCMs in the analysis of smoking cessation data. Participants were female smokers (N=330, mean age=43.52, SD=9.96) randomized to CBT+Exercise or CBT+Contact Control. Smoking data were collected weekly over 12 weeks. Results suggested a 5-class model was best supported by the data. Based on the observed patterns, classes were labeled as non-quitters (49.7 %), few attempters (9.7 %), early attempters (8.5 %), late attempters (5.5 %), and quitters (26.7 %). Although there were no between-group differences (Exercise vs. Contact Control) in the overall distribution of classes, analyses suggested a dose-response relationship between exercise (total aerobic/resistance sessions) and class ($p's<.01$), such that the greatest dose of aerobic sessions was reported amongst quitters (mean=15.98, SD=10.31) and the lowest dose amongst non-quitters (mean=5.26, SD=8.06). Mean resistance sessions was highest for late attempters (mean=8.00, SD=7.35) and lowest for non-quitters (mean=2.28, SD=5.57). In addition, between-class differences were found in baseline demographics (age, smoking cessation self-efficacy) and changes in psychosocial constructs over time (weight concerns, smoking cessation self-efficacy and smoking cessation stage of change). Understanding patterns of smoking behavior and how dose relates to these patterns is critical from an intervention development, design, and analysis perspective.

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C-204

POLICY COMPLIANCE OF SMOKERS ON A TOBACCO FREE UNIVERSITY CAMPUS

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Colleges in the US have implemented policies to restrict tobacco use. Few studies have explored factors that influence compliance with campus tobacco policies and potential strategies to increase policy compliance. Researchers surveyed a convenience sample of 60 people who were smoking in compliant (n=30) or non-compliant (n=30) areas on and around the campus of one university that had recently adopted a campus-wide tobacco ban. Participants (48.3 % female, 93 % white, median age=23.5) answered 21 closed ended and 2 opened ended questions about their smoking and the campus tobacco policy. Most (90 %) participants did not think the smoking policy was enforced. Compared to compliant smokers, non-compliant smokers had significantly less knowledge of locations where tobacco use was permitted ($t(58)=2.88, p<0.005$) and were more likely to identify (incorrectly) their smoking location as compliant [$\chi^2(1, N=60)=10.59, p=.002$]. Non-compliant smokers (70 %) were more likely to have knowingly violated policy by smoking on campus compared to the compliant group (30 %); $\chi^2(1, N=60)=7.6, p=.022$. Content analysis was based on grounded theory (inter-observer agreement was 83 %, $\kappa=.805$) and revealed that the most frequently mentioned factor for influencing the choice of location to smoke for non-compliant smokers was convenience (42.9 %); and for compliant smokers, a desire to follow the policy was reported most frequently (28.1 %). Frequently mentioned factors that might influence non-compliant smokers to become compliant were consequences (34 %) and structures that accommodated smoking (27 %). This study suggests that educational, environmental and contingency strategies should be implemented to increase compliance with campus tobacco policies.

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C-205

AN ANALYSIS OF ATTENTION TO AND PREFERENCES FOR SMOKING WARNING LABEL CONTENT

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Health warnings on tobacco packages are an effective population-level intervention to prevent smoking and promote cessation (Hammond, 2011). Prospect theory states that people are more willing to accept risks when options are presented in terms of costs, but avoid risks when options are described in terms of benefits (Kahneman & Tversky, 1979). Gain-framed messages can be more effective than loss-framed messages for convincing individuals to engage in prevention behaviours such as smoking cessation (Toll et al., 2010). Yet, loss-framed messages continue to be used on smoking warning labels (Strahan et al., 2002). The FDA selected new smoking warning labels, eight loss-framed labels and one gain-framed that were released in 2012. The purpose of the present study was to determine the effect of label content on viewers' attention to and preferences for smoking warning labels. The level of attention directed toward a message could be an important precursor to processing, whereas message preferences may precede persuasion. Participants were 30 university students (Mage = 21±1.6) identified as occasional smokers (≤ 10 /week) with very low nicotine dependence. Participants were exposed to 36 labels containing images and text that were either gain-, loss- or neutral-framed. Participants viewed two labels with different frames simultaneously. Attention to labels was measured using eye-tracking technology. Label perceptions were evaluated on ratings of appeal. Results indicated that the frame of the label influenced the amount of time participants spent viewing the label $F(1,37)=7.25, p<.05$. Participants presented with a loss-framed and gain-framed label spent more time viewing loss-framed labels ($p<.05, d=0.88$) and rated gain-framed labels as more appealing $F(1,39)=6.97, p<.05$ than loss-framed labels. When given the opportunity to look at a gain- or loss-framed label, occasional smokers paid more attention to loss-framed labels, yet they found gain-framed labels more appealing. Future research is needed to determine the role of attention and appeal in influencing the effects of framed messages on behavior.

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C-206

ABSTINENCE-INDUCED CONCENTRATION DIFFICULTIES AND ABSTINENCE-INDUCED DECREMENTS IN SUSTAINED ATTENTION ARE ASSOCIATED WITH SMOKING RELAPSE

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Most smokers are motivated to quit smoking but most quit attempts end in failure. When smokers abstain from smoking they experience difficulty concentrating. In addition, performance on objective measures of sustained attention deteriorates. We examined the associations between subjective and objective measures of difficulty concentrating, and their associations with relapse to smoking. Smokers (N=200) attempting to quit were followed from 2 weeks pre-quit through 4 weeks post-quit. Participants did not receive pharmacotherapy. At one pre-quit laboratory session participants abstained from smoking before the session, and at another pre-quit session they smoked as usual. Three items adapted from the Wisconsin Smoking Withdrawal Scale (WSWS) assessed difficulty concentrating "right now", and a single summary item of difficulty concentrating was also administered. Participants also completed the Rapid Visual Information Processing (RVP) task. The outcome variable was biochemically-verified point prevalence abstinence 4 weeks post quit date. Self-reported concentration difficulties generally did not correlate with RVP performance (no. hits, mean reaction time [RT]). Subsequent relapsers (n=162) reported more difficulty concentrating at the abstinent (vs. non-abstinent) session on the WSWS items and the summary item ($ps<.001$). They also made fewer hits on the RVP and had slower RTs at the abstinent session ($ps<.01$). In contrast, abstainers (n=38) did not report greater difficulty concentrating at the abstinent (vs. non-abstinent) session, and their RVP performance did not decline. Using logistic regression, abstinence-induced increases in difficulty concentrating (WSWS items) and abstinence-induced decrements in RVP performance (no. hits, RTs) prospectively predicted relapse ($ps<.05$). Interventions that prevent abstinence-induced decrements in sustained attention may facilitate smoking cessation.

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C-208

UNDERSTANDING SPIRITUAL TRANSFORMATION, FORGIVENESS, AND EMOTIONS

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One approach to understanding the relationship between church attendance and health is to examine significant spiritual experiences that may occur in this religious context. Fredrickson's Broaden and Build Theory of Positive Emotion (2001) provides a framework for understanding that spiritual experience may not only boost positive emotion, but also undo the effects of negative emotion. The relationships among transformational worship experience, forgiveness, and emotions were examined in a multiethnic sample (N=64). Participants responded to interview questions about spiritual transformation and were asked whether confession and/or forgiveness played a role in this transformational experience. In describing transformational worship experiences 70 % of the participants indicated that confession and being assured of God's forgiveness played a role. Repeated Measures ANOVAs were conducted. The Confession/forgiveness question description was associated with more Positive Emotion word counts than Spiritual Transformation, $F(1, 44)=4.49, p<.05$. There were no significant differences on Benefit or Negative Emotion word counts. Post hoc analyses were conducted on those participants who indicated that their transformational experience was related to confession and being assured of God's forgiveness. In describing spiritual transformation, forgiveness word counts were associated with more Benefit words, $r=.30, p=.024$, more Cost words, $r=.47, p=.001$, and more Positive Emotion words, $r=.32, p=.016$. No association was found with Negative Emotion. Our finding that positive and negative emotions were associated with divine forgiveness may support the undoing hypothesis of the Broaden and Build Theory as negative emotions are reframed in the context of deepened spiritual insight. Future work may benefit from focusing on spiritual experiences that include these complex emotional responses and the articulation of their common and distinct associations with emotion.

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C-210

SMARTPHONE BREATHING MEDITATION APPLICATION PROOF OF CONCEPT: LINKAGE BETWEEN NIGHTTIME BLOOD PRESSURE REDUCTION AND SALIVARY ALPHA-AMYLASE AWAKENING RESPONSE

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This study further demonstrates proof of concept results for Tension Tamer (TT); a smart-phone application based on breathing awareness meditation (BAM) upon reductions in nighttime systolic blood pressure (SBP) and salivary Alpha-Amylase collections from the same time period. BAM has been previously shown to lower BP. The TT application integrates BAM with an embedded validated photoplethysmography (PPG) component that enables real-time heart rate (HR) capture. During TT sessions users receive instructions and place their index finger over the camera lens. HR changes are detected and processed. At the end of the 10-minute TT session, users receive a feedback graph depicting HR changes over the session and data are sent to remote data servers for time stamped adherence monitoring. Three adult prehypertensives completed nighttime SBP (i.e. collected between bedtime and morning awakening) and saliva samples (at bedtime, upon awakening, 30 and 60 min later) at preintervention and again 3-months later. Following initial assessments subjects received a smartphone with the TT application and were instructed to practice 2x daily for 10 minutes per session. Average adherence across the 3-month period was 79.1 %, with preintervention nighttime SBP=123.09 mmHg and salivary Alpha Amylase area under curve (AUC)=122.50 DU/ml. Efficacy signals indicated nighttime SBP reduction after 3-months was -5.9 mmHg and Alpha-Amylase AUC decreased -17.30 DU/ml. The small number of participants precluded valid statistical tests but data showing how individuals' magnitude of nighttime BP reduction aligned with Alpha-Amylase AUC changes will be presented. The TT application is objectively tracking practice adherence that corresponds with physiological changes. A randomized clinical trial is needed to determine efficacy of TT upon BP control and underlying neurohormonal mechanisms.

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C-211

SOCIAL CONSTRAINT AND ROMANTIC PARTNER SUPPORT PREDICT SALIVARY CORTISOL AND ALPHA-AMYLASE TRAJECTORIES DURING AN ACUTE SOCIAL STRESSOR

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Purpose: To assess whether self-esteem, optimism, social constraint, and perceived partner support in times of need predict salivary cortisol and alpha amylase (sAA) responses to an acute social stressor.

Design: Repeated measures experimental design.

Methods: Couples (N=142) were recruited from the University of California, Los Angeles community. Individual difference variables were assessed via questionnaire and one member of each couple was randomly assigned to experience an acute stressor, the Trier Social Stress Test (TSST). Salivary cortisol and sAA were assessed at five time points during the TSST. Results: Predictors of the trajectories of cortisol and sAA (collapsed across experimental condition) were examined controlling for sex, age, and recent caffeine, alcohol, and prescription medication use. Overall trajectories were examined with random effects of both linear and quadratic time. Reactivity and recovery (the first three or the last three time points, respectively) were examined with random effects of linear time. Neither self-esteem nor optimism were significant predictors of cortisol or sAA. Social constraint significantly predicted the overall cortisol trajectory $\chi^2(2)=6.68$, $p=.035$, but not sAA. Perceived partner support predicted sAA recovery, $\chi^2(1)=4.99$, $p=.026$, but not sAA reactivity nor the overall trajectory.

Conclusions: Participants who report high levels of social constraint have a blunted cortisol response to the TSST whereas people who perceive high support have a faster decline in sAA levels after the stressor ended suggesting a faster return to basal levels following stress.

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C-212

GENDER DIFFERENCES IN AUTONOMIC NERVOUS SYSTEM REACTIVITY TO STRESS

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The purpose of this study was to disentangle the psychobiological mechanisms and social-evaluative and achievement oriented conditions that impact Autonomic Nervous System (ANS) reactivity in males and females. ANS reactivity was elicited using the Trier Social Stress Test (TSST), and two modifications to the TSST were implemented to enhance the social-evaluative threat: an incentive and a disincentive modification. Measures of ANS functioning before, during, and after the TSST were continuously captured through heart rate (HR) and respiratory sinus arrhythmia (RSA). To distinguish the effect of the modifications, participants were randomly assigned to one of three groups: a no-modification group (N=35, 17 male), a disincentive group (N=12, 7 male), and an incentive group (N=13, 8 male). All participants exhibited ANS reactivity to the stressor; females exhibited the most magnified response across all three conditions. The greatest ANS reactivity was found within the incentive condition, for both genders. The no-modification and disincentive groups exhibited less reactivity, driven in part by reduced ANS reactivity in males in these groups. Evidence indicated that the ANS stress response system is highly sensitive to potential for gain (incentive) across both genders.

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C-213

THE CONTEXTUAL IMPACT AND MANAGEMENT OF TRAUMA: A DAILY PROCESS STUDY OF PARAMEDICS AND THEIR SPOUSES

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Due to the unique nature and high demands of their job, paramedics regularly experience stress not common to the general population, such as death of a patient under their care, violence, and more generally, human suffering and tragedy. As a result, paramedics are at increased risk for post-traumatic stress and trauma-related symptoms such as depression, anxiety, detachment, and sleep disturbance. Previous qualitative studies have indicated that these factors significantly impact the home environment. In particular, spouses of paramedics deal with stressors resulting from the occupational stress of their significant others. The current study employed online daily diary methodology to examine the interaction between home and work settings of full-time paramedics. Paramedics and their cohabitating spouses were followed for a period of one week and asked to answer key questions about quality of sleep, daily mood, stress, social support, and coping up to three times daily. Daily diaries were structured around the schedules of participating paramedics so as to gather information consecutively on one day off, four days on work, and two days off, facilitating a dynamic analysis of spillover and crossover effects. Preliminary dyadic and multilevel analyses reveal a significant interaction of reported stress and coping strategies between home and work settings. While daily work stress experienced by the paramedic predicts increased stress in the spouse, particular dyadic coping strategies appear to buffer the impact of stress both on and off the job. Greater perceived support from the paramedic's work partner is also associated with better daily marital adjustment among the paramedic and spouse. The role of sleep and health are also discussed.

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C-214

ANGER, FORGIVENESS AND MINDFULNESS: CORRELATES OF PERCEIVED STRESS IN AN LGB SAMPLE

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According to the Minority Stress Model, minority stress is described as being related to the juxtaposition of minority and dominant values and the resultant conflict with the social environment experienced by minority members (Meyer, 1995). Meyer suggests minority stress is correlated with anger; however, forgiveness and mindfulness have not been studied in conjunction with those variables. We hypothesize that anger, forgiveness and mindfulness will account for a significant proportion of the variance in perceived stress.

Psychometrically sound instruments used in our study include: the perceived stress scale ($\alpha=.88$) (Cohen, Kamarck, & Mermelstein, 1983); the inward expression of anger subscale ($\alpha=.86$) of the State-Trait Anger Expression Inventory (Spielberger, 1994); the forgiveness scale ($\alpha=.84$) of the Heartland Forgiveness Scale (Thompson, et. al., 2005); and the describing subscale ($\alpha=.931$) of the Kentucky Inventory of Mindfulness Skills (Baer, Smith & Allen, 2004).

Our gender balanced sample ($N=150$, mean age=32.5, $SD=13.1$, range=18–76 years old) consisted of African American (12.7%), European American (62%), Latino (12.7%), Asian or Asian American (2.7%) and Other (10%) participants. We found significant negative relationships between stress and mindfulness ($r=-.38$, $p<.001$), as well as stress and forgiveness ($r=-.45$, $p<.001$) and a significant positive relationship between stress and inward expression of anger ($r=.55$, $p<.001$). After controlling for age, education and income a hierarchical regression analysis indicated our model accounted for 36.3% of the variance in perceived stress ($F(6, 143)=15.14$, $p<.001$) with inward expression of anger ($\beta=.31$, $t=3.52$, $p=.001$) and forgiveness ($\beta=-.19$, $t=-2.40$, $p=.02$) as significant predictors.

Our results suggest that forgiveness and inward expression of anger are associated with perceived stress. Knowledge of this relationship may guide practitioners in treatment plans by suggesting methods to decrease stress with LGB people, such as including forgiveness and stress reduction techniques when working with this population.

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C-216

SUBSTANCE USE AND BODY IMAGE AMONGST SCHOOL-AGED CHILDREN ON THE TEXAS/MEXICO BORDER

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Background: Marijuana and alcohol use are higher in Hispanic youth in the U.S. compared to their non-Hispanic peers. Studies analyzing predictors of adolescent behaviors found that negative body images were associated with risky behaviors including personal harm and substance use. Few studies have looked at the link between body image and substance use among Latinos, particularly along the US-Mexico border.

Objective: Explore the relationship between body image and substance use among 6th - 12th grade students in schools near the south Texas-Mexico border.

Method: Using a cross-sectional design, 556 Mexican-American students (44.9% male, $Age=13.22$ years) from randomly selected schools representing 6th-12th grades near the south Texas/Mexico border self-reported age, gender and substance use behaviors, completed the Stunkard Silhouette Scale to assess perceived and ideal body image, and were measured for weight and height. T-tests were used to compare perceived and ideal body image by substance use behaviors. Chi-square tests and odds ratios were used to assess differences in substance use by gender.

Results: Boys were more likely to have ever had a drink of alcohol compared to girls ($p=0.0458$). Students who had ever smoked were more likely to have larger perceived and ideal body image than students who had never smoked ($p=0.0008$; $p=0.0004$ respectively). Students who had ever had a drink of alcohol had a larger ideal body image than students who never had a drink ($p=0.0072$). Students who had ever smoked marijuana had larger perceived and ideal body images than students who had never smoked marijuana ($p=0.0003$; $p=0.0005$ respectively).

Discussion: Our results support existing literature, especially with regard to boys being at greater risk for substance use. Students who used substances were more likely to have a higher perceived body image, which is consistent with other studies of negative weight perceptions as a risk factor for substance use. Future public health efforts to reduce substance use should focus on young males in Hispanic communities as well as students with high perceived body image.

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C-217

IDENTIFYING EVIDENCE-BASED PRACTICE NEEDS FOR SUBSTANCE ABUSE IN HAWAII

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Substance abuse is a problem in Hawai'i (adult prevalence: 15% illicit drug abuse, 18% alcohol abuse). An effective approach is to implement evidence-based programs (EBP) and program evaluation. However, service providers' capacity needs to be assessed to gauge the practical application. Due to the geographic distribution of alcohol and drug abuse providers in Hawai'i, an online needs assessment was conducted. The survey (Survey Monkey) was e-mailed to providers. All treatment providers (TP, $n=21$) and 83% prevention providers (PP, $n=15$) responded. TP (62%) and PP (53%) were familiar with the EBP definition. TP (53%) and PP (57%) were familiar with the evaluation definition. When asked to rate the priority of support needed to begin or continue the use of EBP (eg. training, websites, contact info, ...), TP (47%) and PP (42%) identified training as the highest priority. When asked the same of program evaluation, TP (46%) identified training in process evaluation as highest priority, and PP (42%) identified training in evaluation methods as the highest priority. Even though there is some familiarity with the EBP and program evaluation definitions, providers would like additional trainings in those areas. The online needs assessment method was a quick and simple way to gather and analyze data from multiple respondents across geographical areas. This needs assessment is a preliminary step in narrowing the research-to-practice gap within Hawai'i's behavioral health system in substance abuse.

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C-218

EVALUATING SBIRT SKILLS USING WRITTEN CASE VIGNETTES: A RELIABILITY STUDY

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OBJECTIVES: This study created and evaluated a system to assess health professionals' SBIRT skills using written case vignettes. In light of growing empirical evidence supporting SBIRT, integration of SBIRT training into residency programs and hospitals is increasing; however, the field lacks reliable tools to evaluate skills. The use of case vignettes simulating a brief intervention for substance use is a cost- and time-efficient way to assess basic skills. The availability of a psychometrically reliable tool to evaluate responses can enhance implementation fidelity of SBIRT.

METHOD: Case vignettes were developed by physicians and trainers to simulate a discussion about risky substance use with a patient. After given patient statements, residents provided 8 separate responses to 4 separate prompts. Responses were evaluated using a 2-part coding scale. Scale development was based on competencies outlined in the MD3 SBIRT resident training program and focus primarily on the BI aspect. The coding system includes Part 1: Behavior Counts (14 SBIRT-Adherent behaviors, 6 SBIRT Non-Adherent behaviors), and Part 2: Global Ratings (evaluated on a 3-point likert scale). Two coders evaluated 163 vignettes completed by Internal Medicine residents and 20% ($n=33$) were double coded. ICCs were analyzed.

RESULTS: Reliability among coders was high, with ICCs of .92 for Adherent Behaviors, .84 for Non-Adherent Behaviors, .95 for Part 1 total points, .83 for Global Ratings, and .94 for Part 2 total points. A wide range of scores was observed for both Part 1 and Part 2. Part 1 and Part 2 scores were highly correlated ($r=.75$).

CONCLUSIONS: Preliminary analyses suggest that case vignettes may be an effective way to evaluate SBIRT skills, and reliability results indicate that vignette responses can be evaluated reliably with a coding scale. These findings have implications for effectively training and evaluating medical residents and health professionals in the implementation of the SBIRT protocol.

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C-219

MEANS MAY BE MEANINGLESS WHEN ASSESSING STANDARD DRINK KNOWLEDGE

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Individuals are often mandated to alcohol education classes when they break some type of alcohol-related rule (e.g., underage drinking on campus). Individuals' self-reported alcohol consumption is the most common method of assessing "current use" and effectiveness of these education classes. However, some have moved toward a more objective measure, the free-pour, in which participants pour water representing various alcohol types into various cups (e.g., White et al., 2005). Yet, data are typically reported as group means which can obscure important differences between individuals. For example, if 50 % of individuals pour more than the standard serving size and 50 % pour less, aggregated data will suggest that, overall, individuals can accurately pour a standard drink. The current study included 64 undergraduate students mandated to attend an alcohol education course. Students attended a Pre, Post, and 30-day follow-up session in which water was free-poured into various sized cups, and their estimation of a standard serving size of beer, wine, and liquor was recorded. Initial examination of group means of percent deviation from the standard serving size led us to conclude that students were fairly accurate in their free-pours, with some improvement upon completion of the course. When individual data points were graphed it was clear that students were generally unable to accurately pour a standard drink across sessions. For example, group means of follow-up pours in the 16 oz "red cup" of beer ($m=-14.97\%$, $SD=14.69\%$), particularly when graphed, masked that few participants poured at or near the standard serving size; instead, their pours ranged from over-pouring by 9.92 % to under-pouring by -54.92 % relative to the 12 oz standard serving size. These findings have important implications for the use of aggregate group mean data when analyzing the results of a free-pour assessment, such that the method of graphing and analyzing data can significantly change the conclusions derived. Moreover, these data suggest the need for developing methods of teaching individuals to accurately pour standard serving sizes.

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C-220

CHANGES IN SELF-REPORTED DRINKING FOLLOWING FEEDBACK: COMPARING FREE-POURS TO SELF-REPORT

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Our understanding of alcohol use is largely based on self-report, necessitating the assumption that individuals are able to correctly identify standard serving sizes of alcoholic beverages. However, most individuals are unable to correctly state or identify the size of a standard drink of alcohol (e.g., White et al., 2005) and self-reported and observed behaviors are often only minimally correlated. Changes in self-reported drinking after receiving corrective feedback is often interpreted as an increase in the accuracy of self-report (White et al., 2005). The current study evaluated the association between participants' self reported drinking and their accuracy in identifying a standard drink via pouring task. Undergraduate students ($n=43$) completed a timeline follow back questionnaire (TLFB) and were then asked to free-pour water equaling standard serving sizes of beer, wine, or hard liquor into various sized cups. They were provided feedback on the accuracy of their pours and then asked to return for a follow-up session. Results indicated that self-reported number of drinks consumed did vary from pre- ($m=8.16$, $SD=7.14$, range 0 to 25) to post-corrective ($m=7.13$, $SD=6.78$, range 0 to 21) feedback. However, participants were no more likely to accurately pour, calculated as percentage deviation from the standard (i.e., 0 % is the standard serving size), after receiving corrective feedback. For example, when participants poured "beer" into a 20 oz red cup, post-feedback pours ($m=12.42\%$, $SD=19.38\%$, range 15.53 % to -15.46 %) were no more accurate (i.e., as inaccurate) than pre-feedback pours ($m=12.42\%$, $SD=19.38\%$, range 31.03 % to -30.96 %). These data suggest that motivational factors, other than increased knowledge about standard drinks sizes, may lead individuals to "adjust" their self reported drinking post corrective feedback.

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C-222

COPING, DEPRESSION, AND IMMUNOLOGICAL EVENTS AMONG FACE AND HAND TRANSPLANT PATIENTS

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Factors affecting patients' psychological and immune response to a transplant surgical procedure vary by individual, medical history, and circumstance. Largely studied among organ transplant recipients (Dindo et al., 2004), there has yet to be an evaluation among face and hand transplant patients (HFTPs). Based on preliminary examination of outcomes among 4 HFTPs (1 female; 1 hand transplant), revealing mood deterioration during early post-op period, we sought to identify factors related to changes in depressive symptoms. As immune functioning and depression are also bi-directionally related (Blume et al., 2011; Kiecolt-Glaser & Glaser, 2002), we explored how immune response post-transplant is related to pre-transplant coping and depressive symptom change. Using the CES-D and Brief COPE, we obtained depressive symptom severity and coping strategies prior to the transplant. Depression was also assessed at 3 months post-transplant. Number of immunological adverse events were obtained following successful transplantation. Depression levels ranged from $M=4.3$ at baseline to $M=9.8$ at 3 months post-op, well below the cutoff for major depressive disorder. Only positive reframing was significantly negatively related to depressive symptom increase from pre- to 3 months-post transplant ($r=-.91$; $p=.09$). The number of immunological adverse events was also related to increasing depression ($r=.96$, $p=.04$). Moreover, greater use of positive reframing prior to transplant was negatively associated with number of adverse immune responses immediately following transplant surgery ($r=-.95$; $p=.05$). Increasing depression ($t(2.0)=-4.7$; $p=.04$) and positive reframing ($t(2.0)=4.2$; $p=.05$) significantly differed between those with adverse immune responses vs. those without. Initial findings suggest that pre-transplant coping behaviors and depressive symptoms may be relevant for post-transplant immunological and psychological functioning among HFTPs. Additional patients to be included in future analyses.

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C-223

ENHANCEMENT OF MEDICATION ADHERENCE IN KIDNEY TRANSPLANT RECIPIENTS

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The treatment of choice for end stage renal disease is kidney transplantation. Graft half-life is only 9 yrs. Medication non-adherence & poorly controlled comorbidities (i.e., hypertension) are two leading contributors to early graft loss. Effective, low-cost, and easily disseminated approaches to improve these issues are needed.

This proof-of-concept trial examined a behavioral theory-driven, patient and provider-centered, mobile health (mHealth) program. Electronic medication trays transmitted real-time adherence data and provided reminder signals. Bluetooth-enabled blood pressure (BP) devices measured and transmitted data via smartphones. After data processing, patients received motivational/reinforcement messages based upon adherence levels. Healthcare providers received weekly summaries of medication adherence/BP.

Six kidney transplant recipients with uncontrolled hypertension were randomly assigned to standard of care (SOC) or the mHealth program. SOC group used the medication tray with its reminder functions disabled. The mHealth group used the medication trays with reminder functions enabled, the wireless BP cuff, and the smartphone. Clinic resting BPs were obtained at trial outset and at 3-months.

The mHealth group had significantly improved adherence across the trial compared to a 1 mth screening phase (97% vs. 69%, $p<.05$) whereas SOC group maintained poor adherence throughout the intervention (~52 %). Pre-intervention resting SBP for mHealth was 148.7 mmHg and 140.5 mmHg for SOC. Clinic resting BP gain scores (i.e., 3 months - preintervention) were analyzed; each mHealth patient reached BP control (<140/90 mmHg). The mHealth group exhibited a change of -15 mmHg compared to +9.5 mmHg for SOC ($p=.09$).

These proof-of-concept results demonstrate that the mHealth program is acceptable and useful in enhancing medication adherence and BP control among kidney transplant recipients. A large scale feasibility trial is planned.

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Saturday
March 23, 2013
8:45 AM–10:15 AM

Citation Paper

Paper Session 25 **8:45 AM–9:03 AM** **4001**

CONTEXTUAL DETERMINANTS OF MAMMOGRAPHY USE AMONG POOR AND RACIAL/ETHNIC MINORITY WOMEN

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Women who underutilize mammography are disproportionately poor and from racial/ethnic minority groups. As little is known about the broader context of these women's lives, elucidating contextual determinants of screening in these populations can inform the development of more appropriate and effective intervention strategies. This study examined screening behavior and associations between use of mammography and contextual characteristics in a sample of poor and racial/ethnic minority women. Telephone survey data were obtained in 2010–2012 from an RCT of callers to United Way 2-1-1 Missouri, a phone referral system that connects callers to resources that address their unmet basic needs (e.g., housing). Using data from 711 female 2-1-1 callers ages ≥ 40 , predictive cluster modeling was used to identify subgroups of women with differential screening patterns, and multilevel multinomial logistic regression was used to examine contextual determinants of screening by subgroup. The study found six distinct subgroups of women with varying patterns of screening ($p < 0.001$). After taking neighborhood-level characteristics into account and controlling for demographics, contextual determinants of being in subgroups with the lowest screening rates included having a child living in the home (aOR 2.70, 95 % CI 1.75–4.16), not having enough food to eat (aOR 1.76, 95 % CI 1.17–2.70), and having higher perceived stress (aOR 1.07, 95 % CI 1.01–1.15). Being in the subgroup with the highest screening rate was associated with having high social capital (aOR 1.97, 95 % CI 1.18–3.23). Notably, many of these contextual variables were stronger determinants of screening than other, widely-known determinants such as receiving a provider recommendation for mammography. Understanding these relationships and the mechanisms through which they operate can aid in developing targeted behavioral interventions to reduce disparities in breast cancer screening.

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Paper Session 25 **9:03 AM–9:21 AM** **4002**

WOMEN'S AWARENESS OF MAMMOGRAPHIC BREAST DENSITY AS A BREAST CANCER RISK FACTOR

Suzanne O'Neill, PhD, Nadiyah Sulayman, BA, Elizabeth Spellman, BA, Kara Grace Leventhal, BS and Marie Scarles, BA

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Breast density is an established, independent risk factor for breast cancer. Women in the highest quartile of density have a four-fold greater risk for breast cancer than women in the lowest quartile. Despite this, density has not been included in standard risk models or routinely disclosed to patients. However, this is changing with the introduction of new technologies and in the face of legal mandates and advocacy efforts to disclose this information. Women at the highest risk due to density and other factors could consider more aggressive screening and/or chemoprevention. Little information exists regarding women's awareness of density as a risk factor, their personal risk, and risk management options. We assessed awareness of density as a risk factor, their personal risk, and potential management strategies in 128 women who had had a recent mammogram. We focused on women under 50, as they have the best risk/benefit profile for Tamoxifen, a common form of chemoprevention. Women were, on average, 45 years old, 71 % White and 23 % African American. Of these women, 64 % had heard about density as a risk factor and 27 % had spoken to a health care provider about breast density. The most commonly mentioned provider included their gynecologist (14.8 %). 20.3 % of our sample report that their provider indicated that they had high breast density, but only 31 % of these (or 6 % of our total sample) indicated that they had received any specific recommendation based on their density status. These recommendations included annual bilateral MRI, ultrasound, annual mammography, and breast self-exam. Only three women in our sample had taken chemoprevention. These results suggest that while a growing number of women are aware of mammographic breast density as a breast cancer risk factor, few women who are aware of their density status receive specific risk management recommendations. These results suggest the need for patient education interventions for women at increased risk for the disease.

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Paper Session 25 **9:21 AM–9:39 AM** **4003**

MAMMOGRAPHIC BREAST DENSITY AS A BREAST CANCER RISK FACTOR: IMPLICATIONS FOR INTERVENTION

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Breast density is an established, independent risk factor for breast cancer. Women in the highest quartile of density have a four-fold greater risk for breast cancer than women in the lowest quartile. Clinical guidelines would suggest that many women with this risk factor would meet the threshold to be eligible for risk reduction counseling. Despite this, density has not been included in standard risk models or routinely disclosed to patients. However, this is changing with the introduction of new technologies and in the face of legal mandates and advocacy efforts to disclose this information, leaving several communication challenges. We assessed awareness of personal risk, perceived breast cancer risk, cancer worry, and preferred modes of health communication in 128 women who had received a recent mammogram. We focused on women under 50, as they have the best risk/benefit profile for Tamoxifen, a common form of chemoprevention. Women were, on average, 45 years old, 71 % White and 23 % African American. 20.3 % of our sample report that their provider indicated that they had high breast density. While women who reported having high breast density perceived that they were at higher risk for breast cancer than other women of their age ($t=2.04$, $p < .05$), they did not report significantly greater worry about breast cancer ($t=.72$, $p=.47$). 63 % of the sample indicated that they would be moderately or very interested in a risk counseling session in which they could learn about breast density, their own risk status and potential management strategies. Most (66 %) preferred receiving this information via an in-person consultation with a health care professional, followed by personalized print information sent to their home (61 %). These preliminary results suggest that women prefer for this information to be integrated into their ongoing care, followed by supplemental information that will allow for additional consideration of their options in their own time.

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Paper Session 25 **9:39 AM–9:57 AM** **4004**

ABNORMAL MAMMOGRAM RESULTS AMONG LATINAS AND WHITE WOMEN: WHAT ARE DIFFERENCES IN THE HEALTHCARE EXPERIENCE?

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Timely follow-up to an abnormal result is essential to early cancer detection and treatment, however, it varies across ethnicity. Adherence to follow-up care guidelines is poor among Latinas, who are less likely to receive and more likely to delay care than non-Hispanic White women. Latino/as generally report poorer medical experiences, including communication problems and difficulties navigating the healthcare system. Little research has addressed patients' medical experiences within the context of the follow-up care process.

This study's purpose was to explore perceptions and perceived quality of follow-up care among Latina and non-Hispanic White women who received an abnormal mammogram.

A convenience sample of Latinas and non-Hispanic White women who have received an abnormal mammogram ($n=28$) underwent qualitative, semi-structured interviews designed to explore participants' experiences with results and subsequent care. We conducted content analysis using the principles of grounded theory (Atlas.ti 6.2).

Emerging themes suggested that perspectives on and quality of care varied across ethnicity. Latinas viewed the U.S. healthcare system more favorably due to previous healthcare experiences in their home countries and cultural values promoting respect for authorities (respeto). Latinas, however, were more likely to report problems understanding results, because of language barriers and ambiguous wording in mailed letters. In contrast, non-Hispanic White counterparts appeared to be more informed and more comfortable explaining results and subsequent care. Within the cultural context of personalismo, Latinas stressed the importance of warm, interpersonal delivery of results and communication during follow-up care.

Efforts to improve adherence among Latinas should address communication inequalities throughout the follow-up process in the context of cultural values (e.g., respeto, personalismo).

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Paper Session 25 9:57 AM–10:15 AM 4005

INTRUSIVE THOUGHTS ABOUT BREAST CANCER IN HEALTHY WOMEN ARE ASSOCIATED WITH HIGHER PERCEPTIONS OF FUTURE RISK OF DEVELOPING THE DISEASE, AS WELL AS WITH PAST EXPERIENCE WITH THE DISEASE IN CLOSE RELATIVES

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Survey studies have found that it is not uncommon for healthy women to experience intrusive thoughts about breast cancer. In largely cross-sectional studies, higher levels of intrusive thoughts have been found to be associated with having experienced breast cancer in a close relative in the past, as well as with higher perceived personal risk of developing the disease in the future. In the present study, we repeatedly administered the IES, and explored associations not only with having a family history of breast cancer (FH) and perceived risk of breast cancer, but also a positively framed question examining perceived likelihood of remaining free of breast cancer.

Participants ($n=172$) were healthy premenopausal women (mean age=34.5 yr; 78 % white) without a personal history of cancer or other serious illness, recruited by community advertisement with oversampling for FH women ($n=75$). All completed the Intrusive Thoughts Subscale of the IES 5 separate times over the course of the study and answered questions regarding perceived lifetime risk (0–100) and likelihood of remaining breast cancer free (0–100), as well as standard demographics.

Stepwise regression analyses revealed significant independent relationships between levels of intrusions (IES) across assessments and: FH ($B=.305$, $p<.001$), perceived risk of breast cancer ($B=.155$, $p<.045$) and perceived likelihood of remaining breast cancer free ($B=-.158$, $p<.050$). No demographic variables made significant contributions.

Intrusive thoughts about breast cancer in healthy women, are predicted by past FH, but also are also predicted by perceptions of future risk, consistent with cross sectional studies. We report here for the first time, an additional inverse contribution of women's expectations of remaining cancer-free. Additional research is needed to explore ways to reduce the negative emotional influences of breast cancer on healthy women.

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Paper Session 26 8:45 AM–9:03 AM 4006

WHEN BEHAVIORAL SCIENCE AND USER-CENTERED DESIGN COLLIDE: BUILDING AND TESTING AN ONLINE INTERVENTION FOR PERSONS WITH CORONARY ARTERY DISEASE

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The future of healthcare rests, in part, on the hope that technology and behavioral science will cross-pollinate to create effective, scalable and cost-efficient interventions. Chronic illnesses, such as coronary artery disease (CAD), place a burden on the existing provider workforce and the financial stability of our country. Decreasing that burden by engaging more consumers in self-care, and by scaling interventions through innovative technologies, creates excitement and skepticism. The prospect of empowering millions to play a greater role in managing their health is exciting. But the limited uptake of eHealth interventions, and the concern that automated programs are impersonal, creates skepticism.

This project describes a cross-disciplinary design and development process that was leveraged to create an ehealth intervention for people with CAD. The disciplines of User Centered Design (UCD) and Behavioral Science were leveraged to build CAD personas. UCD principles included combing qualitative research of people with CAD to extract their self-reported feelings, thoughts, and behaviors. A mental model was built based on patient experiences. Behavioral science principles were then cross-referenced against the mental model content using validated constructs such as Transtheoretical Model and Patient Activation. Three CAD "personas" emerged and discrete, tailored content and learning objectives were developed for each.

The completed CAD ehealth program uses interactive technology to support behavior change. It was tested on 95 people diagnosed with CAD and living across the US. Users self-selected one of three CAD personas that most resonated with them. The impact of the persona-based content delivery was measured against the outcomes of knowledge, skills, confidence, and intent to act. This outcome data validated the efficacy of a hybrid methodology for tailoring behavior change content in a more empathic (or "persona colored") context. Findings and implication for future ehealth interventions will be summarized.

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Paper Session 26 9:03 AM–9:21 AM 4007

SMARTPHONE MEDICATION ADHERENCE STOPS HYPERTENSION (SMASH) AMONG HISPANICS

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Hispanics have higher rates of uncontrolled essential hypertension (EH) compared to non-Hispanic Blacks and Whites. Medication non-adherence is the leading modifiable behavior to improve EH control. Effective, low-cost, easily disseminated medication adherence BP control programs are needed.

This proof of concept trial examined SMASH; a behavioral theory driven iterative patient and provider centered mobile health technology program. Electronic medication trays provided patients' reminder signals and patients' self-administered BPs and medication adherence were wirelessly captured and transmitted to data servers and processed. Participants received personalized motivational and reinforcement messages based upon their adherence. Healthcare providers received bi-monthly reports of medication adherence and BP levels.

Six uncontrolled EH Hispanic adults were identified via medical records and a clinic BP screening. Before and after the 3-month trial, 24-hr BP evaluations were conducted. Following the initial 24-hr evaluation, participants were randomly assigned to standard of care (SOC) control or SMASH. Prior to start of the trial, SMASHers were shown how and demonstrated ability to use the medication tray, BP device and smartphone.

SMASHERS showed high adherence (e.g., medicine intake within 1.5 hours of designated times was 95 %). Preintervention 24-hr SBP/DBP for SMASH was 151.3/98.1 mmHg and 140.2/78.2 mmHg for SOC. Gain scores (i.e. 3 months - preintervention) were analyzed using ANOVA. For 24-hr DBP, there was a significant between-group effect ($p=.03$) with SMASH having an average change of -19.9 ± 9.7 mmHg compared to $+3.8\pm 6.5$ mmHg for SOC. For 24-hour SBP a trend was observed ($p=.06$) with SMASH displaying a change of -28.5 ± 18.2 mmHg compared to -6.3 ± 4.47 mmHg for SOC.

The proof of concept results demonstrated SMASH is acceptable and useful in BP control management among Hispanics. A larger scale feasibility trial is planned.

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Paper Session 26 9:21 AM–9:39 AM 4008

MHEALTH INTERVENTION TO IMPROVE MEDICATION ADHERENCE IN HEART FAILURE: PROMISES AND PITFALLS

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Over 5 million Americans suffer from heart failure (HF). HF patients manage complex medication regimens and non-adherence is common. Medication reminding using mHealth interventions may improve medication adherence. We evaluated two medication-reminding interventions, a smartphone application and an automated pillbox, in a pilot randomized clinical trial. It was hypothesized reminding would increase adherence. Participants were 60 adults (65 % male) predominantly Caucasian (83 %) HF patients (69±11 years) recruited from an outpatient cardiology practice. Participants were randomized to alarmed or silent conditions and smartphone or pillbox. The smartphone application sent reminder texts (active) or was a passive medication log (silent). The automated pillbox had auditory and visual alarms for medications (active) or acted as a pillbox (silent). Four medications were tracked across 28 days. Adherence values per medication were averaged, creating an overall rate per person (outcome measure). Intent-to-treat analyses revealed an adherence rate of 75 ± 30 % with a median of 88 %. Reminding did not improve adherence, $F(1,58)=.100$, $p=.753$; it did not differ by device, $F(1,58)=1.94$, $p=.169$. Completer analyses were similar. 67 % of participants who could use the mHealth intervention achieved at least 80 % adherence. Nearly all patients were able to use an mHealth intervention. Adherence rates were high, though not improved by reminding. Social support, established medication systems, and reactivity to measurement may have influenced findings. Future interventions should monitor longer to minimize reactivity.

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Paper Session 26 9:39 AM–9:57 AM 4009

HEART EXERCISE AND REMOTE TECHNOLOGIES (HEART): PERCEPTIONS OF A MHEALTH EXERCISE-BASED CARDIAC REHABILITATION INTERVENTION

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Cardiac rehabilitation (CR) is vital in the management of cardiovascular disease (CVD). Benefits include lower mortality and increased quality of life. Despite this, program attendance is poor as patients often encounter time or transport barriers to attend. Mobile technologies (mHealth) offer a potential solution, as CR can be delivered at a convenient time and place. However it is not known whether people with CVD are receptive to using this technology. This qualitative study aimed to determine the usability and perceptions of a mHealth delivered exercise-based CR program.

A single-blinded parallel two-arm randomized controlled trial was conducted and 171 people were randomized to receive a mHealth CR intervention or usual care. The 6-month intervention aimed to increase exercise behavior through a theory-based, personalized, automated package of text and video messages, delivered via participants' mobile phones and a supporting website. Sixteen adults with CVD took part in semi-structured exit interviews at the end of the intervention period (median age=65). A general inductive analysis revealed participants read the messages and found text messaging simple to use, although accessing the website was difficult for some. The messages were a good reminder to exercise regularly. Suggestions to improve the intervention included tailoring the content and delivery of the messages to suit their personal circumstances, such as the type of exercise prescribed, how to overcome relevant barriers, and customizing the time messages were sent.

Older adults with CVD were able to use a mHealth delivery format and felt text messaging was a good way to deliver CR. While mHealth is designed to be automated, programs could be improved if content and delivery was tailored to individuals' needs.

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Paper Session 26 9:57 AM–10:15 AM 4010

PHONE-DELIVERED MINDFULNESS TRAINING FOR PATIENTS WITH IMPLANTABLE CARDIOVERTER DEFIBRILLATORS (ICDs): RESULTS OF A PILOT RANDOMIZED CONTROLLED TRIAL

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Background The reduction in adrenergic activity and anxiety associated with meditation practices may be beneficial for patients with implantable cardioverter defibrillators (ICDs). Our primary aim was to determine the feasibility of a phone-delivered mindfulness-based intervention (MBI) in patients with ICDs. The secondary aim was to obtain preliminary estimates of efficacy on mindfulness and anxiety symptoms.

Methods Clinically stable ICD outpatients were randomized to a MBI (8 weekly individual phone sessions plus home practice with a CD for 20 minutes daily) or to a weekly scripted phone call inquiring about their health. The Hospital Anxiety and Depression Scale and the Five Facets of Mindfulness questionnaire were used to measure anxiety and mindfulness, respectively. Assessments were conducted at baseline and post-intervention. Multivariate linear regression models were used to estimate the effect of the MBI on change from baseline mindfulness and anxiety scores.

Results 45 patients (23 MBI, 22 UC; age 43–83; 30 % females, 93 % white; 60 % high school or less) were enrolled. Overall retention was 93 %; MBI attendance was 94 %. Instructors delivered the MBI content with fidelity to the intervention protocol 96 % of the time. Qualitative assessments indicated that the intervention was acceptable to patients with no side effects. Mindfulness (change in FFM scores, UC vs. MBI: -4.53; 95 % CI: -7.876, -1.189; $p=0.01$); as well as anxiety symptoms (change in HADS scores, UC vs. MBI: 1.33, 95 % CI: 0.163 to 2.487, $P=0.027$) improved in the MBI group (completers).

Conclusions Mindfulness training can be effectively and safely phone-delivered in ICD outpatients. The MBI resulted in increased mindfulness levels and may reduce anxiety symptoms in these high-risk patients.

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Paper Session 27 8:45 AM–9:03 AM 4011

UTILIZATION AND OUTCOMES OF A LOW INTENSITY PHONE AND WEB-BASED WORKPLACE WEIGHT LOSS PROGRAM

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Workplace weight loss (WL) programs, provided by employers as a benefit to employees, are accepted by workers and modestly effective for reducing weight. We evaluated a low intensity workplace WL program, based on clinical guidelines and Social Cognitive Theory, consisting of 3 WL counseling phone calls over 12 weeks and a website offering education and several interactive self-monitoring features. The program was offered by 12 medium and large companies to their employees between 2009 and 2011.

1238 individuals completed the 6 month follow-up survey. Fifty-four percent ($n=676$) of this group were female and the average age was 43 ± 10.8 and ranged from 21 to 74. Average baseline BMI was 32.1 ± 5.4 and BMI ranged from 25 to 82.

Program utilization: Participants completed a mean of $1.26 \pm .93$ WL counseling calls. Website use varied widely: We tracked number of log-ins ($m=17 \pm 37.46$, $med=6$); use of the weight tracker ($m=5 \pm 11.8$, $med=2$); use of the step tracker ($m=12.47 \pm 47.38$, $med=0$); and use of the activity tracker ($m=13.8 \pm 54.39$, $med=0$).

6 month results: Average WL was $7.7 \text{ kg} \pm 11.8$. Obese participants averaged $9.1 \text{ kg} \pm 13.5$ and overweight participants averaged $5.6 \text{ kg} \pm 8.3$. Participants lost an average of 3.5 % of their body weight with 32.8 % of participants losing at least 5 % and 10 % losing at least 10 % of their bodyweight at 6 months.

Predictors of WL: Using logistic regression, we evaluated program utilization and health behavior change variables as predictors of ≥ 5 % WL. WL counseling calls and using the weight tracker were significant independent predictors of WL (OR 1.19, $p<.03$ & OR 1.04, $p=.01$, respectively). Increasing fruit and vegetable consumption and reducing stress were also independent predictors of WL (OR 1.5, $p<.01$ & OR 1.5, $p<.02$). Physical activity factors were not related to WL, consistent with the literature.

Conclusions: Low intensity weight loss programs offered via the workplace can be modestly effective. Improving utilization of counseling and weight monitoring may improve outcomes.

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Paper Session 27 9:03 AM–9:21 AM 4012

SINO-US COOPERATION IN WEIGHT LOSS: AN INTERVENTION USING SMS AMONG CHINESE ADULTS IN BEIJING

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PURPOSE: Overweight and obesity prevalence are increasing in China. Today, it is estimated to be 36.5% and 21 % in Beijing alone. With 1.05 billion mobile phone users in China, there is promise for adapting mobile technology in weight loss. We conducted a 6-month randomized controlled trial to test the effect of a mobile phone-assisted lifestyle intervention (IT), versus usual care control (UC), on weight loss. Secondary outcomes included changes in BMI, waist circumference (WC), systolic blood pressure (SBP), diastolic blood pressure (DBP), total cholesterol (TC) and triglyceride (TG).

METHODS: We recruited 123 Chinese adults (40 % male), ages 30–50, BMI >24 , who used a mobile phone. Participants randomized to the 6-month intervention attended 4 group sessions and took 5 monthly coaching calls. Each participant also received a prescription to monitor 3 weight loss goals daily, via text message. These goals changed every 8 weeks. All intervention activities were culturally adapted to be appropriate for the Chinese population.

RESULTS: Of the 123 randomized participants, 110 (89 %) completed the 6-month follow-up. Significant group differences were found for change in weight [UC: 0.24 ± 0.28 vs IT: $-1.60 \pm 0.28 \text{ kg}$ ($P<.0001$)], BMI [UC: 0.07 ± 0.11 vs IT: $-0.61 \pm 0.10 \text{ kg/m}^2$ ($P<.0001$)], WC [UC: -0.13 ± 0.43 vs IT: $-2.69 \pm 0.43 \text{ cm}$ ($P<.0001$)], SBP [UC: 2.43 ± 1.14 vs IT: $-1.71 \pm 1.12 \text{ mmHg}$ ($P=.01$)], DBP [UC: 1.20 ± 0.88 vs IT: $-3.24 \pm 0.87 \text{ mmHg}$ ($P=.0004$)], but not in TC [UC: -0.32 ± 0.09 vs IT: $-0.39 \pm 0.09 \text{ mg/dl}$ ($P=.55$)] or TG [UC: -0.23 ± 0.13 vs IT: $-0.58 \pm 0.12 \text{ mg/dl}$ ($P=.052$)] over 6 months.

DISCUSSION: This intervention resulted in moderate but statistically significant reduction in weight, BMI, and WC and clinically meaningful reductions in both SBP and DBP. These findings suggest that adaptation of a technology-assisted weight loss intervention that employs behavior change strategies is feasible and holds promise for combating obesity and treating its metabolic indicators in China.

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Paper Session 27 9:21 AM–9:39 AM 4013

TREATMENT OF BINGE EATING DISORDER IN ETHNICALLY DIVERSE OBESE PATIENTS IN PRIMARY CARE

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Objective: To determine whether treatments with demonstrated efficacy for binge eating disorder (BED) in specialist treatment centers can be delivered effectively in primary care settings to an ethnically/racially diverse obese patient group. This study compared the effectiveness of a self-help version of cognitive behavioral therapy (shCBT) and an anti-obesity medication (sibutramine), alone and in combination for BED. This study also is the first placebo-controlled trial of any medication for BED with a blinded 12-month follow-up. **Method:** 104 consecutive obese patients with BED (73 % female, 55 % non-white) were randomly assigned to one of four 16-week treatments (balanced 2-by-2 factorial design): sibutramine (N=26), placebo (N=27), shCBT-plus-sibutramine (N=26), or shCBT-plus-placebo (N=25). Medications were provided double-blind and the blind was maintained until after 12-month follow-ups. Independent assessments were performed throughout treatment, post-treatment and at 6- and 12-month follow-ups. **Results:** Mixed-models analyses (intent-to-treat using all available data) revealed significant time ($p < 0.001$) and sibutramine-by-time interaction ($p = 0.0009$) effects for percent BMI loss, which was significant over time for sibutramine ($p < 0.001$) but not for placebo ($p = 0.98$). Percent BMI loss differed significantly between sibutramine and placebo by third month of treatment and at post-treatment, but no longer significant once the double-blind medication was discontinued at 6- and 12-month follow-ups. For binge-eating frequency, mixed-models analyses revealed significant time ($p < 0.001$) and sibutramine-by-time interaction effects ($p = 0.05$); binge-eating frequency did not differ significantly between treatment during or at post-treatment; shCBT had significantly lower binge-eating at 6-month ($p = 0.04$) but not 12-month follow-up. **Conclusions:** Minority groups have been vastly under-represented in treatment studies for BED. We conclude with clinical and research implications of our findings for the delivery of low-intensity CBT and medication interventions to ethnically-diverse obese patients with BED in generalist settings.

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Paper Session 27 9:57 AM–10:15 AM 4015

OUTCOMES FROM MIND YOUR HEALTH I AND II: RANDOMIZED CONTROLLED TRIALS OF AN INNOVATIVE ACCEPTANCE-BASED BEHAVIORAL TREATMENT FOR OBESITY

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BACKGROUND: Gold standard behavioral treatment (SBT) has poor long-term outcomes due to lapses in adherence to weight control behaviors. Recent theoretical and empirical work suggest that adherence might be improved by incorporating, into SBT, strategies focusing on tolerance of difficult internal experiences, mindful decision making and commitment to valued behavior. **METHODS:** In the current study (Mind Your Health), overweight participants ($n = 128$) were randomly assigned to 40 weeks of SBT or acceptance-based behavioral treatment (ABT). **RESULTS:** A modest advantage of ABT over SBT was magnified considerably in those more susceptible to eating cues. For example, weight loss at 6-month follow-up was 11.2 in ABT v. 4.6 % in SBT in those with higher baseline mood disturbance; other comparisons were 10.5 % v. 6.0 % (emotional eating), 8.3 % v. 6.4 % (disinhibition) and 9.7 % v. 4.5 % (responsivity to food cues; all $ps < .05$). Expertise of interventionists was also a significant moderator: when administered by experts, weight loss was significantly higher in ABT than SBT at post-treatment and 6-month follow-up (11.0 % v. 4.8 %; $p = .01$). Mediation analyses produced partial support for theorized mechanisms of action, but also suggested substantial limitations of retrospective self-reports. As such, the utility of ecological momentary assessments (EMA) of eating cues and dietary lapses via smartphone technology will be reported for initial waves ($n = 100$) of Mind Your Health II. **CONCLUSIONS:** This randomized trial strongly supports the efficacy of infusing mindfulness, acceptance and commitment strategies into standard behavioral weight control interventions. Consistent with its focus, ABT was especially efficacious for those with susceptibility to eating in response to internal and external cues. EMA potentially offers an improved method of discovering and capitalizing on key mechanisms of action.

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Paper Session 28 8:45 AM–9:03 AM 4016

HABITS PREDICT PHYSICAL ACTIVITY ON DAYS WHEN INTENTIONS ARE LOW

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Previous studies have shown that some people have stronger physical activity habits than other people and that strong habits predict more physical activity behavior, but it is possible that physical activity is more regulated by habits on some days than on others. People's intentions for physical activity have been shown to vary across time, and it may be that these shifts in intentions are coupled with disconnects from people's typical habitual regulation of physical activity. The present study tested whether the relation between habit strength and daily directly-monitored physical activity was moderated by daily intentions for physical activity. We hypothesized that people's habits would regulate physical activity more on days when they had low intentions for physical activity than on days when they had high intentions.

University students ($N = 128$, 77 women, M age = 21 years) self-reported their physical activity habit strength at baseline and subsequently self-reported daily physical activity intentions for 14 days. Physical activity was assessed with ActiGraph accelerometers. Multilevel regression revealed that daily intentions significantly moderated the relation between habit strength and daily physical activity ($b = -23.62$, $SE = 11.84$). In line with our hypothesis, on days when people had stronger intentions than was typical for them (all scores $> M + .36$ SD), habit strength was unrelated to daily physical activity, but on days when people had intentions that were typical (M), or weaker than typical ($< M$), habit strength was positively related to physical activity. These results suggest that physical activity is not exclusively regulated by intentions or habits, but rather fluctuate between the two types of regulation across days. Efforts to promote physical activity may need to target both intentions and habit development to account for the dynamic nature of physical activity regulation.

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Meritorious Paper

Paper Session 27 9:39 AM–9:57 AM 4014

DAILY SELF-WEIGHING DOES NOT CAUSE ADVERSE PSYCHOLOGICAL OUTCOMES AMONG OVERWEIGHT ADULTS: RESULTS FROM A RANDOMIZED CONTROLLED TRIAL

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Despite evidence that daily weighing is effective for weight control, concerns remain regarding the potential for negative psychological consequences. The purpose of this analysis was to examine the impact of a 6-month daily self-weighing weight loss intervention on relevant psychological constructs. The intervention included daily weighing via a cellular-connected scale, weekly emails with tailored feedback, and lessons on behavioral weight control.

Participants were randomly assigned to a daily self-weighing intervention group or delayed control group. At baseline, 3, and 6 months, the psychological outcomes assessed included depressive symptoms, anorectic cognitions, body satisfaction, dietary restraint, disinhibition, susceptibility to hunger, and binge eating.

Participants ($n = 91$) were on average age $44y \pm 11$, obese (BMI: 32.15 ± 3.8 kg/m²), mostly female (75 %), White (74 %), and college-educated (78 %). At 6 months, using linear mixed models, there were no significant differences between groups in depressive symptoms ($p = .23$), anorectic cognitions ($p = .41$), disinhibition ($p = .12$), and susceptibility to hunger ($p = .19$). There was a significant group by time interaction for both body dissatisfaction ($p = .007$) and dietary restraint ($p < .001$) with the intervention group reporting lower body dissatisfaction and greater dietary restraint compared to the control group. Using GEE, there was a trend towards a smaller percentage of participants in the intervention group reporting any binge eating over time compared to controls ($p = .07$). Results indicate that a daily self-weighing weight loss intervention does not cause adverse psychological outcomes; rather, improvements were seen in dietary restraint and body dissatisfaction as a result of the intervention. This confirms that daily weighing is an effective and safe weight control strategy among overweight adults.

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Paper Session 28 9:03 AM–9:21 AM 4017

AUTONOMY MEDIATES THE RELATIONSHIP BETWEEN PERSONALITY AND PHYSICAL ACTIVITY: AN APPLICATION OF SELF-DETERMINATION THEORY

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Research investigating personality in relation to exercise has indicated that extraversion, neuroticism, and conscientiousness are all related to exercise behaviors. Recent extensions of this work also indicate a positive relationship between autonomy and physical activity. This study sought to examine tenets of Self-Determination Theory by testing a mediation model of physical activity and personality via autonomy. Methods: 290 adults (M age=24 years, Range 17–63) were recruited to complete a one-time online survey of exercise habits and individual characteristics. Study surveys assessed personality, autonomy, and physical activity. Results: A measurement model specifying direct effects between personality dimensions and physical activity and indirect effects operating through autonomy provided an excellent fit to the data ($X^2=0.66$, $df=3$, $p=0.88$, $RMSEA[90\% CI]=0.00[0.00-0.05]$, $CFI=0.99$, $SRMR=0.01$). Results indicated significant ($p<.05$) effects of Extraversion ($\beta=.13$), Conscientiousness ($\beta=.22$), and Emotional Stability ($\beta=.13$) on autonomy, which in turn, was significantly associated with physical activity ($\beta=.52$). No significant effects were observed for Agreeableness or Intellect. None of the personality constructs were found to be directly associated with physical activity. Consistent with Self-Determination Theory, the associations between personality dimensions and physical activity were all indirect (.01–.12, $Ps<.05$), operating through autonomy. This model accounted for 27 % of the variance in physical activity. Conclusions: The results of this study suggest that autonomy is significantly associated with physical activity. Therefore, attempts to improve autonomy in individuals may be a useful intervention strategy in improving physical activity levels. Additionally, understanding the influence of personality on autonomy development may be important.

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Paper Session 28 9:21 AM–9:39 AM 4018

LONGITUDINAL CHANGE IN PHYSICAL ACTIVITY AND SELF-EFFICACY AS A DETERMINANT IN RELAPSING-REMITTING MULTIPLE SCLEROSIS

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There are many benefits of physical activity for persons with multiple sclerosis (MS), but this population is largely inactive. There is minimal information on change in physical activity and its determinants for informing the development of targeted behavioral interventions. This study examined change in physical activity and self-efficacy as a social-cognitive determinant over a 2.5 year period of time in persons with relapsing-remitting MS (RRMS). On 6 occasions each separated by six months, persons ($N=269$) with RRMS completed an assessment of self-efficacy and physical activity. The participants further wore an accelerometer for 7 days. The data were analyzed with standard latent growth curve modeling (LGM) and LGM with parallel growth processes in MPlus. There were significant linear changes in self-reported (Mean slope= -0.64 , $p<.05$) and objectively measured (Mean slope= $-3,508$, $p<.001$) physical activity and self-efficacy (Mean slope= -0.76 , $p<.05$) over the 2.5 year period. The changes in physical activity were associated with change in self-efficacy (e.g., standardized path coefficient= $.50$, $p<.0001$), after controlling for confounding variables (e.g., standardized path coefficient= $.49$, $p<.005$). Researchers should consider designing interventions that target self-efficacy for the promotion and maintenance of physical activity in persons with MS.

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Citation and Meritorious Paper

Paper Session 28 9:39 AM–9:57 AM 4019

RELATIONSHIPS BETWEEN PHYSICAL ACTIVITY AND THE MEAN AND VARIABILITY IN REPEATEDLY-MEASURED BEHAVIORAL COGNITION VARIABLES

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To attain recommended levels of physical activity, individuals must engage in daily decisions to be physically active. These choices are determined by, among other environmental and individual-level factors, cognitive processes such as self-efficacy, outcome expectancy, and intentions. Traditionally these have been treated as invariant person-level variables, but this approach may be insufficient to describe mechanisms that exhibit differing mean responses and patterns of variability of response across contexts. Ecological momentary assessment was used to obtain real-time self-report survey responses via mobile phones for 108 adults multiple times per day across four days. The sample had a mean age=40.3 years, was 72.4 % female, 46.4 % white, 30.8 % overweight and 29.9 % obese. Overall minutes of moderate to vigorous activity (MVPA) were recorded through accelerometry. Mixed-effects location-scale models were used to determine the relationships between MVPA and the mean and intraindividual variability (i.e., instability) of three cognitive variables (self efficacy, outcome expectancies, and intentions). There was a positive relationship between overall MVPA and intraindividual variation in self-efficacy ($\tau=0.13$) and intentions ($\tau=0.09$) for physical activity ($p's<.05$). There was no relationship between overall MVPA and mean levels of any of the three cognitive variables, contrary to other studies examining these variables as invariant at the person-level. These results suggest that performing a health behavior such as physical activity may depend more on the degree to which one's cognitions pertaining to that behavior vary across the day than whether they are generally high or low in those cognitions. Adults who are more physically active appear to be those who have greater swings in physical activity self-efficacy and intentions throughout the day—suggesting that they are more aware of distinct demarcations of when they can and cannot be active.

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Paper Session 28 9:57 AM–10:15 AM 4020

EXPLORING MEDIATORS OF PHYSICAL ACTIVITY IN YOUNG ADULT CANCER SURVIVORS: EVIDENCE FROM THE FOSTERING IMPROVEMENT THROUGH NETWORKING AND EXERCISING TOGETHER STUDY

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This study examined the effects of a physical activity (PA) intervention for young adult cancer survivors on changes in psychosocial factors (self-efficacy, social support, self-monitoring) and determined whether these factors mediated the relationship between the intervention and changes in PA.

A twelve-week randomized trial compared a Facebook-based intervention (FITNET) aimed at increasing moderate-to-vigorous intensity PA (MVPA) to a self-help Facebook comparison (SC) condition. Young adult cancer survivors ($n=86$) were randomly assigned to the FITNET or SC group. Self-report measures of PA and psychosocial variables were collected at baseline and 12 weeks. The FITNET group increased mild PA by 135.1 min/wk more than the SC group ($p=.032$), and both groups increased MVPA over time (FITNET: 67.0 min/wk v SC: 46.3 min/wk), with no significant differences between groups. The intervention group reported lower self-efficacy for sticking to PA (mean change= -0.38 ; $p=.025$) and social support from friends on social networking sites (mean change= -0.47 ; $p=.039$) relative to the SC group over time. The proposed psychosocial mediators did not explain the positive effects of the FITNET intervention on mild PA. Changes in social support from friends on social networking sites partially explained the intervention effects on MVPA (mean indirect effect= -22.4 , 95%CI= -62.0 , -2.8), but in the unexpected direction. Among all participants, social support from friends and self-monitoring were positively associated with changes in MVPA. The lack of significant improvements in psychosocial constructs among FITNET participants may partly explain the lack of increase in MVPA compared to the SC group. Future research should examine mediators of PA behavior change in young adult cancer survivors.

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Paper Session 29 8:45 AM–9:03 AM 4021

BRIDGING BARRIERS TO CLINIC-BASED HIV/STI TESTING WITH NEW TECHNOLOGY: AT HOME TESTING FOR YOUTH

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HIV/STI testing is a key element in the CDC's effort to identify and treat infected persons. Urban Black youth, a high risk group for HIV/STI, hold generally positive attitudes towards testing. Numerous barriers to clinic-based testing exist (e.g., stigmatization) that may be addressed by new technology, specifically HIV at-home test kits now available commercially. A two-stage qualitative interview study of low income Black youth (15–17 yrs.) in two U.S. cities (N=132) identified barriers to and facilitators of clinic testing that may be addressed or enhanced by at-home testing (AHT). Youth's perceptions of the utility of AHT were also obtained. The majority of respondents identified testing access points, however, numerous barriers made access challenging (e.g., stigmatization, trust, parental concerns, distance). Data suggest that AHT may alleviate some of these challenges. Moreover, high use of community-based health clinics by youth suggests that such clinics may provide good distribution points for AHT kits. Teens reported widespread support for testing in their social networks (e.g., friends, partners, family); networks could be leveraged to promote AHT. Findings show that teens primarily used a reactive testing strategy, seeking testing after fear of STI infection, which may result in delays in testing; such delays may be ameliorated with AHT. When asked directly about AHT or repeat-AHT, a substantial majority (64 %) favored AHT and repeat-AHT. Perceived benefits of AHT were convenience, control, privacy, and ease of repeated testing. Opposition to AHT focused on difficulties in conducting or interpreting tests, test accuracy, and receiving treatment. Findings suggest that AHT, with suitable training materials to address barriers, might be distributed to youth in community health venues, and overcome barriers and delays associated with clinic-based testing.

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Paper Session 29 9:03 AM–9:21 AM 4022

BASELINE PREDICTORS OF RETENTION IN AN HIV/STD RISK-REDUCTION INTERVENTION FOR AFRICAN AMERICAN FEMALE ADOLESCENTS OVER 24 MONTHS

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African American female adolescents experience elevated rates of sexually transmitted diseases (STDs), including HIV. To optimally assess the long-term efficacy of behavioral STD/HIV risk-reduction interventions, it is critical to retain participants for the duration of a randomized controlled trial's (RCT) follow-up period. The present study examined baseline predictors of retention in an HIV/STD risk-reduction intervention RCT over 24 months. African American adolescent females (N=701; 14–20 years; M=17.6 years) completed a self-administered ACASI with measures of psychological functioning, abuse history, substance use, and sexual behaviors prior to participating in the intervention. Follow-up assessments were conducted at 6-, 12-, 18-, and 24-months post-intervention participation. A series of logistic regression models assessed associations between potential predictors and completion of all follow-up assessments, controlling for age and treatment assignment. 47.8 % completed all four follow-up assessments; 77.9 %, 71.9 %, 64.5 %, and 61.1 % completed the 6-, 12-, 18-, and 24-month assessments, respectively. Baseline sexual behaviors did not predict retention in the trial. However, participants reporting higher levels of depressive symptoms (AOR=.98, p=.04), a history of sexual abuse (AOR=.69, p=.04), and recent marijuana use (AOR=.99, p=.05) were less likely to complete all four scheduled follow-up assessments, while those living in more distressed neighborhoods (AOR=1.2, p=.02) were more likely to be retained. Future research should further explore economic factors associated with intervention retention. Strategies to optimize retention could include screening and linking participants to appropriate mental health services. HIV/STD risk reduction intervention content may also benefit from tailoring to address adolescents' psychological distress, abuse history, and substance use.

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Citation Paper**Paper Session 29** 9:21 AM–9:39 AM 4023

COMPUTER-BASED VIDEO TO INCREASE HIV TESTING AMONG PATIENTS WHO INITIALLY DECLINE

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Because people with undiagnosed HIV will not receive treatment and may unknowingly infect others, the CDC recommends (Branson et al., 2006) offering routine HIV testing in all types of primary care facilities, including hospital emergency departments (EDs). However, as HIV testing is voluntary, and those at greatest risk frequently decline, it is not only important to offer HIV testing to all ED patients but to motivate reluctant patients to test (Carey et al., 2008).

During summer 2012, 160 patients in a high volume urban ED who declined an HIV test at triage, were recruited to view short videos and respond to pre- post data collection instruments using inexpensive netbook computers. Videos lasted less than 3 minutes, and guided by Social Cognitive Theory and the Information Motivation Behavior model, depicted a doctor explaining the importance of testing to a patient, then performing a rapid oral HIV test. At the end of the intervention, computers asked patients if they would like an HIV test. Approximately one third of participants (33.125 %, n=53) accepted a test after watching a video.

To explore patients' experience of the intervention and elicit suggestions for improvement, a subset of 40 participants were interviewed afterward. Major themes emerging from initial qualitative analyses indicate that prior to the video, many were not aware HIV tests could be performed by oral swab, or that results could be delivered in 20 minutes. Some mentioned the intervention design itself (a brief knowledge pre-test, followed by a video, post-test and the immediate offer of an HIV test) encouraged them to think more carefully about the test offer, and ultimately motivated them to test.

These findings indicate brief, theory-driven videos can lead to behavior change, including HIV testing by those who initially decline. They also indicate the value of mixed-methods research to examine efficacy of specific video elements and users' experience of the intervention.

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Citation and Meritorious Paper**Paper Session 29** 9:39 AM–9:57 AM 4024

REACHING A MOBILE TARGET: USING PROBABILITY SAMPLING AND HECKMAN-TYPE SELECTION MODELS TO ESTIMATE HIV RISK AMONG MEXICAN MIGRANTS

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Background: Estimates of HIV risk among Mexican migrants and immigrants (MMIs) are limited by little use of probability sampling methods and potential selective survey participation. Methods: From 2009–2010, a cross sectional probability survey was conducted with MMIs traveling through the border city of Tijuana, Mexico (N=3279). Sociodemographic, migration, and contextual variables were available for all eligible individuals approached (N=6594; response rate 49.7 %). The extent of selective participation on observed and unobserved factors was estimated using a version of the Heckman method, which utilizes two probit equations, one to predict survey participation and the other to predict risk sexual behaviors in the last 12 months, conditional to participation in the survey. Results: Participation was significantly associated with several socio-demographic, migration, and contextual factors. The unadjusted prevalence of last 12-month multiple sex partners, same-sex anal sex, sex with high-risk partners, and unprotected high-risk sex was 37.1 %, 2.1 %, 32.9 %, and 16.5 %, respectively. These behaviors were predicted by age, gender, marital status, education, sexually transmitted diseases history, sex under the influence of alcohol or other substances, and imprisonment. The lack of correlation between the 4 sets of two probit equations suggested that prevalence estimates were not biased by selective survey participation on unobserved factors. Conclusions: HIV risk among migrants traveling through the US-Mexico border is high, calling for binational prevention efforts targeting this mobile, hard-to-reach population.

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Paper Session 29 9:57 AM–10:15 AM 4025

WHEN IS IT TRUE THAT IF YOU BUILD IT, THEY WILL COME? LESSONS ABOUT VOLUNTARY ENGAGEMENT WITH TECHNOLOGY-BASED INTERVENTIONS FROM A SAFER-SEX VIDEO GAME FOR A HARD-TO-REACH POPULATION

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As public health research places more emphasis on translation and diffusion of interventions, it is important to improve our theories of interventions by modeling the conditions under which interventions increase voluntary engagement with health messages. Unfortunately, many people - especially those who perceive themselves as healthy - neither utilize health services regularly nor participate in traditional health education formats like small groups and individual counseling. Alternatively, one can engage people in entertaining formats in which learning may not be their goal, but it is a byproduct.

The present study examined the factors that related to usage of a safer-sex video game named Nightlife delivered via the internet for young urban adult African-American men with low education. This population is at high risk of STDs & HIV but rarely participates in interventions. Prior analyses showed that the more men played Nightlife the more likely they were to get HIV/STD tests.

In a randomized controlled trial, participants were told that they were beta-testing a new game, assigned either Nightlife or a content-irrelevant game to play as many times as they wished, and completed baseline, 3 day posttest, and 4 month posttest surveys. The present analysis uses the data for the intervention group (N=101 at 3 days, N=54 at 4 months).

Men played the hour-long game on average 2 times in the first 3 days, and 9 times in 4 months (self-report). Usage was predicted by liking the game, and men like the game more if they had sex in the past 3 months, felt involved, identified with their avatar and the situations in the game, and thought the game was realistic. There were no significant differences by demographic variables.

Thus, entertainment formats such as video games can be an effective way to engage target populations that are otherwise difficult to reach. To increase voluntary exposure, interventions should be involving, promote identification, and be perceived as realistic.

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Paper Session 30 8:45 AM–9:03 AM 4026

AFFECT AND MINDFULNESS AS MODERATORS OF CHANGE IN MOOD DISTURBANCE, STRESS SYMPTOMS AND QUALITY OF LIFE IN A COMMUNITY-BASED YOGA FOR CANCER SURVIVORS PROGRAM: A LONGITUDINAL MULTILEVEL MODELING APPROACH

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Before yoga can be broadly applied in cancer settings, carefully designed and executed research that evaluates not only the efficacy of yoga programs but also posits potential mechanisms of action underlying these interventions are required. Using a longitudinal multilevel modelling approach the relations between affect, mindfulness and patient reported health outcomes including mood disturbance, stress symptoms and quality of life (QoL) were examined in an existing seven-week community-based yoga program. Participants (intent-to-treat N=66) had completed the yoga program an average of 1.5 times previously and attended an average of 5 classes in the current program. Participants were assessed pre-post yoga program and at three and six-month follow-ups. Moderate clinically significant decreases in mood disturbance (ES=-.47, p=0.000) and stress (ES=-.63, p=.000) and small improvements in QoL (ES=-.30, p=.017) were observed upon program completion. These changes in mood disturbance and stress symptoms were maintained at three and six-month follow-ups. QoL exhibited further moderate improvement at the three-month follow-up (ES=-.50, p=.000), which was maintained at the six month follow-up. Changes in mood disturbance, stress symptoms and QoL were moderated by initial positive beliefs held about yoga practice, attendance in the yoga program and concurrently assessed affective (high activation positive affect, high and low activation negative affect) and mindfulness (ability to act with awareness, be non-judgmental of and non-reactive to inner experience) process variables. Examining these proposed theoretically-based mechanisms for yoga's salutary effects furthers the evidence base by both evaluating clinical yoga program effects and modeling subsequent processes and outcomes. This knowledge can be translated into the ongoing development of innovative community-based yoga programs with the express aim of improving psychosocial health and QoL in cancer survivors.

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Paper Session 30 9:03 AM–9:21 AM 4027

YOCAS[®] YOGA FOR AROMATASE INHIBITOR-RELATED TOXICITIES IN BREAST CANCER PATIENTS: A URCC CCOP RANDOMIZED, CONTROLLED CLINICAL TRIAL

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Background: Aromatase inhibitors (AI) are the most extensively used adjuvant therapy for hormone-dependent postmenopausal breast cancer. However, AI use is associated with several toxicities, limiting tolerability and efficacy. The most troublesome toxicities include joint pain, fatigue, and hot flashes. The aim of this secondary data analysis is to examine whether a yoga intervention can reduce these toxicities. Methods: The original RCT randomized patients with any type of non-metastatic cancer without previous yoga participation into 2 arms: 1) standard care monitoring [controls] or 2) 4-week yoga intervention (2x/wk; 75 min/session) plus standard care. The yoga intervention utilized the UR Yoga for Cancer Survivors (YOCAS) program consisting of breathing exercises, 18 Hatha & Restorative yoga postures, and meditation. Only breast cancer patients currently receiving AI (N=95) were included. Changes in joint pain, fatigue, and hot flashes were assessed using ANCOVA with baseline values as covariates between the yoga and control groups. Results: Among AI users only, yoga group participants demonstrated improvements in joint pain as shown by reductions in general pain (CS=change score; Yoga CS=-0.37 vs. Control CS=+0.02; p=0.02) and muscle aches (Yoga CS=-0.58 vs. Control CS=-0.15; p=0.03) from pre- to post-intervention than the control group. Yoga participants had a greater improvement in fatigue (FACIT-F; 0-52 scale) (Yoga CS=+3.2 vs. Control CS=+0.1; p=0.03) than the control group. There was also a statistical trend toward a reduction in the number of weekly hot flashes for yoga participants compared to control participants (Yoga CS=-8.5 vs. Control CS=-4.8; p=0.10). Conclusions: Among breast cancer patients on AI therapy, the community-based YOCAS intervention significantly reduced general pain, muscle aches, fatigue, and hot flashes. Funding: NCI U10CA37420/KL2RR024136-05.

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Paper Session 30 9:21 AM–9:39 AM 4028

YOCAS[®] YOGA IMPROVES MEMORY: A RANDOMIZED CLINICAL TRIAL AMONG 358 CANCER SURVIVORS

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Background: Memory difficulty is a serious problem for many cancer survivors and can negatively affect quality of life (QOL). Little research has explored physical activity (PA) interventions, such as yoga, on memory function in cancer survivors. We previously reported in a nationwide, Phase III RCT that YOCAS[®] Yoga, implemented over 4 weeks (2 x/wk; 75 min/session), significantly improved fatigue and QOL in cancer survivors. The purpose of this study was to assess the effects of YOCAS[®] on memory and to determine possible mediating effects of memory on fatigue and QOL. Methods: Cancer survivors between 2-24 months post adjuvant therapy were randomized to standard care (SC) or SC with YOCAS[®]. YOCAS[®] consists of breathing exercises, gentle Hatha and Restorative yoga postures and meditation. This analysis included participants (N=358, mean age=54, 96 % female, 75 % breast cancer) who provided pre- and post-intervention data on difficulty remembering things (MD Anderson Symptom Inventory: 0="Did not Interfere" to 10="Interfered Completely"), fatigue, and QOL (FACIT-F). ANCOVA was used to determine the effects of YOCAS[®] on memory at post-intervention. Path Modeling assessed mediating effects of memory on YOCAS[®]-produced changes in fatigue and QOL. Results: ANCOVA, controlling for age, race, ethnicity, diagnosis, education, menopausal status, baseline memory score, and baseline sleep score, revealed a significant group effect of YOCAS[®] on memory difficulty at post intervention (mean change for Yoga - Control = -0.44; p<0.05) representing a 19.2 % improvement in the yoga group compared to a 5.4 % improvement in the control group. Mediation analyses identified changes in memory as a significant partial mediator for improved fatigue (p<0.05) and improved QOL (p<0.05). Conclusions: YOCAS[®] yoga significantly reduces perceived memory difficulty in cancer survivors compared to SC. Funding: U10CA37420, K07CA120025

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Meritorious Paper**Paper Session 30 9:39 AM–9:57 AM 4029**

YOGA PRACTICE IMPROVES ATTENTION IN OLDER ADULTS: PRELIMINARY RESULTS FROM A PILOT RCT

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The use of yoga and other CAM therapies is becoming increasingly popular, especially among older adult populations who use these alternative therapies for aging-related chronic conditions. It is well-documented that increased age is associated with lower performance on various aspects of cognitive function, including attention. The objective of this study was to evaluate the effects of an 8-week Hatha yoga intervention on attention. Sedentary healthy adults ($n=27$; Mage=61.81) participated in an 8-week (3x/week for 1 hour) pilot-RCT which consisted of a Hatha yoga group ($n=13$), and a stretching-strengthening exercise control group ($n=14$). All participants completed the Flanker task at baseline and post-intervention. A repeated measures MANOVA (group \times time \times flanker type) showed a significant group \times time interaction $F(1,19)=6.78$, $p<.017$, partial $\eta^2=.26$. There was no significant mean reaction time (RT) difference at baseline between the two groups ($Y: 636.74\pm 29.61$ vs. $SS: 663.82\pm 37.74$) however, at follow up, mean RT for the yoga group was significantly faster than the stretching-strengthening group (589.28 ± 29.61 vs. 680.89 ± 34.03). No speed-accuracy trade-off was seen for the yoga group, with no significant group differences for accuracy on the task [group \times time: $F(1,19)=1.96$, $p<.17$, partial $\eta^2=.09$]. As expected, a significant main effect for flanker type was seen for both mean RT and accuracy with both groups showing faster RTs and better accuracy on the incongruent type ($\rightarrow < > >$) than the congruent ($\rightarrow > >$) and neutral ($\rightarrow \rightarrow \rightarrow$) type. These preliminary results suggest that yoga practice that includes postures, breathing and meditative exercises do lead to improved attentional abilities. Yoga participants were faster at processing the flanker information and making a decision without compromising the accuracy of their responses. While the underlying mechanisms remain largely speculative, rigorous systematic RCTs are needed to explore the extent of cognitive benefits as well as the underlying mechanisms of change.

ClinicalTrials.gov identifier: NCT01650532

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Paper Session 30 9:57 AM–10:15 AM 4030

PHYSICAL ACTIVITY & QUALITY OF LIFE ASSOCIATIONS WITH TELOMERE LENGTH AMONG SENIOR FEMALE CANCER SURVIVORS ENROLLED IN A TAI CHI CHIH TRIAL

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Objectives: Senior cancer survivors often report poor health-related quality of life (QOL), which is linked to increased mortality in older adults. Similarly, shorter telomere length is associated with poor physical functioning, cancer risk, and overall mortality. However, physical activity can improve QOL and reduce the risk of cancer recurrence and mortality. This study examined health-related QOL and physical activity as predictors of telomere length in senior female cancer survivors enrolled in a Tai Chi Chih (TCC) intervention. Methods: Senior female survivors ($N=63$; age $M=66$; 83 % breast cancer diagnosis), who had completed cancer treatment, were randomized to 12 weeks of TCC or Health Education classes. QOL [SF-36 mental (MCS) & physical component summary (PCS)] and physical activity (Godin Leisure-Time Exercise) were assessed at 1-week post-intervention. Leukocyte telomere length, collected at 1-week post-intervention, was assayed at the UCSF Blackbum Laboratory. A hierarchical regression examined post-intervention MCS, PCS, and physical activity as predictors of telomere length, controlling for age. Results: The regression model with MCS, PCS, and physical activity, controlling for age, was statistically significant ($R^2=.26$, $p=.004$). Physical activity was a significant predictor ($p=.03$), but PCS and MCS were not ($p>.05$). Study arm was not significantly associated with telomere length ($p>.05$). Conclusions: We found that physical activity in senior female cancer survivors is positively associated with telomere length. The implications of these findings are that interventions designed to increase physical activity in aging cancer survivors may improve their cellular health, and potentially lead to reductions in cancer risk and promote healthy aging.

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Paper Session 31 8:45 AM–9:03 AM 4031

STANFORD INTEGRATED PSYCHOSOCIAL ASSESSMENT FOR TRANSPLANTATION (SIPAT) - A NEW SCALE TO PREDICT PSYCHOSOCIAL & MEDICAL OUTCOMES IN ORGAN TRANSPLANT CANDIDATES

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Background: With limited available transplant organs, careful assessment of candidates is imperative. Medical criteria are well established for each end-organ system, but not psychosocial criteria. To address this, we developed and tested a new assessment tool: the Stanford Integrated Psychosocial Assessment for Transplantation (SIPAT) to evaluate psychosocial risk factors for organ transplantation. SIPAT has shown to have excellent inter-rater reliability (Pearson's correlation coefficient=0.853), and high predictability of post-transplant psychosocial outcomes ($P<0.001$).

Methods: Heart, lung, liver or kidney transplant candidates evaluated between 6/1/08 - 7/31/11 were assessed with SIPAT. We analyzed clinical outcomes up to 1-year post transplant. Outcomes included: organ survival (primary), patient survival, rejections, medical re-hospitalizations, infections, non-compliance rates, psychiatric decompensation, failure of support system, and albumin levels (secondary). Patients with SIPAT score of <20 were compared to patients with SIPAT score of >21 .

Results: 217 patients were transplanted during the index period (46 heart, 58 lung, 58 liver, 55 kidney). Of these, 181 patients had SIPAT score of <20 ; 36 patients had scores of 21–68. There was no significant difference in primary outcome. Patients with higher SIPAT scores had significantly higher rates of psychiatric decompensation ($p=0.006$), medical non-adherence issues ($p=0.027$), and had higher frequency of medical hospitalizations ($p=0.057$). Also, patients with higher SIPAT scores who were medically hospitalized had more medical hospitalizations per person (2.23) than those with lower SIPAT scores (1.32).

Conclusions: The SIPAT is a comprehensive screening tool designed to predict psychosocial and medical outcomes of organ transplant candidates. Results suggest SIPAT is a promising tool which standardizes the evaluation process and identifies risk for negative outcomes and need for intervention.

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Paper Session 31 9:03 AM–9:21 AM 4032

CLINICAL OUTCOMES AND QUALITY OF LIFE IN RECIPIENTS OF LIVERS DONATED AFTER CARDIAC DEATH

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Background: Donation after cardiac death (DCD) has expanded in the last decade in the US, however DCD liver utilization has flattened in recent years due to concerns over poor outcomes. Methods: We examined clinical and quality of life (QOL) outcomes of DCD recipients at our institution by conducting a retrospective and cross-sectional review of cases from 2003–2010. Results: We compared clinical outcomes of DCD recipients ($n=60$) to those of donation after brain death (DBD) liver recipients ($n=669$) during the same time period. DCD recipients had significantly lower rates of 5-year graft survival ($p<0.001$) and a trend toward lower rates of 5-year patient survival ($p=0.064$) when compared to the DBD cohort. In order to examine QOL outcomes in our cohorts, we administered the Short Form Liver Disease Quality of Life questionnaire to 30 DCD recipients and 60 DBD recipients. The DCD population reported lower generic and liver-specific QOL. We further stratified the DCD cohort by presence of ischemic cholangiopathy (IC; $n=8$). As expected, patients with IC reported lower QOL when compared to DBD recipients and those DCD recipients without IC ($p<0.05$). Conclusions: While the results are consistent with clinical experience, this is the first report of QOL DCD recipients using standardized measures. As such, these data can be used to design and guide future comparative effectiveness studies in this area. In summary, DCD recipients experienced poor graft survival and QOL. These findings highlight the need to develop processes and interventions to improve post-LT DCD outcomes.

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Paper Session 32 9:03 AM–9:21 AM 4037

MICRO-CULTURAL DIFFERENCES IN THE RELATIONSHIP BETWEEN SOCIAL ISOLATION AND SMOKING BEHAVIOR IN SWITZERLAND

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Background: Social isolation has been recognized as a risk factor for a wide range of adverse health outcomes and for mortality (House, 2012). We were interested in understanding the magnitude of the problem in Switzerland and in highlighting the role of social isolation in explaining smoking disparities. Based on literature on collectivism and individualism (Hofstede, 1983), we further hypothesized that social isolation would be a stronger predictor of smoking in the Italian-speaking part of Switzerland because of the more collectivistic nature of its population compared to those of the French- and German-speaking regions (Schulz et al., 2006).

Methods: Our hypotheses were tested on a representative sample of the Swiss population (N=17,760) in the context of the 2007 Swiss Health Survey. Detailed data on tobacco smoking and availability of a social network were collected.

Results: 10 % of the respondents presented a high level of social isolation. Overall, our data confirmed our hypotheses: controlling for gender, age, educational level, and nationality, respondents with high levels of social isolation were significantly more likely to smoke compared to those presenting low levels of social isolation (OR=1.193; 95%CI:1.186-1.200). Moreover, analyses confirmed that social isolation is a stronger predictor of smoking in the Italian-speaking part of Switzerland (OR=1.296; 95%CI:1.268-1.325) than in the French-speaking (OR=1.234; 95%CI: 1.221-1.248) and the German-speaking regions (OR=1.173; 95%CI:1.165-1.182).

Discussion: Our results confirmed the role played by social isolation in explaining smoking behavior. Practice implications of these findings are at least twofold: tobacco control interventions in Switzerland should consider specifically targeting socially isolated individuals and Swiss policy makers need to differentiate health promoting messages and interventions targeting the different language regions of the country.

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Paper Session 32 9:21 AM–9:39 AM 4038

MOBILIZING SMOKERS AND THEIR FAMILIES TO PROMOTE SMOKING CESSATION IN CHINESE AND VIETNAMESE MEN: A PILOT STUDY

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BACKGROUND: Smoking prevalence remains high among limited English proficient U.S. Chinese and Vietnamese men. Integrating formative research findings and constructs from Social Network Theory, Social Cognitive Theory, and Transtheoretical Model, we developed a family-based intervention, “The Healthy Family Project: Quit Smoking for a Healthy Family.” The intervention utilizes lay health worker (LHW) outreach to both smokers and families to promote smoking cessation through 2 small group education sessions with smoker-family dyads and 2 follow-up individual telephone calls delivered by LHWs over 2 months. **METHODS:** A single-group pre- and post-intervention feasibility trial is underway with 15 LHWs and 96 participant dyads of Chinese or Vietnamese male daily smokers and their family members (N=192, 52 % males, mean age=52 years (range: 25–76), mean number of cigarettes/day=8.8). **RESULTS:** Among the first 48 dyads (n=96) who completed the study, the self-reported 30-day point prevalence abstinence rate of 41 % was independently corroborated by family. Between 3 months before and 3 months after program initiation, utilization increased significantly for quitline services (from 0 to 60 %), medications (4 to 17 %), physicians’ advice (0 to 25 %), and family support (2 to 67 %) for quitting. Most (96 %) would recommend the program to others. **CONCLUSIONS:** Findings support high feasibility and acceptability of using LHW outreach to promote smoking cessation for both Chinese and Vietnamese smokers and families. A large-scale randomized trial is warranted to establish treatment efficacy.

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Paper Session 32 9:39 AM–9:57 AM 4039

CIGARETTE SMOKING AND DEPRESSIVE SYMPTOMS AMONG HISPANIC ADULTS

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In the present study, we investigated associations between cigarette smoking, smoking cessation treatment, and depressive symptoms in Hispanic adults. Data came from the Hispanic Community Health Study/Study of Latinos (N=16,415), an epidemiologic study on Hispanic health in the United States. Hispanic subgroups included Dominican Americans, Central/South Americans, Cuban Americans, Mexican Americans and Puerto Ricans. Cigarette smoking, smoking cessation treatment and depressive symptoms were measured by self-report. Results indicated that current smokers had greater depressive symptoms than never smokers in all Hispanic subgroups (Dominican Americans: b=3.85, p<0.01; Central/South Americans: b=1.63, p<0.0001; Cuban Americans: b=2.39, p<0.0001; Mexican Americans: b=1.73, p<0.0001; and Puerto Ricans: b=1.61, p<0.01). Among males, pack years, years smoked and cigarettes per year were positively associated with depressive symptoms only among Cuban Americans and Puerto Ricans. Among females, pack years, years smoked and cigarettes per year were positively associated with depressive symptoms only among Mexican and Cuban Americans. Last, doctor prescribed medication (b=-1.69, p<0.01) and over the counter medication (b=-0.95, p=0.03) and not psychotherapy (b=-0.68, p=0.43) for smoking cessation treatment was inversely associated with depressive symptoms. In conclusion, these findings suggest that the positive association between smoking status and depressive symptoms stands for all Hispanic subgroups; however, the associations between pack years, years smoked, cigarettes per year and depressive symptoms vary by Hispanic and gender subgroup. It is also possible that people who are not very depressed are more motivated to seek prescribed medication for smoking cessation than people who are more depressed.

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Paper Session 32 9:57 AM–10:15 AM 4040

DIFFERENCES BETWEEN INTERMITTENT AND DAILY LIGHT SMOKERS IN A PREDOMINANTLY HISPANIC SAMPLE

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Tobacco use among Hispanics continues to be a growing concern. Hispanics tend to be light (between 1 to 10 cigarettes per day) and intermittent (non-daily) smokers (LITS), and studies focusing on low level ethnic minority smokers are warranted. This study assessed differences between intermittent and daily light smokers in a predominantly Hispanic sample to better tailor prevention and treatment efforts. One thousand ninety-eight participants (85.6 % Hispanic; 51.7 % male) between the ages of 18 and 87 (M=33.0, SD=14.0) were recruited over multiple cycles of a LITS cessation program from community clinics and a university on the U.S./Mexico border. Participants completed measures assessing demographics, tobacco use and history. Approximately 62 % were intermittent smokers. Logistic regression was used to assess light versus intermittent smoking correlates. The dependent variable was smoking status and the independent variables included demographics (i.e., age, gender, ethnicity, education, marital status) and age of first cigarette smoked.

The model was significant (Chi 2(6)=64.41, p<.001), $\eta^2=.059$. Younger participants (OR=1.027, p<.001), females (OR=0.769, p<.05), those with more education (OR=0.827, p<.01), Hispanics (OR=0.549, p<.01), and older age of initial cigarette smoked (OR=0.953, p<.01) had a greater likelihood of being non-daily intermittent smokers.

These findings are consistent with past studies indicating even lesser smoking in ethnic minority smokers are similar demographics associated with non-daily smoking as observed in other low level smoking samples. Given the increasing prevalence of low level smoking and that a growing number of studies are indicating challenges in promoting abstinence in these smoking groups, recognizing characteristic differences between intermittent and daily light smokers can inform future tailored prevention and intervention efforts.

This study was funded by A Smoke Free Paso del Norte.

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Paper Session 33 8:45 AM–9:03 AM 4041

LATENT POSTPARTUM DEPRESSION TRAJECTORY GROUPS AMONG OVERWEIGHT OR OBESE WOMEN

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Purpose: Postpartum depression (PPD) occurs in 10-15 % of new mothers. While the symptoms of PPD are generally thought to last for less than 1 year, very little work has been done to follow the course of PPD symptoms beyond 1 year postpartum. The present study assesses the change in PPD symptoms over time, up to 24 months postpartum, to identify latent trajectory groups.

Methods: Women (n=719), who were overweight or obese prior to pregnancy, were recruited into a weight management study (KAN-DO: Kids and Adults Now - Defeat Obesity) following childbirth. PPD symptoms were assessed using the Edinburgh Postpartum Depression Scale (EPDS), completed up to 5 times during the first 2 years postpartum.

Latent class growth modeling (LCGM) was used to identify latent groups of women who were heterogeneous with respect to number of endorsed depressive symptoms longitudinally. Simultaneously, multinomial logistic regression models were used to evaluate the relationship between demographic characteristics (age, race, education, household income, marital status, work status, and chronic health conditions) and the identified latent subgroups.

Results: Three trajectory groups were identified: a continually depressed group (4.1 %), a recovering group (13.9 %), and a non-affected group (82.0 %). Compared to the non-affected group, the continually depressed group were more likely to be non-married (OR=13.02, p=.001), White (OR=12.21, p=.003), and have chronic health conditions (OR=3.11, p=.025). The recovering group had similar profile to the non-affected group with one exception; they were more likely to have chronic health conditions (OR=2.81, p<.001).

Conclusion: There are three distinct longitudinal groups of postpartum mothers in terms of depression levels; identification of these groups may be significant both clinically and in terms of research. Future work will examine whether these trajectory groups are predictive of poor parenting behaviors and adverse outcomes for the mother or the child.

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Paper Session 33 9:03 AM–9:21 AM 4042

TECHNOLOGY PREFERENCE IN CHOICES OF DELIVERY CARE UTILIZATION FROM USER PERSPECTIVE - A COMMUNITY STUDY IN VIETNAM

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Objectives: To investigate delivery care regarding utilization, expenditure and technology preference and related factors in urban and rural areas in Vietnam.

Method: A study of two cohorts of pregnant women was carried out in DodaLab and FilaBavi Health and Demographic Surveillance Sites in Hanoi, Vietnam during 2008–2009. Together, 2515 pregnant women were identified and followed until delivery through quarterly household interviews using structured questionnaires.

Results: Almost all women delivered at health care facilities with skilled birth attendance. Most of the rural women gave birth at primary health care facilities as recommended while urban women primarily used central (57.4 %) and provincial hospitals (36.2 %). Caesarean section (CS) was used for 38.5 % of births in the urban area and 12.4 % in the rural. Giving birth in hospitals and caesarean delivery were more common among highly educated women, employed women, women living in households or communities with good economic conditions, nulliparous women, women expected to give birth to a son.

Conclusion: The coverage of delivery care was high and women's choices were made based on the available health care resources and technology preference. The women in urban areas gave birth more often at high level health care facilities with more CS. The overuse of hospital delivery and CS birth in urban areas might partly be due to perceived prestige by the mothers. Technology preference in delivery care was associated with better socioeconomic conditions and expecting a boy. Improving the quality and reputation of primary health care facilities, improving the role of midwives in delivery care provision, informing women about CS risks and monitoring indications of CS during pregnancy are important issues to pursue in future policies.

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Paper Session 33 9:21 AM–9:39 AM 4043

MULTIPARITY: A RISK FACTOR FOR HEALTH-COMPROMISING BEHAVIORS IN PREGNANCY

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About 5 % of first pregnancy (primipara) nonsmokers will smoke during the second pregnancy (multipara). It may be that having had a previous pregnancy makes women less concerned about pregnancy-health compromising behaviors (PHCB) during a subsequent one. However, it is unclear that being multiparous or the outcome of the first pregnancy is associated with PHCB. Therefore, we tested the hypothesis that multipara (MP) are more likely than primipara (PP) to report PHCB.

This is a retrospective cohort study of PP and MP, 1990 to 2009, in Kansas City, MO. MP were further categorized by the first pregnancy outcome as abortive (MPA) or live birth (MPL). PHCB is the use of smoking, alcohol, or drugs during pregnancy. PHCB rates for PP, MPA, and MPL were compared and the odds of PHCB calculated after adjusting for known confounders.

We found that the cohort of 149,144 women consisted of 35.5 % PP, 0.4 % MPA, and 64.1 % MPL; 47 % White; 45 % adult with some/complete college education; 14 % inadequate prenatal care. Overall, PHCB rate was 17 % and varied significantly by parity (12 % PP, 29 % MPA, and 21 % MPL). It also varied by race, education, prenatal care, and marital status. On logistic regression, PP (0.54, 95 % confidence interval (CI) 0.52, 0.56) were less likely and MPA (1.41, 95%CI=1.10, 1.82) more likely than MPL (Reference; OR=1) to engage in PHCB.

Contrary to expectations, PHCB is more likely among women who are pregnant for the second time than those who are pregnant for the first time. Of note, those who lost their first pregnancy are more likely than those who had a live birth to engage in PHCB. This may indicate that MPA may continue behaviors that contributed to the outcomes of their first pregnancy. These findings are concerning and should cause health care providers to question assumptions about health literacy or practices of pregnant women who have experienced a previous pregnancy.

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Citation Paper**Paper Session 33** 9:39 AM–9:57 AM 4044

AN RCT OF 3 PRECONCEPTION MOTIVATIONAL INTERVIEWING INTERVENTIONS TO REDUCE ALCOHOL-EXPOSED PREGNANCY RISK

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Alcohol exposed pregnancy (AEP) is a leading cause of preventable birth defects including Fetal Alcohol Spectrum Disorders. While randomized controlled trials (RCTs) have shown that motivational interventions reduced AEP risk, briefer intervention could facilitate implementation that has been impeded by lengthy interventions requiring high expertise to deliver with fidelity. The purposes of this study were to: 1) test 3 brief motivational AEP prevention interventions for community women and 2) compare outcomes to previous RCTs. 217 women at risk for AEP were randomized to Motivational Interviewing+Assessment Feedback (MI+FB), Informational Video, or Informational Brochure conditions. The MI+FB condition was a single session adaptation of two efficacious AEP risk reduction interventions, CHOICES, and BALANCE. Outcomes were drinks per drinking day (DDD), ineffective contraception rate, and AEP risk at 3 and 6 months. All interventions had significant main effects and decreased DDD, ineffective contraception rate, and AEP risk. Across conditions, AEP risk improved from 100 % at baseline (n=217) to 68.3 % at 3 M (n=183) and 54.1 % at 6 M (n=159), indicating overall AEP risk reduction of 45.9 %. MI+FB had larger absolute risk reductions than either comparison condition in ineffective contraception and AEP risk, but not DDD. Effect sizes were compared to those of previous RCTs of AEP risk reduction interventions. The briefer MI+FB intervention had less powerful effects than more intensive AEP prevention interventions among community women, which reduce AEP risk for a greater proportion of women. However, brief interventions targeting AEP risk are more practical and maybe an appropriate option in a hypothetical continuum of preventive care for women who are drinking and not yet pregnant.

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Paper Session 33 9:57 AM–10:15 AM 4045

MARITAL STATUS AND RELIGIOUS COMMITMENT PREDICT PRENATAL TOBACCO, ALCOHOL, AND ILLICIT SUBSTANCE USE IN SOUTHERN APPALACHIA

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Marital status and religiosity measures have been shown to predict health and health behaviors. This study examined the potential link between partner/marital status and religiosity measures, and pregnancy substance use. Cigarette, alcohol, marijuana, and other illicit drug use during pregnancy were analyzed against marital and cohabitation status, regular church attendance, and religious commitment, both alone and in combination in 336 pregnant, primarily low SES, women recruited from multiple prenatal practices in Southern Appalachia. Overall, women who lived with partners (regardless of marital status) were significantly less likely to smoke cigarettes (32 % v 61 %) or marijuana (14 % v 32 %), or to use alcohol (4 % v 12 %) than those who did not live with partners. Compared to infrequent or non-attenders, regular church attenders were significantly less likely to smoke cigarettes (25 % v 47 %) or marijuana (5 % v 24 %), and to illegally use amphetamines (0 % v 6 %). Similarly, compared with those low on religious surrender, those high on religious surrender were significantly less likely to smoke cigarettes (34 % v 46 %) and marijuana (9 % v 25 %), and were also less likely to consume alcohol (2 % v 8 %) or use several types of illicit drugs. Finally, those who were married, attended church at least one/week, and were high on religious surrender were the least likely to smoke cigarettes (4 %) or marijuana (0 %) or use alcohol (0 %). Women who were not married and high on both religious commitment variables were more likely to smoke cigarettes (46 %) and marijuana (23 %), drink alcohol (7 %) and use illicit drugs (up to 23 %). Being able to identify potentially high risk groups for assessment/intervention is important, particularly prenatally. Findings of this study indicate that being unmarried, living alone, or reporting low religious commitment could indicate a higher potential for substance use during pregnancy.

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Paper Session 34 8:45 AM–9:03 AM 4046

RESILIENCE AS A MEDIATOR BETWEEN SECONDARY CONDITIONS AND QUALITY OF LIFE IN PERSONS AGING WITH DISABILITY

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Persons aging with disability often experience pain and fatigue secondary to their primary impairments that may worsen over time and negatively influence quality of life (QoL). Maladaptive coping can contribute to the development and negative impact of secondary conditions and may further increase disability and depression. Conversely, the ability to positively adapt to adversity, or resilience, may promote healthy aging. The current study used structural equation modeling to examine the association between secondary conditions, resilience, and QoL in a large national sample of people with spinal cord injury (n=243), post-polio syndrome (225), muscular dystrophy (173) and multiple sclerosis (285). Secondary conditions included self-reported pain, fatigue, and depression. Resilience was measured using the Connor-Davidson Resilience Scale (CD-RISC). To examine effects of aging, chronological age and disability duration were included in the model. Participants were 20 to 91 years old (M=55.9+/-12.9), predominately Caucasian, and 63 % were women. Global fit for the model was good ($\chi^2(130)=459.52$, RMSEA=.053). The model accounted for 50 % of variance in depression and 51 % of variance in resilience ($ps<.001$). Older age was associated with greater fatigue ($\beta=.11$) and fewer depressive symptoms ($\beta=-.14$; $ps<.003$), and there was a trend between older age and pain ($\beta=.07$). Pain and fatigue were positively related ($r=.50$); greater pain and fatigue predicted increased depression ($\beta=.35$ and $.46$, respectively), which was associated with lower QoL ($\beta=-.49$; $ps<.001$). Resilience predicted higher QoL ($\beta=.19$) and partially mediated the relationship between depression and QoL ($\beta=-.14$; $ps<.001$). Disability duration was not significantly associated with any criterion variables. Persons aging with disability have a greater burden of secondary conditions that can compound depression and lower QoL. Resilience may protect against the deleterious effects of these secondary conditions and could be particularly relevant to successful aging with disability.

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Paper Session 34 9:03 AM–9:21 AM 4047

MAINTAINING RESISTANCE TRAINING IN PRE-DIABETIC OLDER ADULTS: SCT APPROACH

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Glucose metabolism improves with supervised resistance training (RT) but less is known about maintaining RT with older adults with prediabetes once supervision ends. The Resist-Diabetes (R-D) study assessed the efficacy of a whole-body, 2/week, RT program, moderate resistance, high effort, where after the 3-month supervised RT, participants, pre-diabetic adults (n=62) aged 50–69 years, were randomized to 1 of 2 extended care programs for 6 months that varied by dose. SCT involved extensive hands-on transition sessions to an approved health club, electronic interactions with the R-D web site for planning and recording workouts, feedback, goal setting, problem solving, plus 9 brief personal contacts. Standard involved a brief transition session, more minimal R-D web site interactions, and only 4 personal contacts. Lean body mass (DEXA), glucose tolerance, and strength (3-RM) were assessed at baseline, 3- and 9-months. Program adherence was assessed by timeline follow-back of RT sessions completed in the previous month at follow-up. Both groups reported adherence rates of 72 %. Strength gains, ~30 %, from the end of the supervised phase were maintained by both groups at 9 months. Significant ($P\leq 0.05$) correlations were found for both groups between adherence during the extended contact phase and changes in lean mass ($r=.287$), body fat ($r=-.284$), and a reduction in % body fat ($r=.327$) and increase in % lean body mass ($r=-.326$) were associated with a reduction in glucose concentration 120 min of the OGTT (75 g glucose load). Adherent pre-diabetic, older adults can improve during a faded contact RT program with continued but not extensive contacts; multiple behavior change programs may require the full extended care program.

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Paper Session 34 9:21 AM–9:39 AM 4048

TRAJECTORIES OF CHANGE IN EXERCISE SELF-EFFICACY IN A HOME-BASED PHYSICAL ACTIVITY TRIAL

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Recent evidence suggests that self-efficacy trajectories across exercise trials are not linear and that participants re-calibrate over-estimations once the trial is underway. The objective of the present study was to examine this phenomenon in the context of a 6-month, DVD-delivered physical activity trial. Low active older adults (N=307; M age=71.1) were randomly assigned to the flexibility, toning and balance (FTB) or healthy aging control condition. Measures of exercise self-efficacy (EXSE), gait efficacy (GES), and lifestyle self-efficacy (LSE) were completed at baseline, 3 weeks, and at 6 months. Repeated-measures MANOVA was used to examine trajectories over time and to determine whether these were moderated by group, sex, or age (i.e., 65–69 vs. 70+ yrs). The analysis revealed significant main effects for group, sex, age, and time (all $p<.005$). The time x group interaction was significant, as was the time x group x age interaction (all $p<.05$). The time main effect was driven by changes in EXSE and LSE, the time x group interaction was influenced by changes in EXSE and GES, and the time x group x age interaction was influenced by changes in GES alone (all $p<.05$). Examination of estimated marginal means for the group x time interaction revealed an early peak in EXSE among FTB participants, likely reflective of the gradual progression of the exercises, while program termination may have contributed to a significant decrease at month 6. The chance to participate in an exercise program may have inflated baseline EXSE among control participants. Regarding gait efficacy in the time x group x age interaction, a ceiling effect was present among in the younger group; however older FTB participants appeared to recalibrate at 3 weeks. Increases in strength and balance may have contributed to an elevated efficacy at month 6. This study adds to our understanding of how exercise interventions affect various aspects of exercise-related self-efficacy in older adults.

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Paper Session 34 9:39 AM–9:57 AM 4049

RELATIONSHIP BETWEEN SEDENTARY TIME AND EMOTIONAL HEALTH AMONG OLDER ADULTS IN RETIREMENT FACILITIES

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Physical activity (PA) promotes positive mental and emotional health among older adults, but growing evidence suggests that reducing sedentary time (ST) also contributes to health, independent of PA. Older adults spend more time engaged in ST than any other age group. At least two studies found a positive association between self-reported ST and depressive symptoms among older adults. However, no known studies have measured ST objectively via accelerometry. We aimed to examine associations between accelerometer-derived ST and depressive symptoms and quality of life. Participants at seven retirement communities (N=218; Mean Age=83.5, 70 % female) wore ActiGraph GT3X+accelerometers for seven days. ST was computed as the number of minutes at <100 counts per min. Depressive symptoms were assessed with the 10 item CES-D (scores >10 indicate depression; score range 0–30). Quality of life was assessed with the 12 item Perceived Quality of Life scale (score range=0–5). Linear regression models examined relationships between ST and emotional functioning adjusting for gender, age, and meeting PA guidelines (30 minutes of moderate-to-vigorous PA or more per day). Mean ST per day was 8.5 hours (SD=1.0). Ten percent of the sample met physical activity guidelines. Mean CES-D score was 5.12 (SD=3.89), and mean quality of life score was 3.98 (SD=0.65). There were positive associations between ST and CES-D score (B=.015, β =.25, t =3.250, p <.001) and negative associations between ST and quality of life (B=-.002, β =-.18, t =-4.9, p <.0001). This study provides evidence that objectively measured ST is associated with emotional functioning. Higher levels of ST were related to higher depressive symptoms and lower quality of life, independent of PA. Further research is warranted to determine whether reducing ST may be a feasible approach to improving emotional functioning among older adults.

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Paper Session 34 9:57 AM–10:15 AM 4050

EFFECTS OF AN 8-WEEK THEORY-BASED ONLINE BONE HEALTH PROGRAM FOR OLDER ADULTS RECRUITED FROM TWO LARGE ONLINE COMMUNITIES

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An estimated 10 million Americans age 50 and older are living with osteoporosis, and approximately 50 % of women and 25 % of men over age 50 experience an osteoporosis-related fracture. Although several interventions (e.g., exercise, diet, pharmacotherapies) have shown to be effective in optimizing bone health, they have not been fully incorporated into the daily lives of adults. The Internet, with its increasing popularity, can be an effective medium to facilitate behavior change with regard to bone health. In an ongoing online dissemination study, the impact of two social cognitive theory (SCT) based online bone health interventions is being compared among adults (age>50) recruited from SeniorNet and MyHealtheVet. A total of 866 participants were randomized to three groups: (1) 8-week SCT-based online bone health (Bone Power program (n=301); (2) 8-week Bone Power program followed by biweekly eNewsletters for 10 months (n=302); or (3) Control (n=263). The Bone Power program included learning modules, discussion boards, virtual libraries and the Ask-the-Experts. The purpose of this presentation is to report the effectiveness of the bone health program at 8 weeks post implementation. The majority (89.6 %) of participants were White and 63.4 % were male (mean age, 62.8+8.5). The data were analyzed using Linear Mixed Model. The intervention groups showed significantly greater increases in knowledge (calcium/vitamin D, exercise) and self-efficacy/outcome expectations for calcium intake and exercise, as well as calcium and vitamin D intake and exercise expenditure. The 8-week Bone Power intervention demonstrated its significant impact on improving selected bone health outcome variables. Ongoing interventions and follow-up will provide further information about the long term effects of this intervention in helping to maintain bone health behavior over time.

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Paper Session 35 8:45 AM–9:03 AM 4051

AT THE INTERSECTION OF HIV/AIDS AND CANCER: ARE AIDS SERVICE ORGANIZATIONS READY?

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By 2015, 50 % or more of persons living with HIV/AIDS (PLWHA) are expected to be 50 years or older. Treatment advances have lengthened lifespan, but cancer burden is increasing, with non-AIDS defining cancers, e.g., lung cancer, comprising a growing proportion of cancer morbidity and mortality for PLWHA. As HIV/AIDS and cancer concerns increasingly overlap, providers are challenged to integrate cancer care into HIV care. Since the advent of the AIDS epidemic, AIDS service organizations (ASOs) have been on the frontlines providing community-based educational, preventive, psychosocial, and case management services to PLWHA. In order to assess ASO cancer-related systems/practices, capacities, and needs, we identified and contacted n=103 agencies in the states of NY, NJ, and CT, offering \$50 for mail survey participation. The response rate was 58 % (n=60 ASOs), with 57 % from NY and 22 % each from CT and NJ. Some 40 % did not provide any cancer-focused services; those that did had prevention-oriented services, e.g., tobacco counseling. Systematic assessments varied, with most (>80 %) reporting intake questions regarding tobacco and alcohol use, and Hepatitis B and C infections. Other cancer risk factors were assessed at lower rates: Diet (55 %), physical activity (44 %), cancer history (42 %), HPV infection (38 %), family cancer history (25 %), and sun protection (5 %). Cancer risk reduction counseling (18 %) and mobile on-site cancer screening (10 %) were seldom offered. Only 52 % thought that their clients were knowledgeable about personal cancer risks. Most ASOs (91 %) reported a lack of funding to further undertake cancer-focused activities. Educational interventions are needed to increase ASOs' capacity to address the growing cancer concerns of their clients, with the ultimate aim of reducing cancer burden for PLWHA.

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Paper Session 35 9:03 AM–9:21 AM 4052

MULTIVARIATE PREDICTORS OF HEPATITIS B TESTING AMONG KOREAN ADULT CHURCH ATTENDEES ENROLLED IN A RANDOMIZED TRIAL

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Chronic infection with hepatitis B (HBV) has been causally linked to liver cancer, which represents a significant health disparity for Asians. In Los Angeles County, Koreans are among the most populous Asian subgroups with one of the highest rates of HBV infection and liver cancer. Utilizing a cluster-randomized design, we implemented a culturally-tailored small group intervention in churches to increase HBV testing among Korean adults (18–64 yrs) not previously tested. Trial results demonstrated the effectiveness of the intervention on increasing HBV testing rates, with a 13 % point higher testing rate in the intervention vs. control condition (p <.05). This investigation was conducted to understand which factors, guided by the Health Behavior Framework, predicted HBV testing after accounting for the effect of the intervention. Participants (N=525; mean age 45 yrs, 97 % immigrants) were recruited from 50 churches. Baseline data were collected via interviews conducted immediately prior to the small group intervention session. Six month telephone follow-up interviews assessed self-reported testing receipt (86 % retention). Data collection instruments assessed a number of potential predictors of hepatitis B testing: demographics, knowledge, attitudes & beliefs about HBV, barriers & supports to testing. Results of multivariate logistic regression analyses revealed that three factors were associated with hepatitis B testing: usual source of care (OR 2.02, p =.05), perceived HBV stigma (OR=2.92, p <.01), and family history (OR=.26, p =.05). Future research is needed to better understand the unexpected positive influence of perceived stigma and negative influence of family history on HBV testing. Results also suggest that more intensive interventions may be needed to increase HBV testing rates for untested individuals with a family history of the virus.

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Paper Session 35 9:21 AM–9:39 AM 4053

PRIMARY CARE PROVIDER ATTITUDES AND BELIEFS ABOUT THE HPV TEST AND EXTENDED CERVICAL SCREENING INTERVALS: FINDINGS FROM CDC'S CERVICAL CANCER (CX3) STUDY

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Guidelines recommend when human papillomavirus (HPV) and Pap tests are used together (HPV co-test) for routine cervical cancer screening among women ≥ 30 years, intervals can be extended with normal results. We analyzed pilot study data collected between August 2009 and March 2010 from 98 providers working in six Federally Qualified Health Centers (FQHCs) in Illinois who were part of the Centers for Disease Control and Prevention's Cervical Cancer (Cx3) Study. A cross-sectional survey assessed HPV test use, screening interval recommendations, perceived sources of support for screening, and perceived risks, barriers, and benefits for using the HPV co-test and extended screening intervals. Approximately 39 % reported regular use of the HPV co-test, and only 25 % of providers would recommend the next Pap test in 3 years for women with normal HPV co-test results (guideline recommendation at time of the survey). Providers perceived greater support for use of the HPV co-test when compared to support perceived for extended screening intervals. Barriers to increasing the screening interval with normal co-test results included provider beliefs about patients not returning annually for other screening tests (77 %), patients losing contact with the medical care system (63 %), increased patient concerns about missing cancers (62 %), and medical liability (52 %). Providers are generally accepting of the HPV co-test for screening, but are reluctant to increase the screening interval due to the perception that patients may not return for routine care and medical liability. Education for providers may be necessary regarding the harms of too-frequent screening and false positives to balance perceived harms and barriers to extending screening intervals. Understanding and monitoring provider practices and beliefs is of great importance, as screening interval guidelines now recommend five years in between screenings with a normal HPV co-test.

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Paper Session 35 9:39 AM–9:57 AM 4054

LINKS BETWEEN HPV VACCINATION AND ACCULTURATION IN LATINA MOTHERS

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Background: Human papillomavirus (HPV) vaccination is a newly available primary prevention strategy for cervical cancer, yet rates of vaccine uptake have been low. Low uptake is of crucial concern for populations disproportionately affected by HPV-related disease such as Latinas, who have the highest incidence of cervical cancer. To help guide future interventions, this study investigated relationships between HPV vaccination variables and acculturation among Latina mothers of vaccine-eligible daughters.

Methods: Latina mothers ($N=200$) of daughters aged 9–18 were recruited from a primary care clinic serving low-income migrant farmworker families in southwest Florida. Participants completed a semi-structured interview that assessed daughter's HPV vaccination status, intentions to vaccinate unvaccinated daughters, HPV and HPV vaccine awareness and knowledge, vaccination beliefs, whether their daughter's physician had recommended the vaccine, mother and daughter demographics and health history, and US/American and Latina acculturation.

Results: Only 18 % of daughters had received ≥ 1 dose of HPV vaccine. Mothers who scored higher on US/American acculturation were more likely to have vaccinated their daughter(s). US/American acculturation was also associated with physician recommendation, higher HPV and HPV vaccine awareness, having a personal/family history of cervical cancer, believing new vaccines can be dangerous, and less concern that HPV vaccination would encourage sexual activity. Latina acculturation was associated with greater worry that their daughter(s) could get HPV. Ninety percent of mothers with unvaccinated daughters intended to vaccinate their daughters; however, acculturation was not correlated with intentions.

Conclusions: Mothers who were more US/American acculturated were more likely to have vaccinated their daughters against HPV. In general, US/American acculturation was associated with several established correlates of HPV vaccine uptake. Findings have important implications for future HPV vaccination interventions with Hispanic populations.

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Meritorious Paper**Paper Session 35** 9:57 AM–10:15 AM 4055

DISAPPEARING DISPARITIES, UNSATISFACTORY UPTAKE: TRENDS IN GIRLS' HPV VACCINATION IN NORTH CAROLINA, 2008–2010

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Background. To better target future immunization efforts, we assessed temporal changes and population differences in human papillomavirus (HPV) vaccine initiation among female adolescents in North Carolina over three years.

Methods. We analyzed data from a stratified random sample of 1,427 parents who, between 2008 and 2010, completed two linked telephone surveys: the Behavioral Risk Factor Surveillance System and the Child Health Assessment and Monitoring Program surveys. We used weighted analyses to assess subgroup trends and overall correlates of HPV vaccine initiation for girls ages 11–17.

Results. HPV vaccine initiation increased modestly over time (2008, 34 %; 2009, 41 %; 2010, 44 %). This upward trend was present for 11 subpopulations of girls, including those who lived in rural areas, were of minority (non-black/non-white) race, or had not recently received a preventive check-up. When comparing uptake by sociodemographic and healthcare factors, HPV vaccine initiation was less common among girls who were younger, attended private versus public school, or lacked a recent check-up. However, the latter difference narrowed over time. The low level of initiation among girls without recent check-ups increased substantially (from 11 % to 41 %), while initiation among girls with recent visits improved little (from 39 % to 44 %, interaction $p=.007$).

Conclusions. Although HPV vaccine initiation improved among several groups typically at higher risk for cervical cancer, the lack of progress among girls with recent check-ups suggests that missed opportunities for administration have hampered broader improvements.

Impact. Achieving widespread coverage of HPV vaccine will require redoubled efforts to vaccinate adolescents during routine care.

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Citation Paper**Paper Session 36** 8:45 AM–9:03 AM 4056

TREATMENT DECISIONS AMONG MEN WITH LOW-RISK PROSTATE CANCER

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Background: Concerns about overdiagnosing and overtreating low-risk prostate cancer (PCa) have created strong interest in active surveillance (AS), an intensive monitoring strategy that offers active treatment (AT) (surgery or radiotherapy) only for evidence of cancer progression or patient request. Although AS avoids complications from AT without compromising cancer control, it is not widely utilized. We assessed clinical and decision-making factors associated with selecting AS vs AT.

Method: In the first phase of a longitudinal cohort study, we conducted baseline telephone interviews with 116 (77 % response) KPNC men with newly-diagnosed (median=26 days), low-risk (PSA<10, Gleason<6) PCa. We assessed sociodemographics, family history, decision-making processes and preferences, and general and disease-specific quality of life.

Results: Men were 61.7 (SD=6.7) years old, 52 % had completed college, and 84 % were white. By the baseline assessment, 64 % ($N=74$) had already made a treatment decision, including 42 % selecting AS and 58 % selecting AT. Although the AS and AT groups had similar PSA and Gleason scores, AT patients were younger ($p<.08$), had better physical function ($p<.05$), and were more likely to have relatives who died from PCa ($p<.05$). Further, AT participants were more likely to have assumed primary responsibility for making the treatment decision, to feel completely sure of their decision, and to want to actively treat the cancer (all p 's<.05). Treatment groups did not differ on education, PCa knowledge, prostate-related symptoms, anxiety, or depression.

Conclusions: Most men with low-risk PCa made rapid treatment decisions, usually selecting AT. Men selecting AT were quite certain of their decision and were less likely to engage in shared decision-making. Reducing unnecessary treatment for low-risk PCa will likely require providing balanced decision-support information very soon after—or even before—diagnosis.

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Paper Session 36 9:03 AM–9:21 AM 4057

INTOLERANCE OF UNCERTAINTY MODERATES THE ASSOCIATION BETWEEN COGNITIVE COMPLAINTS AND CANCER-SPECIFIC DISTRESS IN PROSTATE CANCER SURVIVORS

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Background: Cancer survivors have reported cognitive complaints following treatment. Difficulties in cognitive functioning may reduce flexibility in processing the cancer experience. Survivors who have high intolerance of uncertainty may find processing an uncertain situation such as cancer survivorship especially challenging. We hypothesized that greater cognitive complaints and higher intolerance of uncertainty would interact in their relation to predict more cancer-specific distress symptoms.

Method: The 67 participants who completed the last wave (3 to 5 years post treatment) of the longitudinal Prostate Outcomes Project were in our study. To be eligible, patients had to have received a diagnosis of non-metastatic prostate cancer. Self-report scales included the Medical Outcomes Scale-Cognitive Functioning to assess cognitive complaints (CC); Intolerance of Uncertainty Scale (IUS); the intrusion, avoidance, and hyperarousal subscales of Impact of Event Scale-Revised (IES-R); and Fear of Recurrence Scale (FoR) to assess for anxiety and worry related to recurrence. Hierarchical multiple regression analysis tested the extent to which IUS, CC, and their interaction were associated with the IES-R intrusion, avoidance, and hyperarousal subscales after adjusting for age, education, and FoR.

Results: The interaction of IUS and CC was significantly associated with IES-R intrusion ($p = .013$), such that greater cognitive complaints were associated with greater intrusion in survivors high in IUS, but not those low in IUS. Higher CC was associated with higher scores on the IES-R intrusion ($p = .010$) and hyperarousal subscales ($p = .001$). IUS was positively associated with the IES-R avoidance ($p = .004$) and hyperarousal subscales ($p = .042$).

Conclusion: Prostate cancer survivors who are highly intolerant of uncertainty may be at particular risk for cancer-related intrusions when experiencing cognitive difficulties. It may be beneficial to address both cognitive complaints and intolerance of uncertainty in psychosocial interventions.

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Paper Session 36 9:21 AM–9:39 AM 4058

QUALITY OF LIFE AFTER PROSTATE CANCER TREATMENT: TRAJECTORIES OF RECOVERY USING PIECEWISE LATENT GROWTH CURVE ANALYSES

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Background: Patients' treatment choices are influenced by information about recovery and expected side effects. Yet, detailed information based on longitudinal data is difficult to obtain and is mainly derived from mean based analyses. Latent Growth Curve Analyses (GCA) can be used to detect individual trajectories of change that can provide a fine-grained picture of recovery over time to the patient.

Methods: A total of 772 prostate cancer patients were surveyed 6 times over a 3 year period, from diagnosis (baseline) to 36 months post treatment. Assessments included sexual and urinary function and quality of life at each wave.

Results: Patients were on average 65 yrs old, Caucasian (89 %), and retired (60 %). For sexual functioning the model, controlling for covariates (age, PSA level) had a strong fit (CFI=.985; RMSEA=.032). For surgery patients, compared to patients who had external beam (EBR) or brachytherapy, sexual dysfunction increased sharply immediately after treatment and then improved over time. For radiation patients, EBR and Brachytherapy recovery slopes were identical and functioning worsened over time. All three treatment groups experienced the same level of function at 36 mo post treatment. We achieved a similarly excellent model fit for urinary dysfunction. Patients with brachytherapy experienced a sharp decline in urinary function over the first 6 months, whereas surgery and radiation patients experienced minimal change. Function improved for brachytherapy and at 2 years its trajectories became identical to that of EBR. There was slightly less dysfunction at 36 mo for patients who had surgery.

Conclusion: GCA is an excellent application for the fine-grained analyses of longitudinal data in the QOL area. Results provide a detailed picture of the trajectory of prostate cancer recovery to the 3 most common treatment modalities. These data can help physicians effectively counsel patients in their decision choice.

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Paper Session 36 9:39 AM–9:57 AM 4059

DEVELOPING BLADDER CANCER SURVIVORSHIP CARE PLANS: A QUALITATIVE STUDY OF PROVIDER PERCEPTIONS

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Purpose: Bladder cancer (BlCa) has high treatment burden and limited survivorship resources. Survivorship care plans (SCP) summarize resources and treatment plans, but do not exist for every cancer. Moreover, methods for developing plans are not well-studied and are typically developed with limited input from diverse groups of working clinicians.

Materials and Methods: A convenience sample (N=12) of physicians and non-physician providers was recruited from academic and private practices. Two 90-minute groups were conducted by a psychologist and stratified by provider-type. Groups discussed BlCa survivors' unmet needs before shifting to a group cognitive interview to provide specific feedback on a BlCa SCP developed using expert opinion.

Results: The physician group (n=6) included urologists, a medical oncologist, a geriatrician, and a radiation oncologist. The non-physician group (n=6) included nurse practitioners, social workers, and a medical assistant. Physicians identified 3 areas of SCP utility: 1) enhancing communication between cancer specialists and primary care providers; 2) tailoring treatment for specific populations (e.g., older, obese); and 3) providing patients with disease-specific information. Non-physicians reported BlCa survivors currently lack consolidated patient education information resources and stressed the importance of incorporating the SCP into the electronic medical record. Non-physicians also emphasized including psychosocial resources in the SCP.

Conclusions: Our findings suggest physicians find BlCa SCPs useful for enhancing communication among providers and providing disease-specific, tailored information to survivors. Non-physicians stressed the importance of creating a consolidated medical information resource for patients and providers and incorporating the SCP into existing systems to streamline SCP completion. Our BlCa SCP is now being evaluated in a multi-site pilot, with plans for a larger trial.

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Paper Session 36 9:57 AM–10:15 AM 4060

DEVELOPING BLADDER CANCER SURVIVORSHIP CARE PLANS: A QUALITATIVE STUDY OF SURVIVOR PERCEPTIONS

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Purpose: Bladder cancer (BlCa) has high treatment burden and limited survivorship resources. Survivorship care plans (SCP) summarize resources and treatment plans, but do not exist for every cancer type. Moreover, methods for developing plans are not well-studied and are typically developed with little or no survivor input and limited concern for survivor health literacy.

Materials and Methods: A convenience sample (N=17) was recruited through a high-volume, Midwest academic urology practice. Two 90-minute groups were conducted by a psychologist and stratified by gender. Survivors represented a variety of BlCa stages and treatments. Groups discussed survivors' unmet needs before shifting to a group cognitive interview, which provided specific feedback on the contents of a SCP developed using expert opinion.

Results: Gender-specific groups included 8 females and 11 males; most participants were treated with cystectomy and urinary diversion. Unmet needs common to both groups included fear of recurrence and recovery concerns; desire for more information about treatment-related symptom management; and nutritional recovery. Female survivors expressed desires for peer/social support. The SCP was deemed highly acceptable; however, survivors suggested modifications related to reading level and medical terminology. Survivors also provided feedback on the SCP's logistics (e.g., who should complete it?); tailoring to specific survivors; identification of non-medical resources; and symptom-management (e.g., providing information about managing incontinence, correct use of stoma supplies).

Conclusions: BlCa survivorship care plans have not been developed and disseminated to date. Our findings are novel and innovative in that they provide a process and content for developing a BlCa survivorship care plan based on expert opinion and survivors' feedback. The SCP is currently undergoing evaluation in a small pilot study, with plans for a larger trial.

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Saturday
March 23, 2013
10:15 AM–11:45 AM

Poster Session D

D-001

SUN PROTECTION PRACTICES OF LATINO VS. NON-LATINO WHITE CHILDREN WITH A FAMILY HISTORY OF MELANOMA

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Sun protection in childhood is critical for reducing risk for melanoma and may be particularly important for children with a family history of the disease. However, research examining sun protection in high risk populations to date has focused primarily on non-Latino white populations. The goal of this study was to compare sun protection practices and correlates (e.g., demographics, psychosocial factors) between Latino and non-Latino white children with a family history of melanoma. Due to the complexity of collecting data from children, surveys were conducted with parents with a personal history of melanoma. Melanoma cases identified through the California Cancer Registry with children <18 yrs of age were invited to participate in a survey (web, mail, telephone) that assessed their children's sun protection practices and correlates. The final sample includes 323 parental respondents and 323 children (mean age of child=9.19 years, 49 % female, 16 % Latino). Ethnic differences were revealed for use of some sun protection practices. Parents of non-Latino white children were more likely to report that their child "usually" or "always" wears sunscreen as compared to parents of Latino children (81 % vs. 65 %). However, Latino children were more likely to wear sunglasses compared to non-Latino whites (16 % vs. 7 %). Despite their personal history of melanoma, fewer Latino parents perceived their children at "above average" risk for the disease compared to non-Latino whites (39 % vs. 56 %). Nearly half of parents reported their child had experienced a sunburn in the past year (43 %), with similar rates observed for both groups. Although at elevated risk for melanoma, sun protection levels observed among children were suboptimal, especially for certain behaviors (30 % hat use; 8 % sunglass use). Sunburns were relatively common, similar to the population at large. Efforts to improve sun protection and reduce sunburn frequency in this population are needed.

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D-002

META-ANALYSIS OF THE RELATIONSHIP BETWEEN RISK PERCEPTION AND COLORECTAL CANCER SCREENING

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Background: According to health behavior theories, risk perceptions should motivate colorectal cancer screening. Yet across 20 years of research using diverse samples, study design, risk perception measurement strategies, and colorectal cancer screening tests, it is unclear whether this widely-accepted relationship exists. The purpose of this meta-analysis was to examine the relationship between risk perception for colorectal cancer and screening behavior, and whether this association is impacted by pre-defined moderators.

Methods: We searched EMBASE, ISI Web of Knowledge, PubMed, Ovid, and Scopus to identify articles that contained a quantitative assessment of CRC risk perception and CRC screening. All effect sizes were transformed to a Pearson's r statistic and meta-analyzed using a random effects model, which considered the role of potential moderators, including design (i.e., cross-sectional or prospective), screening modality (i.e., colonoscopy, fecal occult blood test [FOBT], flexible sigmoidoscopy[FS]), and risk status of the population using meta-regression.

Results: A total of 34 studies met inclusion criteria. The overall effect size (r) was 0.21, 95 % CI [0.197, 0.224], indicating that a greater perception of risk was associated with greater adherence to CRC screening guidelines. Cross-sectional studies had a higher effect size (0.22, 95 % CI [0.207, 0.240]) than those that used a prospective design (0.09, 95 % CI [0.064, 0.117]). Effect sizes were higher for those who were screened using colonoscopy (0.27, 95 % CI [0.185, 0.358]) than those who used FOBT (0.14, 95 % CI [0.105, 0.172]) or FS (0.09, 95 % CI [0.054, 0.127]). Risk status of the population did not statistically influence the effect size.

Conclusion: The results of this study indicate a small but consistent positive relationship between perceived risk of CRC and reported screening behavior, yet with important identified heterogeneity across moderators. These findings will be useful in the design of interventions and future psychosocial research examining colorectal cancer screening.

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D-003

QUALITY OF LIFE IN MEN WITH PROSTATE CANCER: LONG-TERM EFFECTS OF A PSYCHOSOCIAL INTERVENTION

Catherine Benedict, MS,¹ Lara Traeger, PhD,⁴ Mikal Rasheed, PhD,¹ Eric Zhou, PhD,¹ Natalie E. Bustillo, MS,¹ Bruce Kava, MD,³ Mark Soloway, MD,³ Michael Antoni, PhD^{1,2} and Frank J. Penedo, PhD⁵

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Men treated for prostate cancer (PC) often experience treatment-related side effects that impact quality of life (QOL). Psychosocial interventions may help improve QOL. Prior work reported that a cognitive behavioral stress management (CBSM) intervention improved QOL from pre- to immediately post-intervention. This study sought to determine whether these effects were maintained over a long-term follow-up. Participants were randomized to either a CBSM or a control group and assessed at four time points (T1 [baseline]; T2 [post-intervention]; T3 [6-month follow-up]; and T4 [12-month follow-up]). Men (N=260) were 65.3 years-old (SD=7.7) and ethnically diverse (41 % Non-Hispanic White, 17 % Black, 42 % Hispanic). QOL was measured by the Functional Assessment of Cancer-General Module (FACT-G). Piecewise latent growth models were used to test group differences. Results demonstrated an intervention effect on QOL ($\chi^2[23, N=225]=19.92, p>.05$; CFI=.99; SRMR=.05; RMSEA=.00; $\chi^2\Delta's, p<.01$). CBSM participants reported significant improvement from T1 to T2 and trended toward continued improvement from T2 to T4 (unstandardized slope 1=24.32, SE=9.44, p<.01 and slope 2=.99, SE=.57, p=.08); control participants reported smaller, though significant improvements over time (slope=1.01, SE=.18, p<.01). Men reported baseline levels of QOL below published means of PC and age-matched control populations. CBSM participants improved to above PC and age-matched control means. Education, income, and time since treatment were related to slopes across groups ($p's<.05$). Results indicate that a CBSM intervention may lead to long-term QOL improvements and identified factors related to QOL changes. Future work should evaluate mechanisms of intervention benefits.

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D-004

DEVELOPMENT OF A TARGETED PHYSICAL ACTIVITY GUIDEBOOK FOR YOUNG ADULT CANCER SURVIVORS

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Young adult cancer survivors (YACS) are an understudied group in cancer survivorship research that have unique psychosocial, medical and survivorship issues. Physical activity (PA) has important effects on health-related outcomes in middle-aged and older cancer survivors and preliminary research suggests similar benefits in YACS (18–39 years). Unfortunately, only about half of YACS report meeting public health PA guidelines and there are no targeted interventions or resources available to help YACS increase their PA.

Methods: In this study, a Theory of Planned Behavior (TPB)-based PA guidebook for YACS was developed and evaluated for its suitability and appropriateness. The guidebook was developed based on previously developed guidebooks for colon and breast cancer survivors. Previous research on TPB correlates and exercise preferences specific to YACS informed the content. Expert judges (N=36) included an oncologist, exercise oncology professionals, young adult cancer survivors, health informatics experts and TPB researchers. Expert judges completed the Maine Area Health Education Center's 18-item attribute checklist for evaluating written health information. The TPB judges also assessed the degree of match between the guidebook content and TPB constructs.

Results: The reported mean by the TPB experts was at least 4 out of 5 on a scale of agreement between the PA guidebook content and the keyed TPB domains. Over 80 % of YACS approved of the writing style, appearance, appeal, and appropriateness of the guidebook. Other expert judges indicated that the PA guidebook achieved desirable attributes for all categories.

Conclusions: The evaluations informed the "Strive to Survive" guidebook. This guidebook has 58 pages and 12 chapters that successfully targets the TPB constructs known to influence PA behavior change and contains suitable and appropriate health information. The guidebook will be tested in a future randomized controlled trial to determine if it has an influence on TPB variables and PA in YACS.

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D-005

PERCEIVED BENEFITS AND BARRIERS TO MAMMOGRAPHY IN BREAST CANCER SURVIVORS AND WOMEN WITHOUT A HISTORY OF CANCER

Sara N. Edmond, BA,¹ Rebecca Shelby, PhD,¹ Francis Keefe, PhD,¹ Mary Scott Soo, MD,¹ Celeste Skinner, PhD,³ Sandra Stinnett, DPH,¹ Margarita Zuley, MD,² Jules Sumkin, DO² and Dana Bovbjerg, PhD²

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Perceived benefits and barriers to mammography have been identified as important predictors of breast cancer screening adherence. Studies have not examined if beliefs about mammography differ in breast cancer survivors and women with no cancer history. This study examined beliefs about mammography (perceived benefits, barriers, and feelings of vulnerability to breast cancer without mammography) in 100 breast cancer survivors undergoing their first post-surgery mammogram and 100 women with no cancer history undergoing routine mammography. Relationships between beliefs about mammography, perceived risk of breast cancer, mammography specific anxiety, and patient characteristics were examined. Women completed self-report questionnaires immediately prior to mammography. Breast cancer survivors reported significantly ($p < .05$) greater benefits and greater feelings of vulnerability than women with no cancer history. Barriers did not differ across groups. Among breast cancer survivors, regression analyses showed that greater benefits were related to having one's cancer detected by mammogram ($\beta = .28$) and lower mammography specific anxiety ($\beta = -.29$). Feelings of vulnerability were related to having one's cancer detected by mammogram ($\beta = .28$) and having a family history of breast cancer ($\beta = .30$). Fewer barriers were related to having one's cancer detected by mammogram ($\beta = -.27$), having greater perceived risk for breast cancer ($\beta = 0.34$), and being white ($\beta = .37$). Among women with no cancer history, feelings of vulnerability were related to higher mammography specific anxiety ($\beta = .30$). African American women reported greater barriers to mammography ($\beta = .36$). Benefits were not related to study variables or patient characteristics. For survivors, the way their cancer was detected may have important implications for beliefs about mammography and later mammography adherence. For women with no cancer history, mammography specific anxiety and demographic factors may contribute to beliefs about mammography.

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D-006

INTERNET BASED PEER-SUPPORT IN CANCER - AMBIGUITIES OF PRESENCE, COMMUNITY AND DISTANCE

Mette T. Hoybye, MSc, PhD

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Over more than a decade the increase in available peer-support delivered via the internet has substantially changed the way many people with a chronic disease, including cancer, navigate their condition. The growing literature evaluating the efficacy of such technologies provide mixed evidence on their impact on depression, anxiety and well-being. Few studies, however, have explored the group processes in internet peer-support, despite their potential correlation to efficacy.

In this context this study explored how internet peer-support groups decrease the perceived social isolation of cancer survivors as a process of rehabilitation?

The study was conducted as an ethnographic fieldwork designed as seven case studies in internet peer-support groups over 13 months in 2005–06. The ethnographic research used strategies of participant observation, in-depth interviews and online focus group interviews. Key informants were purposely selected to reflect broad range of diagnoses, age, gender, education, urban–rural location and employment

The internet peer-support groups developed a shared language in their textual interaction, with the potential of both forming and disrupting a shared social space. Within this duality, the participants described social issues in a language of inclusion, producing a social whole by recognizing and emphasizing the shared experience of cancer. The intense social experience of communality in the groups was, however, shattered by the onset of progressive illness or death, which produced a language of separation, through which participants set themselves and the community apart from the dead or ill person.

Group processes in internet based peer-support groups may affect the efficacy of the groups to provide social support as the continuously navigate the potential for support and the frustration and anxiety from the awareness of the suffering of others.

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D-007

HIGHER AUTONOMIC REACTIVITY TO ACUTE STRESS IN HEALTHY WOMEN WITH FAMILY HISTORIES OF BREAST CANCER

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Through as yet unknown mechanisms, healthy women with even one first-degree relative with breast cancer have a significantly elevated lifetime risk of developing the disease. Interestingly, these women have been reported to have stronger neuroendocrine responses to acute stress. Not previously investigated is the possibility that they may also evidence higher autonomic reactivity as indexed by analysis of heart rate variability (HRV). Premenopausal women ($n = 100$) in good health (by self-report, physical exam, and blood screens), 50 with family histories of breast cancer (FH+) and 50 without (FH-) signed informed consent and completed an experimental assessment, which included baseline (30 min), stressor (15 min), and recovery (10 min) periods, with heart rate and respiration continuously recorded. The stressor was the Trier Social Stress Test (TSST), a well-validated social stressor that includes speech preparation and presentation, and completing math problems orally for a live evaluator while being videotaped. Participants also completed assessments of subjective distress. FH+women had higher autonomic reactivity as indexed by the heart rate variability ratio LF/HF during the speech preparation and recovery periods ($p < .05$). There were no significant differences between the two groups on LF/HF during the baseline (consistently low) or speech/math task (consistently high) periods. Respiration rates did not differ during any period ($p > .05$). There were no differences in subjective distress at baseline, but the FH+group scored significantly higher after the recovery period. The higher levels of autonomic reactivity in FH+women suggest that these women may be more sympathetically reactive to impending stressful situations and have a more difficult time inhibiting sympathetic arousal post-stressor. The contribution of subjective responses remains to be determined, but the results suggest the potential utility of interventions to reduce reactivity to daily stressors in this population of women at high risk for breast cancer.

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D-008

DECISIONAL FACTORS INFLUENCING BREAST RECONSTRUCTION POST-MASTECTOMY

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For many women, receiving a breast cancer diagnosis is complicated by decisions about breast reconstruction post-mastectomy. The Cancer Support Community sought to better understand the role of decision-making factors in a national survey. 1,185 women with breast cancer responded to questions online (n=840) or via paper and pencil at CSC affiliate sites nationwide (n=345) in 2010–11. In addition to demographics and breast cancer history, women reported their decision regarding reconstruction, and extent to which psychosocial factors influenced their decision on a 3-point scale. Respondents were primarily Caucasian (81.9%), and the mean age at diagnosis was 48.9 years. 21.2% of respondents were first diagnosed with breast cancer in the past year, and 79.1% were diagnosed with early stage disease. Most respondents (57.2%) reported either having or are planning to undergo reconstruction post-treatment, 18.4% decided to not have reconstruction, and 8.9% were not eligible. Additionally, 15.6% were currently undecided. Participants who chose reconstruction generally rated body image (70.3%) and physical appearance (73.0%) as influencing their decision “a great deal”, compared to women who chose to not undergo reconstruction who were less likely to rate these factors as “a great deal” influential (22.4% and 25.2% respectively). These women also were younger than those who chose to not undergo breast reconstruction ($t=-3.74, p<.01$). Participants who chose to not undergo reconstruction reported concerns about poor outcomes or side effects of procedures (65.8%) and concerns about additional procedures (63.2%) as influencing their decision “a great deal”, whereas women who opted for reconstruction were less likely to report these concerns as “a great deal” influential (20% and 22.1%, respectively). Approximately 60% of all women reported that financial considerations were “not at all” an influence on their decision. This study provides new insight into the relative weight of factors influencing this often challenging decision-making process.

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D-009

PERCEPTIONS OF DOCTOR-PATIENT INTERACTIONS AMONG MULTI-ETHNIC BREAST CANCER SURVIVORS

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The importance of doctor-patient interactions and health outcomes among breast cancer survivors (BCS) is widely recognized. The study goals are to (1) explore the perceived quality of doctor-patient interactions, and (2) to explore how perceived doctor-patient interactions influence treatment decisions among Chinese-, Korean-, and Mexican-American BCS.

A qualitative study with Chinese- (n=21, 51%), Korean- (n=11, 26.8%), and Mexican-American (n=9, 22%) BCS was conducted. Participants were recruited through community and hospital-based support groups or the City of Hope cancer registry. A total of six focus groups (two per ethnic group) were conducted. Discussions were audio-recorded, transcribed, and translated for content analysis of common themes and patterns through qualitative methodology.

Important factors of doctor-patient interactions were reported by patients as influencing their treatment decisions, health behaviors, and health care quality. Among Chinese-, Korean-, and Mexican-American BCS, perceived positive aspects of the doctor-patient interactions included open communication, trust in the physician's recommendations and satisfaction with care. Cultural influences, such as language, influenced the level of communication between the doctor and patient, which were found to relate to positive and negative perceptions of the doctor-patient relationship.

Results revealed that open communication between BCS and their physicians was related to patient's level of trust in their doctor's recommendations and patient's health behaviors including treatment choices. Findings highlight the important role that physicians play in the survivorship experience of multi-ethnic BCS.

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D-010

YOUNG BREAST CANCER SURVIVORS' QUALITY OF CARE

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Background: The impact of breast cancer among young women has increased in public awareness and is gaining significance in public health and behavioral research. Young breast cancer survivors (YBCS) face elevated adverse medical (mortality and morbidity; menopause and infertility) and psychological (distress; fear of recurrence) effects. Despite their risk for poorer survival and survivorship outcomes, little research has focused on their outcomes.

Purpose: This study investigated: 1) the quality of care of young African-American, English language proficient (EP) and limited English language proficient (LEP) Latina YBCS; and 2) access to electronic based resources.

Method: 25 African-American, 44 EP Latina, and 48 LEP Latina YBCS were recruited from cancer registries and community agencies. Chi squares compared differences on demographic and medical factors by ethnic group. Analysis of Variance (ANOVA) examined associations between quality of care and ethnic group, place for routine preventive care and for cancer follow-up care. In a separate survey, 114 African-American and 58 Latinas were asked about their use of technology to avail themselves of resources.

Results: LEP Latinas reported lower educational and income ($p<0.001$); and were more likely to report having a mastectomy ($p<0.01$) but less likely to report breast reconstruction ($p<0.05$). YBCS who received preventive care ($p<0.05$) and cancer follow-up care ($p<0.001$) at a doctor's office reported greater quality of care; and overall, African-Americans reported greater quality of care compared to EP and LEP Latinas ($p<0.01$). Regarding the resources survey, 98% had regular internet access; 70% preferred emotional resources via in-person while 50% preferred informational resources via internet. However, 30% of Latinas still preferred information resources in person.

Conclusions: Given that YBCS report greater burden but have adequate access to technology; the use of technology (electronic medical records, mobile devices) may be considered potential, underutilized strategies improve access to resources for YBCS. However, cultural and linguistic consideration must be taken.

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D-011

CHEMOTHERAPY AND QUALITY OF LIFE IN TRIPLE NEGATIVE BREAST CANCER: PROJECT PAT

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Background: Triple negative breast cancer (TNBC), identified by three negative receptors, is known to be aggressive, likely to strike minorities and younger women, and likely to recur. For TNBC patients, treatment usually includes dose dense chemotherapy which requires a greater volume/dose of drugs to be administered at shorter intervals. Dose dense chemotherapy has been related to greater disruption in women's quality of life. No study to date has examined relationships between treatment effects and quality of life in this population.

Purpose: The purpose of this study is to investigate experiences of women with TNBC, and examine differences in health-related quality of life (HRQOL) in women receiving normal and dose dense chemotherapy.

Methods: Forty-six TNBC survivors (age M=53.8, range 30–79; 60.9% Caucasian; 45.7% Stage II; months since diagnosis M=18, range=2–44) participated in a cross-sectional assessment evaluating behavioral, psychosocial, and medical outcomes following cancer treatment (e.g. surgery, adjuvant chemotherapy, radiation). A medical chart review was completed to assess surgical and adjuvant treatment course. ANOVAs examined differences between dose dense (n=18) vs. normal chemotherapy (n=16) on HRQOL variables (CES-D, SF-36, POMS & CBI-B). Regression analyses examined relationships between length of chemotherapy (range=1–6 months) and HRQOL variables.

Results: Significantly higher scores were found on the mental component summary (MCS) of the SF-36 for the group receiving normal vs. dose dense chemotherapy ($F=4.99, p<.05$). Length of chemotherapy course was also a significant predictor of scores on the MCS ($\beta=-4.42, p<.05$). Other HRQOL variables did not show significant results ($p\text{-values}>.05$).

Conclusions: Dose density and length of chemotherapy have an effect on the mental well-being of TNBC survivors. Ability to detect differences was limited by the range of times between diagnosis and the psycho-social assessment. TNBC survivors could be targeted for psychosocial interventions to prepare them for the quality of life changes associated with dose dense chemotherapy.

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D-012

BARRIERS TO PROVIDING ORAL HEALTH AND ORAL CANCER SCREENING IN LONG-TERM CARE FACILITIES

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Oral cancer will be diagnosed in an estimated 40,000 Americans in 2011 and will cause approximately 8,000 deaths. Nearly half of the people diagnosed with oral cancer were over age 65 and about 60 % of those who died of oral cancer were over age 65. Early diagnosis, through screening is key to survival. Approximately 25 % of patients with oral cancer die because of delayed diagnosis and treatment. Nursing home residents over the age of 65 years are highly vulnerable to poor dental care, which predicts late stage diagnosis of oral cancer. This paper examines the perceived barriers and capacity of long-term care facilities to provide oral health care and oral cancer screening. Methods: Utilizing an integrated theoretical model of the Health Belief Model, Transtheoretical Model and Implementation Science to guide the interviews and analysis, focus groups were held with long-term care administrators and directors of nurses. Results: Findings indicate that while nursing home administrators and directors of nursing are committed to excellent oral care for their residents, competing demands for resources combined with a lack of incentives make oral health a back-burner issue. Other barriers include insurance regulations, funding, and low knowledge about oral cancer risk among nursing home residents, family members, and staff. Perceptions of low capability to screen for oral cancer, combined with high motivation to divert resources toward safety and nutrition contribute to low screening rates. Conclusions and Implications: The themes identified in the analysis identify low-cost approaches to better serve nursing home residents and their families. The paper suggests empirically grounded ways to implement comprehensive oral health and screening using an integrated theoretical approach that identifies risks for low participation, opportunities, and motivations for oral cancer screening. These qualitative findings provide formative data to aid in the development of interventions across disciplines involved in the care of elders in residential facilities.

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D-013

CERVICAL CANCER SCREENING: PSYCHOSOCIAL AND CULTURAL FACTORS FOR OLDER HISPANIC AND WHITE WOMEN

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In 2012, estimates indicate that 25 % of cervical cancer diagnoses occurred in women over the age of 65 and Hispanic women are 50 % more likely to die of cervical cancer than White women. Cancer etiology includes behaviors influenced by psychosocial and cultural factors, specifically related to lower participation in cancer screenings that would lead to early diagnosis and treatment. This study explored the psychosocial and cultural factors expected to influence older Hispanic and White women's participation in cervical cancer screening services. Methods: Guided by integrated health behavior and cultural theoretical framework, this paper presents findings from a secondary analysis of the 2008 wave of the Health and Retirement Study to investigate the relationship between psychosocial and cultural factors of Hispanic (n=1,520,458) and White (n=22,298,915) women and their participation in cervical cancer screening services. Findings: Multivariate logistic regression models were used to identify factors associated with cancer screening participation. Results indicate that factors, such as language, health insurance, and constraints decreased the likelihood of older Hispanic women's participation in cervical cancer screening. The factors, education and health insurance decreased the likelihood of older white women's participation in cervical cancer screenings. Conclusions and Implications: Findings indicate that factors, such as health insurance remain critical to ensure cancer screening participation for Hispanic and White women. In light of the ongoing health care reform debates, these findings suggest that health insurance can provide needed access to cancer screenings. In addition, findings suggest that older Hispanic women's perceptions of control over their lives may be an important consideration for healthcare providers to assess with this population. This investigation provides formative data for the development of interventions to increase older Hispanic women's participation in cancer screening initiatives to assist in reducing cancer screening disparities.

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D-014

PSYCHOSOCIAL CARE FOR CANCER PATIENTS AS IDENTIFIED BY NURSES IN THE EHR IN AN ACUTE SETTING

Huichen Tseng, PhD

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Purpose and Background/Significance: The purpose of this study was to identify the psychosocial care needs of cancer patients as documented by nurses in the electronic health record.

Method: In this descriptive retrospective study, we included 2,237 patients with cancer admitted on four oncology units in a tertiary hospital over 7 months. Data collection included diagnoses, interventions, and outcomes. Data were retrieved from medical records, the nursing documentation system, and the tumor register.

Results and interpretation of results: The sample was primary female(63 %), white(89 %), with a major group undergoing investigation of cancer diagnosis(42 % in current visit, and a diagnosis of cancer in gynecological site, head and neck (13 %). Psychosocial concerns were rarely documented by nurses in the EHR. The most common psychosocial problem documented was anxiety, but it only occurred in 192 inpatient stays of the 2,237 patient records samples. Other psychosocial problems documented included Coping(53, <1 %), Grief Resolution(49, <1 %), and Dignified Life Closure(18, <1 %). Progress in problem resolution was tracked

Using a 5-point-Likert scale(105). For Anxiety, patients providing at least two time points of assessment during hospitalizations showed decreased anxiety in 49 %, unchanged in 37 % and 14 % became worse. For Coping concerns(29), 45 % improved, 31 % remained same scores, and 24 % became worse.

Conclusions: Study findings suggest that cancer patients in the inpatient setting rarely have psychosocial needs documented by nurses in the EHR. Psychosocial problems are common in patients throughout the cancer journey, such as anxiety found in the study. Future studies should describe current systems for delivering psychosocial care to cancer patients by primary care health providers, such as nurses. The issues on detection, intervention, and evaluation for psychosocial concerns in primary care are also required to be addressed.

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D-015

BEHAVIORAL ECONOMICS AND CANCER SCREENING DISPARITIES: NUDGING UNDERSERVED POPULATIONS TOWARDS PREVENTION

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Persistent disparities in cancer screening by race/ethnicity and SES require innovative prevention efforts. Behavioral economics has the potential to help reduce disparities by informing strategies and systems to increase prevention of breast, cervical, and colorectal cancers. With its emphasis on the fairly predictable, but sometimes flawed, mental shortcuts (heuristics) individuals use to make decisions, behavioral economics offers insights that may enhance evidence-based interventions that rely on judgments about the probability of developing and detecting cancer, decisions regarding competing screening options, and the optimal presentation of complex choices (choice architecture) related to cancer prevention. In the area of judgment, we review how the availability and representativeness heuristics can be utilized to increase the perception of risk and highlight the benefits of screening. We describe how several behavioral economic principles involved in decision making might influence screening attitudes, including how framing and context effects can be manipulated to highlight personally salient features of cancer screening tests. Finally, we offer recommendations for how behavioral economic principles related to choice architecture can be applied to health care systems in which cancer screening is performed. These recommendations include the use of incentives to increase screening; introduction of sensible default options; appropriate and multi-phase feedback throughout the decision-making and behavior completion process; and clear presentation of complex choices, particularly in the context of colorectal cancer screening options. We conclude by noting gaps in current knowledge and propose a set of research questions to guide this emerging area of interest for behavioral medicine.

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D-016

FEASIBILITY OF IMPLEMENTING THE SYMPTOM MONITORING AND SYSTEMATIC ASSESSMENT IN YOUNG SURVIVORS (SYMON-SAYS) IN PEDIATRIC ONCOLOGY CLINICS

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BACKGROUND. Effective and timely identification and management of symptoms related to multi-modal therapy for children with cancer is fundamental to the overall success of cancer treatment. Yet such a system in children is lacking. SyMon-SAYS, a patient-oriented, technology-based, symptom monitoring and reporting system, was developed to fill this need. The purpose of this study was to evaluate the feasibility of implementing SyMon-SAYS in pediatric oncology clinics.

METHODS. Patients with a cancer diagnosis, ages 7–17 years, and on- or off-treatment within 6 months were eligible for recruitment. Patients and parents completed weekly fatigue assessment over eight weeks via internet or interactive voice response (IVR) by phone. Alert e-mails to clinicians were generated when pre-defined fatigue score thresholds were met. Based on whether or not fatigue was expected, clinicians decided on the consequent actions (e.g., calling families to further assess, provide treatment). Clinicians and parents/patients received cumulative graphic reports of fatigue scores prior to the clinical visits to facilitate discussion at 4 and 8 weeks post-baseline. Parents and patients completed an exit survey at their last visit.

RESULT. As of today, 22 patients (mean age=11.6 yrs; 58 % females; 58 % white) have completed the study, with an average of 7 assessments completed (max=9). The majority of patients (95.5 %) and parents (80.9 %) felt it was very/extremely easy to complete SyMon-SAYS by IVR/internet. 95 % of parents were satisfied w/ SyMon-SAYS, 70 % reported SyMon-SAYS helped dealing w/ their children's fatigue, and 89.5 % were willing to use SyMon-SAYS to manage fatigue and other symptoms.

CONCLUSIONS. The preliminary results suggest SyMon-SAYS is feasible, acceptable and well-received by parents and patients. The next step is to evaluate whether clinicians shared the same perception. Recruitment is ongoing and we anticipate completing enrollment by February 2013.

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D-017

CANCER COMMUNICATION FUNDING TRENDS, 2000–2012

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Background. Since 2000, the field of health communication has grown tremendously, in large part owing to advances in cancer communication funded by the National Cancer Institute (NCI). This study provides an overview of cancer communication funding trends in the past decade as they relate to the three central themes of health communication: health journalism and mass media, clinical care and patient support, and cancer prevention and control interventions.

Methods. We conducted an original analysis of all communication-related grant applications submitted to the NCI in fiscal years 2000–2012. Portfolio Management Application (PMA), the grants portfolio management application used by the NCI's Division of Cancer Control and Population Sciences (DCCPS), was used to extract data. We crafted a search term including 103 key words related to health communication and informatics, which yielded a universe of 4,212 unique grant applications. All applications were subjected to automatic coding to describe grant mechanism, funding status, study section that reviewed the application, and other grant characteristics.

Results. Coding for relevance to cancer communication yielded 3,458 unique grant applications, of which 1,059 were funded. The top funded mechanisms, in order, were the R01, R21 and R03. Manual coding was conducted to determine relevance to health journalism and mass media, clinical care and patient support, or interventions; methodology; relevance to cancer control continuum stage; and characteristics of the study population.

Discussion. Cancer communication funding has been an important source of growth for the field of health communication.

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Citation and Meritorious Poster

D-018

PERCEIVED MISTREATMENT AND COPING STRATEGIES OF AFRICAN AMERICANS AND CAUCASIANS WITH CANCER

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Introduction: In racial disparities research, perceived mistreatment (PM) is thought to be a risk factor for unfavorable health outcomes, but the mechanisms are unclear. We investigated PM in African Americans (AAs) and Caucasians (CAs) with cancer and hypothesized that the PM–Quality of Life (QOL) relationship would be mediated by coping strategies that lie along an activity-passivity continuum (agentic, active, emotion-focused, disengagement). We posit a “threshold-constraint” process, where intensity of PM may surpass a threshold and require coping strategies, but social constraint (SC) limits coping options. Thus, for AAs, PM may necessitate disengagement because agentic strategies may not be viable under SC. CAs may experience less PM, have less SCs, and use more agentic coping. **Method:** 213 AAs and 121 CAs with cancer (mixed diagnoses), completed measures of PM (including attributions of PM), coping, and QOL. **Results:** AAs reported more PM than CAs ($p < .001$) and more attribution of PM to race/ethnicity ($p < .0001$). Controlling for age, sex, income, and physical impairment, a bootstrapping approach (generating 95 % CIs; significance indicated by CIs not including 0) was used to test mediation. Disengagement was a significant mediator for CAs ($B = .39$; $CI .129-.83$) and AAs ($B = .20$; $CI .07-.43$). Agentic coping was a significant mediator only for CAs ($B = .48$; $CI .18-.81$). PM was positively related to disengagement coping (CA.41; AA.25, $ps < .01$), and disengagement coping was negatively correlated with QOL (CA-.47; AA-.42, $ps < .01$). For CAs, PM was negatively correlated with agentic coping ($-.32$, $p < .01$), which was positively related to QOL (.47, $p < .001$). **Discussion:** Disengagement plays a role in coping with PM, which may compromise QOL, especially for AAs who do not benefit from agentic coping. For AAs, PM may exceed threshold more than for CAs and SC may be more powerful. These results suggest PM as a more potent risk factor for AAs than for CAs because of limited coping strategies available to counter PM.

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D-019

MEN'S EXPERIENCE WITH PENILE REHABILITATION FOLLOWING RADICAL PROSTATECTOMY: A QUALITATIVE STUDY

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Objectives: Erectile rehabilitation post-radical prostatectomy (RP) is important to help men regain erectile functioning. This qualitative study explored men's experience with erectile dysfunction (ED) and ED treatments with the goal to inform a psychological intervention designed to help men consistently adhere to erectile rehabilitation post RP.

Material and Methods: 35 men post RP took part in one of four focus groups to discuss their experience with ED, ED treatments, and provide suggestions to improve compliance with an erectile rehabilitation program. Thematic analysis was used to analyze these qualitative data.

Results: The primary themes that emerged from the qualitative analysis included: frustration over the lack of information provide pre-surgery about ED post-surgery; frustration/embarrassment about ED; anxiety/fear of entering into a sexual situation when not confident in erections; avoidance to using ED treatments and engaging in sexual relations; lack of spontaneity with sex; battling with the relationship between surviving cancer and quality of life after treatment; and openness to an intervention to address these issues. From these themes, we delineated a cycle of avoidance with the following stages: 1) the experience of frustration/shame in a sexual situation if having difficulty with erections, 2) increased anxiety/fear about entering into another sexual situation, 3) avoidance of sexual situations and intimate contact potentially leading to relationship conflict, 4) increased frustration/distress/depression.

Conclusions: Men's frustration and embarrassment about ED after prostate cancer surgery can result in avoidance of the use of ED treatments and engaging in a sexual rehabilitation program. Interventions should specifically target this avoidance.

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D-020

DECREASE IN INTERCOURSE SATISFACTION IN MEN WHO RECOVER ERECTIONS AFTER RADICAL PROSTATECTOMY

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Objectives: It is assumed that if a man “recovers” erections post-radical prostatectomy (RP), intercourse satisfaction (IS) will return to pre-RP levels. We explored if IS returned to baseline levels for men post-RP.

Material and Methods: We assessed 166 men pre-RP and 24 months (m) post-RP. Erectile function domain (EFD) and intercourse satisfaction domain (ISD) of the international index of erectile function (IIEF) were recorded. Patients answered a single question on PDE5i use. Those with penetration hardness erections (PHE) at baseline (EFD>24) were included. Erection recovery was defined in 2 ways at 24 m (i) PHE (ii) EFD back to baseline (BTB) (score within 1 point or higher of baseline).

Results: Mean age=58+/-7 years. Mean baseline and 24 m EFD=29+/-2, 19.7+/-10 (p<0.01). Overall, ISD decreased (12 to 8.3, p<0.01, d=0.87), even for men with PHE at 24 m (12.3 to 11.3, p<0.01, d=0.50). This was true for men not using PDE5i (12.1 to 10.8, p<0.01, d=0.61), and for men using PDE5i (12.5 to 11.7, p<0.01, d=0.42). UVA with 24 m ISD for men with PHE at 24 m were: age (r=-0.23, p=0.05), baseline EFD (r=0.25, p=0.03), baseline ISD (r=0.56, p<0.001), and 24 m EFD (r=0.36, p<0.01). Nerve sparing status (NSS) was not significant. On multivariable analysis (MVA), baseline ISD (beta=0.46, p<0.01) and 24 m EFD (beta=0.23, p=0.04) were predictors of 24 m ISD. For men who returned BTB at 24 m, ISD also decreased (12.4 to 11.7, p=0.02, d=0.35). When considering decreases based on PDE5i use for the BTB group, these did not reach significance. Univariate analyses with 24 m ISD for BTB were: baseline EFD (r=0.45, p=0.01), baseline ISD (r=0.63, p<0.01), and 24 m EFD (r=0.35, p=0.01). On MVA, only baseline ISD (beta=0.49, p=0.01) remained a predictor of 24 m ISD.

Conclusions: IS will decrease for most men post-RP, even for those men who achieve functional erections and even those achieving BTB erections post-RP. These data may assist clinicians in counseling patients pre-RP.

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D-021

THE CANCER AND AGING: REFLECTIONS FOR ELDERS (CARE) INTERVENTION. A PSYCHOEDUCATIONAL INTERVENTION FOR OLDER CANCER PATIENTS

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PURPOSE: While older people are generally thought to cope better with illness and loss than younger individuals, the presence of physical aging related problems, co-morbid medical conditions and symptom burden can overwhelm their strong coping ability, leading to increased vulnerability to distress, anxiety, and depression. We developed a novel psychoeducational intervention, Cancer and Aging: Reflections for Elders (CARE), delivered by phone to help alleviate distress in older cancer patients. We will report preliminary data from a pilot randomized controlled study designed to test the feasibility and initial efficacy of the CARE Intervention.

METHODS: Patients 70 or older that have lung, prostate, breast, lymphoma, or gynecological cancer, are greater than 6 months post diagnosis, and are on current treatment at MSKCC were contacted about participation in the study. Those who expressed interest and reported moderate distress were consented to the study. Eligible patients received 5 sessions over 7 weeks. Outcome data (anxiety, depression, demoralization, loneliness, and spiritual well-being) was assessed at baseline, post-treatment, and 2 months after treatment.

RESULTS: To date, 32 patients have been enrolled. The average age of subjects is 76+4 years old, and 64 % are male. Of the 16 patients randomized to the intervention arm, all subjects completed (100 %) the intervention. For these patients, the preliminary results indicate they had a reduction in depression, anxiety, demoralization, and loneliness. They also had an increase in spiritual well-being. These changes produced small (d=.2) to moderate (d=.5) effects sizes. At the last follow-up assessment, patients testimonials included: “I can laugh more than ever,” “[I] have a better outlook on cancer, a way to reflect on disease and rest of life,” and “Questions made [me] look back upon life and appreciate support and love [I] had.”

CONCLUSION: Preliminary results suggest the CARE Intervention is feasible and effective.

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D-022

ISSUES OF ACCESS: EXAMINING PSYCHOSOCIAL PREDICTORS OF CERVICAL CANCER PREVENTION THROUGH PAP TEST SCREENING AMONG COLLEGE-AGE VIETNAMESE-AMERICAN WOMEN IN LOS ANGELES

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Vietnamese-American (VA) women have the highest age-adjusted incidence rate of cervical cancer (CCA) (43/100,000), and are five times more likely to develop CCA than non-Hispanic White women (8.7/100,000). Population-based studies completed in California have found that Vietnamese women report lower levels of Pap testing (62.3 %) than any other racial/ethnic group. Studies have shown that increased acculturation is linked to higher rates of CCA screening. Although college-age VA women are generally more acculturated than less-educated VA women, they still exhibit the same high-risk screening behaviors as their counterparts. In this study about CCA screening, three initial focus groups comprised of 16 non-HPV-vaccinated, college-age VA women (ages 18–24) who resided in the greater Los Angeles area were convened. This abstract reports on the use of formative research to explore the range and sources of knowledge, attitudes, beliefs, barriers, motivators, and psychosocial predictors regarding CCA screening. Specifically, interviews were conducted to identify factors that would increase the effectiveness of community-based educational messages and materials in order to 1) increase the proportion of college-age VA women who obtain Pap tests on a regular basis and 2) ultimately reduce mortality from CCA among VA women. Findings from this study indicate that higher education, knowledge about CCA, and access to health insurance do not necessarily lead to adherence to recommended screening practices. Social and cultural factors proved critical in determining the attitudes and behaviors of the women. Future research on the generalizability of these preliminary findings is necessary to develop interventions for this often overlooked population.

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D-023

COMMUNICATING ABOUT CLINICAL TRIALS: BRINGING THE CIS TO THE UNDERSERVED

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BACKGROUND: Approximately 20 % of adult cancer patients are medically eligible to participate in cancer clinical trials (CCT), but only 2.5-9 % do so. Accrual is even lower for minority and medically underserved populations. In order to address information disparities underlying CCT decision-making, this study aimed to: 1) assess and adapt (for low literacy and diverse cultures) current National Cancer Institute Cancer Information Service (CIS) practices regarding CCT information; and 2) pilot test the adapted CIS protocol. **METHODS:** We conducted in-person qualitative interviews with CIS Information Specialists (IS) (N=6), and “prompted calls” (calls to the CIS from patients recruited to pose their own questions regarding clinical trials) and follow-up interviews with patients (N=23) and IS (N=23). All calls and interviews were transcribed, coded and analyzed according to standard anthropologic methods. These data informed the development of an adapted protocol which was pilot-tested with English- and Spanish-speaking public hospital patients (N=23) in a second round of “prompted calls.” A baseline and follow-up survey assessed information-seeking efficacy and satisfaction with the CIS. **RESULTS:** The adapted protocol emphasized relationship-building, CCT-specific assessment, CCT teaching, CCT search, verifying comprehension, coaching in question asking, closing summary, and simplification of follow-up information. Pilot findings show an increase in confidence in finding CCT information and high levels of satisfaction with the call and the IS. **CONCLUSIONS:** The CIS is well positioned to play a supportive role in CCT information provision for medically underserved public hospital patients. A large-scale randomized trial is warranted to examine protocol efficacy.

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D-024

PARENT AND PEER SOCIAL SUPPORT FOR THE HEALTH BEHAVIORS OF ADOLESCENTS RESIDING IN HAWAII: THE HEALTH ACTION AND RESEARCH TRAINING (HART) PROJECT

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Childhood obesity has significantly increased amongst youth in the United States and has become a major health concern in the state of Hawaii. Obesity is an outcome of an energy imbalance, which is largely a result of behavioral and environmental factors that contribute to one's physical activity and nutritional choices. The current study objective was to describe the parental and peer influences on ethnically diverse adolescents' physical activity, sedentary behavior, and nutritional habits. Descriptive data were collected during school via surveys and corresponding focus groups. Participating high school students were also trained in research methods, and conducted student-led interviews with his/her parent about health, health behavior, and parent's perceived influence. Participating adolescents (N=42) were 86 % female, 86 % Filipino, and had a mean age of 16.5 (SD=0.6). Participating parents (N=31) were 77 % female, 82 % Filipino with a mean age of 45.9 (SD=6.9). Results demonstrated that participating adolescents were more likely to be sedentary with their parents and more physically active with their peers. However, adolescents reported eating more junk foods with peers compared to their parents. Implications The limited physical activity and sedentary behaviors shared with parents and unhealthy food options shared with peers should be considered in future intervention development. Further research is required to determine the contribution of parental and peer social support in determining minority adolescents' multiple health behavior. This study serves as a foundation for future research, leading to the development, implementation, and evaluation of health promotion strategies that would benefit adolescents with similar backgrounds.

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D-025

A BEHAVIORAL PATHWAY ANALYSIS FOR HEPATITIS B SCREENING AMONG ASIAN AMERICANS

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Background: Application of behavioral theory in understanding hepatitis B virus (HBV) screening behavior is scarce. This study examined the utility of an expanded Theory of Planned Behavior (TPB) to understand the behavior and whether TPB constructs mediate the influence of background factors to the behavior among Asian Americans (AAs).

Methodology: The baseline data of the Maryland Asian American Liver Cancer Education Program (n=877) was used for structural equation model (SEM) analyses with the TPB framework. Subjective norm, self-efficacy, and descriptive norm were latent variables. Model 1 included the TPB classic constructs whereas Model 2 added descriptive norm. Model 3 examined the mediation effects of the TPB constructs between background factors (e.g. educational attainment, the proportion of life in U.S., the family history, and knowledge on HBV transmission mode) and HBV screening. Mplus version 6.0 and Stata version 11 were used for analyses.

Results: Three-factor measurement model showed a good model fit (RMEA=0.063, CFI=0.996, TLF=0.994, WMRR=0.868). Model 1 showed that only subjective norm was predictive (probit coefficient, $\gamma=0.216$, $p<0.001$) with a good model fit (RMSEA=0.084, CFI=0.994, TLI=0.991, WRMR=0.898). Model 2 found subjective and descriptive norms were predictive ($\gamma=0.205$, $\gamma=0.396$, respectively, $p<0.001$ for both) with a good model fit. Inclusion of descriptive norm in Model 2 explained more variance of HBV screening (14.6 %) than Model 1. The TPB constructs partially mediated the effects of background factors (0.5 to 30 %) with the largest mediated effect of the HBV knowledge (Model 3).

Conclusion: Inclusion of descriptive norm improved predictability of the TPB model for HBV screening among AAs. Higher level of descriptive and subjective norms is likely to increase propensity for HBV screening behavior. The path analysis highlighted importance of the HBV knowledge. A combination of norm- and knowledge based interventions should be considered.

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D-026

SHARED DECISION MAKING (SDM) PREVALENCE FOR MAMMOGRAPHY SCREENING AMONG WOMEN AGED 40 TO 49 YEARS: THE 2011-12 HEALTH INFORMATION NATIONAL TRENDS SURVEY (HINTS4)

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Background: The U.S. Preventive Services Task Force's (USPSTF) 2009 guideline on breast cancer screening recommends average risk women aged 40-49 years make their own decisions about mammography screening by discussing benefits and harms with their physicians. Little surveillance has examined how this recommendation has been translated into clinical practice. Objective: To examine population-level prevalence of SDM for mammography among women aged 40-49 years and to identify factors associated with SDM. Methods: We analyzed HINTS4 data collected between October 2011 and February 2012. One SDM item asked respondents if their physicians ever told them they could choose whether to have a mammogram. Women without prior breast cancer were included. Analyses examined whether prevalence of SDM for mammography differed across age groups (40-49, 50-59, 60-69, 70-74). Among women aged 40-49, a weighted multivariable logistic regression model assessed associations between report of SDM and race/ethnicity, educational attainment, marital status, access to a regular physician, patient information-seeking, perceptions about guidelines, and urban/rural residency. Results: Among 2,304 female respondents in HINTS, 402 were 40-49 years without a history of breast cancer. Of these, 44.9 % reported SDM for mammography (95 % CI: 38.8 % to 51.3 %). The population-level prevalence of SDM for mammography in women of aged 40 to 49 was not significantly higher than among women aged 50+ (F(2.89, 3856.95)=0.65, $p=0.57$). Being married and reporting urban residency were significant factors for SDM regarding mammography among women in their forties (OR: 1.74, 95 % CI: 1.05-2.88; OR: 2.46, 95 % CI: 1.16 - 5.24). Conclusion: The USPSTF's recommendation of SDM for mammography was not reflected by greater prevalence of SDM among women in their 40s. Place of residence and marital status were stronger determinants of SDM for mammography in women in this age group.

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D-027

MOTHER TO CHILD RISK COMMUNICATION ABOUT BREAST CANCER OR MELANOMA

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Objective: To understand the factors motivating discussions about cancer risk within families, this study examined the communication between a mother who had either breast cancer or melanoma and her adult children.

Methods: Sequential and independent interviews with the mother were followed by separately interviewing the adult child, ages 18 to 50. The structured 10 minute telephone interview consisted of 27 items concerning mothers' perceptions of the child's cancer risk, familial relationships, mothers' recommendations for early detection, and demographic information. The children answered similar questions.

Results: Mothers with breast cancer and a family history of breast cancer were more likely to tell their daughters to have genetic testing than mothers with melanoma and a family history of melanoma (Fisher's exact test $p=0.0123$). Melanoma (80 %) and breast cancer pairs (78 %) were similar in openly discussing health matters. Children of melanoma mothers performed skin self-examination (30 %) or had a dermatologist examination (48 %). Daughters of breast cancer mothers performed breast self-examination (66 %), and had mammograms (58 %). Thus, children of melanoma mothers were significantly more likely to take action to detect cancer earlier than recommended guidelines for the general population than children of breast cancer survivors. (Fisher's exact test, $p=0.003$) There were no significant demographic differences between the melanoma pairs (n=50) and breast cancer pairs (n=50). Conclusion: Knowledge of family history and preventative measures, including genetic testing were communicated by breast cancer mothers to their daughters more than by melanoma mothers. Children of mothers with melanoma and breast cancer, who had an open discussion of health matters, took action to detect cancer. Communication between family members can be an effective way of providing information relating to cancer risk and the appropriate primary and secondary preventative measures.

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D-028

FACTORS AFFECTING PERCEIVED PROSTATE CANCER RISK, BENEFITS OF SCREENING AND THE UPTAKE OF A PSA TEST IN HIGH RISK MEN: A COMPARISON OF US AND UK COHORTS

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Purpose: This study combined perspectives from the health belief model and new institutional theory to examine whether health service contextual differences moderate the relationship between perceived prostate cancer risk, perceived benefits of having a PSA test, and PSA uptake in a high risk cohort.

Methods: The participants were 150 US and 122 UK white males, aged 35–74, identified by first-degree relatives with prostate cancer. Multivariate logistic regression was used to test for associations between health service context and individual perceptions of prostate cancer risk and benefits of PSA testing. Logistic regression tested for associations between perceived risk and PSA benefits and PSA uptake. Interaction terms for health service context and perceived risk and benefits were also included in the model. The probability of familywise error in the models was reduced using the Bonferroni correction. Socio-demographic variables and family history of prostate cancer were control variables.

Results: US men who strongly believed in the benefits of PSA testing had over five times greater odds of PSA uptake compared to UK men who felt just as strongly about the test (OR 5.32, $p=0.014$). Increased years of education, more family members with the disease, and greater perceived susceptibility were associated with higher odds of perceived risk. Risk perception decreased with age. Knowledge of PSA testing efficacy was associated with greater odds of perceiving a benefit from screening.

Conclusions: The findings suggest that health service contextual differences moderate the relationship between individual beliefs and PSA uptake and may influence prostate cancer screening behavior in high-risk men.

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D-029

YOUNG WOMEN WITH BREAST CANCER: NEEDS AND POTENTIAL INTERVENTIONS

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Background: In the United States, over 12,000 women under 40 are diagnosed with invasive breast cancer each year, another 2000 are diagnosed with noninvasive disease. Young women with breast cancer are known to suffer high levels of distress both at diagnosis and afterwards. Little recent research has focused on which issues are unique and most pressing, and which might be amenable to intervention, particularly when interfacing with the medical team. We conducted focus groups to explore areas of concern and suggestions for improvement.

Methods: English-speaking women who had been treated or involved in research at Dana-Farber Cancer Institute for stage 1-3a breast cancer at 18–42 years old were invited to participate. A trained moderator led four groups using a semi-structured interview guide. Each 90 minute session was audio-recorded. A code book was developed by examining transcripts to identify themes. All transcripts were coded using thematic content analysis with NVivo software, and initial codes were classified into broader categories.

Results: A total of thirty-six women participated. Three major themes emerged: 1) the impact of being diagnosed with cancer at a young age, feeling isolated and different from other breast cancer patients; 2) the unique challenges they faced transitioning into the survivorship period; 3) their desire for assistance and potential interventions including: connections with other patients of a similar age, professional assistance with coordinating their medical care and navigating the health care system, lists of appropriate health care providers including psychotherapists, and print or online materials describing pertinent psychosocial and medical issues and recommendations for management.

Conclusion: Young women with breast cancer have unmet needs regarding psychosocial support, understanding treatment options, managing symptoms, and transitioning into survivorship. Future research is warranted to develop effective interventions that provide psychosocial assistance for this population.

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D-030

WOMEN'S COMPREHENSION OF BREAST CANCER GENOMIC TEST RESULTS: IMPLICATIONS FOR INFORMED TREATMENT DECISION-MAKING

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Background: Patient-provider communication is an important component of informed decision-making, yet relatively little research has examined how well patients understand genomic testing for breast cancer (BC) treatment decisions. As part of a larger study to evaluate the impact of Oncotype DX[®] test results on women's treatment decisions, we explored patient self-reported recall and understanding of provider discussion related to genomic test results among patients who reported having this discussion with their provider. **Methods:** Female breast cancer patients at Moffitt Cancer Center who had Oncotype DX[®] testing between December 2004 and January 2009 were mailed a survey. This survey included 3 items to evaluate their recall and understanding of provider discussion about BC recurrence risk, as well as comprehension about treatment choice based on Oncotype DX[®] (n=130).

Results: Of the 64 respondents, 52 reported their doctor discussed the chance of BC recurrence based on Oncotype DX[®]. When compared to Recurrence Scores (RS) in medical records, most participants (69 %) accurately recalled their risk within 5 percentage points and reported they understood their chance of recurrence "very well" (52 %) or "completely" (21 %). Respondents reported they understood what their doctor told them about choosing their BC treatment based on Oncotype DX[®] "very well" (64 %) or "completely" (18 %).

Conclusions: A relatively small percentage (~19 %) of patients reported their provider did not discuss recurrence risk based on Oncotype DX[®] test results. Among those who reported this discussion, most accurately recalled their RS and rated their understanding of RS and implications for treatment positively. This exploratory study suggests the majority of oncologists are engaging in discussions that facilitate patient understanding of RS and may serve to promote informed decision-making based on Oncotype DX[®] results.

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D-031

PATIENT ATTITUDES ABOUT INTRODUCING HPV TESTING INTO WELL-WOMAN EXAMS AND EXTENDING PAP INTERVALS TO 3 YEARS: FINDINGS FROM CDC'S CERVICAL CANCER (CX3) STUDY

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Background: Despite recent guidelines that women be screened for cervical cancer with both Pap and Human Papilloma Virus (HPV) tests (co-testing) and that intervals between screenings with normal results be extended to 3 years, clinical practice has been slow to change. Patient attitudes and resistance are potential contributing factors. In the Cx3 Study, which introduced HPV co-testing into Federally Qualified Health Centers across Illinois, we surveyed patients about adding HPV testing to well-woman exams and extending Pap testing intervals to 3 years.

Method: We analyzed data from 984 women seen at 1 of 15 clinics participating in the Cx3 Study. Participants completed a survey before their visit. The survey assessed health history, knowledge about HPV and Pap testing, attitudes about HPV testing and extending screening intervals, and demographics.

Results: The majority reported annual Pap testing (60 %), while only 24 % reported following a 2–3 year screening interval. While 80 % had heard of HPV, few demonstrated an understanding of its etiology, prevalence, and clinical implications. Although participants strongly preferred co-testing over Pap testing alone, 60 % indicated they would not wait 3 years to be tested again if their physician recommended it. Unfavorable attitudes about extending screening intervals were prevalent, including beliefs that it was bad (53 %), worrying (60 %), and foolish (62 %).

Conclusion: While women were generally positive about adding HPV co-testing to their routine exam, they did not understand that extending Pap screening intervals beyond 1 year could be safe with the introduction of HPV co-testing. In this session, we highlight patient characteristics associated with negative beliefs about extending screening intervals and discuss the implications of our findings for intervention.

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D-032

ACCURACY OF INFORMATION RECALLED BY PATIENTS AND RELATIVES FOLLOWING GENETIC COUNSELING ABOUT HEREDITARY BREAST AND OVARIAN CANCER

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Background: It is important that accurate information about a genetic susceptibility to cancer is shared within families to enable relatives to make informed decisions about genetic testing, screening and risk reducing measures. Genetics clinicians play a key role in encouraging and facilitating family communication, yet little is known about the accuracy of the information that is passed on to relatives by index patients. This observational study aimed to investigate the accuracy of information about genetics and hereditary breast and ovarian cancer recalled by patients and relatives and whether accuracy amongst relatives improved when information was provided directly by genetics clinicians.

Methods: Semi-structured interviews about genetic test results consultations with 10 patients with breast or ovarian cancer and 22 of their relatives were audio-recorded and transcribed. The information provided in the consultation was tracked through the families and coded for accuracy. Accuracy was analysed using the Wilcoxon Signed Ranks test. Sources of the information were identified from the transcripts and tested using a Spearman's rank order correlation coefficient.

Results: Relatives made significantly more inaccuracies than patients ($p=0.005$). Patients and relatives made significantly more inaccuracies about hereditary cancer than genetics issues ($p=0.017$). Relatives in families where information was provided solely by the patient made significantly more inaccuracies than those where information was provided by the genetics clinician ($p=0.001$). **Conclusions:** Patients do not always pass on accurate information about a genetic susceptibility to cancer to their relatives, particularly about hereditary cancer issues. Accuracy amongst relatives is likely to be improved if targeted information is provided for relatives by the genetics clinician.

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D-033

TREATMENT DECISION MAKING IN PAPILLARY MICROCARCINOMA PATIENTS AND THEIR SIGNIFICANT OTHERS

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Over the past several decades the diagnosis of thyroid cancer has increased steadily. A large portion of this increase may be due to the use of improved imaging studies that detect small thyroid nodules and lead to the diagnosis of papillary microcarcinoma (PMC), a small disease (≤ 1 cm) with slow progression. Due to PMC's low risk, active surveillance may be an attractive treatment option instead of immediate surgery. While PMC patients in Japan have accepted surveillance in clinical trials, it remains unclear how accepted this approach will be in the U.S. In order to explore decision making processes for treatment of PMC, we conducted individual and group interviews with PMC patients and their significant others. Participants included 12 patients (4 surgery, 8 surveillance; 91 % female) and 6 significant others (100 % male). Transcripts were analyzed using inductive thematic analysis. The active surveillance subgroup engaged in a detailed decision-making process that valued the function and role of the thyroid. They were hesitant to remove a vital gland and become reliant on medication. A consideration of the side effects of medication and life after surgery, without a thyroid, were influential factors in their decision to choose surveillance. They viewed PMC as indolent and felt they could elect surgery if and when it is necessary. Alternatively, the surgery subgroup focused on cancer, with a decision-making process driven by an emotional component of fear and anxiety. The desire to physically remove the disease was a prominent factor. This subgroup felt they would need surgery at some point and with active surveillance the disease would progress. They tended to take a more passive role, citing physicians' advice and opinion as the most influential factor in their decision. Developing an understanding of perceptions and influential factors impacting PMC treatment decisions is crucial toward meeting the informational needs of patients and their significant others.

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D-034

INFLUENCE OF BODY IMAGE ON INTENTIONS FOR PROPHYLACTIC MASTECTOMY

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Purpose: Women with a strong family history of breast and/or ovarian cancers face numerous difficult and anxiety-provoking decisions, including whether to pursue risk-reducing surgery, such as prophylactic mastectomy (PM). The purpose of this study was to determine if body image influences intentions for PM in women at high-risk for breast and/or ovarian cancer with a previous diagnosis of cancer (affected) and without a previous diagnosis of cancer (unaffected). **Method:** Seventy-nine (Age $X=48.1$, $SD=11.5$; 99 % Caucasian) women at high-risk for breast and/or ovarian cancer who already underwent genetic counseling and/or testing for BRCA1/2 mutations were interviewed. Questionnaires measuring appearance evaluation and orientation, intrusive ideation, perceived risk of breast cancer, intentions for PM, pros and cons of PM were administered. **Results:** A small significant difference was found between affected and unaffected woman's intentions for PM, with more unaffected women considering undergoing a PM. We found a non-significant negative trend between appearance orientation with intentions for PM in unaffected women ($r=-0.281$, $p=0.09$). Age was an independent predictor of PM in the whole sample (odds ratio [OR]=1.60; 95 % confidence interval [CI], 1.17–2.20; $p=0.003$). Ratings of pros of PM was an independent predictor of intentions for PM in the whole sample and unaffected women (OR=0.89; CI, 0.80–0.98; $p=0.02$), and (OR=1.60; CI, 1.17–2.20; $p=0.003$), respectively. **Conclusion:** Although body image did not significantly predict intentions for PM, we found that it had some influence on intentions for PM in women without a previous diagnosis of cancer. Numerous factors influence decision-making regarding PM in women at high-risk for breast and/or ovarian cancer. Tailoring interventions that inform and prepare these high-risk women for the specific physical and emotional changes of PM may be beneficial.

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D-035

SOCIAL AND ENVIRONMENTAL FACTORS RELATED TO HUMAN PAPILLOMAVIRUS (HPV) VACCINE INTENTION AMONG YOUNG ADULT FEMALES SURVIVING CHILDHOOD CANCER

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Human papillomavirus (HPV), the most common sexually transmitted infection (STI), is a cause of cervical and other cancers. Although HPV vaccination is available as primary cancer prevention, rate of vaccine uptake remains suboptimal. HPV vaccination is particularly important for survivors of childhood cancer, who are at increased risk for HPV-related complication. The purpose of this study is to identify social and environmental influences associated with vaccine intentions and decision-making among vaccine naïve survivors and healthy peers aged 18–26 years. Female survivors of childhood cancer ($N=72$; Mage=21.7 years) and an acquaintance control group ($N=53$; Mage=20.7 years) completed questionnaires addressing intentions to vaccinate along with social and environmental influences potentially linked to vaccination decision-making. A factor analysis revealed these influences loaded onto four factors: 1) historical medical factors (e.g., physician recommendation, family history of cancer or STI), 2) perceptions of friends (e.g., approval, friend vaccination), 3) parental recommendation, and 4) social systems (e.g., religious beliefs and school requirement). A 2x2 ANOVA (cancer/control x intention/no intention) was utilized to identify group differences and the impact of each type of influence. Main effects were significant for medical, parental, and social systems factors across groups. Young adults without clear intentions to vaccinate and those who were survivors of pediatric cancer each reported lower importance of medical influences ($F=7.16$, $p<.01$ and $F=6.04$, $p<.05$, respectively). Parental and systemic influences were significantly more salient among young adults with intentions to vaccinate versus those without intentions ($F=6.31$, $p<.05$ and $F=4.00$, $p<.05$, respectively). Findings suggest that social and environmental influences may impact decision-making in vaccine naïve adults intending to vaccinate.

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D-036

CORRELATES OF HUMAN PAPILLOMAVIRUS (HPV) KNOWLEDGE AMONG MOTHERS OF DAUGHTERS WITH AND WITHOUT CANCER HISTORY

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Genital human papillomavirus (HPV) is the most common sexually transmitted infection and is the cause of cervical and other HPV-related cancers. HPV vaccination is recommended for those as young as 9 years of age and has particular utility for childhood cancer survivors who may be immune compromised secondary to cancer treatment. Despite potential benefits, HPV vaccine remains underutilized and poor maternal HPV knowledge has been implicated as contributing to suboptimal vaccine uptake. The current study explored associations of HPV knowledge among of mothers (N=305; Mage=41.70, SDage=8.45) of girls between the ages of 9 and 17 (Mage=13.25, SDage=2.64) with and without cancer history. Mothers completed a paper-and-pencil questionnaire which included measures of HPV knowledge along with a variety of vaccine-related beliefs and attitudes. Independent sample t-tests revealed that demographic factors, maternal health history, and beliefs regarding parental roles in HPV communications associated with maternal knowledge of HPV. Mothers of daughters with and without cancer history did not differ on HPV knowledge, but demographically, mothers who were younger, white, or had a household income of over \$60,000 annually had greater HPV knowledge ($p < .01$). In regard to personal health factors, self-reported maternal history of HPV (both independently and in combination with reported cervical cancer diagnosis) associated with greater HPV knowledge ($p \leq .02$), whereas history of cervical cancer alone did not. Finally, mothers who believe that parents should be included in communicating HPV information to their daughter had greater HPV knowledge ($p < .01$). As increased maternal HPV knowledge predicts vaccine uptake, these findings suggest that subgroups of mothers have limited HPV-related knowledge and should be targeted for educational interventions.

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D-038

PREVALENCE OF MULTIPLE HEALTH RISK FACTORS AMONG PATIENTS ATTENDING AN ABORIGINAL MEDICAL SERVICE

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Introduction: Indigenous Australians experience significantly poorer health than other Australians. Chronic diseases are a key contributor to this health gap, and are causally linked to a set of modifiable behavioural risk factors such as smoking, high body mass, poor diet and physical inactivity. The disproportionately high prevalence of these risk factors among Indigenous Australians is well established. The tendency for individuals to exhibit more than one (or multiple) health risk behaviours at any one time is also well established. Yet the prevalence of multiple risk factors among Indigenous Australians has rarely been examined, with no comprehensive data available. Aims: To examine, using a novel touchscreen survey, the prevalence of multiple risk factors (including smoking, high body mass, inadequate physical activity, inadequate fruit and vegetable consumption, excess alcohol consumption, illicit drug use, and depression) among Indigenous patients attending an Aboriginal Medical Service (AMS). Methods: Adult patients attending an AMS completed a health risk survey on a touch screen laptop computer while waiting for their General Practice appointment. Weight and height were measured while all other risk factors were self reported. Results: A total of 185 participants completed the survey. Approximately 70 % of the sample were of Aboriginal or Torres Strait Islander origin. All participants had at least one, and over 95 % of participants had multiple (two or more) risk factors. One-fifth of those sampled had five or more of those risk factors assessed. Conclusion: The occurrence of multiple risk factors among Indigenous Australians is high, meaning many Indigenous Australians are at a high risk of developing cardiovascular disease and other health problems.

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D-039

COMBINED EFFECTS OF HEALTHY LIFESTYLE FACTORS ON CARDIOMETABOLIC HEALTH RISK SCORE CHANGES

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Although individual lifestyle factors associate with cardiometabolic disease (CMD) outcomes, the combined effects of lifestyle on CMD risk changes in adulthood and sex differences in these effects remain uncertain.

We compared CMD risk changes in 431 parent-participants in the NHLBI Lipid Research Clinics (LRC)'s Princeton School (1973-8) and Princeton Follow-up Studies (PFS) (1998-2003), at mean ages 39 +/-6.5 and 66 +/- 6.5 respectively, with healthy lifestyle practices at PFS. Risk scores combined BMI, blood pressure, glucose, and lipids measured with standard protocols. We assessed healthy lifestyle factors including fruit and vegetable intake, smoking, alcoholic consumption, TV viewing, physical activity, and derived a combined healthy lifestyle score. Multivariate logistic regression analyses and the Wald test assessed overall changes and sex-differences in associations.

Healthy lifestyle scores at PFS were associated with smaller increases in CMD risk (OR=0.71; 95 % CI, 0.57-0.88) from LRC to PFS, adjusting for age, race, and sex. Each additional healthy lifestyle factor associated with smaller increases (p-trend=0.003 overall and 0.031 (men) and 0.050 (women)). Compared with participants without any healthy lifestyle practices, CMD risk changes were 48 % less in subjects with one healthy lifestyle factor (OR=0.52; 95 % CI: 0.29-0.91), 60 % less in subjects with two healthy lifestyle factors (95 % CI: 0.22-0.75), and 61 % less in subjects with three or more healthy lifestyle factors (95 % CI: 0.18-0.83). Corresponding ORs were 0.40 (95 % CI: 0.17-0.93), 0.36 (95 % CI: 0.15-0.88) and 0.34 (95 % CI: 0.12-0.95) for men and 0.62 (95 % CI: 0.28-1.37), 0.45 (95 % CI: 0.19-1.05) and 0.43 (95 % CI: 0.14-1.33) for women. No sex-differences were observed ($p=0.96$). Healthy lifestyle factors were associated with smaller changes in CMD risk scores in both men and women. Maintaining or adopting healthy lifestyle behaviors, even later in life, can be beneficial for cardiometabolic health.

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D-040

THE BUFFERING EFFECTS OF SOCIAL SUPPORT ON SOCIOECONOMIC DISADVANTAGE IN PREDICTING BLOOD PRESSURE IN UNDERSERVED AFRICAN AMERICAN ADULTS

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High rates of hypertension in African Americans have been linked to socioeconomic disadvantage. Stress-buffering theory posits that social support may attenuate the negative effects of socioeconomic stress on health, and this buffering effect may be most prominent for more disadvantaged individuals. The purpose of this study was to assess whether family, friend, and significant other social supports collectively buffered the negative relation of income and blood pressure in African American adults participating in the Positive Action for Today's Health (PATH) trial. The PATH trial aimed to assess the efficacy of an environmental intervention for increasing walking in underserved (low income, high crime) communities. In three communities matched demographically, a subsample of African American adults (N=204) provided measures of perceived social support, annual household income, and blood pressure (BP). Perceived social support was assessed with the Multidimensional Scale of Perceived Social Support, and average BP was obtained from 3 assessments based on standard clinical guidelines. The sample had a mean age of 52.8 years (SD=11.3), was predominantly female (66 %), and had a mean systolic BP of 129.2 mmHg and a mean diastolic BP of 77.8 mmHg. After controlling for age, sex, and BMI, regression analyses indicated that perceived social support predicted both systolic ($\beta = -.141, p < .05$) and diastolic ($\beta = -.178, p = .01$) BP, though income was not related to either and the overall model for systolic BP was not significant, $F(6, 197) = 1.81, p = .10$. Perceived social support did, however, interact with income to predict systolic ($\beta = 2.11, p = .04$) and diastolic ($\beta = 2.09, p = .04$) BP, with higher support related to lower BP for low- but not high-income individuals. Results showed a buffering effect of social support in attenuating the negative impact of lower income on BP, in an underserved population. Interventions aiming to address the effects of stress on hypertension in underserved communities should incorporate components of social support.

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D-041

ELEVATED BLOOD PRESSURE, LESS STRENUOUS EXERCISE AND HIGH SMOKING RATES AMONG YOUNG WOMEN WITH PTSD

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Posttraumatic stress disorder (PTSD) is associated with elevated risk for cardiovascular disease (CVD). However, little research has documented mechanisms by which PTSD might confer CVD risk in young women. The present study was conducted to examine whether resting blood pressure, exercise, and smoking are significantly different among young women with PTSD (n=18) compared to a group with depression (n=11) or no mental illness controls (n=22). Women with no history of chronic medical illness (M±SD age=30±8) were recruited from mental health clinics and the general community. There were not significant group differences in age, family income, or ethnicity. Systolic blood pressure (SBP) was higher in the PTSD group than in the control group (p<.001) and depression group (p<.05). Diastolic blood pressure (DBP) levels in the PTSD group were higher than in the control group (p<.05), but were not significantly different than the depression group. The PTSD group reported lower levels of strenuous (but not moderate) exercise relative to the control group (p<.05) and did not differ significantly from the depression group. The depression and control groups did not differ significantly in SBP, DBP, or exercise. Smoking rates were high and not significantly different between the PTSD (39 %) and depression groups (46 %); both the PTSD and depression groups had a significantly higher smoking rate (p<.01) than the control group (5 %). These findings provide preliminary evidence that PTSD is associated with CVD risk factors for women early in life, in the absence of medical illness.

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D-042

COGNITIVE BEHAVIORAL THERAPY FOR INSOMNIA IN WOMEN WITH CARDIOVASCULAR DISEASE

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Thirteen to forty-four percent of patients with coronary heart disease report co-morbid insomnia (Bankier et al., 2004; Taylor et al., 2007) and population studies show that chronic sleep disturbances are associated with increased risk of hypertension, coronary artery disease, acute myocardial infarction, and cardiovascular disease (CVD) in general (Grandner et al., 2011; Laugsand et al., 2011). The current study is a pilot trial of Cognitive Behavioral Therapy for Insomnia (CBTI) in a specialty cardiovascular clinic for women. This is an open 8-week trial of CBTi that involves education about sleep, changing daytime and nighttime behaviors, and examining thoughts that disrupt sleep. Participants include women seen in the Women's Heart Health clinic who have comorbid insomnia, as diagnosed by the clinician administered Duke Structured Interview Schedule for DSM-IV-TR. At present, 10 participants have completed their course of treatment and the pilot study is ongoing. Preliminary analyses (paired t-tests) of sleep data indicate significant improvement in self-reported insomnia symptoms (p<.001), fewer minutes awake during the night (p<.05) and better sleep efficiency (p<.05). Pre- and post-treatment mean differences indicate a non-significant trend towards decreasing weight and blood pressure. Additional results and implications will be discussed, including feasibility of recruitment, enrollment, and treatment of behavioral health problems in this specialty medical setting.

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D-043

PROJECT STRENGTH (SPIRITUAL GUIDE TO HYPERTENSION): USING SPIRITUAL VIGNETTES AND PEER SUPPORT TO INCREASE MEDICATION ADHERENCE AMONG HYPERTENSIVE AFRICAN AMERICAN CHURCH MEMBERS

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Hypertension is a major public health problem for African Americans. Increasing blood pressure control requires a comprehensive approach that includes patient adherence to their antihypertensive medications. Unfortunately, it is African Americans who are most likely to be non-adherent to their antihypertensives. Innovative approaches that are sensitive to the unique issues of hypertensive African Americans are critical to addressing hypertension-related disparities. Our previous research underscored the importance of hypertensive African American spiritual beliefs for their medication adherence. Indeed, faith-based institutions are increasingly recognized for the role they may play in improving the health status of the African American community. Thus, the objective of Project STrenGTH was to develop and pilot test a spiritually-based educational intervention to increase antihypertensive medication adherence among African American church members. In partnership with an African Methodist Episcopal Church, we developed and implemented Project STrenGTH for 60 hypertensive church members. Working with the church's pastor, communication director and representatives from the Church Health Commission, we developed the faith-based intervention components which include: (1) an interactive curriculum that increases hypertension knowledge and medication adherence through the novel use of spiritual vignettes and (2) partnering participants with fellow church members for peer support. The study is ongoing and baseline data is reported. Participants are female (65.9 %), 68.0+9 years, and non-adherent (59.1 %). Findings from this study can be used to guide other researchers in dissemination and implementation of similar faith-based interventions.

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D-044

RACE-ETHNICITY MODERATES RELATIONSHIP BETWEEN DEPRESSIVE SYMPTOMS AND C-REACTIVE PROTEIN: ANALYSIS OF 2005-2010 NHANES DATA

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Although the link between depression and systemic inflammation is well established, few studies have examined potential moderators of this relationship or the components of depression (a multidimensional construct). Thus, our objective was to evaluate whether race-ethnicity moderates the relationship between depressive symptoms and C-reactive protein (CRP), an inflammatory marker predictive of cardiovascular disease, at both the construct and symptom levels. We analyzed data from 10,250 adults (mean age=44 years, 49 % female, 31 % Hispanic, 20 % African American, 49 % Caucasian) who participated in the National Health and Nutrition Examination Survey (NHANES) between 2005-2010. We excluded those with CRP≥10 mg/L or health conditions associated with inflammation. Depressive symptoms were assessed using the Patient Health Questionnaire-9 (PHQ-9), and serum CRP was quantified by latex-enhanced nephelometry. Regression models adjusted for age, sex, education, and diabetes revealed that the PHQ-9 total x race-ethnicity dummy variable 1 (Hispanic vs. Caucasian) interaction and the PHQ-9 total x race-ethnicity dummy variable 2 (African American vs. Caucasian) interaction were significant (both p=.01), which promoted stratified analyses. Among Hispanics, we did not observe any associations between the PHQ-9 total (B=.03, SEM=.04, p=.42) or item (all p's≥.15) scores and CRP. Among African Americans, the fatigue item was positively related to CRP (p=.04), although no associations were observed for PHQ-9 total (B=.01, SEM=.06, p=.91) or the other items (all p's≥.06). Among Caucasians, the PHQ-9 total (B=.19, SEM=.04, p<.01) and the anhedonia (p<.01), depressed mood (p=.02), sleep disturbance (p=.01), fatigue (p<.01), appetite disturbance (p<.01), failure (p=.04), and concentration problems (p=.04) items were all positively related to serum CRP. Our findings suggest that race-ethnicity moderates the relationship between depressive symptoms and CRP at both the construct and symptom levels and that Caucasians may be driving the depression-CRP relationship.

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D-045

DISTRESS SYMPTOMS, SOCIAL SUPPORT, AND HEALTH BEHAVIORS IN MEN AND WOMEN WITH CARDIOVASCULAR DISEASE

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We investigated the relationship between social support and health behaviors in men and women with cardiovascular disease (CVD), controlling for age and depressive symptoms. Depression and social support have each been shown to predict health behaviors in community based and CVD samples. Prior research in a community based sample supported a unique contribution of social support to health practices in women, but not men. We tested this unique contribution in a CVD sample.

Participants with CVD (n=188) completed a survey at the onset of cardiac rehabilitation that included the Beck Depression Inventory-II, measures of emotional social support (ESS) and tangible social support (TSS), and measures of fruit and vegetable consumption (F&V), red meat and high-fat food consumption (M&F), and mild and moderate exercise frequency (E).

A MANCOVA with age as a covariate indicated gender differences in F&V and M&F, but not E: women ate fruits and vegetables more often, and men ate red meat and high-fat foods more often. Regressions were run separately for males and females when predicting F&V and M&F, with age as a predictor in step 1, depressive symptoms in step 2, and ESS and TSS in step 3.

For F&V, age was a predictor for both men and women ($\beta=.31$ and $\beta=.33$, respectively). Depressive symptoms approached significance in predicting F&V in men only ($\beta=-.14$, $p<.10$). For M&F, age in step 1 ($\beta=-.30$) and depressive symptoms in step 2 ($\beta=.31$) were predictors for men, but not women. For E, age was not significant, but depressive symptoms were ($\beta=-.27$). For each analysis, no additional variance was explained when adding ESS and TSS as predictors in step 3.

Our results suggest a concurrent relationship between depressive symptoms and engagement in health behaviors among CVD patients, especially for men. We did not find that social support is associated with health behaviors. These results highlight the importance of identifying depressive symptoms in males who may be at the highest risk of not engaging in lifestyle changes that reduce risk for recurrence.

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D-046

EFFECTS OF YOGA PRACTICE ON 24-HOUR AMBULATORY BLOOD PRESSURE: CASE REPORT IN A SUBJECT WITH PREHYPERTENSION

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Ambulatory blood pressure (ABP) is more strongly related to target organ damage than clinical blood pressure (BP) measurements. The acute and chronic effects of yoga training on ABP have not been well studied. A single-subject longitudinal design was used to investigate the effects of acute bouts of yoga and chronic yoga training on ABP in a 26 year-old non-smoking, sedentary male who met the criteria for prehypertension. The subject completed 9 weeks of Hatha yoga training (27 sessions, 90 min per session). ABP was measured for 24 hours on four occasions prior to yoga training, the last measurement was used as a baseline comparison measure. ABP measurements began at 6:30 pm on Mondays during weeks 1, 2, 5, 6, & 9 of training, and again 1 week post-yoga training (i.e., week 10). Acute ABP measurements began immediately after a yoga training bout on weeks 1, 5, & 9. Control ABP measurements were taken at least 48 hours after a yoga bout, during weeks 2, 6, & 10. The average ABP of the subject decreased from baseline of 137/80 to 129/73 following the first yoga training session, representing a 6 % drop in systolic and 9 % drop in diastolic ABP. No further reduction in average 24-hour ABP relative to baseline was seen following the first yoga session. The subject was classified as a "dipper," a reduction in BP > 10 % during sleep, and his nocturnal "dipping" was greater following yoga bouts than control periods. Average sleeping systolic ABP was 15 mm Hg (13 %) and diastolic ABP was 6 mm Hg (10 %) lower during weeks of yoga exercise as compared to non-exercise (baseline and control) weeks. The week 10 control ABP measurement did not demonstrate this characteristic BP "dipping," and the subject reported he was unable to sleep. Resting BP changed from 129/82 (pre-training) to 122/84 (post-training), representing a 5 % decrease in systolic BP. Yoga training had only the acute effect of increased dipping of sleeping ABP during the 24 hours following practice. Yoga training had no long-term effect on the ABP of the subject, but did lower resting systolic BP.

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D-047

ASSESSMENT OF THE QUALITY OF EXISTING EDUCATION TOOLS ON SUDDEN CARDIAC ARREST

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Background. Modern-day treatment options for those at risk for sudden cardiac arrest (SCA) are complex and must be explained to patients in clear and relevant ways. The purpose of the present research was to evaluate existing SCA and implantable cardioverter defibrillator (ICD) education tools to identify areas for potential improvement.

Methods and Results: We utilized a IPDAS 2005 standards to assess specific domains of content, development, and effectiveness of 18 available SCA and ICD education tools. The diverse review panel included: 2 electrophysiologists, 2 general cardiologists, a cardiac psychologist, a health services researcher, and a patient advocate. Of the 18 education tools, 4 were rated as "good, may need revisions, but sufficient for use," 12 were rated as "marginal, needs revision prior to use and 2 were rated poor, inadequate for use." None of the tools were rated as having "very good" or "excellent" quality.

Conclusions: The quality and completeness of existing tools for SCA and ICD education tools appears to vary, but the tools assessed in the study were generally well-developed, with appropriate content, and appear to be generally effective. However, compared to emerging standards in informed medical decision-making, most tools were generally below current standards. While some tools were relatively superior and had items rated as having "very good" quality, none of the measures were scored in the "very good" or "excellent" range on content, development, or effectiveness. Revision of current education tools or development of new educational tools is warranted. Using this information, the aim is to create educational tools and assess their effect on decision making, quality of life, decisional satisfaction, and psychological distress.

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D-049

ARE STRESS MANAGEMENT INTERVENTIONS EFFECTIVE IN IMPROVING GLYCEMIC CONTROL IN ADULTS WITH TYPE 2 DIABETES? A SYSTEMATIC REVIEW AND META-ANALYSIS

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Background: Diabetes is a metabolic disturbance associated with defects in insulin production, action, or both that result in high levels of blood glucose. Studies indicate glycemic control is affected by stress. Stress management techniques, such as social support, adaptive coping, and relaxation, can diminish the negative effects of stress. The objective of this systematic review is to assess the efficacy of stress management interventions on long-term glycemic control as measured by glycosylated hemoglobin in adults with type 2 diabetes.

Methods: A search was performed in the following computerized databases: CINAHL, the Cochrane central register of controlled trials at the Cochrane Library, PsycInfo, PubMed, UMI Proquest Digital Dissertations, and Web of Science. Studies published between January 1, 1976 and December 31, 2011, were retrieved. 'Stress management intervention' was defined as: any method, activity or program focused on assisting people with type 2 diabetes in coping/managing stress using some kind of physical relaxation, meditation, and/or cognitive-behavioral-change technique.

Results: Database and hand searches identified 1,768 citations from which 22 studies met inclusion criteria; 13 were randomized controlled trials (RCTs) and 9 were quasi-experimental. Pooled results from the 22 studies enrolling 1,936 patients showed a statistically significant (p less than 0.00001) beneficial effect of stress management interventions on glycemic control (standardized mean difference was -0.28 ; 95 % CI: $[-0.37, -0.19]$). Among the pooled studies, there was significant heterogeneity ($I^2=62\%$). Restricting data analysis to RCTs resulted in disappearance of heterogeneity ($I^2=0\%$). When data were analyzed separately for the RCTs and quasi-experimental trials, the overall effect was still significant. Conclusion: Results from our meta-analysis showed that stress management interventions are helpful in improving long-term glycemic control in adult patients with type 2 diabetes.

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D-050

CHARACTERISTICS OF ADOLESCENTS WITH TYPE 1 DIABETES (T1D) ASSOCIATED WITH CAREGIVER STRESS

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Parental stress is a concern for youth with T1D as it has been found to be associated with poor outcomes for both youth and parents. This study explored the demographic, clinical, and psychosocial characteristics of adolescents (13–18 years) with T1D associated with parental stress and the longer term effects of specific stress domains. The Pediatric Inventory for Parents (PIP) assesses frequency and difficulty of stressful events related to child's chronic illness in four domains: communication (PIP-C; with family/healthcare team), medical care (PIP-M; assisting with regimen), emotional functioning (PIP-E; impact on parent's mood/sleep), and role function (PIP-R; impact on parent's career/family). Youth and parents (n=50) were given the PIP and a survey battery at baseline (BL); clinical variables were extracted from the youth's chart at BL and 2-years post. Youth age, sex, years diagnosed, parent education and race were not associated with the PIP. Those reporting a family income of \geq \$75 K had less stress across all domains than those $<$ \$75 K. Higher BL A1c and being on injections (versus insulin pump) were also associated with all domains. Youth resilience associated with PIP-M frequency and difficulty (r 's = $-.37$, $-.29$, p 's $<$.05), and diabetes-specific quality of life associated with frequency and difficulty of all domains (r 's = $-.28$ to $-.45$, p 's $<$.05). Youth depression also affected all domains except the PIP-M (r 's = $.29$ to $.34$, p 's $<$.05). Analysis of 2-year follow-up data showed that higher PIP-E and PIP-R associated with higher follow-up A1c (r 's ranged from $.35$ to $.36$, p 's $<$.05). Further, PIP-C, PIP-E, and PIP-R associated with a higher number of adverse events (DKA or severe hypoglycemia; r 's = $.32$ to $.52$, p 's $<$.05). In sum, personal characteristics of these youth were shown to affect parental stress levels, and parental stress levels were associated with the youth's longer-term outcomes. This study can help identify those most at risk for high stress with the goal to inform tailored interventions to reduce stress and improve outcomes in youth with T1D.

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D-051

LEVELS OF PROVIDER CARE AND HEALTH BEHAVIORS IN UNDERSERVED ADULTS WITH TYPE 2 DIABETES

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Diabetes self-management education (DSME) guidelines highlight a need to investigate levels of DSME across health providers in order to optimize approaches to patient care. This study aims to characterize the relationship between diabetes provider [general practitioner (GP), diabetes specialist (SP), no provider (NoP)], domains of self-care behavior (self-management, prevention) and participation in DSME with a diabetes educator. Ss were individuals with type 2 diabetes (DM) recruited from underserved diabetes settings in KY, a state below US average in medical outreach, high in behavioral risk factors and with elevated rates of DM and related comorbidities (N=234, 44 % African American, 36 % male, 88 % overweight or obese). 66.7 % of Ss endorsed having a GP as the main provider of their care (66.7 % of which received DSME), 23 % endorsed having a SP (83 % receiving DSME) and 10.3 % reported NP (54.2 % receiving DSME). Ss who visited an educator within the past 3 years had higher rates of lifestyle and programmatic physical activity (PDQ) regardless of whether they used insulin (U=5333.5, p =.02; U=5340.5, p =.01). Ss who used insulin and saw a SP had more frequent glucose testing (p =.036, .003) (SDSCA) than those receiving care from a GP or had NoP, and had higher medication adherence compared to those with NoP (p =.013; SDSCA). Ss in the GP group had higher diet knowledge skill scores (PDQ) than those with NoP (p =.049), though no group differences in diet self-care behavior were observed (SDSCA). Ss with NoP were more likely to smoke and had lower Diabetes Knowledge Test scores (p =.001, .014) than those with regular GP or DS providers (U=1187.5, p = .000; U=411.5, p =.002). Research is needed to investigate overlap and discrepancy between provider care type, DSME and specific patient health behaviors, including GP impact on patients' knowledge of DM self care and preventive care domains. Patients and providers may optimize DM care by seeking teAM-based care approaches in primary care settings, particularly those in low medical outreach settings.

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D-052

EDUCATION BEHAVIORAL COUNSELING TO FACILITATE TRANSITION TO SELF-MANAGEMENT OF MODERATE DIABETIC KIDNEY DISEASE-A SMART REVIEW

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Evidence suggests that good self-management (SM) in stage 3 Diabetic Kidney Disease is renoprotective. The study aims were to: (a) refine the Self-management and Resourceful Transition (SMaRT) behavioral-education-counseling intervention; (b) assess differences in disease burden, quality of life, and glycemic health between subjects in the intervention and attention-control groups; and (c) assess feasibility. Effective interventions actively engage the patient in goal setting, planning, information use, and draw upon behavioral theory. SMaRT uses computer assisted learning modules of five tailored segments with a review and scripted telephone counseling using motivational interviewing. Enrollment was from specialty clinics. Of 179 patients eligible, 20 did not meet inclusion, 88 declined, and 33 were excluded for other reasons. Of 38 randomized, 12 withdrew. Withdrawals were balanced across groups, leaving 13 subjects per group with reasons offered of too busy, moved, dialysis, and caregiver burden. Primary outcomes were A1C, Kidney Disease Quality of Life (burden, composites of physical health and mental health) and the Problem Areas in Diabetes. Intervention effects on the mean change from baseline to 3 month midpoint were assessed by ANCOVA models, age adjusted. No significant differences were found between groups. Effect sizes estimated by Eta2 were small. Program satisfaction per group did not differ, suggesting the control group was placebo unaware; equal satisfaction likely contributed to balanced missing data and withdrawals between groups. Participants were asked about 9 study related SM behaviors. Half in the intervention used 78 % or more behaviors as compared to a median of 56 % in the control, a potentially clinically-significant difference. Limitations were sample size and attrition. Intervention satisfaction suggests acceptability, and effects were in the predicted direction and potentially clinically meaningful.

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D-053

PARENT AND ADOLESCENT SELF-CONTROL IN MANAGING TYPE 1 DIABETES

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Management of type-1 diabetes (T1D) during adolescence is related to adolescent self-control (Hughes et al., in press). As adherence benefits from the involvement of the entire family system (Wysocki et al., 2008), this study explores how parental self-control may also be associated with T1D management. Parents with better self-control more efficaciously engage in instrumental and support behaviors with their children (Calkin et al., 1998), which have also been associated with improved T1D management (Berg et al., 2010). We hypothesized that poorer adolescent, mother, and father self-control would be associated with poorer metabolic control through increased reports of challenges with treatment adherence (i.e., how hard are adherence tasks) and decreased adherence. We also hypothesized that mother and father self-control would interact in explaining adolescent challenges with treatment adherence. Adolescents (n=136; M Age=13.5, 53 % female) diagnosed with T1D and their mothers and fathers completed the Brief Self Control Scale (Tangney et al., 2004). Adolescents completed the Self-Care Inventory (La Greca et al., 1990) and Treatment Adherence (challenges)-Peds QL-3.0 Diabetes Scale (Varni et al., 2003). Metabolic control was assessed through HbA1c from medical records. Structural equation modeling conducted in AMOS v18.0 in part supported our hypotheses (X2=7.25, p =.20; RMSEA=.042; CFI=.98; R2 challenges=.16; R2 adherence=.27; R2 HbA1c=.09). There was a significant indirect effect of teen self-control on HbA1c through adherence; this effect was partially mediated through challenges. There were significant indirect effects of mother and father self-control on adherence and HbA1c mediated through challenges. There was a significant direct effect of father self-control on HbA1c. Regression analyses found the interaction of mother and father self-control was associated with challenges; two parents high in self-control was particularly beneficial. These findings suggest the importance of understanding self-regulatory skills of the entire family system in studying T1D management.

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Meritorious Poster

D-054

SOCIOSTRUCTURAL, CULTURAL, AND PSYCHOLOGICAL FACTORS INFLUENCING EXERCISE COMPLIANCE IN TYPE 2 DIABETICS

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South America is expected to report the highest rates of type 2 diabetes (T2D) by 2025 in comparison to the US, Canada and Europe. Physical activity and maintaining a normal body weight can effectively prevent complications from T2D. However adherence to recommended diet and exercise plans remains a primary challenge for diabetics. The purpose of this research was to examine potential underlying factors such as cultural and related psychological factors that may influence exercise compliance among T2 diabetics in Chile. The bottom-up cultural research approach to instrument development was implemented resulting in the Cultural Beliefs about Exercise Compliance Scale. Guided by Betancourt's Integrating Model of Culture, Psychology, and Behavior, cross-sectional data from 397 diabetics were used to investigate the multivariate relations among population factors (SES, urban/rural residence), cultural beliefs about exercise (social-cultural inhibitors), psychological factors (exercise self-efficacy), and exercise compliance over the last 7 days. Structural equation causal modeling revealed that the hypothesized model fit the data well [CFI=.984, χ^2 (48, n=397)=69.61, $p=.02$, $\chi^2/df=1.45$, SRMR=.04, RMSEA=.034, 90 % CI (.01, .05)]. SES negatively influenced cultural beliefs about social-cultural inhibitors of exercise ($\beta=-.39$, $p<.001$), which in turn negatively influenced exercise self-efficacy ($\beta=-.21$, $p<.001$). Exercise self-efficacy had a direct positive influence on exercise adherence ($\beta=.43$, $p<.001$). Additionally, self-efficacy mediated the effect of cultural beliefs on exercise compliance (β indirect=-.09, $p=.001$). Findings highlight the importance of identifying cultural factors that may influence adherence behaviors for T2D. Additionally, results indicate the intermediary role that psychological factors play in explaining health behaviors among culturally diverse populations. Results are discussed in terms of their implications for the development of culturally appropriate research and interventions.

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D-055

DIABETES DISTRESS, DEPRESSIVE SYMPTOMS AND DIABETES CONTROL IN A SOUTHERN RURAL SAMPLE

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Diabetes distress and depression have previously been associated with diabetes control. We examined associations between both variables and diabetes control over time in a mostly black sample of patients recruited for a community-based trial in rural, southern Alabama. Participants were recruited through clinics and respondent-driven sampling. Face-to-face interviews assessed depression (PHQ-8) and diabetes distress (17-item DDS) and glycemic control (A1c) was assessed at baseline and 12 months. Of 424 participants, follow-up was completed on 360 (84.9 % retention). Mean age was 59, 75 % were female and 87 % were black. At baseline, 27 % had PHQ-8>10 (moderate depressive symptoms), 16 % had DDS>3 (moderate distress) and mean A1c was 8.0 %±2.0. Also at baseline, those with DDS>3 had higher A1c (8.8 % vs 7.8 %, $p<.001$) and those with PHQ-8>10 had nonsignificantly higher A1c (8.2 % vs 7.9 %, $p=.017$). At follow-up, A1c declined compared to baseline (mean change=-.06±1.50). Adjusted for baseline A1c, diabetes distress had a borderline significant association with change in A1c at follow-up ($p=0.06$) and those with DDS>3 had an increased A1c (+0.03) whereas those with DDS<3 had decreased A1c (-0.08). However, with adjustment for age, sex, and insulin use, these associations attenuated. PHQ-8 was not associated with change in A1c at follow-up in either unadjusted and adjusted analyses including diabetes distress. In this sample, neither diabetes distress nor depressive symptoms at baseline were associated with change in A1c at one year once patient characteristics were accounted for.

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D-056

THE ROLE OF RELIGION IN DIABETES MANAGEMENT AMONG MARRIED OLDER ADULTS

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INTRODUCTION: The way individuals cope with chronic illness varies. Married older individuals in particular, may cope through a combination of spousal support and religious mechanisms. Literature on this is limited and findings are contradictory, especially when observing the relationship between religiosity and diabetes management. The present study aimed to expand the literature available on the evaluation of the effects religion and spousal support play on diabetes management among married older diabetic individuals.

METHODS: The data used for the present study originates from the 2006 Health and Retirement Study (HRS). Participants were those 593 women and 615 men who self-reported having diabetes. The mean age was 74.8. Perceived Diabetic Control was evaluated with a self-report where the objective measure of control, HbA1c, was evaluated with biomarker data.

RESULTS: The results showed that neither Spousal Support nor Religious Salience was significantly related to diabetes management (perceived or actual control). There were observed gender differences in Religious Salience (males=4.84, females=5.36, $p<.001$) and Positive Spousal Support (males=3.19, females=3.02, $p<.001$), but none of the major hypotheses concerning diabetes management and religious salience or spousal support were validated by the results.

CONCLUSION: A major limitation of this study is that the measure scales administered had a somewhat restricted range. The impact of this sample being a U.S. population probability study sample, and not drawn from a medical clinic population, may provide a more accurate demonstration of these relationship for the adult diabetic population in general as compared to studies drawing from medical clinics.

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D-057

HAVING A TARGET FOR GLUCOSE CONTROL IS ASSOCIATED WITH BETTER DIABETES-SPECIFIC AND GENERAL COPING IN UNDERSERVED ADULTS WITH TYPE 2 DIABETES

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Self-monitoring of blood glucose (SMBG) is considered a cornerstone of diabetes care, particularly for insulin users. Unfortunately, many patients fail to test or test without considering goals despite findings that SMBG is most beneficial for BG control when patients and providers use it as a decision-making strategy consisting of comparing observed BG levels to BG goals and adjusting care accordingly. The vast majority of research has limited focus to frequency of SMBG thus limiting understanding of this process. The current study examines aspects of coping and diabetes factors in an underserved (19 % below poverty threshold; 43.7 % African-American), sample of men (39.5 %) and women with type 2 DM (N=252, 34.8 % using insulin). Those following a plan for BG targets (70 % were compared with those who did not have a plan (16 %) or were not sure (14 %). Measures of physical quality of life (QOL), diabetes knowledge, and beliefs about benefits of treatment did not differ between groups. SMBG frequency (SDSCA; $F=11.32$ $p<.001$), Mental QOL (SF-12; $F=8.03$ $p<.001$) and dispositional optimism (LOT; $F=4.51$ $p=.012$) were all higher in those who had a plan than in other groups. Diabetes self-efficacy (DSES; $F=14.81$ $p=.077$) was highest in those with a plan and lowest in those who were not sure (scheffé). Barriers to treatment ($F=4.23$ $p=.016$) and depressive symptoms (CESD-10; $F=11.54$ $p<.001$) were both significantly lower in those who had a plan compared with both other groups (scheffé). The simple item chosen for this study, whether one has a plan for glucose targets, was associated with many positive factors including persistence with SMBG and better coping, yet not physical QOL or knowledge, which are typically the focus of medically driven SMBG studies. Measures of QOL and coping were generally poorer than in other populations. Results suggest that mental wellbeing and coping are important for self-regulation, a key strategy for diabetes management. Assessment of SMBG decision-making, coping and efficacy should be considered in future SMBG research.

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D-059

EXTRINSIC OR INTRINSIC? MOTIVATION BEHIND PLANS TO PURSUE A HEALTH CAREER AMONG HIGH ACHIEVING YOUTH IN A LOWER SOCIOECONOMIC STATUS COMMUNITY

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Disparities exist in the quality of care for racial and ethnic minorities from underserved areas. Minority researchers and public health workers would be more likely to understand the complex interworkings of these communities that lead to disparities in health and well-being. Unfortunately, minority researchers are traditionally underrepresented in the health sciences field. Few studies examine motivations beyond goal attainment as predictors for pursuing health science careers. The Self-Determination Theory can be used to enhance our understanding of the motivations behind minority students' plans to pursue careers in the health sciences. Guided by this Theory, the authors theorized that extrinsic motivation, referring to engaging in an activity as a means to an end rather than for its inherent qualities, and intrinsic motivation, reflecting the highest degree of self-determination or autonomy, can impact students' plans to pursue a health science career. The authors also tested whether gender modifies this relationship. The study sample consisted of 134 10th graders in the lowest socioeconomic and predominantly non-White area of Prince George's County, Maryland. Results revealed that only intrinsic motivation was predictive of students' plans for pursuing health science careers ($b = -.886, p < .001$). Extrinsic motivation did not significantly predict plans for pursuing a health science career and gender was not a significant effect modifier. These findings reveal the possibility that interventions to educate the next generation of minority researchers and public health workers may be more efficacious if focused on the intrinsic value of public health research.

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D-061

EXAMINING THE ROLES OF ANXIETY SENSITIVITY, DISTRESS TOLERANCE, AND EMOTION REGULATION IN TERMS OF HIV SYMPTOM SEVERITY

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HIV symptom severity has a direct impact on quality of life. A range of empirical work has focused on methods to decrease HIV symptom severity, yet few studies have attended to cognitive-affective vulnerabilities that may exacerbate HIV symptom severity. Anxiety sensitivity (AS), distress tolerance (DT), and emotion regulation (ER) are malleable risk factors associated with a wide range of mental health outcomes, such as anxiety and affective disorders. Given the high rates of anxiety and affective disorders among HIV-affected individuals and the overlap between HIV symptoms and affective distress, it is possible that these vulnerabilities may be elevated among HIV-affected individuals. Identification of vulnerabilities that impact both mental health and HIV symptom severity may lead to interventions that are able to effectively and simultaneously target these outcomes. The current investigation represents a cross-sectional investigation of AS, DT, and ER in relation to severity of HIV symptoms. It was hypothesized that each would uniquely and significantly be associated with HIV symptom severity. Participants were 143 HIV positive individuals (34 female; Age $M = 48.2$ years, $SD = 8.1$, 42 % Black) who were prescribed at least one antiretroviral medication and were receiving outpatient HIV care. A hierarchical regression analysis revealed that after accounting for cannabis and alcohol use, medication adherence, and number of DSM-IV axis I diagnoses, AS ($\beta = .29, p < .01$), DT ($\beta = .25, p < .01$), and ER ($\beta = .28, p < .01$) each significantly and uniquely predicted HIV symptom severity. Findings provide initial evidence of the unique roles of cognitive-affective vulnerabilities in terms of HIV symptom severity, informing efforts aimed at refining current treatments for HIV positive individuals so as to improve functioning.

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D-062

MINDFULNESS & QUALITY OF LIFE AMONG YOUTH AFFECTED BY HIV

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Limited research has been conducted on the coping responses of youth impacted by HIV or the efficacy of these responses (Orban et al., 2010). Mindfulness has been found to be associated with increased quality of life, academic competence, improved social skills & decreased psychological concerns among youth (Burke, 2010; Greco et al., 2011). Mindfulness-based approaches have also shown promise in improving psychological outcomes among chronically ill youth (Lagor & Williams, 2010). This study investigated the effects of a mindfulness group intervention on quality of life (QL) among minority youth affected by HIV. It was expected that a significant positive relationship exists between mindfulness & QL. Also, youth in the intervention are expected to demonstrate significantly higher mindfulness & QL compared to the control group post-treatment. Data from the Child & Adolescent Mindfulness Measure (lower scores indicate increased mindfulness) & the Pediatric Quality of Life Inventory were collected from 84 youth infected with or affected by HIV (53.6 % female; mean age 12 years). Twenty-nine youth participated in the intervention which consisted of a five-day manualized mindfulness group treatment. Consistent with our hypothesis, results indicated a significant positive relationship between QL & mindfulness at pre ($r = -.521, p < .01$) & post intervention ($r = -.436, p < .01$). Mindfulness was also significantly positively correlated with age ($r = -.250, p = .01$). Interestingly, after the intervention this relationship was no longer significant ($p = .15$). At post-treatment, youth in the intervention group reported significantly better QL in terms of social functioning ($t = 1.6, p = .10$). Youth in the treatment group also demonstrated higher mindfulness & QL at post treatment; however, these results were not significant, likely due to the small sample size & that the sample was more mindful than the average youth population sample at pre-treatment (Greco et al., 2011). It is also possible that changes in mindfulness & QL may not be immediately apparent after a brief, condensed treatment. Clinical implications will be discussed.

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D-063

THE RELATIONSHIP BETWEEN HEPATITIS C, HIV, SERVICE UTILIZATION AND HIV RISK BEHAVIOR

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Rates of Hepatitis C (HCV) in intravenous drug using (IDU) populations are estimated to be between 50-90 % (Abou-Saleh et al., 2008; Bashu, 2010). HCV is often diagnosed prior to HIV for those with both diagnoses, suggesting that identification of HCV may be an opportunity for primary HIV prevention as well. One recent study found that polysubstance users (opioids and cocaine specifically), were more likely to "self-medicate" and report higher rates of sharing needles and casual sex, suggesting behavioral/mental health factors may increase risky behaviors (Harrel et al., 2012). We hypothesize 1) Participants with HCV will report a higher rate of HIV risk behaviors, specifically IDU and unprotected sex and 2) Participants utilizing mental health and/or drug rehabilitation services will be less likely to engage in risk behaviors.

We used a cross-sectional design to examine the relationship between HCV and HIV, mental health utilization, substance use treatment, and IDU in 124 participants (52 % female, 35 % HCV-positive, 18 % HIV-positive; mean age 41.33) enrolled in research designed to assess the efficacy of HIV prevention for people with SMI. A multiple regression analysis indicated participants with HCV ($\beta = -.237, t = -2.46, p < .05$) who did not utilize mental health programs ($\beta = -.215, t = -2.60, p < .05$) were more likely to report IDU (adj. $r^2 = .202, F(12, 111) = 3.60, p < .001$). No significant relationships were observed with unprotected sex behaviors as the outcome variable. Consistent with our hypothesis, we found HCV and not utilizing mental health care were predictors of increased IV drug use while utilizing programs for substance use were not associated with reduced risk. Our results highlight the critical importance mental health services play in reducing risk in the HCV population.

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D-064

PAIN AS A FUNCTION OF DEPRESSION, CHILDHOOD SEXUAL ABUSE, AND RESILIENCE IN HIV+LATINO MEN WHO HAVE SEX WITH MEN

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Relative to the general population, childhood sexual abuse (CSA) is reported more frequently by men who have sex with men (MSM). Percentages of MSM (irrespective of HIV status) having a history of CSA range from 11-39 %. Furthermore, depression is more common in people living with HIV/AIDS, as high as 36 %. CSA has been associated with both depression and pain. By contrast, resilience has been identified as a resource that buffers against depressive symptoms. We thus hypothesized a mediated-moderation effect involving CSA, resilience, depression and pain. Depression was predicted to mediate the effect of CSA on pain, an effect moderated by levels of resilience. We administered the Patient Health Questionnaire-9 (minus somatic symptom items), the Connor-Davidson Resilience Scale, and the AIDS Clinical Trials Group Pain Scale to 84 Latino MSMs in outpatient HIV treatment (mean age=44.1, SD=12; mean of 10 years living with HIV/AIDS, SD=8; median annual household income=\$11,376, SIQR=\$4,805). Cutoff scores for "mild" symptoms of depression were met in two patient groups: those with and without a history of CSA ($M=9.4$ and 6.6 , $SD=8.1$ and 6.4). We tested our hypotheses using a bootstrapping resampling approach. As expected, CSA and resilience were predictive of depression ($\beta=.56$ & $-.28$) and depression was predictive of pain ($\beta=.37$). The effect of CSA on pain was mediated by depression, yet also moderated differentially by levels of resilience: ($\beta=1.40$, $.64$, & $.02$ at the 10th, 25th and 50th percentiles of resilience scores, respectively). Thus, as hypothesized, the mediating effect of depression was greater for patients who reported low levels of resilience. More important, as resilience levels increased, the mediating effect of depression on pain diminished. At the highest levels of resilience, no differences were observed for depression between those with and without a history of CSA. In conclusion, resilience may exert a protective effect on pain disorders despite the presence of childhood traumatic events and depression.

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D-065

UTILIZATION OF AN ONLINE DOCUMENTATION SYSTEM BY CHURCH HEALTH LIAISONS TO EVALUATE A CHURCH-BASED HIV INTERVENTION

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Many community-based participatory research studies have reported on community participation in intervention development and implementation, yet fewer reports exist on community members' participation in the intervention evaluation process, particularly in church settings. In the Taking It to the Pews (TIPS) project - an African American church-based HIV education and screening intervention using a religiously/culturally-tailored HIV Tool Kit, church health liaisons (CHLs) participated in project development, implementation, and evaluation. Regarding evaluation, 8 CHLs from 4 TIPS churches (2 intervention and 2 comparison churches) provided TIPS study implementation data using an internet-based documentation support system (ODSS). The ODSS allowed CHLs to report on their project implementation activities (e.g., when/where/what Tool Kit materials/activities delivered, church populations targeted, communication technology strategies used) and researchers to evaluate project feasibility and fidelity. ODSS reports indicated that intervention CHLs implemented 32 TIPS activities primarily consisting of brochures/church bulletin inserts, resource tables, and pastoral sermons and announcements delivered in Sunday morning church services with the entire church congregation over 12 months. Similarly, comparison church CHLs delivered 30 non-tailored HIV informational activities. Most frequently used TIPS intervention strategies to promote HIV testing included pastor/pastor's spouse tested in church services, announcements made during church services on availability of screening and number of persons screened, and testimonials from persons tested for HIV. Most frequently used communication technology strategies included computers, digital projectors, and telephone tree messaging systems. Church liaisons reported that they were satisfied to very satisfied with the evaluation process. Further CHL use of the ODSS and dissemination of findings with faith partner constituents will be discussed.

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D-066

GENDER AND SEXUAL ORIENTATION MODERATE THE EFFECTS OF MOTIVATIONAL INTERVIEWING IN REDUCING SEXUAL RISK BEHAVIOR IN HIV+OLDER ADULTS

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Background: Project SAFER is a 3-arm randomized controlled trial that tested the efficacy of 1-session telephone-delivered Motivational Interviewing [TDMI] versus 4-session TDMI versus no treatment control to reduce risky sexual practices in HIV+adults 45+ years of age. Primary outcome analyses indicated that four sessions of TDMI reduced sexual risk behavior to a greater extent than one or no sessions of TDMI, yet subpopulations for which TDMI may be most effective have not been identified.

Methods: Participants were 100 HIV-positive older adults enrolled in Project SAFER (Mean Age=53.8 years; 87 % Racial/Ethnic Minority; 44 % Female; 48 % men who have sex with men [MSM]). Participants reported condom use for sexual acts in the past three months at baseline, 3-, and 6-month follow-up. Generalized estimating equations modeled the moderating effects of Gender (male versus female) and Sexual Orientation (MSM versus heterosexual) on longitudinal intervention outcomes.

Results: Main effects of Gender and Sexual Orientation indicated that women reported more occasions of unprotected anal and/or vaginal sex relative to men (9.45 versus 2.61, $p<0.01$), while heterosexual participants reported more unprotected sex than MSM (8.99 versus 1.97, $p<0.01$). A significant Time X Study Condition X Gender interaction ($p<0.01$) indicated that reductions in sexual risk behavior among 4-session TDMI participants were more pronounced among female than male participants. In addition, a significant Time X Study Condition X Sexual Orientation interaction ($p<0.01$) indicated that four sessions of TDMI reduced sexual risk behavior in both heterosexual and MSM participants, while 1-session TDMI reduced sexual risk behavior in MSM only.

Conclusions: Four sessions of TDMI may be most efficacious at reducing sexual risk behavior among HIV+heterosexual women and MSM, while one session of TDMI may also reduce sexual risk behavior among MSM. Larger scale interventions of TDMI for HIV+older adults are needed to replicate these findings.

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D-067

MENTAL HEALTH AS A FUNCTION OF RELIGIOUS AND SPIRITUAL BELIEFS IN HIV+LATINO MEN WHO HAVE SEX WITH MEN

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Meta-analyses have shown modest positive correlations between religiosity and mental health, and researchers have suggested that religion may function as a protective factor. However, this case is less clear for those stigmatized or marginalized by major religious groups. Among men who have sex with men (MSM), religion may pose a threat to identity as well as psychological functioning through its association with internalized homophobia (Kubicek et al., 2009). We conducted a study of religion and mental health in a sample of 123 primarily Catholic HIV+MSM Latinos of Mexican descent (mean age=44, SD=11.31) at an HIV clinic.

Consistent with past studies, we found negative correlations between all subscales of the Duke Religion Index (DRI) and both depression and anxiety (r ranging from $-.09$ to $-.21$), assessed with the Beck Depression Inventory and Hospital Anxiety and Depression Scale. Similarly, spiritual well-being assessed using the Functional Assessment of Chronic Illness Therapy was negatively linked to depression ($r=-.58$) and anxiety ($r=-.53$). However, the use of religion as a coping strategy (the Brief Religious COPE) was positively associated with depression ($r=.19$) and anxiety ($r=.18$). Meanwhile, internalized homophobia was positively correlated with religiosity as assessed by the DRI subscales (r ranging from $.15$ to $.20$) and use of religious coping ($r=.24$), but negatively associated with spiritual well-being ($r=-.19$). As expected, internalized homophobia was positively correlated with depression ($r=.34$) and anxiety ($r=.23$).

These results suggest that even among stigmatized groups, religiosity may be associated with better mental health. However, the use of religion as a coping strategy may be less adaptive. The somewhat smaller effect of religiosity on depression, when compared to that of spiritual well-being, might be accounted for by the internalized homophobia associated with the former. These results highlight the complexity of mental health, spirituality, and religious issues among Latino MSM living with HIV.

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D-068

TRANSITIONING METHADONE PATIENTS FROM DIRECTLY ADMINISTERED ANTIRETROVIRAL THERAPY TO SELF- ADMINISTRATION

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Background: Directly Administered Antiretroviral Therapy (DAART) has been shown to be effective in methadone clinic settings (Lucas et al., 2006). Providing observed doses over years is costly, strains clinic resources, and limits the number of patients who can be served. Patients whose psychosocial conditions are stabilized may be able to take Antiretroviral Therapy (ART) on their own. The present study describes preliminary results from a pilot intervention developed to help methadone patients receiving DAART transition to ART self-administration (SA).

Methods: Participants were recruited from an urban methadone clinic. Study eligibility included HIV+serostatus, ART prescription, and methadone dosing ≥ 3 days/week. Participants took 12 weeks of DAART with bi-weekly medication coaching. Those interested and eligible (i.e., approved by primary care provider) then transitioned to 12 weeks of medication self-administration (SA) with weekly ART pick up from a trained medication coach and received another 12 weeks of medication coaching.

Results: We enrolled 21 participants with a mean age of 47, 67 % male, 91 % heterosexual, and 62 % disabled. Our sample was ethnically diverse [29 % African American; 19 % Latino], marginally housed [57 % in single room occupancy hotels or homeless] and had low levels of education [38 % some high school]. At baseline, 7 (33 %) participants had undetectable viral loads (VLs). Seventeen participants completed the intervention (81 % retention). Seven of the retained participants (41 %) were able to transition to SA. Comparisons were made between those who transitioned and those who did not. Chi-square statistics showed that stable housing was related to transitioning ($\chi^2=4.2$, $p<.05$), while active drug use was not. Of the 7 who transitioned, 5 (71 %) had undetectable VLs at the time of transition.

Conclusions: It is possible to transition DAART patients to self-administration. Future research should focus on understanding the predictors of successful transition.

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D-069

CYTOKINE NETWORK PATTERNS AND HEALTH STATUS IN PERSONS WITH HIV

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Cytokines have emerged as mediators of physical and psychological health in persons with HIV. Studies often focus on a single cytokine, assuming that cytokines function independently and serve a single function. Cytokines likely function as a pleiotropic, interdependent network (Lyon et al., 2011). New technology allows simultaneous measurement of multiple cytokines, allowing multivariate analyses. Factor analysis (FA) allows relationships among cytokines to illuminate underlying processes rather than relying on assumptions about functions of individual cytokines. The current cross-sectional study explored the utility of FA in analyzing cytokine networks by comparing factors to indicators of health in 45 adults with HIV. 17 cytokines were measured in plasma using magnetic microbead multiplex assays. Clinician ratings and clinical indicators of HIV-related illness severity, trait affect, chronic stressors, depressive symptoms, medication adherence, and health behaviors were collected. Log-transformed cytokine data were entered into maximum likelihood FA with Varimax rotation. A 4-factor solution was obtained and factor scores created by averaging cytokines loading on each factor. Factor 1 (IFN- γ , IL-6, IL-1b, IL-2, IL-13, IL-12, IL-4) accounted for 20 % of variance and was associated with CD4+ % ($r=.32$, $p=.03$) and chronic stress ($r=-.34$, $p=.04$). Factor 2 (CSF, IL-7, TNF- α) accounted for 12 % of variance and was associated with clinician rated disease severity ($r=.40$, $p=.01$) and chronic stress ($r=-.37$, $p=.02$). Factor 3 (IL-17, IL-10) accounted for 11 % of variance and was associated with CD4+ % ($r=.35$, $p=.02$). Factor 4 (IL-8, MIP1b, MCP1) accounted for 11 % of variance and was associated with physical activity ($r=-.35$, $p=.02$) and clinician rated disease severity ($r=.32$, $p=.05$). FA in this sample resulted in a structure which correlated with meaningful indicators of psychological and physical health in adults with HIV, providing support for this approach in analyzing patterns in cytokine networks that may underlie symptoms and disease-related pathology.

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D-070

ASSESSMENT OF MENTAL HEALTH PROBLEMS OF HIV-INFECTED PATIENTS NEW TO MEDICAL CARE, UNITED STATES - MEDICAL MONITORING PROJECT PROVIDER SURVEY, 2009

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Background: Over a third of HIV-infected individuals report mental health (MH) problems. Although MH problems are common among HIV-infected patients, little is known of HIV care provider characteristics associated with MH assessment of patients new to HIV medical care. Understanding which provider characteristics are associated with MH discussions with new patients can help improve MH screening, a critical step for MH treatment.

Methods: From June-September 2009, 1999 surveys were mailed to a probability sample of HIV medical care providers in 20 states as part of the Centers for Disease Control and Prevention Medical Monitoring Project. This analysis focused on whether providers report that they always discussed MH problems with patients new to HIV care. Provider characteristics associated at $p<0.05$ with the outcome variable in bivariate analyses were included in a multivariable logistic regression model.

Results: Of 734 (42 %) eligible providers who participated in the survey, 690 (94 %) provided information regarding discussing MH problems with new patients. Of those 690 providers, 56 % reported always discussing MH problems with new patients. Non-infectious disease medical doctors (MD) and non-MD providers were more likely to always discuss MH problems than infectious disease MDs (1.7 adjusted Odds Ratio [aOR], 95 % confidence interval [CI]=1.1-2.5, and 1.6 aOR, CI=1.1-2.4, respectively). Female providers were more likely to always discuss MH problems than male providers (1.9 aOR, CI=1.4-2.8), and providers who spent >30 minutes with their new patients were more likely to always discuss MH problems than providers who spent ≤ 30 minutes with their new patients (2.3 aOR, CI=1.6-3.3).

Conclusions: To improve MH screening among patients new to HIV medical care in the United States, additional training to facilitate MH discussions should target infectious disease MDs and male providers. Allocating more time with new patients may also facilitate discussions of MH problems.

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D-071

A MIXED-METHODS STUDY OF HIV TESTING AMONG RURAL AFRICAN AMERICAN COCAINE USERS

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This mixed-methods study provides a thorough assessment of the correlates of HIV testing among rural African American cocaine users and their perceptions of the individual, structural, and contextual barriers to HIV testing. Such knowledge is especially needed in the rural South, where the HIV epidemic is growing rapidly. To accomplish this, a secondary analysis was conducted of baseline data from a clinical behavioral trial among 261 rural African American cocaine users. Qualitative methods were used to interview and conduct focus groups with a representative subsample of 69 participants in the clinical trial including 7 community advisory board members and 8 peer leaders. Assumptions about testing and errors in understanding of the reporting process were evident among our sample in the qualitative interviews and focus groups. Many assumed that they had been tested for HIV as part of routine care. They further assumed their test results were negative because they were not contacted by a provider about results. Analysis of secondary quantitative data from the behavioral clinical trial indicated HIV testing is positively and strongly associated with use of other healthcare and specialty services, and also with past incarceration. Risk behaviors, risk perception, or physical health status did not predict testing for HIV. This study provides rich contextual information about barriers and facilitators to HIV testing in this disproportionately-affected, under-resourced population.

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D-073

MULTIPLE RISK BEHAVIOR PROFILES OF SMOKERS WITH SERIOUS MENTAL ILLNESS

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Individuals with serious mental illness (SMI) are dying on average 25 years prematurely. The leading causes are chronic preventable diseases. In the context of a tobacco treatment trial, we examined the multiple behavioral risk profiles of adults with SMI to identify broader interventional needs.

This study analyzed baseline data from 693 adult smokers (50 % male, 45 % Caucasian, age M=39, 49 % income <\$10 K) recruited from acute inpatient psychiatry units in the San Francisco area. The Staging Health Risk Assessment screened for risk status and readiness to change 11 health behaviors.

Participants averaged 5.2 (SD=2.1) risk behaviors. A greater number of risks correlated with worse mental health and social standing, but generally not demographic or tobacco use characteristics. Most prevalent risks were high-fat diet (68 %), inadequate fruits/vegetables (67 %), poor sleep (53 %), physical inactivity (52 %), and marijuana use (46 %). Abstaining from tobacco and marijuana were the behaviors participants were least prepared to change (23 % in preparation), whereas a majority of those at risk were ready to adopt behaviors to prevent depression (76 %), abstain from stimulants (74 %) and nonprescription opiates (68 %), improve sleep (69 %), manage stress (69 %), cease binge drinking (57 %), and meet physical activity guidelines (51 %). Latent class analysis differentiated three risk-groups: global high, global low, and a mood and metabolic risk group. The global high-risk group (11 % of sample) was younger, largely male and had the greatest total number of risk behaviors; most severe indices of nicotine dependence, addiction treatment history, and psychopathology; and the lowest commitment to abstinence and confidence for quitting smoking.

Most smokers with SMI engaged in multiple risks. Expanding targets to treat co-occurring risks and personalizing treatment to individuals' multibehavioral profiles may increase intervention relevance, interest, and impact on health.

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D-074

LONGITUDINAL ASSOCIATIONS BETWEEN HEALTH BEHAVIORS AND MENTAL HEALTH IN LOW-INCOME ADULTS

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Background. Although there are established relationships between physical and mental health, few studies have explored associations between health behaviors and mental health over time. Health compromising behaviors (HCBs) may be used to cope with negative affect and mental health problems; these behaviors may also cause (or exacerbate) mental health problems.

Objectives. To explore rates of HCBs and the longitudinal relationship between HCBs and depression, anxiety, and stress.

Methods. Five waves of data were collected over 1 year from 482 patients at an urban public health clinic (47 % female, 68 % African American, Mage=28). Cross-lagged models were used to explore associations between HCBs and mental health within and across time.

Results. Smoking (61 %), binge drinking (52 %), illegal drug use (53 %), unprotected sex with non-primary partners (55 %), and regular fast food consumption (71 %) were common, while regular consumption of fruits or vegetables (30 %) and breakfast (17 %) were rare. Very low-income patients (<\$15,000/year) reported more HCBs than did higher-income patients ($\beta=.70$, $p<.001$).

There were within-time associations between HCBs and mental health, with participants reporting more HCBs also reporting higher levels of depression, anxiety, and stress ($\beta_s=.11-.14$, $ps<.001$). Additionally, depression, anxiety, and stress predicted later HCBs ($\beta_s=.12-.19$, $ps<.01$), indicating that those who reported higher levels of mental health problems at one wave engaged in more HCBs at the next wave. HCBs did not predict later mental health ($\beta_s=.02$, $ps>.05$).

Conclusions. Because findings suggest that poor mental health leads to HCBs, it may be important for clinicians and practitioners to provide referrals for mental health counseling or stress reduction techniques in order to improve health behaviors and, in the longer term, physical health.

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D-075

PSYCHOSOCIAL PREDICTORS OF POSTPARTUM DEPRESSIVE SYMPTOMS IN A RANDOMIZED TRIAL

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Postpartum depression is related to numerous negative consequences including difficulty caring for the newborn, poor functional status of the mother, higher weight retention for the mother, and poor mother-infant bond. Approximately 10-13 % of postpartum women experience depression. Therefore, it is important to better understand factors that may influence the occurrence of postpartum depressive symptoms. The purpose of this study is to examine psychosocial variables that may predict depressive symptoms among postpartum women. Participants were postpartum women (n=130) who had a history of depression and/or a maternal family history of depression, not currently depressed, and were enrolled in a randomized controlled trial examining the efficacy of a six-month exercise intervention for the prevention of postpartum depression. Sleep quality (as assessed by the Pittsburgh Sleep Index) was administered at baseline, which occurred at approximately six weeks postpartum. Participants also reported their breastfeeding at one month (yes/no and retrospective report), employment status, number of other children in the home, and depressive symptoms (assessed using the Edinburgh Postnatal Depression Scale) at six months. Multiple regression analyses were used to analyze the influence of the predictor variables on depressive symptoms at six months. After controlling for treatment assignment (exercise vs. wellness), sleep quality at six weeks predicted postpartum depressive symptoms at six months, $\beta=.305$, $p<.05$. Number of children in the home, breastfeeding, and working outside of the home were not significant predictors. Results indicate that sleep quality early in the postpartum phase may be an important risk factor for later postpartum depressive symptoms. It may be important for interventions to focus on strategies that improve sleep duration and quality (e.g., sleep when the baby sleeps including daytime naps, accept help from family members) among postpartum women.

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D-076

HEALTH LOCUS OF CONTROL, EXERCISE AND DEPRESSION IN COLLEGE STUDENTS

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Depression is a debilitating condition that afflicts college students at a higher rate than the general population. The role of health locus of control (HLOC) on the relationship between exercise and depression has largely been neglected. This study aimed to reexamine the effect of exercise and HLOC on depression severity in a non-clinical sample of college students, and determine whether HLOC moderates this effect.

Two hundred and nineteen students completed measures of depression, HLOC, and exercise as part of a larger IRB approved study on health behaviors of undergraduates. Two hierarchical multiple regressions assessed links between exercise, HLOC, and depression. Results found that Chance Health Locus of Control (CHLC) and exercise significantly predicted depression and accounted for 13.7 % of the variance ($p<.001$). CHLC ($p<.001$) was a more significant predictor than exercise ($p>.05$). Internal Health Locus of Control (IHLC) was not a significant predictor of depression ($p>.05$). HLOC was not a significant moderator in any of the models.

Post-hoc analyses examined seasonality effects through separate multiple regressions on Fall and Spring seasonal groups. During Fall, exercise and CHLC significantly predicted depression ($p=.001$) and accounted for 13.5 % of the variance, with CHLC ($p<.001$) being a more significant predictor than exercise ($p>.05$). IHLC was not a significant predictor during Fall. During Spring, exercise and IHLC significantly predicted depression ($p<.05$), and accounted for 5.3 % of the variance. CHLC also significantly predicted depression during Spring ($p<.01$) and accounted for 11.2 % of the variance, with CHLC ($p<.01$) being a more significant predictor than exercise ($p>.05$). The results support a multidimensional approach to measuring HLOC, and suggest that CHLC is a more powerful indicator of depression than exercise. Results highlight the effect of seasonality, and suggest that interventions focus on students with higher CHLC in Fall and lower IHLC in Spring.

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D-077

THE EFFECT OF CHRONIC HEALTH PROBLEMS ON RESPONSE TO TREATMENT FOR COMORBID DEPRESSION AND SUBSTANCE DEPENDENCE

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Individuals with Major Depressive Disorder (MDD) and Substance Dependence (SD) are more likely to suffer from chronic health difficulties (CHD) than people without these disorders. We examined whether CHD negatively impacted response to treatment for comorbid MDD and SD using linear mixed effects models. Participants were assigned to one of the treatments in this study, Integrative Cognitive Behavioral Therapy or 12-Step Facilitation Therapy, each consisting of 24 weeks of group therapy. Depression symptoms (Hamilton Rating Scale for Depression), daily substance use (Timeline Followback), and CHD were assessed at intake and quarterly thereafter for 18 months. CHD severity (none, non-severe, or severe) was assessed as part of a general life stress interview. Participants were 221 predominantly male (89 %) veterans (mean age 49) meeting DSM-IV criteria for MDD and SD. The outcome variables for depression were the means for cognitive-affective symptoms and somatic symptoms, which were evaluated separately. The outcome variable for substance use was the percentage of days abstinent. Models controlled for age, treatment type, and prior depression and substance use. For both cognitive-affective and somatic symptoms, there was a significant interaction between CHD, time, and initial depression levels ($p < 0.05$). Individuals with severe CHD showed a slower improvement in both cognitive-affective symptoms and somatic symptoms and this pattern was more pronounced for individuals with higher initial depression levels. For percentage of days abstinent, there was a significant interaction between CHD, time, and early percentage of days abstinent ($p < 0.05$). Individuals with severe CHD engaged in greater substance use after treatment and this pattern was more pronounced for individuals with poorer early treatment response. Thus, it may be beneficial for individuals with severe CHD to receive added monitoring following treatment and booster sessions if needed to maintain treatment gains.

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D-078

EFFECTS OF SCHOOL-BASED TAEKWONDO TRAINING ON EXECUTIVE FUNCTIONS AND HEALTH OUTCOMES: THE HEALTHY FOR LIFE PILOT TAEKWONDO STUDY

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There is growing consensus that exercise improves cognitive functioning, but research is needed to identify exercise interventions that optimize effects on cognition. The objective of this pilot study was to evaluate Taekwondo implemented in public middle school physical education (PE). Two classes were randomly assigned to either: five sessions per week of PE or three sessions of PE and two sessions of Taekwondo. In PE sessions, evidence-based curriculum to address the Presidential Core Fitness Guidelines and California Physical Fitness Tests was implemented. Taekwondo curriculum included traditional techniques and forms taught in an environment emphasizing character development. Most outcome measures were collected at baseline and during the last week of the intervention (nine months later). The majority of Taekwondo students reported positive perceptions of Taekwondo and perceived self-improvement in self-control and physical fitness. Differences in mean residualized change scores for parent-rated inhibitory control yielded moderate effect sizes (d 's = .67 and .53 for attentional and behavioral control, respectively), indicating greater improvement among Taekwondo students. Results for the Congruent, Incongruent, and Mixed trials of an executive function computer-administered task revealed greater accuracy (d 's = 1.0, .38, and .92) and faster response times (d 's = -.57, -.12, and -.37) among Taekwondo students. Differences in mean residualized change scores for BMI percentile yielded a small effect size (d = -.20), indicating a larger reduction for Taekwondo students; health behaviors also improved more among Taekwondo students. Results suggest that Taekwondo is an exercise program that optimizes effects on cognitive functioning and support the need for a longitudinal school-based randomized trial.

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D-079

DISPARITIES IN MENTAL HEALTH LITERACY AND STIGMA WITHIN A HISPANIC POPULATION

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Mental health stigma and lack of knowledge about mental health and related resources are substantial treatment barriers for people suffering from mental illness (Corrigan, 2004). To reduce these barriers for San Diego residents, the County of San Diego Health and Human Services Agency developed an informational multi-media campaign. Random digit dialed phone interviews were conducted six months before and six months after the implementation of the campaign to measure exposure to the campaign, and to track changing beliefs and knowledge about mental health. Although the perception of stigma and its impact on service use has been shown to vary based on racial or ethnic background (Cooper, 2003), little research has compared ethnic subgroups. As San Diego County has a large Hispanic population, many of whom are recent immigrants, the present study compared mental health stigma and literacy for English-speaking and Spanish-speaking Hispanics. Four mental health domains were assessed, including Lack of Social Distancing, Knowledge & Access, Openness, and Literacy. Compared with English-speaking Hispanic participants, Spanish-speaking Hispanic participants scored significantly lower on the Mental Health Literacy scale ($t = 3.372$, $p = .001$), the Mental Health Knowledge & Access scale ($t = 3.236$, $p = .001$), and the Mental Health Openness scale ($t = 3.099$, $p = .002$). Spanish-speakers were also less likely than English-speakers to know anyone in treatment for mental health problems ($\chi^2 = 11.848$, $p = .001$) or to be currently receiving treatment for mental health problems ($\chi^2 = 8.390$, $p = .004$). They were marginally less likely to report having ever received treatment for mental health problems ($\chi^2 = 3.192$, $p = .074$). Results suggest increased stigma and lower mental health literacy among Spanish-speaking Hispanics compared to English-speaking Hispanics within San Diego County. This could indicate a need for specifically targeted, Spanish language materials about mental illness, treatment resources, and recovery.

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D-080

PREDICTORS OF QUALITY-OF-LIFE AMONG INDIVIDUALS WITH BORDERLINE PERSONALITY DISORDER

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Individuals with borderline personality disorder (BPD) are a vulnerable and costly clinical population who use an inordinate amount of medical, emergency and mental health services, due to frequent crises associated with suicidal behavior (Comtois et al., 2007). Research also indicates that individuals with BPD have a reduced quality of life compared to many other psychiatric disorders (Cramer, Torgersen, & Kringlen, 2006). DBT, an evidence-based treatment of BPD, has been shown to reduce suicide attempts and to treat behaviors that interfere with quality-of-life (Linehan et al., 1991; Linehan et al., 2006). Few published studies have examined the factors that are associated with overall quality-of-life among individuals with BPD, particularly among those receiving DBT. However, identifying factors that interfere with quality-of-life is quite relevant given the emphasis in DBT on building a life worth living (Linehan, 1992). The goal of the current study was to determine whether factors such as physical health, job satisfaction, and emotional well-being are associated with quality-of-life among individuals with BPD who have completed standard DBT.

The current study examined factors related to quality-of-life in a sample of 45 subjects with BPD who had completed 12 months of DBT through an outpatient mental health clinic in an urban county hospital setting. Subjects were administered the Lehman Quality of Life Interview (QOLI) following standard DBT treatment. We hypothesized that QOLI scores are associated with physical health, job satisfaction, and emotional well-being. A Hierarchical Multiple Regression and Correlation analysis revealed that variance on QOLI scores were predicted by all three factors ($p = .014$, $R^2 = .77$), with emotional well-being predicting the most variance on overall QOLI scores over and above the others. The results of this study suggest that emotional well-being is a significant predictor of quality-of-life among clients in DBT, consistent with the theory in DBT that the core problem in BPD is emotion dysregulation.

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D-081

NEXT-GENERATION EMERGING TECHNOLOGIES FOR AMBULATORY PHYSIOLOGY AND BEHAVIOR MEASUREMENT

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Despite great advances in mobile phone technology and a proliferation of wearable sensors, most commercial devices today are still fairly crude and provide a limited amount of information for use in ambulatory monitoring and behavior analysis. Most wearable sensors are limited to actigraphy and provide no contextual information about the local environment to help alleviate issues with confounding variables. Furthermore, the maintenance requirements (e.g. wires, batteries) and cost of these devices prevent researchers from easily using these devices on large segments of the population that arguably need it the most, such as autistic children, elderly Alzheimer's patients, homeless people, or people with severe mood disorders and substance abuse, for example. In order to address these challenges, a new generation of wearable and wireless sensor technology is emerging with several key advances including: 1) self-powered sensors which do not require battery recharging 2) integration of environmental sensors (light, sound, proximity to specific people and objects) 3) integration of physiological sensors for autonomic activity and "emotion" measurement and 4) new low-power communication protocols for phones, including the new Bluetooth LE standard and Near-Field Communications (NFC). In parallel with these developments in wearable sensors, great advances are also being made in "ubiquitous sensing" with the emergence of new non-contact sensors that can be embedded into our environment. In order to help illustrate the use of these new technologies and describe design trade-offs, three examples are presented from our laboratory: Example #1) A wearable skin conductance sensor for ambulatory "stress" monitoring that is powered from a person's body heat (thermoelectric generation); Example #2) a wearable sensor that measures ambient light colors and sound levels for studying affective mood disorders; Example #3) a low-cost non-contact heart rate sensor that is embedded into furniture as an unobtrusive alternative to wearable sensors.

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D-082

PRE- AND POSTNATAL DEPRESSION AND ITS EFFECTS ON LATER SOCIAL-EMOTIONAL DEVELOPMENT AND CHILD ATTACHMENT AMONG LOW-INCOME CHILDREN

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Although it is widely recognized that maternal depression can adversely affect child development, few studies have prospectively examined whether depression occurring during pregnancy and the early postpartum period affects developmental outcomes later on in childhood. The current study prospectively examined whether maternal depressive symptoms (Major Depression Screener, CES-D), assessed during pregnancy and 6 months postpartum, were associated with child social-emotional development (Vineland Early Childhood Scales) and attachment (Child Characteristics Questionnaire) at 2–4 years postpartum. Ninety-six low-income, multiethnic women (76 % Spanish-speaking; mean age = 24±4 years) were initially assessed during pregnancy and followed until 2–4 years postpartum. On average, their children were 31 months of age ($SD=13$ months), were mostly boys (57 %), and most spoke Spanish as their primary language (63 %). ANOVA analyses revealed a significant main effect for child language on social-emotional development, with English-speaking children scoring better in areas of interpersonal relationships with others, play and leisure, and coping skills than bilingual or Spanish-speaking children ($F=3.4, p<.05$). Hierarchical regression analyses showed that children born to mothers with high depressive symptoms at 6 months postpartum had lower overall social-emotional development at 2–4 years postpartum, controlling for child language and prenatal depression ($R^2=.10, p<.05$). In terms of child attachment, hierarchical regression analyses showed that mothers with high depressive symptoms at 6 months postpartum rated their child as having a more difficult temperament ($R^2=.13, p<.05$) and being less sociable with others ($R^2=.10, p<.05$) at 2–4 years postpartum, controlling for child language and prenatal depression. These findings highlight the need for early prevention interventions to help offset the adverse effects of maternal depression on early childhood development.

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D-083

A PROPOSED PATHOPHYSIOLOGICAL MECHANISM FOR THE CREATION OF CONVERSION SYMPTOMS

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Background: Conversion disorder often presents in association with medical conditions. Therefore finding reliable, objective ways to assess these disorders is of utmost importance. Objective measures may also assist in better understanding its neurobiology and develop treatments. Naatanen & Michie described a clearly defined somatosensory event-related potential (SERP) response to selective attention: a negative deflection around 140–150 msec post-stimulus called the N140. Based on these findings and our clinical observations suggesting that subjects with conversion motor symptoms pay unconscious attention to the affected body part, we predicted that they would exhibit a normal N140 on the unaffected side, and an enhanced N140 on the affected side.

Methods: A pilot study was conducted consisting of the first 9 subjects with lateralized sensory-motor conversion symptoms. Measures of hypnotizability and comorbid Axis I disorders were obtained. SERP-electrical stimulation was delivered randomly (80 % single and 20 % double pulses) to the right and left median nerves at 900 msec intervals and were recorded from contralateral central scalp electrodes (10–20 EEG system).

Results: The amplitude of the N140 component of the SERP was significantly greater on the affected body part. This increase in amplitude was reversed during the therapeutic intervention. All cases suspected of conversion disorder exhibited a cluster of characteristics which include: somatosensory event related potential (SERP) asymmetry, high hypnotizability, and a high incidence of psychiatric comorbidities, in particular a comorbid anxiety or depressive disorder. Successful elimination, by the use of hypnotic suggestions, of SERP asymmetry predicted excellent response to treatment.

Conclusion: This paper suggests the presence of a measurable psychophysiological signature of conversion disorder. It also suggest that, given the high levels of hypnotizability in Conversion Disorder, hypnosis may be an excellent treatment for the acute management of conversion symptoms, as well as a method to prevent symptom recurrence and substitution.

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D-084

CREATING CHOIS (CREATING HEALTHY OUTCOMES INTEGRATED SELF-ASSESSMENT): A RECOVERY-ORIENTED PROMIS-BASED MENTAL HEALTH SCREENING AND OUTCOMES INSTRUMENT

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The National Institutes of Health Patient Reported Outcomes Medical Information System (NIH-PROMIS) measures some important domains of mental health, but does not yet measure some other important psychiatric symptoms, nor does it include recovery factors and strengths such as social connectedness, self-esteem, and coping ability. The CHOIS is a recovery-oriented PROMIS-based instrument that supplements traditional PROMIS administration by attempting to fill in these gaps. The purpose of this study was to examine the validity of adding to the PROMIS additional specific symptoms of mental disorders based on DSM-IV-TR, as well as positive recovery factors that were drawn from focus groups of clients with various diagnosed mental illnesses. We also included response inconsistency indicators as well as some other items that are helpful in clinical interpretation. The goal was to provide syndrome-specific measures as well as cross-cutting psychiatric domains that are not specific to one disorder. We first implemented the measure across thirteen Alcohol and Drug Services programs as a screening measure and outcomes tool, and measured internal consistency of the scales among a wide variety of participants. Among the 1,960 people who completed the measure, the internal consistency of the scales was as follows: PROMIS-Depression .93, PROMIS-Anxiety .90, PROMIS-Anger .88, CHOIS-Psychosis .72, CHOIS-Cognition .78, CHOIS-Recovery Factors .90, Syndrome-PTSD .84, Syndrome-OCD .77, Syndrome-GAD .85. The CHOIS may become an important tool for allowing valid and comprehensive immediate use of the still-developing PROMIS system in a variety of settings as a mental health screening and outcomes instrument. It allows more comprehensive assessment of mental health, positive recovery factors, and response inconsistency to detect invalid responders. It works seamlessly as a supplement to the entire PROMIS outcomes system that measures many important health constructs, even using the same response choices, and is available at no cost.

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D-085

DOES QIGONG SHAPE BODY, MIND AND SPIRITUAL HEALTH FOR PATIENTS WITH CHRONIC FATIGUE SYNDROME (CFS) IN A RCT?

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Background: Patients with CFS usually experience physical and psychological distress. Effects of Qigong on physical distress, mental status and spiritual wellbeing for CFS patients are unknown.

Objectives: Effects of Qigong on fatigue level, as well as physical distress, mental status and spiritual well-being were assessed. Their correlations were also investigated. **Methods:** A RCT was conducted with Qigong and control groups (n=150). 16 sessions of Qigong was delivered. Primary outcome was change of Chalder's fatigue between baseline and post-intervention (T1-T0). The mental status, physical distress and spiritual wellbeing were measured by Hospital Anxiety and Depression (HADS) and Body-Mind-Spirit Well-being Inventory (BMSWBI)-physical distress (PD) and spirituality. Change of Chalder's fatigue and other outcomes between 2 groups were compared using T-test. Also their correlations were assessed.

Results: Subjects in Qigong and control groups at baseline had moderate anxiety [anxiety: 10.9 (3.7) vs 11.2 (3.6), $p=.580$] and mild depression [depression: 9.4 (3.5) vs 9.5 (3.4), $p=.850$]. Changes of anxiety (T1-T0) were -2.3 (3.2) vs -0.8 (3.3) ($p=.006$) and depression were -2.7 (3.5) vs -0.7 (2.9) ($p<.001$) for Qigong and control groups respectively. Differences of fatigue were -11.8 (11.4) vs -4.1 (6.5) respectively ($p<.001$). Changes of PD were -21.2 (23.8) vs -7.6 (16.5) ($p<.001$) and 9.7 (19.0) vs 3.0 (17.1) ($p=.023$) in spirituality. Correlations between changes of fatigue and HADS were significantly positive (0.500 for anxiety, $p<.001$ and 0.574 for depression, $p<.001$). There were also significant correlation between changes of fatigue and BMSWBI (0.765 for physical distress $p<.001$ and -0.496 for spirituality $p<.001$). **Conclusion:** Significant differences in body, mind and spirit measurements after Qigong were found between two groups. There were also significant correlations between fatigue level and body-mind-spirit wellbeing.

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D-086

THE EFFICACY OF INTERACTIVE TECHNOLOGY INTERVENTIONS FOR CAREGIVERS OF PERSONS WITH DEMENTIA: A SYSTEMATIC REVIEW

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Background: Over 5 million people have Alzheimer's disease or another dementia. Caregiving for a person with dementia (PWD) can lead to physical and psychological morbidity. Interactive technology interventions hold the promise of convenient, low-cost methods of delivering psychosocial interventions to caregivers of PWD by disseminating health information alongside social support or behavioral change support. This systematic review examined the efficacy of interactive technology-driven interventions for caregivers of PWD. **Methods:** OVID Medline, PsychInfo and EBSCO were searched from January 1990 to May 2012 with key words including: dementia, caregivers, interactive health communication, multimedia, and randomized control trial. **Results:** Of the 295 citations identified, 17 were duplicates. Remaining articles were reviewed based on the abstract and title alone; 32 were relevant or could not be fully assessed without reviewing the entire paper. These 32 papers were reviewed by two independent reviewers. Eight papers satisfied the inclusion/exclusion criteria. Papers were excluded for the following reasons: was not an RCT or did not report RCT results (16 papers), did not report caregiver psychosocial outcomes (5 papers), and was not technology driven as defined in this review (3 papers). All studies included multiple components in their interventions. A health information component as well as a social support component was also found in each study. Some studies demonstrated reductions in depression (n=4) and anxiety (n=2). However, there was large variability in the content and delivery of the interventions, inconsistency in measurement and variability of outcomes. **Conclusions:** Prior studies have found interactive technology-driven interventions to be acceptable and feasible among caregivers of PWD but have not reported longitudinal findings from randomized trials. Future studies should compare promising interventions to a control group and utilize common, validated measures.

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D-087

CONTINUOUS HEART RATE MONITORING AS AN INNOVATIVE STRATEGY TO IMPROVE CLIENT-PROVIDER COMMUNICATION

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The importance of client-provider communication has long been highlighted in chronic illness literature. Elevated occupational (work) stress may undermine performance on various tasks that influence client-provider communication including working memory and decision making. Occupational stress may be particularly relevant for community health workers (CHWs), community members without advanced degrees or formal communication training, who provide home-based services to disadvantaged youth and families. The traditional strategy of clinical supervision to improve communication may be insufficient to decrease occupational stress among CHWs because supervision relies upon the subjective recall of stress that occurred during a previous session. Continuous heart rate monitoring (CHRM) was used to derive a novel, objective measure of occupational stress in CHWs. Preliminary support for this approach has been established. CHWs wore a heart rate monitor during audio recorded weight loss sessions with African American youth/caregivers and completed a stress questionnaire. Elevations in heart rate were identified using interrupted autoregressive integrated moving average (ARIMA) modeling and outlier detection. A range of 0 to 21 elevated "events" were identified among each of 12 interview sessions conducted by 3 CHWs. Using a qualitative approach, the coinciding segments of session audio were defined for content and interaction type. The scheduling of future sessions emerged as a stressful topic from both subjective and objective measurements. Topic themes occurring only when objective CHRM included the provision of information and transitioning between agenda topics. When synchronized with session audio, CHRM may be a useful tool for supervisors and counselors to objectively identify and improve communication during events of occupational stress.

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D-088

MEASURING MOTIVATION FOR HPV VACCINATION AMONG YOUNG ADULT MEN

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In 2011 the Advisory Committee on Immunization Practices recommended all boys and young men receive the human papillomavirus (HPV) vaccine. However, many young men are not aware of their HPV-related risks or vaccine options. Increasing HPV vaccination among men will require additional education and intervention. The Transtheoretical Model of Change (TTM) offers empirically supported constructs that are used to measure and modify health behaviors. This study developed and validated measures of the TTM constructs Stage of Change, Decisional Balance (Pros and Cons) and Self-Efficacy in a sample of young adult men (N=329; ages 18 to 26). The stage distribution was: Precontemplation 54.1% (N=178), Contemplation 14.6% (N=48), Preparation 5.2% (N=17), and Action/Maintenance 26.1% (N=86). Principal Components Analysis (PCA) performed on a split half sample revealed a 2-factor solution for the Decisional Balance scale, representing both Pros ($\alpha=0.78$) and Cons ($\alpha=0.83$). Factor loadings ranged from 0.43 to 0.84. Confirmatory Factor Analysis (CFA) confirmed that the two-factor uncorrelated model was the best fit, Chi-square (35)=82.6, $p<.001$, CFI=.92, GFI=.92, AASR=.06. For the Self-Efficacy scale, PCA revealed a single-factor solution ($\alpha=0.83$) with factor loadings ranging from 0.49 to 0.75. A CFA indicated the single factor model was the best fit, Chi-square (14)=43.4, $p<.001$, CFI=.93, GFI=.92, and AASR=.04. Follow-up ANOVAs supported the theoretically predicted relationships between Stage of Change, Pros, and Self-Efficacy. Overall, these results support the validity of these TTM measures for HPV vaccination among young adult men and provide the foundation for an intervention to promote vaccine acquisition. These findings build on previous TTM-based research among young adult women and adds to a growing literature promoting HPV vaccination among men.

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D-089

ANOTHER REASON TO ACT? EXPLORING THE INFLUENCE OF BEHAVIORAL PROTOTYPE IDENTIFICATION ON COLLEGE STUDENTS' INTENTIONS TO GET TESTED FOR SEXUALLY TRANSMITTED DISEASES

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Although identity is not a formal component of the theory of planned behavior (TPB), decades of research has demonstrated that, on average, identity significantly accounts for variance in intentions and behavior beyond that explained by TPB constructs. In this study, we examine the role of identity as a predictor of intentions to get tested for STDs among a sample of college students ($N=172$). The two main goals of this study were to test whether identity impacts STD-testing intentions when TPB constructs are also considered and to illustrate how the choice of analytic strategy may impact results. Participants completed an online survey that assessed prototype identification and the components of the TPB. Using a two-step structural equation modeling approach, we tested two alternative hypotheses: (a) that the association between prototype identification and intentions to get tested for STDs would be mediated by attitudes, norms and perceived control (i.e., standard model) and (b) that prototype identification would have a direct, positive effect on intentions to get tested for STDs even when taking these other constructs into account (i.e., augmented model). A scaled-difference test of these competing models revealed that both fit the data equally well, $T_d (df=1)=0.69, p=.405$; however, because the augmented model was less parsimonious, the analysis provides support for the standard model. Most studies that explore the utility of including identity in the TPB have done so using hierarchical regression analysis. Despite several well documented limitations, we also analyzed our data using that approach. Interestingly, the addition of identity in the second step explained additional variance in intentions beyond that explained by the TPB variables alone ($\Delta R^2=.01, p=.02$). If taken at face value, this result might spuriously be interpreted as evidence in support of the augmented model.

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D-090

MOTIVATIONAL INTERVIEWING TO IMPROVE CLINICAL COMMUNICATION WITH PATIENTS WITH MULTIPLE COEXISTING CONDITIONS: A QUALITATIVE STUDY

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Primary care providers are increasingly caring for patients with multiple chronic illnesses, which can be difficult given resource and time limitations, and especially challenging for socially and economically disadvantaged populations. Improving clinical encounter communication is associated with increased patient participation, medication and treatment adherence, and improvements in health outcomes. A limitation of the current research on improving patient-provider communication is most focus on one outcome (e.g., diabetes) and the success of these interventions has been suboptimal with medically- and economically-indigent patients. To address current gaps, providers were trained in Motivational Interviewing (MI) to improve clinical dialogue and to foster behavior change in their patients. Semi-structured interviews explored providers' attitudes towards using MI to treat low-income patients with multiple chronic illnesses. Ten primary care providers participated in semi-structured interviews that included questions on MI use, benefits/barriers to using MI in their practice, and any ambivalence about MI. Several themes emerged regarding MI including effectiveness for opening communication with patients, identifying patients' competing demands as well as levels of self-efficacy, and providers feeling more satisfied with the quality of the visits. An emergent theme was providers using MI to address several conditions simultaneously including medication adherence, weight loss, and substance abuse and depression. Though providers shared ambivalence about MI (e.g., time constraints), concerns were resolved and MI was seen favorably. As treating complex patients becomes more prevalent in primary care, experiences shared by the providers suggest MI as a practical and useful strategy to open communication and increase patient participation to elicit behavior change for multiple conditions.

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D-091

AN INVESTIGATION OF CLINICALLY SIGNIFICANT CHANGE AND FACTORS ASSOCIATED WITH CLINICALLY SIGNIFICANT CHANGE AMONG CLIENTS OF A DOCTORAL PSYCHOLOGY TRAINING CLINIC

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There are approximately 200 Doctoral-Level Psychology training clinics in the US which provide affordable mental health services to individuals who otherwise may have limited access to such services (Heffer et al., 2006). The research literature on clinically significant (CS) change in training settings has largely examined outcome change in college counseling centers as opposed to psychology training clinic settings (Okiishi et al., 2006; Okiishi et al., 2003; Wolgast et al., 2005; Wolgast et al., 2003). The current study aimed to: (1) determine to what degree clients at a university training clinic meet criteria for CS change at the termination of therapy; (2) determine the number of sessions for 50 % of clients to meet criteria for CS change and (3) determine factors associated with CS change in a university training clinic. The study consisted of 58 adult participants who engaged in psychotherapy at a university training clinic. The OQ-45 was used to assess change in therapy outcomes and has been found to meet criteria in detecting change sensitivity in training settings (Vermeersch et al., 2004). Criteria for CS change required that a client begin treatment in the clinical range and end treatment in the functional range as well as demonstrate a reliable change in score (14 points) (Anderson & Lambert, 2001; Jacobson & Truax, 1991; Jacobson et al., 1984). Reliable improvement occurred when a reliable change in score was observed but the score did not fall in the functional range at the end of treatment. Of the 58 participants, 41 began treatment with scores in the dysfunctional range. Of these 41, 26.83 % attained CS change by the end of treatment and 24.39 % demonstrated reliable improvement by the end of treatment. Factors which modified clinically significant change will also be reported. Results will be discussed in terms of implications for clients served in such settings and student therapist training. Guidelines for integrating the OQ-45 in outcome assessment protocols will be offered.

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D-092

IDENTIFYING YOGA INTERVENTION COMPONENTS FROM A SYSTEMATIC LITERATURE REVIEW AND FOCUS GROUP METHODOLOGY

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Objectives: The scientific study of yoga requires identifying and measuring components of yoga interventions. We used two methodologies, a systematic literature review and focus groups, to determine how yoga elements have been described 1) in published literature and 2) by yoga practitioners.

Methods: We identified 3,039 yoga intervention studies through six indexed databases and hand searching of five select journals. Of these, 466 unique studies spanning 27 countries met our four inclusion criteria. We also conducted nine focus groups with 68 yoga teachers and students across multiple sites in the U.S., using a semi-structured focus group guide. We employed grounded thematic analysis to identify emerging themes from these data, using a constant comparison process.

Results: Most yoga interventions took place in India ($n=204$) or the U.S. ($n=125$). Although the importance of asana (postures) was prominent ($n=354$ studies), asanas were not included in 112 studies, suggesting the importance of other components of yoga as well. Among the focus group participants, themes centered on the benefits of yoga in daily life; the importance of cultivating an inner awareness, both physically and mentally; therapeutic and empowering effects of postures; therapeutic effects of breathing exercises and emphasis on breath during practice; ways in which yoga helped participants to focus and calm their minds to develop a meditation practice; and emphasis on spirituality. Each of these themes can be mapped on to one of the eight limbs of yoga, suggesting this may be a potential framework for coding the important elements of yoga interventions.

Conclusions: Yoga researchers may want to keep the eight limb framework in mind during the development of their interventions. Current research by our team involves creating survey items to address the eight limb framework, in order to assess which components of this framework are incorporated into specific yoga interventions.

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D-094

EXTENSION EDUCATORS' AND PARAPROFESSIONALS' SUCCESSES AND CHALLENGES IN MAKING HEALTHY LIFESTYLE RECOMMENDATION AMONG LOW-INCOME PREGNANT WOMEN

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PURPOSE. The purpose of this study was to identify Extension educators' and paraprofessionals' knowledge sources and the practices and challenges that they experienced while encouraging low-income pregnant women to adopt healthy lifestyle behaviors. **DESIGN.** Seven focus groups (N=39; 8 educators, 31 paraprofessionals) were conducted in seven collaborating Michigan State University Extension offices. Discussions and comments evoked by semi-structured interview questions were transcribed and common themes were identified.

RESULTS. Participants reported that they gained knowledge of making healthy lifestyle recommendations from their formal education, credible Internet sites, professional development, books, magazines, and personal experience. Establishing rapport, being culturally sensitive, emphasizing and encouraging small and gradual change, providing interactive learning environments, emphasizing practical skills that could be applied to daily life, and identifying community resources were important elements in successful education programs. Challenges when providing recommendations to pregnant women were learners' lack of interest or motivation to make changes, unsupportive family members, busy schedules, confusion due to inconsistent or conflicting recommendations, perceptions that healthy foods are expensive, and literacy limitations.

CONCLUSION. When providing healthy lifestyle recommendations to low-income pregnant women, educators value interactive educational tools and messages that are personally relevant, culturally sensitive and easily understood. They appreciate educational programs that encourage small and gradual changes that acknowledge community resources and can be easily adopted within the limitations of learners' daily lives.

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D-095

A QUALITATIVE INVESTIGATION OF ADULTS' PERCEIVED BENEFITS, BARRIERS AND STRATEGIES FOR CONSUMING MILK AND MILK PRODUCTS

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Consuming milk or milk products can lower risk for developing osteoporosis, type 2 diabetes, and metabolic syndrome (Heaney, 2000; Liu et al., 2005). Nonetheless, consumption of milk and milk products has declined over the past two decades (CDC, 2012). A multi-component intervention including effective, theory-based messages are needed to promote milk consumption. As a preliminary step to informing the content of these messages, we conducted a qualitative investigation of men's and women's outcome expectancies for and facilitators and barriers to consuming milk and milk products. We conducted eight focus groups. Separate groups were conducted for men (n=20, Mage=42±5.8) and women (n=20, Mage=38±6.9) and adequate (≥2 servings/day) and inadequate (<2 servings/day) milk consumers. The interview schedule, grounded in social cognitive theory, included questions probing participants' perceptions of milk and milk products and strategies for meeting dietary recommendations for milk consumption. A content analysis of the focus group discussions revealed physical benefits and taste as widely held outcome expectancies. A lack of knowledge about milk and milk products was the most common barrier for consumption. Consuming milk and milk products as part of a routine, making plans to consume milk and combining milk and milk products with other foods emerged as common strategies for ensuring adequate consumption. Within these themes, gender differences were apparent. Men preferred messages with factual information and reputable sources. They expressed concern about the content of milk and milk products. Women preferred health and well-being messages and disapproved aesthetic appeals. Messages promoting milk and milk product consumption should target consumers' beliefs about the benefits of milk and provide strategies for increasing dairy consumption.

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D-096

"WHAT ABOUT YOUR FRIENDS? THE INFLUENCE OF PARENTS AND FRIENDS ON THE NUTRITION AND PA BEHAVIORS OF COLLEGE STUDENTS"

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A plethora of research exists on the relationship between parent and peer influence on college students' health risk behaviors while few studies examine parent and peer influence on college students' preventive health behaviors (PHB) including diet, nutrition (D/N) and physical activity (PA). Research has shown that parents continue to influence decision making among college students, however the strength of the influence may decline as students' transition away from the family. Like health risk behaviors, peers and friends may be supplemental to parents' influence on PHB of college students.

Objectives: (1) To compare parents' and friends' influence on D/N and PA of college students; (2) To explore the main and moderating effects of parents' and friends' influence on college students' decisions to engage in healthful D/N and PA.

Method: College students (N=233, 54 % Female, 70 % Caucasian, 66 % Freshman) completed the Health Knowledge Survey (HKS) online. The HKS was developed to examine students' knowledge, beliefs, and behaviors regarding preventive health topics such as PA and D/N. Paired sample t-tests and hierarchical linear regressions were used to answer objective 1 and 2 respectively.

Results: Parents were more likely to encourage healthy D/N and PA than friends. D/N knowledge and parent influence on diet were predictive of D/N behaviors. D/N knowledge and parent influence on diet were predictive of students' changing their healthy foods consumption. Additionally, parent influence moderated the relationships between PA knowledge, sedentary activity (SA) limit setting, and students changing their SA.

Discussion: The results highlight the importance of parents continuing to be actively involved in their adolescents' PHB as they transition to independent living. Additionally, peers are key counter players in college students' lives and more should be done to encourage them to be positive influences on each others' PHB.

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D-097

ELUCIDATING THE RESTAURANT FOOD ENVIRONMENT FOR CHILDREN: FINDINGS FROM A RURAL, BORDER COMMUNITY

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Background: Research is needed to elucidate the restaurant food environment for children at the community and consumer levels using direct methods of assessment.

Purpose: In response, the present study assessed the child food environment in Imperial County, CA, a region characterized by above average childhood obesity rates, by enumerating and auditing restaurants.

Methods: To describe the community food environment, researchers triangulated three sources of restaurant listings to create an enumeration database. The database was then verified through phone calls, internet searches, and/or visits. Any food establishments that served less than 10 entrée items or did not meet the North American Industry Classification System (NAICS) definition of a 'Table' or 'Fast food' restaurant were removed. To characterize the consumer food environment, researchers audited 50 % (N=67) of enumerated restaurants using an adapted version of the Children's Menu Assessment (CMA), a standardized observational tool. Descriptive statistics were conducted in SPSS 20.

Results: At the community level, 50.7 % were national chains and 58.2 % were fast-food restaurants. At the consumer level, few restaurants had signage or promotions targeting children and adolescents, although signage/promotions were more likely to encourage unhealthy eating (19.4 %) than healthy eating (1.5 %). Only 49.3 % of restaurants offered children's menus. Children's menus were characterized as follows: 60.6 % offered a healthy side dish, 51.5 % included menu labeling, 30.3 % offered a healthy beverage, 24.2 % offered a healthy entrée, 12.1 % offered a whole grain item, 3.0 % offered a healthy entrée salad, and 0 % offered a healthy dessert.

Conclusion: In summary, characterizing the restaurant food environment revealed limited availability and promotion of healthy menu options for children. Findings will inform future restaurant-based interventions in Imperial County.

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D-098

COLLEGE SMARTS: INVESTIGATING THE NUTRITION KNOWLEDGE AND HEALTH BEHAVIORS OF STUDENTS IN TEXAS

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College students may be at higher risk for weight gain as they frequently consume fast food and foods making up the college meal plan. Transitioning from high school and living at home to a college environment may lead to decreases in physical activity as well as increases in caloric intake. Behaviors developed during this period may influence adulthood health status. It is imperative, therefore, to examine how prepared students are to take control of their preventive health behaviors at this stage in their lives.

To explore gender differences in students' nutrition knowledge and behaviors. To examine the role of nutrition knowledge and behaviors in stage of behavior change for a sample of college students. An online health knowledge survey was developed and administered at a major university. The survey was designed to assess college students' knowledge, beliefs, and behaviors regarding preventive health topics including physical activity, diet, and nutrition. Participants (N=233) were mostly female (54 %), non-Hispanic white (74 %), freshman (66 %). Independent t-tests and multinomial logistic regressions were used to answer study objectives.

Significant gender differences were found for factual knowledge of diet (e.g. serving sizes), necessity of good diet, and healthy and unhealthy foods. Gender differences were also found for diet behaviors including following serving sizes, limiting sugary foods, and planning meals. Regarding stage of change, knowledge was a significant predictor for avoiding high fat foods. Additional results on nutrition behaviors will be presented.

These results highlight the need for further research aimed at young adults, a group frequently overlooked in dietary research. This is a period where independent lifestyle, nutrition and dietary choices are made. As such, a young adult equipped with the necessary knowledge of healthy eating and requisite health behaviors will be more prepared to make decisions regarding eating, nutrition as well as other health behaviors.

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D-099

SUGARED DRINKS AND ORAL HEALTH AMONG UNINSURED CHILDREN

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Background: Research indicates a correlation between dental caries & drinking patterns high in sugared beverages. Dental caries is the most prevalent chronic condition among children. Despite health promotion efforts, sugared drinks comprise over 50 % of some children's daily total fluid intake. Minority and low SES children tend to have higher sugared beverage intake. Yet there is limited research on those further marginalized (e.g., lack any type of medical and dental insurance coverage). The current study addresses this gap.

Purpose: To examine sugared beverage intake patterns & relationships with oral health and other issues among uninsured children.

Methods: The sample consisted of 157 children, aged 3–10 years, that lacked medical & dental insurance & who attended an annual one-day oral health intervention. Parents completed a survey on each child regarding oral health status, behaviors, and needs. Analysis examined drinking patterns among children whose daily beverage intake consisted of >50 % non-healthy drinks (any beverage no milk or water) (NHD) and those whose intake consisted of >50 % sugared drinks (any beverage not water) (SD).

Results: 17 % had drinking patterns >50 % NHD and 66 % had >50 % SD. Children >50 % NHD were more likely to: obtain services for more than a routine checkup (p=0.025); report teeth in fair or poor condition (p=0.049); and have parents with less than high school education (p>0.04). Children >50 % SD they were more likely to need restorative dental care and sealants and have parents that were unemployed and less educated.

DISCUSSION: Findings confirm studies that show poor outcomes for children with drinking patterns high in sugared beverages. Yet, this study contributes to this literature by examining patterns among a vulnerable subpopulation of children.

Implications: There are strong implications for health education. Increased knowledge & skills among children/families are needed, as well as environments that promote healthier choices.

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D-101

POSITIVE ASSOCIATION BETWEEN DARK GREEN/ORANGE VEGETABLE CONSUMPTION AND METABOLIC HEALTH IN OVERWEIGHT LATINO YOUTH

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Background: There is minimal data on the impact of vegetable consumption on adiposity and metabolic health, specifically vegetables that are dark green and deep orange/yellow (also known as nutrient-rich vegetables, NRV). This study aims to examine this relationship in overweight Latino youth.

Methods: This cross-sectional study of 172 overweight (≥ 85 th percentile BMI) Latino youth (8–18 years) included the following measures: dietary intake via multiple 24-h recalls, total body fat via dual-energy x-ray absorptiometry, adipose tissue distribution via magnetic resonance imaging, and insulin sensitivity (SI) via frequently-sampled intravenous glucose tolerance test. The following were used to evaluate metabolic syndrome (MetS): fasting glucose, HDL cholesterol, triglycerides; blood pressure and waist circumference. Participants were dichotomized into those that consumed NRV (n=105) and those who did not consume any NRV (n=67). Regression and analysis of covariance were used for analysis, with the following a priori covariates: age, gender, energy intake, dietary fiber and total body fat.

Results: NRV intake is positively correlated with SI (r=0.20, p=0.03). Consumers of NRV (mean intake=0.3±0.4 servings/day), compared to non-consumers, had 25 % increased SI (1.6±1.1 vs. 1.2±1.1, p=0.03), 17 % less visceral adipose tissue (1.6±1.1 vs. 1.9±1.1, p=0.04), and a trend for 58 % decreased prevalence of MetS (11.4 % vs 26.9 %, p=0.05).

Conclusion: These findings suggest that overweight Latino youth consume a minimal amount of nutrient-rich vegetables, but such little amounts may have a profound impact on reducing metabolic disease risk. This may be a relevant target for interventions.

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D-102

INTERACTIVE TEXT MESSAGING TO SUPPORT BEHAVIOR CHANGE IN A CHILDHOOD OBESITY RANDOMIZED CONTROLLED TRIAL

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Background: Prior interventions have used text messaging for disease management, but interactive text messaging systems to help parents improve their child's health behaviors remain understudied.

Methods: STAR is a three-arm, cluster RCT underway at 14 pediatric offices in MA to improve obesity outcomes among 800, 6–12 year olds with a BMI ≥ 90 th percentile. Parents in one intervention arm received a text message campaign to support family behavior change with key features including: 1) educational messages about behavioral goals; 2) queries of parents on target behaviors to support self-monitoring; 3) automated feedback tailored to child's direction of change from the prior response.

Results: Of 164 children in this intervention arm, 56 % are non-white, 47 % have a household income <\$70,000/yr, and 45 % of parents surveyed have high school education. At baseline, 76 % of parents reported sending/receiving ≥ 1 text/day and 70 % have unlimited texting plans. Parents who agreed to receive the study text message campaign (84 %) were more likely to report they text \geq once/day (p<.001), enjoy text messaging (p<.001) and have unlimited messaging plans (p<.001). Thus far, 91 % of participants have responded to at least one and half responded to all self-monitoring messages.

Conclusions: Text messaging is a common means of communication for parents of school age children in this obesity intervention. Most participants opted in to the text messaging campaign, and the majority of those receiving texts engage with the interactive system. Interactive text messaging is promising as a means of supporting behavior change to address child obesity.

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D-103

RELATIONS AMONG RISK FOR METABOLIC SYNDROME, SOCIAL ECOLOGICAL FACTORS, DIET, AND PHYSICAL ACTIVITY IN UNDERSERVED YOUTH

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The high rate of obesity in youth contributes to the rising prevalence of metabolic syndrome, particularly in underserved adolescents (low income, minorities). Previous ecological approaches have supported the evaluation of social contextual variables, including parenting factors, and home and neighborhood influences, in understanding health behaviors. However, little research is available in underserved adolescents, especially those with high-risk metabolic profiles. In the current study, social contextual predictors collected from surveys included self-efficacy, parental limit-setting, monitoring, and support, home PA resources, neighborhood supports for PA, and geographic information systems estimates of proximity to food outlets. Outcomes included accelerometer estimates of moderate to vigorous and light PA (MVPA and LPA) and three random dietary recalls (N=201, mean age=13.3, mean BMI =33.9, 80 % African American, 60 % female). Metabolic data were collected from medical records and showed a high-risk sample. Results of regression analyses showed no significant predictors of MVPA but showed significant effects of parental ($\beta=.16$) and neighborhood support ($\beta=.14$) on LPA ($F(9,191)=2.91$, $R^2=.12$). Results also showed self-efficacy ($\beta=-.27$) was significantly associated with lower fat intake. No significant effects were found for fruit and vegetable consumption ($F(9,191)=2.21$, $R^2=.10$). LPA was the only significant correlate of body mass index. Results emphasized the importance of investigating of different systems for different health behaviors, particularly those at highest risk for developing metabolic syndrome. Results suggest family and neighborhood approaches to MVPA and individual and family approaches to diet. Furthermore, results support exploring the role of LPA in health behavior and obesity interventions in an effort to inform the development of more effective interventions in underserved youth.

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D-104

VALIDATION OF THE YALE FOOD ADDICTION SCALE AMONG A WEIGHT LOSS SURGERY POPULATION

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An emerging literature suggests that excessive eating behavior shares features with addictive disorders, including common behavioral and neurobiological components. The Yale Food Addiction Scale (YFAS), recently validated in college students and binge eaters, is a means to assess "food addiction" in accordance with DSM-IV criteria for substance dependence. Using online survey methodology, we aimed to validate use of the YFAS among weight loss surgery (WLS) patients. Participants completed measures about pre-WLS food addiction (YFAS), emotional and binge eating, behavioral avoidance and inhibition, and pre- and post-WLS substance use. A sample of 63 WLS patients (59.7 % Roux-en-Y) was recruited; participants were 62.7 % female, 86.6 % Caucasian, and ranged in age from 25 to 73, with a mean age of 42.7; 53.7 % met criteria for pre-WLS food addiction. Convergent validity was found between the YFAS and measures of emotional eating ($r=.368$, $p<.05$) and binge eating ($r=.469$, $p<.05$). Discriminant validity was supported in that problematic substance use, behavioral avoidance, and behavioral inhibition were not associated with YFAS scores. Incremental validity was supported as the YFAS explained a significant proportion of variance in binge eating scores, $R^2=.421$ for Step 1 (EES, EAT-26), $\Delta R^2=.060$ for Step 2, adding YFAS, $F(2,1)=17.018$, $p=.014$. Those meeting food addiction criteria had poorer total weight loss outcomes (32 % vs. 27 %) and were more likely to admit to post-WLS problematic substance use (i.e., potential "addiction transfer"; 53 % vs. 39 %), but these comparisons did not reach statistical significance. Results support use of the YFAS as a valid measure of food addiction among WLS patients. Future research with a larger sample may shed light on potentially important relationships between pre-surgical food addiction and both weight and substance use outcomes.

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D-105

EMA ADHERENCE AMONG ADULTS SEEKING WEIGHT LOSS TREATMENT

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Ecological momentary assessment (EMA) assesses individuals' experiences, behaviors, and moods in real time and in their natural environment. We are using EMA to study relapse after intentional weight loss. The purpose of this report is to examine adherence to the EMA prompts during the first 3 mos of a 12-mos study that includes standard behavior weight loss treatment with continuous EMA to identify antecedents to lapses and relapses. There are 4 types of EMA surveys programmed on the participants' smartphones: 1. Random are sent 1–5 times during the waking hours of each day; 2. Self-initiated are completed when the person experiences an urge or temptation; 3. End of day (EOD) asks how typical the day was in terms of eating, exercise, mood, sleepiness, stressors, coping, and also can report lapses not reported in real time; and 4. Beginning of day (BOD) asks about quantity and quality of sleep and current energy level. We used descriptive statistics and Chi-sq to analyze adherence to the 4 types of EMA surveys. The sample (N=17) was 94.4 % female, 77.8 % White, 61.1 % married, completed 15.9±2.2 years of education, and had a mean BMI of 32.5±3.89. Of a total of 5293 random EMA surveys, 90.0 % were completed, 0.7 % abandoned and 9.3 % were missed. For the BOD, 92.7 % of the 1778 surveys were completed, 0.4 % abandoned and 6.6 % missed. Of the 1766 EOD surveys, 92.1 % were completed, 0.9 % abandoned and 7.0 % missed. There were 370 self-initiated surveys, 92.7 % of them were completed and 7.3 % abandoned. Adherence varied significantly among participants with a range of 73.8–98.3 % for completed random prompts, 66.0–100 % for BOD and 69.3–100 % for EOD. Chi-sq tests indicated that the month did not have a significant impact on adherence to completing self-initiated ($p=0.56$), BOD ($p=0.18$), and EOD ($p=0.44$) assessments; however, completing random prompts generally increased over time ($p<.0001$). These data show that individuals are highly adherent to completing EMA prompts over an extended period.

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D-106

STRESS EXPOSURE MODIFIES GENETIC AND ENVIRONMENTAL INFLUENCE ON BMI AND WAIST CIRCUMFERENCE IN CHINESE ADOLESCENTS

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Chronic stress has been linked to the etiology of obesity. Limited effort has been focused on the investigation of moderation effects of stress exposure on the genetic and environmental predispositions to obesity. Our goals were to examine how genetic and shared and nonshared environmental variance in body mass index (BMI) and waist circumference differed by level of stress exposure with data collected in 483 Chinese same-sex pairs of adolescent twins living in Qingdao, China. Chronic stress exposure was assessed with a 26-item stressful life event questionnaire on the prior adversity experienced by participants in the past 12 months. In girls, the additive genetic, shared and nonshared environmental influences accounted for 51.2 %, 0 % and 48.8 % of variance in BMI and 13.1 %, 75.4 % and 11.4 % of variance in waist circumference respectively. Further, additive genetic effects were significantly decreased as the level of stress exposure increased for both BMI ($p=0.01$) and waist circumference ($p<0.01$). In boys, additive genetic, shared and nonshared environmental influences accounted for 93 %, 0 % and 7 % of variance in BMI and 27.7 %, 53.1 % and 19.2 % in waist circumference respectively. There were no significant moderation due to stress exposure for either BMI or waist circumference. These results suggest that the role of stress exposure in obesity may function differently in adolescent males and females. Our findings represent the first attempt to quantify the moderating role of stress exposure in the genetic and environmental influence on obesity and indicate a new insight about genetic interactions with exposure to negative stressors.

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SUBSTITUTION AND COMPLEMENTARITY IN A MULTIPLE HEALTH BEHAVIOR CHANGE INTERVENTION

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The Make Better Choices (MBC) trial examined different strategies for maximizing simultaneous change across multiple health behaviors. All participants (n=200) had four risk behaviors at baseline: high saturated fat intake (Fat), low fruit vegetable intake (FV), low physical activity (PA), and high sedentary leisure screen time (Sed). Participants used handheld technology and coaching to change one diet and one activity behavior simultaneously, while change in untargeted behaviors was also measured. They were randomized to one of four prescriptions: 1) FV+PA+; 2) Fat-PA+; 3) FV+Sed-; 4) Fat-Sed-. Spring et al. (2012) previously reported that the FV+Sed- condition maximized overall healthy behavior change. Secondary analyses were conducted to explore whether targeted health behavior changes were associated with untargeted healthy behavior changes; i.e., substitution and complementarity. Substitution refers to untargeted change that is inversely associated with targeted change; complementarity refers to untargeted change that is positive associated with targeted change. Analysis within the (optimal) FV+Sed- treatment group revealed that targeted changes in sedentary leisure time correlated positively with untargeted reductions in fat intake, $r(54)=.31$, $p=.02$; evidence of healthy complementarity, which helps to explain the superiority of the FV+Sed- group relative to the other 3 groups (Spring et al., 2012). We next looked for evidence of substitution and complementarity within each of the suboptimal treatment groups (FV+PA+, Fat-PA+, and Fat-Sed-). These tests revealed marginal evidence for substitution within the Fat-Sed- condition; a marginal inverse correlation between targeted Fat- and untargeted FV+, $r(51)=-.23$, $p=.10$. These findings may be used to help patients with behavioral comorbidity select an optimal subset of health behaviors to target for change.

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IS KNOWING HALF THE BATTLE?: EXPLORING KNOWLEDGE IN BARIATRIC SURGERY CANDIDATES

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Preoperative psychosocial assessment of surgery-seeking obese patients focuses on evaluating psychiatric and behavioral barriers for postoperative success. Knowledge about medical, nutritional, and psychosocial components related to bariatric surgery can also provide additional information about the patient's surgery preparedness. Knowledge was measured using the University of Virginia Bariatric Knowledge Scale (BKS), a 22-item multiple choice scale (Mean score=80.29%). The purpose of this study was to explore preoperative patient knowledge and its association with behavioral and psychological variables. Data from 168 preoperative obese candidates (Mean age=45.2; Mean BMI=49.11, 81 % Female) were analyzed using descriptive statistics, Pearson correlations, and hierarchical linear regression. Higher scores on the BKS were significantly associated with higher estimated IQ, number of weight loss attempts, a more permissive eating style, and more problems with emotional eating ($ps<.05$). While results of a regression analysis showed that estimated IQ explained 22.8 % of the variance in knowledge, $R^2=.228$, $F(1,124)=36.32$, $p<.001$, past weight loss attempts through commercial programs explained an additional 4.4 % of the variance in knowledge score. Problematic eating patterns did not significantly contribute to the 2-predictor model. The results of our study suggest that patients who report higher number of behavioral attempts at weight loss through commercial programs may be more prepared for surgery. These findings have practical implications for preoperative assessments and suggest the potential importance of learning behavioral skills despite regaining lost weight. Future research on the association between knowledge and post-operative success is warranted.

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THE INTERPERSONAL ENVIRONMENT OF SMALL FOOD STORES (TIENDAS) IN SAN DIEGO, CA AND IMPLICATIONS FOR OBESITY RESEARCH

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Lack of access to healthy foods disproportionately impacts racially/ethnically diverse, low-income populations, such as Latinos, and contributes to disparities in obesity in the United States. Many Latinos make frequent trips to small food stores (e.g. tiendas) to buy and cook with fresh, culturally appealing foods, spending more on groceries than the average American. This abstract argues for the re-examination of social influences within small food stores. As part of a larger NIH-funded study, El Valor de Nuestra Salud (The Value of Our Health), 29 structured interviews were audio-recorded with small food store owners, employees, and customers in San Diego, CA. Interviews were coded to examine the interpersonal environment of small food stores, assess relationships between customers and store employees, and understand the overall role that small food stores play within the Latino community. Preliminary analyses revealed close, established relationships between customers and small food store employees were prevalent. The sense of home and community provided within the store was revealed, and, the importance of the small food stores within the Latino grocery shopping experience was emphasized by all groups. Small food stores are prevalent in the urban food system and interpersonal interactions that occur within the store need to be considered as potential mediating influences on health behavior, including healthy eating. Further research on the customer-small store relationship help inform intervention efforts to effectively modify the retail food environment in ways that promote healthy eating and help address the epidemic of obesity prevalent in most communities.

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THE PEDSQL: A COMPARISON OF THE FOUR- AND BI-FACTOR MODELS

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Introduction: The PedsQL is a widely used 23-item, health-related quality of life (HRQoL) measure. Yet, it's not clear whether the 4-factor, standard configuration (SC) or a bi-factor model (BF), which assumes all items share some proportion of common variance, better represents the construct.

Methods: Obese teenagers (N=248; BMI M=99%,SD=0.96; age M=13.9,SD=1.8) enrolled in a weight loss intervention responded to the measure at baseline. The SC includes 4 groups of items which are regressed onto a unique latent variable (Physical, Emotional, Social, School) they are purported to measure. The BF is identical but all the items, regardless of domain, are also regressed onto an additional general latent variable (GLV). The two models were judged using 3 criteria: 1) direct comparison of the non-nested models using the Bayesian Information Criterion (BIC; lower absolute value indicates better fit) and a maximum likelihood estimator (integration; adaptive quadrature, 15 points), 2) model fit using 2 metrics with established cut-points, including the comparative fit index (CFI>.95) and the root mean square error of approximation (RMSEA<.08), both of which were derived using a mean- and variance-adjusted weighted least squares estimator, and 3) factor loading (FL) comparisons.

Results: The BF had a slightly better BIC (BF=16643.23,SC=16661.70). Both had good RMSEAs ($\leq.07$) and close CFIs, but only the BF met the cut-point (BF=.95, SC=.93). FLs for the SC model were all significant and only 2 were below 0.5. The inclusion of the GLV reduced the same FLs with 15 falling below 0.5 and 4 turning non-significant. Also, comparison of BF model FLs found values for 24 items regressed on the GLV to be higher than the same items regressed onto the 4 factors (24vs4), and 13 of the GLV FLs were at least 30 % higher.

Conclusions: The fit indices are close, but since all of the items share a theme (HRQoL) and for many items, substantial common variance, the BF is a better representation of PedsQL data than the standard SC model.

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MINDFULNESS AND ADHERENCE IN A BEHAVIORAL WEIGHT MANAGEMENT PROGRAM

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Obesity is a major public health concern associated with increased risk of health complications. Weight management programs have proliferated in the U.S., but programs continue to be plagued by poor outcomes and relapse. Mindfulness has been incorporated into some weight management programs to promote healthy changes and facilitate weight loss. However, data regarding the efficacy of mindfulness components in weight management are equivocal. The aim of this observational study was to explore changes in mindfulness that occur without mindfulness intervention during weight management. A sample of overweight and obese individuals was recruited from a university-based behavioral weight management program which was offered as a 3-month (n=42) or 6-month (n=37) program. The program targeted behavioral changes for all participants through weekly classes taught by nutrition, physical activity, and behavioral specialists and provided individualized support and access to exercise facilities. Seventy-nine participants (78.8 % female; 78.8 % white; mean age 45.8±11.5; mean BMI 47.8±12.0) were recruited for the study and completed self-report questionnaires at program start and completion. Assessments included the Five Facets of Mindfulness Questionnaire, and data were collected regarding participant compliance with dietary logs, physical activity logs, and session attendance. Analysis of variance was used to evaluate differences between individuals who became more mindful (n=29) and those who became less mindful (n=50) during the program. Results indicated that increased mindfulness was associated with completing more physical activity logs ($F=5.37$, $p=.024$), more diet logs ($F=3.23$, $p=.077$), and attending more sessions ($F=3.28$, $p=.073$). Thus, individuals who became more mindful tended to be more adherent to treatment guidelines. Given that dietary and fitness log completion and attendance have been identified as predictors of BMI change in this and other studies, future studies are needed to determine whether targeting mindfulness in behavioral weight loss interventions will improve adherence to treatment.

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A PILOT STUDY EXAMINING A STEP-DOWN APPROACH TO BEHAVIORAL WEIGHT LOSS TREATMENT

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Background: Stepped-care (SC) approaches have been applied to a range of chronic conditions, including the management of obesity. Stepped-care approaches have traditionally transitioned (stepped-up) patients to more intensive treatment when they are unable to meet treatment goals with less intensive treatment. However, there is modest precedent for stepped-down approaches. In a stepped-down approach, patients begin with a more intensive treatment and are stepped down to less intensive treatment based on achieving treatment goals. This study compared a standard behavioral weight loss program to a stepped-down approach.

Methods: Fifty-two overweight and obese adults participated in an 18-week behavioral weight loss program. Half were randomly assigned to be stepped-down from weekly group meetings based on completion of weight loss goals every 6 weeks, while the other half remained in their groups regardless of weight loss. Participants were asked to self-monitor and report caloric intake and expenditure throughout the program.

Results: While not statistically significant, by the end of treatment, the standard treatment participants lost nearly 3 % more body weight than stepped-down participants (Stepped down =4.9 % versus Standard treatment=7.8 %). Greater self-monitoring was associated with lower stepped-care eligibility and higher percent weight loss at the end of treatment ($p<.01$).

Conclusion: There was little evidence to support the efficacy of the stepped-down approach for behavioral weight loss treatment employed in this investigation. Additional research in this area is greatly needed.

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DIFFERENCES IN WEIGHT PERCEPTION AND HEALTH-RELATED ATTITUDES IN COLLEGE STUDENTS

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Background: Research shows college students have inaccurate body weight perceptions. Women tend to overestimate their weight, while men have more realistic perceptions. Such misperceptions may be related to higher levels of body dissatisfaction, disordered eating, depression, and lower self-esteem in women. The current study examined differences in weight status (normal weight (NW) vs. overweight or obese (OW/OB)) and gender as it relates to attitudes in a sample of students at an urban commuter college.

Methods: Participants (N=428, 52 % female; 31 % Caucasian; mean age=20.6±1.9 yrs; BMI=23.1±4.0 kg/m²) completed a self-report questionnaire on health and lifestyle behaviors, the Block Food Frequency Questionnaire, select subscales from the Multidimensional Body Self-Relations Questionnaire, and had height and weight measured.

Results: In this sample, 66 % were NW (BMI 18.5-24.9) and 26 % were OW/OB (BMI≥25). A greater percentage of men were OW (38 % compared to women (19 %; $p<.001$), yet men were less preoccupied with weight ($p<.001$) and less likely trying to lose weight than women (69 % men vs. 49 % women; $p<.001$). Accuracy of weight perception varied across gender depending on weight status. Among NW students, more men accurately classified themselves as NW compared to women (93 % vs. 78 %; $p<.01$). However, among overweight participants, women were more likely to accurately classify themselves as overweight compared to men (71 % vs. 49 %; $p<.05$). NW students with accurate perceptions felt they were in better health ($p<.05$) and were more satisfied with their appearance ($p<.001$) than NW students who perceived themselves as heavier. On the other hand, OW students who perceived themselves as NW were more health conscientious ($p<.05$) and more satisfied with their body ($p<.001$) than OW students who accurately perceived their weight.

Conclusion: This study identifies gender differences in body weight perception by weight status, which may have implications for health and lifestyle behaviors.

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PATTERNS OF SEDENTARY BEHAVIOR AMONG OVERWEIGHT/OBESE COLLEGE STUDENTS RECRUITED TO A WEIGHT-LOSS INTERVENTION

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Excessive sedentary behavior (SB) is a risk factor contributing to the high prevalence of overweight/obese status among American college students. Yet there are limited data on the SB patterns of this group. The purpose of this study is to describe the SB patterns of overweight/obese college students who self-selected into a technology-based intervention for weight-loss. 1941 students were screened to participate in a Social and Mobile Weight Control Program for Young Adults (SMART). Participants (N=404) were predominately (70 %) female, Mage=22 (+4) years, and 33 % were obese (MBMI=29+2.8). Participants self-reported their SB on a typical weekday and weekend day using a 16 item questionnaire. Data were grouped by SB domain: TV, computer, phone, transportation, other. Variables were log transformed and 90 % Winsorized means were used to reduce the effects of outliers. At baseline, participants spent an average of 715 (+239) min.dy-1 being sedentary. Participants were more sedentary on weekdays compared to weekends ($p<.001$), with computer use (CU) accounting for the largest single type of SB ($M=310+123$ min.dy-1). Compared to men, women spent significantly more time sitting using the phone ($p<.001$) and during transportation ($p<.01$). Obese students spent significantly more time on school-related CU than overweight students ($p<.01$). Students pursuing their first undergraduate degree spent significantly more time sitting using the phone ($p<.01$) whereas students who already had at least one degree spent significantly more time on school-related CU ($p<.001$). Results indicate that overweight/obese college students spend their sedentary time differently. These data can inform weight-loss interventions targeting this group. Teasing out differences between school-related CU and discretionary CU could help inform how to best to reduce sedentariness without interfering with study habits.

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SIPS AND SIDES: CAREGIVER ORDERING OF HEALTHIER BEVERAGES AND SIDES FOR CHILDREN AT FAST FOOD AND CHAIN RESTAURANTS

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The aim of this study was to examine whether caregiver sociodemographics and health behaviors were associated with ordering healthier beverages and sides for children in fast food and chain restaurants. We used a cross-sectional sample that included all parents/caregivers (n=1,347) from the HealthStyles 2010 Survey (N=4,184). The analytic sample was 66 % Female; 70 % White/non-Hispanic, 12 % Black/non-Hispanic, and 18 % Hispanic; and 9 % were 18–24 years, 26 % were 25–34 years, 37 % were 35–44 years, and 28 % were 45 years or older. Of families that eat at fast food restaurants, when ordering a kids' meal, 77 % reported ordering healthier sides (fruit cup or apple slices) and 77 % reported ordering healthier beverages (100 % juice or white milk) always, most of the time, or sometimes. Multiple logistic regressions were conducted and odds ratios (OR) were adjusted for sociodemographics.

Those living in the Midwest compared to the Northeast (OR=2.2, CI=1.3-3.9) had significantly greater odds of reporting they order a healthier beverage for their children. Those with an annual income greater than \$50,000/year compared to those earning \$49,999 or less (OR=1.8, CI=1.2-2.6) had higher odds of reporting that they order a healthier side item for their children. Those who do not engage in physical activity compared to those who do (OR=0.5, CI=0.4-0.95) or do not eat a healthy diet compared to those who do (OR=0.5, CI=0.3-0.8) were less likely to engage in healthier ordering behaviors for their children (OR was same for both behaviors). These results have implications for educating caregivers about healthy restaurant menu choices for children.

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CORTICAL ACTIVATION TO FOOD PICTURES PREDICTS WEIGHT CHANGE FOLLOWING BARIATRIC SURGERY

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Introduction: Recent work suggests that pre-intervention functional neuroimaging can predict weight loss among behavioral dieters. No studies have examined whether neural reactions to food images predict weight loss following bariatric surgery. The aim of the present study was to determine if a pre-surgical functional magnetic resonance imaging (fMRI) food motivation paradigm could be used to predict post-surgical laparoscopic adjustable gastric banding (LAGB) outcomes.

Methods: 18 participants were scanned using an established food motivation paradigm prior to LAGB surgery. Weight was assessed pre-surgery and six months post-surgery. fMRI data were analyzed using BrainVoyager QX statistical package.

Results: Whole brain analysis of food images vs. nonfood images, corrected for multiple comparisons ($p < .01$, cluster threshold=7) was performed to analyze the relationship between presurgical brain activation and subsequent weight loss. Prior to eating a small meal, increased brain activity to food cues in middle frontal gyrus at baseline was associated with more weight loss six months following surgery. Increased activation in inferior frontal gyrus was associated with less weight loss. After eating a small meal, increased brain activity to food cues in middle temporal gyrus and posterior cingulate at baseline was associated with more weight loss six months post-surgery. Increased activation in inferior parietal lobule was associated with less weight loss.

Discussion: This is the first study to correlate fMRI activity with LAGB outcomes. We found that neural activity in previously established regions associated with food motivation, visual attention, and higher order processing predict weight loss following bariatric surgery. These preliminary findings highlight the role of neural circuitry in the success and maintenance of weight loss, and suggest the potential use of fMRI in screening LAGB surgery candidates.

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EXPLORING PUBLIC DISCOURSE ABOUT OBESITY ACROSS SOCIAL MEDIA PLATFORMS

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Background: The escalating US obesity rate has made obesity prevention a top public health priority. Recent efforts (policies, campaigns, interventions) have tapped into the social media landscape; yet, to effectively leverage social media (SM), we must understand the nature of authentic, user-generated discourse on obesity across diverse online platforms. Through a mixed method approach combining computational linguistics and discourse analysis, we identified patterns and themes across SM platforms to describe real-time weight-related dialog.

Methods: Over 60 days, we used a social media data mining service to search on 3 key terms (overweight, obese/ity, fat) and collect over 2 million pieces of publicly available data from Facebook, Twitter, blogs, and forums. Data were analyzed with a mixed methods approach. Quantitative analyses included descriptive statistics of keyword distribution within the data and posts across platforms, bigrams associating key terms with content words, and frequencies of commonly shared messages. Qualitative discourse analysis was performed on select data excerpts representing themes highlighted in quantitative analysis.

Findings: The keyword "fat" appeared most frequently and 91 % of the data were derived from Twitter. Content words associated with keywords and most shared posts had derogatory, stigmatizing, and misogynist connotations. Qualitative analyses revealed aggression, stigmatization, and ridiculing humor toward overweight individuals and weight management behaviors. Other themes included education and assigning blame/responsibility. Blogs and forums contained more nuanced and actionable comments compared to Twitter.

Conclusions: This study takes an innovative approach to documenting social media content and understanding public attitudes about obesity. Web 2.0-based health promotion/obesity prevention efforts can benefit from knowledge gained in this analysis, as efforts to reframe weight-related issues and address sentiment toward overweight individuals may be key steps toward behavior change.

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SHORT-TERM IMPACT OF AN EVIDENCE-BASED, CHURCH-BASED, CULTURALLY SENSITIVE HEALTH PROMOTION PROGRAM TO MODIFY AND PREVENT OBESITY IN AFRICAN AMERICAN ADULTS

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African American adults are disproportionately affected by obesity. Despite the benefit of health promoting behaviors on obesity risk, African American adults do not meet current guidelines for these behaviors. Churches are influential in shaping health behaviors, and church-based health promotion programs have great potential for reducing obesity disparities. The purpose of this study was to examine the effectiveness of an evidence-based, church-based, culturally sensitive program (Health-Smart Behavior Program) implemented by church leaders in increasing health promoting behaviors, and reducing BMI and blood pressure among African American adults. A sample of 107 adults (Mean Age=49.1; Female =74.8 %) were recruited from two African American churches in Bronx, NY. Participants at the randomly assigned intervention church (n=55) participated in the 8-week program and participants at the other church (n=52) served as wait-list controls. Participants completed the health responsibility, physical activity, and nutrition subscales of the HPLP-II and had BMI and blood pressure assessed at baseline and post-intervention. Group by time repeated measures ANOVAs were used to determine intervention effects on outcome measures. Significant group by time interactions indicated improved systolic blood pressure ($F[1, 75] = 8.22, p < .01$) and scores on all three HPLP-II subscales measured (health responsibility, $F[1, 79] = 7.79, p < .01$; physical activity, $F[1, 79] = 23.76, p < .001$; nutrition, $F[1, 77] = 6.23, p < .05$) in the intervention group. No significant intervention effects were found for diastolic blood pressure and BMI. The lack of intervention effects on BMI was not surprising given the short duration of the program. The program improved health promoting behaviors that are known to modify and prevent obesity and related conditions. Results support the use of culturally sensitive, church-based health promotion strategies to increase health promoting behaviors and reduce obesity-related conditions among African American adults.

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THE GO! STUDY: PRELIMINARY RESULTS OF AN OBESITY PREVENTION PROGRAM WITH HOSPITAL EMPLOYEES

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The average weight gain of adults is approximately 1–2 lbs per year, which over time, contributes to the development of overweight and obesity. Interventions aimed at preventing such weight gains may be an effective strategy to reduce the incidence of obesity. Worksites are considered an ideal setting in which to target obesity prevention efforts due to the existing social networks, available resources, and the opportunity to change existing physical and social environments. This study examined the effectiveness of an innovative 12-month multi-component worksite obesity prevention program (Go!). A total of 407 hospital employees in the intervention arm and 96 clinic employees in the comparison arm were assessed during the course of the study. The intervention involved pedometer distribution, labeling of all foods in the worksite cafeteria (with calories, step equivalent, and a traffic light signaling recommended portion), persuasive messaging throughout the hospital, and the integration of influential employees to target healthy social norms. Primary outcomes included changes in weight, BMI, waist circumference, physical activity, and dietary behavior. Repeated measures ANCOVA indicated that neither group showed significant increases in weight, BMI, or waist circumference over 12 months. However, the intervention group showed greater physical activity. Surprisingly, there were no group differences in dietary behavior. Moderator variables (e.g., sex, job classification) will be further examined and implications will be discussed.

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IS LESS ALWAYS MORE? THE EFFECTS OF LOW-FAT LABELING AND CALORIC INFORMATION ON FOOD INTAKE, CALORIE ESTIMATES, TASTE PREFERENCE, AND HEALTH ATTRIBUTIONS

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Environmental factors such as low-fat claims and calorie labeling play an important role in the way that people make food-related decisions and may have an effect on food intake. The present study examined the effects of low-fat labeling and caloric information on food intake, calorie estimates, taste preference, and health attributions. Female undergraduate students ($n=224$) were randomly assigned to one of four experimental conditions. Participants were asked to taste and rate chocolate candy labeled as either low-fat or regular-fat. In addition, in two of the four conditions, participants were shown caloric information about the candy. Outcome variables included participants' intake, calorie estimates, taste ratings, and health-related attributions. Eating disorder attitudes and behaviors were also assessed. The differences in food consumption across conditions did not reach statistical significance. However, participants significantly underestimated the caloric content of low-fat labeled candy relative to regular-fat labeled candy. Participants also rated low-fat labeled candy as better tasting than regular-labeled candy when they had caloric information available. Participants endorsed more positive health attributions for low-fat labeled candy than for regular-labeled candy, independent of caloric information. The inclusion of eating disordered attitudes and behaviors as covariates did not alter the results. The present study adds to the literature examining the impact that our current obesogenic environment has on food intake. This study demonstrated that young women underestimate the caloric content of low-fat foods which may be related to participants' "health halo" associated with low-fat foods. These findings suggest that knowledge of caloric content may not have as great of an impact on food intake as previously assumed. Public health initiatives concerning the prevention and treatment of obesity may be more successful if they address the caloric biases that people display when they are presented with health claims.

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PERCEIVED STRESS PARTIALLY MEDIATES THE ASSOCIATION BETWEEN INCOME AND ADIPOSITIVITY AMONG NON-HISPANIC WHITE WOMEN

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Research indicates an inverse association between socioeconomic status and adiposity among non-Hispanic whites (NHWs). The nature of this association is less clear, however, for Hispanics. The present study sought to examine the potential mediating role of perceived stress in explaining the income-adiposity link among separate cohorts of 450 NHW women and 343 Hispanic women. Eligible women were aged 30–50 years, and English or Spanish speaking. Participants completed a standard demographic measure and the Perceived Stress Scale. Clinic-measured weight, height, and waist circumference were also recorded. Anthropometric and demographic characteristics were: M (SD) BMI=29.8 (8.9) kg/m², M (SD) age=39.9 (6.1) years, 52 % college-educated, 79 % reporting a total household income of \$30,000 or higher [NHW cohort]; and M (SD) BMI=31.4 (8.0) kg/m², M (SD) age=38.6 (5.4) years, 13 % college-educated, and 40 % reporting a total household income of \$30,000 or higher [Hispanic cohort]. Mediation was tested per Baron and Kenny (1986). Income predicted BMI among NHWs (path $c=-0.47$, $p<0.001$) but not Hispanics (path $c=-0.01$, $p=0.946$). Therefore we only examined mediation among NHWs. Results indicated that perceived stress partially mediated the association between income and BMI (ab=-0.12, $p=0.002$; $c'=-0.36$, $p<0.001$). A second set of analyses used waist circumference as the criterion. Income was associated with waist circumference for both NHWs (path $c=-1.24$, $p<0.001$) and Hispanics (path $c=-0.61$, $p=0.04$), but further analyses revealed evidence for the mediating role of stress only among NHWs (p values <0.001 , same pattern as that for BMI). Findings underscore the inconsistent nature of the SES-adiposity association for Hispanics: inverse for waist circumference but essentially zero for BMI. They also offer implications for the development and application of stress-reducing interventions for NHWs.

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D-122

PHYSICAL INACTIVITY ASSOCIATED WITH METABOLIC SYNDROME IN LAW ENFORCEMENT OFFICERS

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Law enforcement officers (LEO's) have a high prevalence of metabolic syndrome (abdominal obesity, elevated blood pressure and triglycerides, low HDL cholesterol, glucose intolerance) and factors leading to this syndrome are not well understood. Recently, shift schedule and sleep disorders were shown to be important contributors to metabolic syndrome among police officers. Objective: To examine the association between physical activity, stress, healthy eating, sleep, and metabolic syndrome among LEO's. Methods: 320 (250 male and 70 female) LEOs participated in NIOSH funded SHIELD (Safety & Health Improvement Enhancing Law Enforcement Departments) study. Physical measures (height/weight, BP) and blood biomarkers (triglycerides, HDL cholesterol, and glucose) were obtained at the time of testing and constructs of physical activity, stress, healthy eating and sleep were obtained by questionnaires. LEOs were characterized into the absence or presence of the metabolic syndrome (2005 AHA/NHBLI guidelines). Logistic regression was used to see the association between physical activity, stress, sleep, healthy eating and metabolic syndrome. Results: 34.06 % (96 males and 13 females) met criteria for metabolic syndrome. Multivariate odds ratio (95 % CI) after adjusting for age, sex and smoking status showed that physical activity (OR=0.015; 95 % CI: 0.0002, 0.113; $p<0.001$) stress (OR=1.28; 95 % CI: 1.05, 1.56; $p=0.011$), healthy eating (OR=0.74; 95 % CI: 0.59, 0.92; $p=0.007$) were significantly associated with metabolic syndrome, but not sleep (OR=1.11; 95 % CI: 0.8, 1.53; $p=0.514$). Odds of having metabolic syndrome significantly decreased by 98.5 % with increased physical activity, decreased by 26 % with healthy eating, and increased by 28 % with increased stress. Conclusion: Despite previous studies showing sleep and shift work as contributors, successful health promotion programs to increase physical activity and healthy eating are needed to decrease the risk of metabolic syndrome in this unique occupational group.

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D-123

ARE LAW ENFORCEMENT OFFICERS FIT FOR DUTY?

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Law enforcement work is a high stress occupation with increased risk of cardiovascular disease (CVD). Despite governmental agencies established strategic goals to improve the health and safety of law enforcement officers (LEO's), it is not clear what lifestyle factors are contributing to this elevated CVD risk. Objective: The CDC/NIOSH funded SHIELD (Safety & Health Improvement Enhancing Law Enforcement Departments) study is evaluating the effects of a health promotion program on LEO injury, illness, and cardiovascular disease outcomes. Methods: 320 LEO's from Vancouver Police Department, Clark County Sheriff's Office in Vancouver Washington, and Marion County Sheriff's Office in Salem Oregon participated in the baseline physical and survey measures which included dietary and exercise behaviors, stress and sleep, tobacco and alcohol, physical measures of height, weight, blood pressure, fitness, anthropometric indices, lipid and glucose blood values, and mental health survey. Results: The average years of service was 14 years. Only 17 % of LEO's were at optimal body weight with 38.5 % obese (BMI>30) and 43.8 % overweight (BMI>25 <30). 34 % of LEO's met criteria for metabolic syndrome. LEO's averaged less than 6.3 hrs of sleep per 24 hours and fruit and vegetable intake was 3.4 servings per day. 16.5 % of the LEO's were current smokers. Conclusion: LEO's have elevated rates of metabolic and cardiovascular disease. Workplace behavioral change programs are needed to reduce these unhealthy lifestyle causes of disease and promote the health and fitness of those that protect our communities. This research was supported by the National Institute on Occupational Safety & Health R01 0H009676.

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ILLNESS DISCLOSURE AND HEALTH-RELATED QUALITY OF LIFE IN ADOLESCENTS AND ADULTS WITH CYSTIC FIBROSIS

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Cystic fibrosis (CF) is a life-threatening chronic medical condition with a high treatment and symptom burden. A diagnosis of CF may be perceived as stigmatizing by the patient, and since the condition is somewhat concealable, patients may select individuals to whom they disclose their diagnosis. This cross-sectional study examined the relationship of illness disclosure to psychological and physical well-being in 65 adolescents and young adults (51 % female) with CF (ages 14 to 25). All participants completed self-report questionnaires assessing illness disclosure, stigma, CF-specific quality of life (QoL), anxiety, depression, optimism, and mastery. The illness disclosure questionnaire assessed broad groups the patient had disclosed to (e.g., friends, teacher/boss), as well as the impact disclosure had on that relationship (i.e., having a negative, neutral, or positive effect). Physical health data included pulmonary function, BMI, recent hospitalizations, number of medications, and comorbid conditions. Analysis of variance and correlational analyses were used to analyze the data. Results indicated that greater negative effect of illness disclosure on relationships was associated with higher hospitalization rate ($p < .05$), more depression ($p < .01$), worse health perceptions ($p < .05$), lower optimism ($p < .05$), and lower mastery ($p < .05$). Higher frequency of negative illness disclosures (i.e., disclosures that worsened a relationship versus disclosures that had a neutral or positive effect) was related to worse lung function (FVC% predicted; $p < .05$), older age ($p < .05$), higher anxiety ($p < .01$), higher depression ($p < .001$), lower QoL ($p < .01$), worse self-reported respiratory symptoms ($p < .05$), and higher stigma ($p < .001$). Negative illness disclosure experiences appear to be related to worse psychological functioning and self-reported symptoms, as well as more perceived stigma. Future studies should examine whether negative illness disclosures lead to psychological distress, or high distress and stigma lead to more negative disclosure experiences.

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CONTEXTUAL FACTORS IN THE EXPERIENCE OF SEIZURES

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This study is a pilot administration of a measure of contextual factors that may increase seizures for those with epilepsy. The Survey of Seizure Experience (SSE) included 103 items about epilepsy diagnosis, treatment, seizure warning and the situations, emotions, behaviors, and medication changes that may relate to seizures. The SSE also assessed coping, control over seizures, and efforts to stop or reduce a seizure. Constructs that related to overall perceived control over seizures, such as coping style, were explored through structural equation modeling. Ninety-four participants completed the survey offered through the Sydney (Australia) Epilepsy Action website and Facebook page. Most participants were women (74 %) with a mean age of 29, and a mean 13-year history of epilepsy. Seizures were more likely during the early morning and late afternoon or evening. Being tired, consuming alcohol, missing or changing seizure medications, exposure to flashing lights, specific kinds of touch, and being anxious appeared to promote seizures. Participants reported coping by adhering to medical regimens, avoiding triggers, such as alcohol, and engaging in healthy behaviors, such as getting good sleep. Most participants reported combining medical and lifestyle approaches to manage epilepsy. A structural equation model, accounting for perceived control over seizures, was statistically supported (Chi-square=35.4, $p > .05$). Several factors significantly ($p < .01$) contributed to perceived control, including higher education level ($r = .23$) internal locus of control ($r = .36$), and combining self-management and medical approaches in coping ($r = .37$). Surprisingly, neither seizure frequency nor coping significantly correlated with perceived control. Consistent with other findings (Kobau & DiIorio, 2003; Trevorrow, 2006) seizures appear promoted by contextual factors. A patient's sense of control is influenced by more than seizure frequency and includes an appreciation of these factors. The SSE may contribute to behavioral, psychological, and environmental strategies to reduce seizures.

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D-127

CORRELATES OF SEDENTARY BEHAVIOR IN CHILDREN AND ADOLESCENTS AGED 7-18: A SYSTEMATIC REVIEW

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Objectives: Risks posed by sedentary behaviors, independent of physical activity, have become evident. This review collected and assessed the current literature on the correlates of sedentary behaviors among children and suggests interventions aimed at reducing sedentary behaviors.

Methods Search engine literature searches were conducted from June 2011 to February 2012. Eligible papers were published in English in peer-reviewed journals, and examined correlates of sedentary behaviors in children aged 7-18.

Results: 188 samples were included. Sedentary behavior was correlated to age, physical maturity, gender, ethnicity, socioeconomic status, location, week/weekend day, neighborhood satisfaction, access, emotional and physical health status, risk behaviors, family and social influences, physical activity, and nutrition. Significant differences by specific sedentary behaviors were present in the findings.

Conclusions: Correlates of sedentary behaviors were significantly affected by the type of sedentary behavior, suggesting that this is a complex area of research that cannot be assessed simply as an absence of physical activity. Several health, socio-economic, social, ethnic, gender, and age factors seem to be reliably linked to sedentary behavior, but there is evidence that specific sedentary behaviors may have opposing effects compared to sedentary behavior in general. Research focused on sedentary behavior specific interventions could be efficacious in improving quality of life in children.

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D-128

ACCEPTABILITY AND FEASIBILITY OF MOBILE PHONE TECHNOLOGIES TO ENGAGE HOMELESS PERSONS IN OUTPATIENT CARE

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Objectives: The health of homeless persons is among the worst of any vulnerable group. They use emergency departments more, and ambulatory care less, than the general population. We evaluated the feasibility and acceptability of mobile phone text messaging to improve homeless persons' engagement in outpatient care.

Methods: Survey and qualitative interviews with 48 homeless veterans living in Boston. Descriptive statistics are provided. We analyzed qualitative interview field notes using grounded theory. **Results:** Participants were 27–65 years old (mean of 53.1), 77 % were white and 88 % had a mobile phone. Of these, 29 % were smart phones. Most participants with a mobile phone used texting (71 %). Of the total sample, 94 % were interested in receiving mobile phone reminders (call or text) of upcoming appointments and 94 % were interested in receiving a mobile phone contact from their health care provider if they had not been seen in a long time (e.g. 1–2 years). Qualitative data indicated that accessing health care is hard for homeless persons due to communication barriers (e.g. lack mailing address) and reliance on public transportation. Many felt mobile phone reminders would help keep track of appointments, "A lot of us veterans our memories aren't that great and to receive something on a cell phone like a text message letting me know two days from now I have an appointment — Yeah, that would be very helpful." Participants liked text messages because they can be saved, are inexpensive, and can be responded to at one's convenience.

Conclusion: Homeless persons use mobile phones, and are interested in text message appointment reminders. This may be an effective means of increasing homeless persons' use of outpatient healthcare services and improving management of chronic conditions.

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D-129

EXPLORING HOW MINDFULNESS AND DISTRESS TOLERANCE IMPACT ADHERENCE IN COLLEGE STUDENTS

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Adherence to medical recommendations is essential for good health, yet it remains a significant challenge for patients. Several barriers to good adherence have been identified: non-acceptance of illness, complexity of medication regimen, physical discomfort, and anxiety/depression. Awareness of these barriers and ability to accept or tolerate the physical and emotional components of treatment appear critical to good adherence. While distress tolerance has received some attention in research on adherence behaviors, few studies have focused on the relationship between mindfulness and adherence. The aim of this study was to determine if distress tolerance and/or mindfulness were predictive of adherence behavior in college students faced with stressors already inherent to university living.

A non-clinical sample of 284 students (80 % female; 65 % Caucasian, 17 % African American, 8 % Hispanic, 6 % Asian) was recruited from a Catholic university in Philadelphia as part of a larger IRB-approved study on health behaviors. Correlation analyses revealed adherence to healthy behaviors was significantly correlated with Mindful Awareness subscale of the Philadelphia Mindfulness Scale (PHLMS, Cardaciotto et al., 2008; $r=.359$, $p<0.01$) but not significantly correlated with Distress Tolerance Scale (DTS, Simons & Gaher, 2005; $r=.108$, n.s.) or Mindful Acceptance subscale the PHLMS ($r=-.001$, n.s.). A simultaneous regression determined that Mindful Awareness was the only significant predictor of adherence behavior ($b=.395$, $p<0.01$), suggesting that greater capacity for self-regulatory attention and awareness positively predicts adherence behaviors in a college population. This novel finding is supported by evidence that mindfulness relates to healthy behavior in college students (Roberts et al., 2010) and increases the strength of the intention-behavior relationship (Chatzisarantis et al., 2007). The non-significant finding with the DTS is consistent with research suggesting better predictive utility in clinical samples with heightened emotional distress (Zvolensky et al., 2010).

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D-130

UTILIZING SOCIAL MEDIA TO ENGAGE A COMMUNITY OF HEALTH DATA USERS: A CASE STUDY USING HINTS

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Background: Social media are increasingly integrated into health communication efforts. Although the literature offers many strategies to improve audience engagement and enhance message visibility, reach, and impact on these channels, there is limited evidence to suggest which strategies are effective in practice. To grow this evidence base, we implemented and evaluated a set of social media messaging strategies to promote the Health Information National Trends Survey (HINTS), a public use health information dataset.

Method: We conducted formative research using media search engines Vocus (mainstream news) and Radian 6 (social media) to assess the health communication environment related to HINTS constructs, and to better target outreach and message design. Over 6 months, we implemented outreach strategies on Twitter, such as identifying opinion leaders, targeting messages via hashtags, and promoting tweets from other users. Metrics from Twitter (followers, retweets, clickthroughs) and the HINTS website (unique visitors, data downloads, visit duration) assessed effectiveness.

Results: Outreach efforts were largely effective. Baseline HINTS Twitter statistics were: 87 tweets, 109 followers, 134 messages retweeted, and 239 clickthroughs to sites linked in tweets. During the study, HINTS Twitter disseminated 1077 tweets, received 445 retweets ($M_{\text{month}}=74$), had 1827 clickthroughs, and gained 449 followers ($M_{\text{month}}=75$). The HINTS website had a monthly mean of 1368 unique visitors, who on average spent almost 4 minutes per visit. New HINTS data were downloaded 121 times in the 2 weeks following the release date. **Conclusions:** Our results suggested the relative success of some strategies over others. Specifically, targeted messaging, fostering interaction, and sharing key messages from other users enhanced the reach and resonance of strategic communication efforts. These findings can guide future health communication endeavors on social media.

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D-131

HOW AND WHERE TEENS SEARCH ONLINE FOR SEXUAL HEALTH INFORMATION

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INTRO: According to the Pew Research Center, 38 % of 14–17 year old youth use the internet to gather health information. The purpose of this study is to determine which websites teens visit for sexual health information, and which search terms are placed in the search engine. **METHODS:** 11 African American students (grades 9th–12th) participated in a guided discussion to assess how teens would search online for health information regarding common adolescent sexual health concerns. The students were presented with the following scenarios: 1) You are experiencing the following symptoms: burning when you urinate and abdominal pain. You think you have a sexually transmitted disease but are not sure which one; 2) Your 15 year old friend recently took a pregnancy test, and it was positive. She came to you for help. She wants you to help her decide what to do next; and 3) You have to write a paper on the Human Papillomavirus for your science class. After presentation of each scenario, students were asked to list any websites they would go to directly to find information and the search terms they would use in a search engine. **RESULTS:** On average 9 websites were listed per scenario, and 11 search words. Google.com and Yahoo.com were listed as website options for all scenarios. For the scenario regarding symptoms of a sexually transmitted infection student also listed cdc.gov, as a website address for information. Students would use the following search terms: "STD symptoms," and "Sexually Transmitted Disease" to find information about symptoms concerning for an STD. To find information about pregnancy concerns, youth stated that they would seek information from teenpregnancy.com. To find information on HPV, the following website would be used: HPVinfo.com. **CONCLUSION:** Recognizing the importance of the internet for sexual health information, knowing how and where teens look for this information is critical for sexual health website developers and online educators.

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STIGMA MODERATES THE LINK BETWEEN HEALTH-PROMOTING BEHAVIOR AND ITS SOCIAL-COGNITIVE PREDICTORS

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Perceived stigma is related to negative emotional, behavioral, and health consequences (Pascoe & Smart Richman, 2009). This study tested if epilepsy-specific stigma is associated with less health-promoting behavior and its correlates. As suggested by the information-motivation-behavior skills model (Fisher, Fisher, Amico & Harman, 2006), we hypothesized that disease-specific stigma would be a moderator of the link between social-cognitive adherence predictors and lower medication adherence in people living with epilepsy.

Adults with epilepsy (N=142, age: M=39) completed an online questionnaire including the epilepsy stigma scale (Austin et al., 1998; DiIorio et al., 2003). To measure medication adherence, participants reported medication intake in the past week and the time interval since last doses missed (Knobel et al., 2002; Chesney, Ickovics, & Chambers, 2000). To measure social-cognitive predictors of adherence, we adapted the information-motivation-behavioral skills scale of HIV medication adherence for epilepsy (The LifeWindows Project Team, 2006).

Stigma was associated with social-cognitive predictors of adherence: Among adults with epilepsy, those reporting higher levels of epilepsy-specific stigma had lower adherence motivation, ($r=-.51, p<.001$), were less knowledgeable about how to manage their medical regimen ($r=-.28, p=.001$), and had less developed behavioral skills ($r=-.44, p<.001$). We conducted moderation analyses examining stigma as a moderator of the main effects of motivation, information, and behavioral skills. Epilepsy-specific stigma moderated the link between motivation and behavior, $F(1)=4.84, p=.03$. For people who reported more stigma, medication adherence was dependent on motivation. If they were highly motivated they showed high adherence but if they had low motivation they showed low adherence.

The current study adds to the growing literature on stigma and health where stigma related to neurological disorders remains understudied. Stigma may lead to worse health outcomes because it interferes with health behaviors.

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D-133

UNDERSTANDING THE DECISION-MAKING PROCESS IN WOMEN AGES 18 TO 25 CHOOSING TO UNDERGO BREAST REDUCTION SURGERY

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Breast reduction is a common procedure that has only increased in popularity over the past decade. There is an increasing minority of girls and young women in their teens and early twenties who have undergone this procedure, and there is little research on the psychological effects that can result from this type of surgery. Furthermore, there is a void of reliable information available for members of this population who are looking to explore their options regarding their breast size. This study aims to understand why young women might feel motivated to reduce their breast size, how the decision was made, and how women who have already had the surgery feel about the decision. Eligible participants were female breast reduction patients between the ages of 18 and 25, or those women who were outside of that age range but had had their surgery between those ages. Women between 18 and 25 who were considering the procedure but had yet to have it done were also recruited, but none served as participants. Data collection is ongoing for this qualitative study, and 7 participants have been consented and interviewed to date. Of those women interviewed, the majority were white (71.4 %), with the remaining identifying as Latina/Hispanic (14.3 %) or African-American (14.3 %). The mean age at time of surgery was 22.3 (SD=1.7). Analysis of interviews revealed, overwhelmingly, that women who develop significantly large breasts at puberty come to identify with their breast size. They cite the decision to reduce their breast size as difficult, mainly because of the change in identification that would ensue. In addition, all of the women interviewed spoke of a sexuality that was both implied by and forced upon them due to their breast size. This led to unwanted attention because of their breasts, a need to minimize the appearance of their breasts that is sometimes described as "desperate", and overall self-consciousness. The results of this study, as they continue to emerge, will hopefully provide information for surgeons and patients, and empower young women to make informed choices for their bodies.

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EXAMINING A MODEL OF SELF-COMPASSION, BODY SHAME, AND MINDFUL EATING

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Recent years have witnessed a surge of scholarly interest in exploring the link between mindfulness and the adaptive self-regulation of appetite, eating, metabolism, and weight. Similarly, the construct of self-compassion, a modern outgrowth of ancient Buddhist spiritual traditions has received increased attention in the context of body image disturbance and disordered eating. Aligned with integrating these two emerging lines of contemporary research, this cross-sectional analysis sought to test a preliminary indirect effect model of individual differences in self-compassion (SC) on variation in self-reported mindful eating (ME) via the proposed mediator of body shame (BS). A related aim examined whether this indirect effect was larger for certain components of ME among 322 undergraduate females (mean age=19.5, SD=1.5). Results indicated that SC was positively correlated with ME-Total Score ($r=.21, p<.001$) and negatively correlated with BS ($r=-.50, p<.001$). The bivariate associations between SC and each of the ME subscales were as follows: ME-Disinhibition ($r=.19, p<.01$), ME-Awareness ($r=.06, p=.29$), ME-External Cues ($r=-.12, p=.04$), ME-Emotional Response ($r=.30, p<.001$), and ME-Distraction ($r=.27, p<.001$). ME also negatively covaried with BMI in the current sample ($r=-.16, p<.01$). Significant indirect effects were observed for ME-Total Score (.08, $p<.01$; 95 % CI=.03 to .14) and the ME-Emotional Response (.17, $p=.001$; 95 % CI=.08 to .28), ME-Distraction (.20, $p<.001$; 95 % CI=.12 to .31), and ME-Disinhibition (.10, $p<.01$; 95 % CI=.04 to .19) subscales. Parameter estimates were comparable in magnitude whether evaluated using standard parametric (i.e. Sobel test) or more robust non-parametric bootstrap resampling methods. Effects were preserved in models adjusted for BMI and self-esteem. Preliminary findings: 1) suggest the utility of further model evaluation in developmental and experimental (e.g., intervention) research paradigms and 2) may have implications for contributing to targeted health promotion initiatives in at-risk college women.

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HEALTHCARE SERVICE UTILIZATION IN A SAMPLE OF TRANSGENDER WOMEN

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The field of transgender health care has changed considerably in recent years as a result of increased community advocacy and visibility in mainstream society. Historically, health care professionals working with transgender persons promoted the idea that mental health and life satisfaction was linked to successful completion of sex reassignment surgery and other medical/surgical procedures aimed at changing the body to align with one's gendered self. More recently, professionals working with this population have come to recognize that gender transitioning can occur through one of many paths which may or may not include medical/surgical procedures. Furthermore, some transgender individuals may not seek gender transition per se but prefer to express themselves outside of the gender-binary. The 7th Version of the Standards of Care developed by the World Professional Association for Transgender Health (WPATH; SOC, 2012) reflects this paradigm shift, recognizing that any set of guidelines for transgender care need to be flexible so that clinicians can tailor treatments to address the needs of each client. This presentation will review literature highlighting the changes in approach to treating gender dysphoria for transgender clients and present data from a non-clinical sample of 91 transgender women who completed a survey about biomedical and non-surgical interventions they pursued during their process of transitioning. Of the 91 transgender women, 90 percent engaged in hormone therapy, 84 percent engaged in electrolysis/laser treatment, 43 percent had sexual reassignment surgery, 35 percent engaged in speech therapy, 21 percent had facial feminization surgery, 64 percent engaged in some form of counseling/psychotherapy, while 20 percent sought a mental health professional merely to get a letter of recommendation for surgical intervention. These findings support the field's shift toward flexibility in transgender healthcare acknowledging the diversity of needs and desires within the transgender community.

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PREDICTORS OF RESILIENCE AND HEALTH-RELATED BEHAVIORS AMONG HISPANIC ADULTS: A LIFE TRAJECTORIES ANALYSIS FROM LATE ADOLESCENCE TO ADULTHOOD

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Currently, little is known about the contextual effects of neighborhood socioeconomic status and acculturation, as predictors of health outcomes in Hispanic populations. Using multiple regression models, we examined the effects of social class and acculturation in late adolescence and current adulthood, as predictors of five healthy lifestyle outcome variables. We assessed socioeconomic status (SES) of neighborhood and level of acculturation, at late adolescence and also at current adulthood from a Life Journey structured interview. We sought to examine the life trajectory from adolescence to early adulthood as related to five adult-stage health-related outcomes: (a) Resilience, (b) Health Motivation, (c) Exercise, (d) High-Caloric Food Intake, and (e) Low-Caloric Food Intake. For a sample of (N=185) Hispanic adults, the alpha reliability of scales for these five outcome variables was: Resilience ($\alpha=.941$), Health Motivation ($\alpha=.781$), Exercise ($\alpha=.713$), High-Caloric Food Intake ($\alpha=.764$), Low-Caloric Food Intake ($\alpha=.754$). Controlling for age and gender, significant predictors in these regression model analyses were: (a) for Resilience - adulthood level of acculturation ($B=.217$); (b) for Health Motivation - late adolescence SES ($B=-.200$) and adulthood SES ($B=.333$); (c) for Exercise behavior - adulthood SES ($B=.224$) and adulthood level of acculturation ($B=.267$); and (d) for High Caloric foods - adulthood SES ($B=-.198$). The adjusted final model R Squared for these models ranged from .077 to .223, all significant at $p<.01$ or greater. We will also expand these models with qualitative data using our innovative Integrative Mixed Methods methodology developed by Castro and colleagues. We will convert qualitative thematic categories into numeric form to examine the effects of two predictor domains: (a) intensity of stressors, and (b) types of coping responses, to learn more about the effects of various stressors and coping responses as other predictors of these health outcomes.

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Citation and Meritorious Poster

D-137

A NOVEL MEASURE OF IMPLICIT ATTITUDES PREDICTS BLOOD DONATION BEHAVIOR

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Background: Past blood donation researchers typically rely on self-report measures of blood donor motivations without addressing implicit processing inherently involved in decision-making. We addressed this by introducing and testing the validity of an implicit blood donation attitude measure we refer to as the blood donation Single Target Implicit Association Test (ST-IAT).

Method: A total of 412 (134 male and 278 female) undergraduate participants first completed the blood donation ST-IAT. Next, they filled out self-report measures of donation attitudes, donation anxiety, blood and needle fears, and donation intention. Participants were given an opportunity to sign-up for an upcoming local blood drive. One month after the testing session participants indicated whether they showed up to a blood drive intending to donate blood within the past 30 days.

Results: The blood donation ST-IAT was significantly related to explicit attitudes ($r=0.22$, $p<0.001$), fear of needles ($r=-0.20$, $p<0.001$), fear of blood ($r=-0.17$, $p<0.001$), donation anxiety ($r=-0.25$, $p<0.001$), and donation intention ($r=-0.20$, $p<0.001$). Also, those with no prior donation experience demonstrated significantly more negative implicit attitudes towards blood donation compared to those without a history of donation ($t(410)=3.775$, $p<0.001$). Using logistic regression analyses, the ST-IAT was a significant predictor of sign-up behavior (Wald $X^2(1, 404)=5.263$, $p<0.05$, $B=0.94$) and whether participants indicated showing up to a blood drive during the 30 day follow-up period (Wald $X^2(1, 346)=5.417$, $p<0.05$, $B=1.13$).

Conclusion: The present study demonstrated that donation anxiety held the strongest relationship with the ST-IAT, suggesting the measure may be tapping affective approach or avoidance tendencies toward blood donation. Most importantly, we demonstrated that the ST-IAT predicts sign-up behavior and 30 day follow-up behavior.

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D-138

POSITIVE AFFECTIVE EXPERIENCES: EXPLAINING THE ASSOCIATION BETWEEN RELIGIOSITY AND HEALTH

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Although religiosity has been associated with physical health in numerous studies, attempts to unpack this relationship remain noticeably incomplete. Drawing from recent research on sub-types of positive emotion, we examined the role of a specific but understudied type of positive emotion: spontaneous feelings of inner peace/tranquility. Results from several samples (n 's range from 35 to 222) indicate that a majority of participants report experiencing such episodes. For most individuals, these episodes are relatively brief, lasting 10 to 120 minutes, and occur in a number of religious (and non-religious) contexts. Not surprisingly, feelings of tranquility and gladness predominate during such episodes, whereas feelings of awe, amusement, and alertness are reported at lower rates. In two samples, these types of episodes correlated significantly with both intrinsic religiosity (r 's = .23 and .13) and self-reported physical health (r 's = .30 and .23). The episodes exhibited modest but significant correlations with self-reported frequency of prayer ($r=.21$) but across several samples did not correlate with measures of general positive affect, general negative affect, stress, life-satisfaction or mindfulness, suggesting that these episodes are distinct from other constructs. To address whether such episodes mediate the religiosity-health relationship, a cross-sectional survey study was conducted using a convenience sample of young adults ($n=93$). Spontaneous episodes of inner peace/tranquility, religiosity and physical health were assessed using self-report measures. Regression analyses revealed that these episodes (marginally) met the statistical criteria for mediation, Sobel $Z=1.75$, $p=.07$, thereby supporting their hypothesized role. These findings suggest that positive affect in general, and feelings of inner peace/tranquility in particular, may help explain why religiosity is so often associated with physical health.

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D-139

DESIGN AND USE OF A PATIENT FACING ELECTRONIC HEALTH RECORD IN PRIMARY CARE IN RURAL AREAS

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Background: A patient facing electronic health record (EHR) was designed to support patient self-management with an intuitive technology interface. Self-determination theory (SDT) provided a conceptual framework to connect the technology development with these goals of patient-centered care incorporating needs for autonomy, competence, and relatedness. Features of the EHR included a home page with health-related reminders and a health history section. Health management trackers provided tools for monitoring blood pressure, weight, blood glucose, and cholesterol. Additional features included health maintenance alerts and a communication resource to enhance communication with the provider. **Methods:** Patient interactions with the EHR were captured in log files. Each action was associated with a user id, session id, page load id, time stamp, and label. The label indicated the section of EHR and the nature of the action. We calculated descriptions of EHR use and examined factors that predicted repeat logins using a multiple event, time-varying Cox regression model. **Results:** The health history was at least partially completed at the initial login in 79 % of instances. Time windows around clinic visits and follow-up time after the first re-login were treated as time varying covariates. A total of 448 patients representing 5,963 person-months of follow-up were included in this analysis. Overall, 49 % of patients who initially logged into UHR used it again. The single strongest predictor of repeat use was using the system two times. Other factors included lower patient age. Communication functions and medication management tasks were associated with heavy use. **Conclusions:** Patient-centered informatics has the capability to enhance self-management and health communication. However, our findings also point to the challenges of expanding adoption of EHRs.

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D-140**SPIRITUALITY VS. RELIGIOSITY: IMPLICATIONS FOR SELF-REGULATION AND HEALTH**

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Prior research has frequently demonstrated that both religiosity and the related but distinct variable of spirituality positively predict physical health. Self-regulatory ability has often been hypothesized as an important mediator of these relationships: religiosity and/or spirituality are thought to enhance self-regulation, which in turn should promote health. However, direct tests of this hypothesis are rare. In the current investigation, we examined whether self-regulatory ability mediates the relationships between: 1) religiosity and health and 2) spirituality and health. A questionnaire containing previously validated measures of general spirituality, intrinsic religiosity, self-regulatory ability and physical health was administered to a sample of young adults ($n=77$). Regression-based mediation analyses indicated that self-regulatory ability did indeed function as a (marginally) significant partial mediator of the religiosity-health and spirituality-health relationships ($p's < .06$). However, follow-up analyses indicated that spirituality's role in this relationship could not be accounted for by the variance it shares with religiosity, whereas the converse was not true. These findings suggest that it may be spirituality, not religiosity per se, that contributes to self-regulatory ability and its health protective effects.

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D-141**RELATIONSHIP OF OPTIMISM AND PESSIMISM TO QUALITY OF LIFE IN PATIENTS WITH SYSTEMIC SCLEROSIS**Kadie M. Harry, MA,¹ Rina M. Sobel, MA,² Scott C. Roesch, PhD,¹ Philip J. Clements, MD,³ Suzanne Kafaja, MD,³ Vanessa L. Malceme, PhD,^{1,2} Daniel E. Furst, MD³ and Dinesh Khanna, MD⁴

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Systemic sclerosis (SSc), a severe chronic rheumatic disease, negatively impacts patients' quality of life (QOL), but disease severity only explains a small portion of variation in QOL outcomes, thus implicating the potential role of psychological characteristics. Optimism and pessimism have been related to QOL in other disease populations, although with somewhat mixed results; the present study examined their relationship to QOL in SSc, after controlling for covariates. Existing literature is inconclusive regarding whether the widely-used Life Orientation Test-Revised (LOT-R) better represents optimism/pessimism on a continuum, or as independent constructs. Thus, confirmatory factor analysis (CFA) was used to compare one- and two-factor structures for the LOT-R. Participants were 183 patients with SSc recruited through the UCLA Scleroderma Quality of Life Study. Participants underwent clinical examinations and completed surveys that included the LOT-R and self-report measures of depressive symptoms (CES-D-10) and disability (HAQ). The CFA supported a two-factor structure of the LOT-R, demonstrating that optimism and pessimism are distinct, albeit correlated, dimensions. Hierarchical linear regression analysis indicated that, after controlling for medical covariates, optimism ($\beta = -.376, p < .001$) was a slightly stronger predictor of depressive symptoms than pessimism ($\beta = .349, p < .001$). After controlling for medical covariates, optimism ($\beta = -.153, p = .04$) was the only significant predictor of disability. Future research should consider using the two-factor structure of the LOT-R when measuring optimism and pessimism. This study was the first to examine optimism and pessimism in patients with SSc; further research is warranted to examine their relationship to other disease outcomes in SSc.

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D-143**COGNITIVE-SPECIFIC COPING STRATEGIES ARE ASSOCIATED WITH INCREASED PAIN TOLERANCE DURING A PHYSICALLY DISTRESSING TASK**

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Coping strategies during experiences of distress can be classified as cognitive (using thoughts) or behavioral (using actions) to manage stress. Much research has shown that cognitive strategies are more effective in coping with pain. However, research has yet to investigate how cognitive versus behavioral strategies differ under a general versus specific framework. The present study extends a two-dimensional, bipolar (cognitive-behavioral; general-specific) coping framework that specifies whether cognitive or behavioral strategies are also general or specific. It was hypothesized that greater use of strategies classified as both cognitive and specific would be associated with longer time elapsed during a cold pressor task (CPT). Participants from the community ($N=114$, 50 % males, 65 % Caucasian, M age =34, $SD=14$) submerged their hand in 0 ° C water for as long as tolerable. Following the task, participants were asked to list the strategies used to cope with the pain during the CPT. Coping strategies were coded by two independent raters as "behavioral" or "cognitive" (dimension one) and were further divided into "general" or "specific" (dimension two). Prior to reconciliation by two independent reviewers, inter-rater reliability analysis using the Kappa statistic showed acceptable inter-rater reliability (.81 for dimension one and .70 for dimension two). Cognitive strategies (80 %) were used more than behavioral strategies (20 %), $\chi^2(1, N=432)=158.90, p < .001$. As hypothesized, greater use of cognitive-specific strategies were positively correlated with time elapsed, ($r=.35, p < .001$). This study supports previous literature that cognitive coping is adaptive in dealing with stress. Furthermore, the findings have extended previous literature by demonstrating that cognitive strategies, that are also specific, are advantageous when coping with physical distress. Future investigation of these relationships among individuals with pain conditions would be valuable.

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D-144**PAIN INTENSITY IN PATIENTS WITH PERMANENT PLACEMENT OF SPINAL CORD STIMULATION: SOCIO-DEMOGRAPHIC, DISEASE, AND PSYCHOLOGICAL CORRELATES**Lekeisha Sumner, PhD^{1,2} and Kenneth Lofland, PhD³

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Subjective pain intensity, routinely assessed in chronic pain populations, is a vital component in the assessment and treatment of pain. This study sought to determine changes in pain intensity after permanent placement of spinal cord stimulation (SCS), as measured by the Visual Analog Scale and, examine presurgical psychological, socio-demographic and disease correlates with presurgical pain intensity.

Methods: Medical chart review was used to extract data on pain intensity (assessed at each physician's visit approximately eight weeks before SCS trial and after SCS permanent placement), disease (body mass index [BMI], duration of pain symptoms), socio-demographic (e.g. employment status, education) and psychological (e.g. catastrophizing, depressive symptoms, somatic concern, and pain sensitivity) variables in a sample of adult patients ($N=58$; Mean age=42 years) who had undergone permanent placement or SCS.

Results: In a sample comprised of individuals with mostly chronic non-malignant pain (51.9 % = Complex Regional Pain Syndrome, 33.3 % = Low Back Pain) with a mean duration of pain symptoms of almost four years ($M=42.5$ months) significant reductions in pain intensity were demonstrated. At approximately two months post SCS, paired sample T-test revealed significant decreases in pain intensity between pre ($M=6.87$; $SD=1.38$) and post ($M=4.11$; $SD=1.54$) permanent placement of SCS ($p < .0000$). Presurgical pain was significantly and positively associated with employment status and inversely related to catastrophizing. Postsurgical pain was significantly and positively correlated to BMI and employment status and negatively correlated with presurgical pain intensity.

Conclusions: Results lend additional support for the short-term effectiveness of SCS in reducing pain intensity and the need for presurgical psychological preparation to emphasize catastrophizing and pain sensitivity.

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D-145

ACCEPTANCE AND PATIENT FUNCTIONING IN CHRONIC PAIN: THE MEDIATING EFFECTS OF PHYSICAL ACTIVITY

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Engagement in physical activity is conceptually associated with pain acceptance, primarily involving pursuit of life activities despite pain. The most recent study suggested that pain acceptance may precede physical activity. Given these, pain acceptance may play an important role in person's choice to engage in activities in the presence of pain, and this could lead to better patient functioning. However to our knowledge, possible interactions between pain acceptance and physical activity, in their relations with physical and psychological functioning have not been investigated. Thus, the purpose of this study was to investigate a potential mediating role of physical activity between pain acceptance and patient functioning in patients with chronic pain. A total of 190 patients with chronic pain (58.4 % females; mean age=49.4 years, SD=13.9) seeking treatment in a university pain management center located in Seoul, Korea were invited to participate in the study. The results of structural equation modeling indicated that a partial mediation model had adequate goodness-of-fit indices on physical functioning (i.e., RMSEA=.04, CFI=.99, NNFI=.98) and psychological functioning scores (i.e., RMSEA=.09, CFI=.96, NNFI=.90). Furthermore, a chi-square difference test showed that the partial mediation model has advantage over the full mediation model on both physical and psychological functioning scores. 26 % and 23 % of the variance in physical and psychological functioning were explained by the mediation effect in the partial-mediation model, respectively. These findings suggest exploration of whether pain acceptance improves physical and psychological functioning by increasing the facilitating impacts of physical activity and whether it would be useful to further introduce acceptance-based coping strategies for pain (e.g., mindfulness, values-based behavioral change strategies), in pain management centers.

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D-146

DIFFERENCES IN PHYSICAL, PSYCHOLOGICAL AND SOCIAL FUNCTIONING IN CHRONIC PAIN PATIENTS WITH AND WITHOUT A HISTORY OF TRAUMATIC EVENTS

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Research in the past decade points to a dynamic relationship between factors that contribute to and maintain chronic pain and post-traumatic stress disorder (PTSD). The prevalence of traumatic history is considerably higher in chronic pain patients than in the general population. Furthermore, experience of traumatic events (TE) may predispose chronic pain patients to increased stress and poorer health. The objective of the current study was to examine whether chronic pain patients with and without history of TE differ in mental and physical health factors. A sample of 178 participants who met criteria for fibromyalgia syndrome, a chronic pain disorder, were interviewed with the Mini International Neuropsychiatric Interview (MINI) to identify history of TE and lifetime diagnosis of PTSD. Only the self-reported events that met Diagnostic and Statistical Manual of Mental Disorders-IV criteria for TE were included in the analysis. The eight subscales in the SF-36 health survey (SF-36) were used to assess current level of functioning in social, emotional, and physical factors. In our sample, 98 participants (55 %) had experienced at least one TE and 39 (21.9 %) met criteria for PTSD. Compared to participants without TE, those with TE reported significantly worse outcomes in physical functioning, social functioning, bodily pain, fatigue, general health and mental health. Also, increased number of TE corresponded with worsening of symptoms on all SF-36 subscales. Additionally, PTSD diagnosis did not contribute significantly to deterioration of symptoms over and above TE. However, increased severity in subclinical PTSD symptoms was significantly correlated with increased pain and fatigue. These results show that the experience of trauma matters regardless of PTSD diagnosis. The results also provide insight into the contribution of PTSD symptoms and a history of trauma to a poorer symptom profile in patients with chronic pain and emphasize the need for further research into the possible role of trauma in the etiology, treatment, and prognosis of chronic pain disorders.

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Citation Poster

D-147

THE INFLUENCE OF COPING ON CHANGES IN QUALITY OF LIFE DURING MIGRAINE TREATMENT

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Behavioral Migraine Management (BMM) is postulated to increase headache-specific quality of life through increasing positive coping behaviors and decreasing palliative coping behaviors. 232 people with migraines received Optimized Acute Therapy for 5 weeks and were then randomized into treatment groups in a 2 (BMM vs. No BMM) x 2 (β-blocker vs. Placebo) design. Participants received BMM and/or β-blocker dose adjustment for 4 months (4 clinic visits) and were followed for one year (5 clinic visits). At each clinic visit, participants completed the Migraine Specific Quality of Life Questionnaire (MSQL) and the Headache Disability Inventory (HDI). Coping was assessed with the Interview of Coping Efforts - Migraine, and operationalized as number positive or palliative strategies participants reported using during a migraine. Mixed models for repeated measures examined the impact of changes in coping (Month 5 - pretreatment) on changes in quality of life. Overall, quality of life increased in all groups, with the combined BMM and β-blocker group having a larger effect than the other groups $ps < .01$. BMM increased positive coping and decreased palliative coping, $ps < .01$, with the combined group further reducing palliative coping, $p < .05$. Increases in positive coping were associated with increases in quality of life in multiple measures across treatment groups, MSQL $F(1, 1053.7) = 6.9, p < .01$, HDI $F(1, 1048.0) = 17.7, p < .001$. Decreases in palliative coping also showed significant association with increases in quality of life as measured by the MSQL $F(1, 1048.3) = 4.0, p < .05$, but was not associated with the HDI $F(1, 1044.8) = .03, p > .50$. These effects did not differ significantly across treatment groups. Increases in positive coping, and to a lesser extent decreases in palliative coping, were associated increases in quality of life across migraine treatments. Interventions that focus on providing support and goal-setting for increasing positive coping strategies during a migraine are likely to be effective to increase headache-related quality of life.

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D-148

THE RELATIONSHIP BETWEEN PAIN ACCEPTANCE AND FUNCTIONAL OUTCOMES AMONG LUMBAR FUSION PATIENTS

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The concept of pain acceptance emphasizes how the struggle to control pain is often maladaptive and may contribute to increased pain and psychological distress. Thus, by accepting pain, the more willing a person is to engage in valued life activities despite their pain. While recent evidence suggests that pain acceptance is known to play an important role in how people experience pain, little is known how this variable is linked to outcomes among lumbar fusion patients. The current study sought to investigate the relationship between pain acceptance and other functional and psychological outcomes including disability, pain catastrophization, and general physical and mental health functioning in a sample of injured workers (N=245) who underwent lumbar fusion surgery. Injured workers at least two years post-surgery were identified through medical chart review. Of the total sample, 45 % (n=110) were contacted and completed a follow-up outcome survey including the Chronic Pain Acceptance Questionnaire (CPAQ), Pain Catastrophization Scale (PCS), Roland Morris Disability Questionnaire (RDO) and Short Form Health Survey, (SF-36). Results revealed higher pain acceptance was significantly correlated with lower levels of disability ($r = -0.55, p < 0.01$) and pain catastrophization ($r = -0.78, p < 0.01$), and increased physical and mental health functioning ($r = 0.48, p < 0.01$, and $r = 0.65, p < 0.01$, respectively). These data emphasize the need for further exploration of how pain acceptance plays a role in our understanding of pain management and the potential value of acceptance-based behavioral interventions for back surgery patients. Specific implications for our findings as well as limitations associated with this study are addressed.

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D-149**DEVELOPING PAINCOACH: AN AUTOMATED WEB-BASED PAIN COPING SKILLS TRAINING PROGRAM FOR PEOPLE WITH OSTEOARTHRITIS PAIN**

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Osteoarthritis pain is a highly prevalent health problem that causes individual disability in addition to burdening the United States healthcare system. Research shows that cognitive-behavioral pain coping skills help people manage osteoarthritis pain; however, training in these skills is typically delivered in person by trained healthcare professionals, limiting access. We developed the PainCOACH program to increase access by making the training available in an automated, web-based program that teaches and reinforces use of pain coping skills in a way that mimics therapeutic aspects of in-person training. This presentation details and discusses challenges related to developing a web-based behavioral intervention of this type. Early challenges to be discussed relate to selecting a development approach (e.g., involving university collaborators vs. a development company), a technology platform (keeping in mind the rapidly changing technology environment), design principles, and program architecture. We will describe our process of translating an in-person protocol for delivery as an automated web-based program, including methods for capturing and mimicking, through programming, the expertise of experienced therapists. We will also discuss later challenges related to specifying an appropriate population, conducting user and pilot testing, and avoiding technical problems such as poor Internet access. We will report findings of our user testing (n=48) and pilot testing (n=9), describing how findings shaped the final intervention. An important feature of PainCOACH is that it targets older adults, some of whom have little computer experience, necessitating a selection of design principles to accommodate limitations of aging and poor computer literacy. We will end with lessons learned to facilitate others' ability to use an interactive, web-based approach to make proven behavioral interventions more accessible to populations who may benefit from them.

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D-150**HIRING A HEALTH CARE ADVOCATE: DOES HAVING A RHEUMATIC CONDITION MAKE A DIFFERENCE?**

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The health care system is complex and better designed to provide acute care than chronic care, which poses issues for individuals with chronic conditions. Health care advocacy is an emerging field dedicated to providing patient-centered assistance in navigating the health care system. The present study examined the likelihood of hiring a Health Care Advocate (HCA) by comparing people who suffer from a rheumatic condition(s) with that of an age- and sex-matched healthy comparison group. Participants (N=508) were randomly selected; they completed a questionnaire measuring their likelihood of hiring an HCA. Participants who reported having or having had rheumatic conditions (e.g., osteoarthritis, rheumatoid arthritis) were identified (n=27). An age- and sex-matched healthy comparison group was selected (n=27) that did/do not suffer from any medical condition(s). Participants were asked to indicate their likelihood of hiring an HCA if they became ill or injured, and the reasoning behind their decision. A one-way ANOVA revealed a significant main effect of health [rheumatic condition(s) vs. no medical condition(s)] on willingness to hire an HCA, $F(1, 52)=14.463, p<.001$. Individuals with rheumatic conditions were less likely to hire an HCA if they became ill or injured ($M=3.70, SD=.452$) than participants who did/do not suffer from any medical condition(s) ($M=6.33, SD=.523$). The most commonly cited reasons for not hiring an HCA included having sufficient social support, adequate knowledge of the condition, and perceived ability to manage symptoms. These results suggest that individuals who are more likely to use the health care system are less likely to hire an HCA than are healthy individuals. People with low social support who have less knowledge and ability to manage symptoms may also be more likely to use HCA-related services.

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D-151**HEALTH ADVOCACY: DO AGE, CHRONIC ILLNESS, AND COMORBIDITY MATTER**

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The field of Health Care Advocacy developed out of a need for patient-centered health care support. Questions remain regarding the factors that impact one's likelihood of hiring a health care advocate (HCA). In the present study, it was predicted that having a chronic condition, being an older adult, and having a co-morbid chronic condition would predict greater willingness to hire an HCA. Participants (N=470) were randomly assigned to read 1 of 6 vignettes in which they were asked to imagine they were in a car accident and required medical care. A 2 (acute vs. chronic injury) x 2 (35 vs. 80 years old) x 2 (comorbid vs. no comorbid condition) ANCOVA was conducted, controlling for age, ethnicity, knowledge of the HCA role, and education. There were significant interactions between age and comorbidity, $F(1,458)=3.784, p<.05$, and between comorbidity and chronicity, $F(1,458)=4.430, p<.04$. In the 35-year-old vignettes, participants were more willing to hire an HCA if they had a comorbid condition than if they did not. In the 80-year-old condition, there was no significant difference in the likelihood of hiring an HCA, regardless of the presence or absence of a comorbid condition. That is, participants all rated a greater willingness to hire than not to hire. In the vignettes with comorbid condition, there was no significant difference in likelihood of hiring an HCA as a function of chronic vs. acute injury. In the no-comorbid/healthy condition vignettes, having a chronic condition resulting from the car accident was associated with greater likelihood of hiring an HCA than was an acute injury. These findings suggest that having a comorbid chronic condition increases willingness to hire an HCA, and that being older or having a having a new chronic condition extends the perceived need for assistance.

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D-152**THE EFFECT OF CHRONIC ILLNESS AND FAMILY SUPPORT ON THE LIKELIHOOD OF HIRING A HEALTH CARE ADVOCATE**

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Living with a chronic condition is a source of great psychological strain, as well as a financial burden on the individual and his or her family. A health care advocate (HCA) may be able to help an individual to manage the stresses associated with such conditions (especially when the individual does not have a high level of family support). Thus, a 2 (Low Family Support vs. High Family Support) X 2 (Acute vs. Chronic Condition) analysis of covariance (ANCOVA) was performed to examine the likelihood of hiring an HCA (1–10). Insurance status (Yes vs. No) was included in the model as a covariate. Level of family support was significantly related to the reported likelihood of hiring an HCA [$F(1, 321)=4.651, p=.032$, partial $\eta^2=.014$]. Lower perceived family support ($M=4.52, SD=2.83$) was related to higher likelihood of hiring an HCA than higher perceived amount of family support ($M=3.85, SD=2.79$) Type of condition was significantly related to likelihood of hiring an HCA [$F(1, 321)=10.661, p=.001$, partial $\eta^2=.032$]. Participants reported being more likely to hire an HCA when the condition was chronic ($M=4.77, SD=2.87$) than when the condition was acute ($M=3.65, SD=2.66$). The interaction between condition type and level of perceived family support was not significant [$F(1, 321)=.859, p=.355$, partial $\eta^2=.003$]. Thus, it appears that an HCA may be most helpful to people whose medical condition is chronic and who have a low level of family support. These findings may also help researchers and health advocacy organizations to reach and serve patients who may be interested in the services of an HCA.

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COGNITIVE AND ATTITUDINAL CORRELATES OF SUCCESS IN REACHING OBJECTIVELY MEASURED NATIONAL GUIDELINES FOR PHYSICAL ACTIVITY

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Meeting the national guidelines for physical activity (PA) proves challenges for many including those involved in wellness center programs. Identifying cognitive and attitudinal constructs associated with PA may be useful to develop and modify PA programs. This study used an advanced data management system to track free-living and aerobic machine PA at a medical wellness center in Lake City, SC using Mywellness Key (Technogym, Italy) accelerometers and compatible exercise machines. Sixty participants (72 % female, 52 % African American) were assessed over 10 days. Data collected by the Mywellness Key were used to classify whether participants met the 2008 PA Guidelines for Americans' recommendation of ≥ 150 equivalent minutes of moderate PA per week. Psychosocial and demographic information were collected during the assessment. Sixty-three percent of the participants met the PA Guidelines. The constructs of self-efficacy ($p=0.01$), goal setting ($p=0.02$), and general health perceptions from the SF-36 ($p=0.03$) were positively associated with meeting PA Guidelines. Logistic regression models that were adjusted for age and BMI indicated that self-efficacy (1.04 (CI: 1.01-1.07), goal setting 1.07 (CI: 1.01-1.14), and physical functioning from the SF-36 (1.04 (CI: 1.00-1.08) were each significant correlates in meeting the PA Guidelines. Intrinsic motivation, social support, perceived stress, and other subscales of the SF-36 were not significant. To help individuals increase success in reaching PA Guidelines, wellness centers and future mobile health applications should strive not only to objectively assess PA but also address issues related to self-efficacy, unrealistic or lack of goal setting, and low physical functioning.

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DISTANCE-BASED WORKPLACE WEIGHT LOSS USING AN E-HEALTH DELIVERED INTERVENTION PROGRAM

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Background: This proof of concept study investigated the effectiveness of a distance-based e-health delivered physical activity and dietary intervention program with a sample of Federal Credit Union employees at remote sites across five cities in South Carolina. Program design and implementation were based on the premises of Social Impact Theory (SIT) and delivered using Polycom teleconferencing systems.

Methods: Fifty-four (47 White, 7 Black) participants ages 24–58 completed 10 weeks of e-health delivered physical activity and dietary intervention using live remote videoconferencing. Dietary lunch and learns were provided for approximately one hour twice a week. Physical activity was delivered live once a week for two-hours, and participants were provided with a self-guided take home DVD. Preliminary ANOVAs confirmed age and weight were not different across sites ($ps>.10$). Post weight changes were examined as a primary outcome using ANCOVA controlling for weights at pre-intervention.

Results: The findings showed that regardless of site location, participants on average reduced their weight by 10.13lbs if they completed both the exercise and lunch and learn components of the study compared to a decrease of 2.73lbs for participants who chose not to engage in the exercise related activities ($p=.06$). Participant dropout from either group was less than four percent.

Conclusions: The results of this study show the feasibility of large scale implementation of weight loss programs using an e-health approach guided by SIT. In addition, the high adherence and weight loss success show promise and demonstrate the potential for e-health delivered exercise and lifestyle interventions. Replication of results via randomized controlled trials is needed.

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FINANCIAL INCENTIVES FOR EXERCISE ADHERENCE IN ADULTS: A SYSTEMATIC REVIEW

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Financial incentives are gaining popularity as a means to promote regular exercise. This systematic review summarizes the current evidence of the efficacy of financial incentives to increase exercise adherence in adults. We searched key medical, public health and psychology databases from inception to April 2012 for randomized controlled trials. English language studies reporting the impact of financial incentives on exercise, where incentives were contingent on a pre-specified exercise behavior or outcome, were included. Quality of evidence was determined using U.S. Preventive Services Task Force criteria. From an initial return of 7745 articles, 96 full texts were assessed for eligibility and 8 met our inclusion criteria ($n=1,011$; age=18–85 yrs; female=31.5-86 %; overweight=35 %; post-secondary education=44 %). Given heterogeneity in study design and outcomes, a qualitative synthesis of the studies was conducted. All studies offered incentives contingent on exercise-related behaviors. Interventions lasted 6 months or less and guaranteed (vs. lottery-based) cash incentives were used in 7 of the 8 studies. Incentives exhibited significant, positive effects on exercise in 7 studies (incentive magnitude ranged from \$6 to \$44 per week). Physically active adults were less likely to respond to incentives in 2 studies (vs. their sedentary peers), and 1 study observed a greater effect among lower SES adults. None of the studies evaluated the impact of incentives on mediating psychological variables. Study quality varied from poor ($n=2$) to good ($n=2$) with 4 studies rated as fair. Collectively, the included studies highlight the potential role of even modest financial incentives in promoting exercise adoption in adults. More theoretically driven research into the impact of incentives on exercise maintenance and associated psychological constructs is warranted.

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DIFFERENCES IN INFLUENCES ON ACTIVE COMMUTING IN ADULTS BY AGE CATEGORY

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Active commuting (AC) has the potential to impact population health due its known health benefits. However, AC participation rates remain low particularly among older adults (OAs). Understanding the influences on AC in OAs is critical for designing and developing AC interventions. Purpose: This study examines potential influences on AC participation in adults by age category. Methods: Self-reported participation in AC, demographic, health, employment-related, community and environmental factors were obtained from an online, cross-sectional survey of employed adults in the Mid-Atlantic region. Participants were dichotomized into age groups (younger: 18–49 years; $n=638$, 64 % and older: 50+ years; $n=359$, 36 %). Independent t-tests, chi-squares and regression analyses were used to examine differences in influences on AC by age category. Results: Participants were predominately female (68.3 %), Non-Hispanic White (92.1 %), with at least some college education (96.1 %). Older adults (0.75+2.24 times/week) were less likely to report participation in AC than younger adults (2.24+3.82 times/week). Similarly, OAs (8.55±3.15 times/week) reported taking more trips by car than younger adults (7.57±3.96 trips/week) ($t=4.06$, $p<0.001$). In bivariate analyses, chronic illness ($p<0.05$) was uniquely associated with AC in older adults while gender, race, income, marital status and number of children were only significantly related to AC ($p<0.05$) in younger adults. BMI, health status, spouse, employer and community support for AC, perceived benefits of AC, self-efficacy for AC, concerns about safety from traffic, availability of sidewalks and bike lanes were significantly related for both age groups ($p<0.05$). In forced block multiple regression analyses, individual level and interpersonal level variables accounted for the greatest proportion of variance in the models for both the younger and older adults. Findings suggest age is an important consideration when examining AC behaviors and developing tailored interventions.

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D-158**PHYSICAL ACTIVITY RESOURCES DIFFERENTIALLY CONTRIBUTE TO PHYSICAL ACTIVITY ADOPTION AND MAINTENANCE IN MINORITY WOMEN**

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Access to high quality physical activity (PA) resources may help promote PA. Little is known about the associations of PA resources to PA adoption and maintenance. This study investigated the relationship of neighborhood PA resources to physical activity adoption, from baseline (T1) to immediately following a six month intervention (T2), and maintenance, from T2 to six months follow up (T3). Health Is Power (NIH 1R01CA109403) was a longitudinal, multi-site intervention that aimed to increase PA among community dwelling, healthy African American and Hispanic or Latina women. Women (N=410, M age=45.2 years, SD=9.4, 62.7 % African American) completed interviewer-administered questionnaires assessing demographics and the International Physical Activity Questionnaire at T1, T2, and T3. Count, features, amenities and incivilities of all physical activity resources in participants' neighborhoods, defined as an 800 m radius around their home, were assessed with the Physical Activity Resource Assessment© (PARA). An overall composite index (QPAR) based on a sum score from each PA resource of features and amenities, minus incivility ratings were computed and aggregated for each neighborhood. Women reported increases in all PAs from T1 to T2 and generally maintained these increases from T2 to T3 ($p < .05$). After adjusting for age, education, income, site and treatment group general linear models with repeated contrasts demonstrated that maintenance of transportation PA was associated with the number of PA resources in the neighborhood; adoption of walking was associated with amenities; adoption and maintenance of vigorous PA was associated with features, amenities and with overall QPAR ($p < .05$). PA resources and their specific features, amenities and incivilities may be differentially important for adoption versus maintenance, and appear to play a particularly important role in the maintenance of vigorous PA.

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D-159**THE CHANGING POSTPARTUM BODY: HOW DEPRESSING**

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Women go through an array of emotional and physical changes after the birth of a baby. Changes in hormones, anxiety levels, weight, body image, and physical activity as well as transitions in personal roles and priorities have been associated with symptoms of depression in new mothers. This study examined women in their first year postpartum and tested the association between depression and appearance evaluation (component of the MBSRQ), social physique anxiety, and physical activity (IPAQ). A sample of 250 postpartum women completed an online survey. Respondents were primarily white (90.4 %), married (87.6 %), educated (72 % college degree), and first time mothers (52 %). Mean age=30.04±4.18, mean time since birth=5.88±3.31 (months), and mean Body Mass Index=25.89±5.45. Depression was significantly correlated with social physique anxiety and appearance evaluation ($r=0.33$, $r=-0.32$). A higher BMI was significantly associated with number of children ($r=0.15$), higher social physique anxiety ($r=0.34$), and lower appearance evaluation ($r=-0.48$). Physical activity was significantly and negatively associated with age ($r=-0.16$). For every month further in the postpartum period, women were 12 % more likely to be depressed than not depressed. Also for every 1-unit increase in appearance evaluation, postpartum women were 51 % less likely to be depressed than not depressed. In the months following childbirth women may expect their bodies to return quickly to their pre-pregnancy weight/appearance. However if this does not occur, new moms are more likely to become frustrated, anxious, and less satisfied with their body. New mothers experience unique emotional and physical changes during the first year following childbirth. Future studies should develop interventions that incorporate information about emotional issues such as depression, and changes in postpartum body image. Interventions in which postpartum women can learn to cope with their changing bodies, overcome barriers to losing weight gained during pregnancy and how to set realistic goals to increase their physical activity could help reduce depression in this population.

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D-160**TELEPHONE-BASED PHYSICAL ACTIVITY COUNSELING IMPROVES PHYSICAL PERFORMANCE AND PSYCHOLOGICAL WELL-BEING AMONG OLDER VETERANS WITH PTSD**

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Posttraumatic stress disorder (PTSD), a psychological disorder linked to negative health outcomes, affects over 15 % of Vietnam War veterans. Vietnam-era veterans now constitute the 65+ patient population within the VHA. To date, little work has been done to examine the relationship between PTSD, physical activity (PA), and physical and psychological well-being in older veterans. Methods: Secondary data analysis of an ongoing 12-month randomized, controlled PA counseling intervention for older, overweight veterans with impaired glucose tolerance. 302 older veterans (>60 years) participated in the trial. 22 % (n=67) of the study sample had PTSD. The statistical significance of both the Group and GroupXTime interactions were assessed between those with and without PTSD. SF-36, physical performance, and psychosocial functioning were assessed. Results: Intervention effects: significant ($p < .05$) pre-post improvements were observed for vitality, minutes of PA, satisfaction with physical function, aerobic endurance, and number of symptoms among those with PTSD. After adjusting for age, the pre-post magnitude of change in those with PTSD was significantly greater than those without PTSD on measures of role-emotional health, physical function, satisfaction with function, and aerobic endurance. Intervention vs. Usual Care: Participants with PTSD had significantly greater improvements in vitality, physical function, and aerobic endurance compared to those with PTSD randomized to Usual Care. Conclusions: These preliminary results suggest that older veterans with PTSD have significant impairments, and where these impairments exist, we see meaningful improvements over time with intervention. Older veterans with PTSD are just as capable of improvement and further investigation is warranted.

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D-161**SHORT-TERM RELATIONSHIPS OF AFFECTIVE AND PHYSICAL FEELING STATES WITH PHYSICAL ACTIVITY LEVEL IN NATURALISTIC SETTINGS**

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Introduction: Studies have shown better affective states following physical exercise and positive affective states are related to future physical activity (PA) behavior. However, these studies have been limited to either lab-settings experiments or cross-sectional assessment of the effects over longer periods of time. The moment-to-moment associations of affective and physical feeling states with PA level in the naturalistic settings remain unclear. A better understanding of this relationship may be helpful to determine people's decision making about PA across their everyday life. Methods: This study used electronic surveys delivered by mobile phones to assess adults' affective and physical feeling states randomly throughout the day among 110 participants (ages 27-73, 72 % female, 30 % Hispanic, and 62 % overweight/obese). PA level was measured by accelerometers. Questions about current positive affect, negative affect, tiredness, and energy level were asked up to 4 times a day at random intervals for a 4-day monitoring period. Total PA counts were calculated for the 15-min before and after the affect/physical feeling questions were answered. Two multilevel models were fit using prompt-level affect/physical feeling as the predictors to predict (1) total activity counts 15-min before the prompt, and (2) total activity counts 15-min after the prompt, controlling for age, gender, ethnicity, body mass index, income, and person-level average affect/physical feeling. Results: Less tiredness and more energy level relative to one's usual (average) level were associated with more total activity counts for both 15-min before the prompt and 15-min after the prompt ($p < .05$). There was no relationship between other affective states and PA level. Discussion: The observed relationships suggests a positive feedback loop between physical feeling states and PA, such that feeling energetic triggers subsequent PA, which further elevates subsequent feelings of energy (and the opposite for feeling tired).

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USING MAINTENANCE SELF-EFFICACY TO PREDICT PHYSICAL ACTIVITY TRAJECTORIES

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INTRODUCTION: Many people initiate physical activity (PA) regimens but struggle to maintain them over time. Maintenance self-efficacy (MSE) for PA is the confidence a person has in the ability to maintain PA in the face of barriers such as stress, lack of social support, and lack of progress. MSE may play an important role in people's PA trends across time; that is, whether people will increase, decrease, or maintain stable PA when taking on a PA regimen. The present study examined this relationship in a sample of young adults failing to meet national recommendations for PA.

METHODS: 154 young adults (mean age=23.3, 82.4 % female), selected for inadequate levels of prior PA and intention to increase PA, completed 4 online surveys across 6 weeks. At each wave, participants completed the International Physical Activity Questionnaire (IPAQ) and scales measuring coping planning, behavioral intentions, and MSE. Additionally, at baseline, previous month's PA was assessed. A mixed-model Generalized Estimating Equation (GEE) examined the interactive effect of MSE and time on METs of PA expended in a week. Coping planning, intention, and previous PA were entered as covariates.

RESULTS: There were significant main effects of both previous PA and time ($p < .001$). Importantly, a significant interaction between time and MSE was present ($p < .001$). Simple slope analyses indicated that for those with high MSE (1SD above mean), PA increased significantly across the 6-week period ($B = 258.81$, $p < .001$), but that for those with low MSE (1SD below mean), PA did not significantly change across time ($B = 30.48$, $p > .05$).

DISCUSSION: We found that maintenance self-efficacy plays an important role in sustaining lifestyle behaviors such as physical activity over time. Although the effect of MSE on PA may not always be seen immediately, it may have long-lasting implications on PA maintenance. Physical activity interventions should seek to increase individuals' MSE to help buffer against potential stagnancy or relapse into sedentary behavior.

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TO TWEET OR NOT TO TWEET: THE RELATIONSHIP BETWEEN USE OF TWITTER, MOBILE PHYSICAL ACTIVITY APPLICATIONS AND PHYSICAL ACTIVITY PARTICIPATION

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With the popularity of social media (e.g. Twitter) and the availability of mobile physical activity applications (e.g., Nike+), these technologies could play a role in motivating physical activity (PA) behavior. This study examined the extent to which mobile PA application users tweeted their workouts over a 3-week period and whether the number of workout tweets was associated with changes in PA behavior. All tweets ($N = 104,026$) that tagged a mobile PA application were collected for a 3-week period. Total minutes of PA were gathered from the individuals' publicly available online profiles that are linked to their mobile PA application. Information from a total of 23,176 individuals was collected. Results demonstrated that, on average, the number of workout tweets per person decreased over the three week period, $F(2, 23174) = 1546.19$, $p < .001$, partial $\eta^2 = .12$; week-1: $M = 1.88$, week-2: $M = 1.37$, week-3: $M = 1.23$. The same trend was found for minutes of PA, $F(2, 23123) = 520.41$, $p < .001$, partial $\eta^2 = .04$; week-1: $M = 88.16$, week-2: $M = 64.22$, week-3: $M = 56.03$. Despite this decrease, the number of workout tweets at week-1 had a positive relationship with the residual change in minutes of PA from week 1 to week 2, ($\beta = 18.52$, 95 % C.I. = 17.68 to 19.42, $\beta = .28$). Similarly, number of workout tweets at week-2 had a positive relationship with the residual change in minutes of PA from week 2 to week 3, ($\beta = 15.19$, 95 % C.I. = 14.41 to 15.98, $\beta = .28$). Thus, the use of twitter to share workout information decreased over time; however, more tweeting during one week was related to greater increases in physical activity in the following week. These results suggest that tweeting may motivate subsequent PA participation, perhaps as a result of support received via tweets from one's social network. Further research is needed to examine the role that tweeting plays in promoting PA, and the mechanisms underlying this putative relationship.

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HIGHER PREFERENCE FOR CHANGE IS ASSOCIATED WITH HIGHER PHYSICAL ACTIVITY

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Researchers have looked at stable person characteristics to identify groups at risk for insufficient physical activity and moderators of physical activity interventions. Correlations have been found between physical activity and personality traits such as extraversion, conscientiousness, and neuroticism (Rhodes et al., 2006; Trost et al., 2002). The current study tested preference for change - a construct also called trait locomotion (Kruglanski et al., 2003) - as a correlate of engaging in and enjoying physical activity. The relationship between preference for change, preference for physical activity, and actual behavior has not yet been explored, although prior research suggests a likely connection between preference for change and physical movement from state to state (Kruglanski et al., 2003). The present study assessed whether trait locomotion predicted higher levels of physical activity and physical activity enjoyment.

Young adults ($N = 101$) reported their preference for change and enjoyment of physical activity. Participants with a higher preference for change reported higher enjoyment of physical activity ($r = .34$). A subsample of 24 participants wore accelerometers for 6 subsequent days. Participants with higher preference for change were more physically active; the effect size was 902 more accelerometer-recorded steps for one standard deviation increase in preference for change. Participants who are higher in preference for change enjoy physical activity more and are more physically active. Preference for change is a construct that can be readily manipulated in laboratory experiments and should therefore be amenable to change. Further research should investigate how preference for change can be used in interventions. We will discuss implications of our findings for population health and physical activity interventions.

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PARK USE AND SOCIAL COHESION LEVELS ON PHYSICAL ACTIVITY BEHAVIORS IN U.S. LATINAS

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Background: Park-based physical activity (PA) plays an important role in achieving PA recommendations. Studies show that active communities can facilitate participation in PA behaviors and are associated with improving obesity-related factors. In the US, women and ethnic minorities have some of the highest rates of engaging in little to no leisure PA. In addition, little is known about the role of park use and neighborhood cohesion on PA among US Latinas. This study aims to compare neighborhood cohesion and park use between women who meet the recommended 150 minutes/week of moderate-vigorous PA (MVPA) and those who do not meet these recommended levels. **Methods:** Baseline data were collected from 209 Latinas (18–65 years of age) participating in a randomized controlled trial promoting PA. Participants were asked about park use and neighborhood cohesion (i.e. feelings of connectedness with neighborhood). Accelerometer data were used to assess MVPA. We used SAS ver. 9.2 to analyze PA levels by frequency of park use and neighborhood cohesion levels.

Results: Among those who met PA recommendations, 80 % had medium-high levels of neighborhood cohesion compared to those who did not meet recommendations (78 %). Also, of those who met PA recommendations, 83 % and 67 % used their park in the neighborhood and near their church for PA, respectively, compared to those who did not meet recommendations (81 % and 66 %, respectively).

Conclusions: Latinas who report high levels of neighborhood cohesion use the park for PA in similar proportions regardless of whether or not PA recommendations were met. These findings support the importance of parks for neighborhood cohesion. Latinas in our study who used the parks but did not meet the recommended PA levels may not rely on parks for engaging in MVPA. Future research should seek to better understand the role of parks in women's PA and other potential factors influencing MVPA among Latinas.

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ARE THERE GENDER DIFFERENCES IN PHYSICAL ACTIVITY OF COPD PATIENTS DURING AND AFTER PULMONARY REHABILITATION?

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Supervised pulmonary rehabilitation (PR) programs aim at increasing physical activity of individuals with Chronic Obstructive Pulmonary Disease (COPD), thereby, decreasing morbidity and mortality associated with this disease. To date, however, very little research has been conducted to determine if PR programs actually change the physical activity (PA) of its participants or to determine if there are any gender differences in PA.

The purpose of this longitudinal study was to measure PA of COPD patients during and after a supervised PR program using an objective exercise assessment (i.e., pedometers) and to compare PA of males and females.

Patients diagnosed with COPD were recruited from 7 PR programs across Canada (Saint John, NB; Halifax, NS; Sydney, NS; Montreal, QC; Quebec, QC; Saskatoon, Sask, and Vancouver, BC) and asked to: (1) complete a PA questionnaire, and (2) wear a pedometer and record their daily steps and energy expenditure into a logbook for 7 consecutive days on 4 separate occasions over a 1-year period (T1=start of PR; T2=end of PR; T3=3 months post PR; T4=9 months post PR).

In total, 178 patients (mean age: 66.6±7 years; 54.7% male; 95% white) were recruited. The mean number of daily steps recorded at each of the 4 time periods was: T1=4302; T2=4261; T3=4075, and T4=4135 steps per day. A Repeated Measures ANOVA showed that there were no significant differences in number of steps across time or based on gender.

These findings suggest that PA behaviors of COPD patients who participate in PR remain relatively stable over time and are similar for men and women. Future research is needed to identify the factors that influence PA of this population given the low levels of PA observed in this study (i.e., < 4500 steps/day). This information can then be used to develop more effective PA interventions for COPD patients.

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PASSION FOR EXERCISE: AN EXPERIENCE SAMPLING STUDY OF BEHAVIORAL AND WELL-BEING INDICATORS IN ACTIVE WOMEN WITH MULTIPLE ROLES

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The Dualistic Model of Passion distinguishes between two types of passion for activities: Harmonious passion (HP) and obsessive passion (OP). Harmonious passion has been associated with greater levels of positive affect as well as other indicators of well-being and quality of life. Conversely, OP has been associated with higher negative affect, shame, and anxiety, especially when an individual is prevented from engaging in their passionate activity. The principles of the model of passion require additional testing in the context of exercise. In particular, studying the passion constructs with active women who juggle exercise among several life roles may have important theoretical and practical implications. Therefore, the purpose of this experience sampling study with active mothers was to examine the relationships between levels of HP and OP for exercise and markers of well-being as well as self-reported indices of exercise. Sixty-three women (mean age of 42) completed baseline and endpoint questionnaires as well as daily measures of exercise behaviour and affective states over a two-week period. Data were analyzed using bivariate correlations as well as multilevel modeling for daily measures. Neither baseline HP nor OP was significantly related to end-of-day positive affect ($p > .05$). While positive affect was lower on days when women were unable to exercise [$t(62) = 3.37, p < .01$], this effect was not moderated by levels of OP for exercise ($p > .05$), as theoretically hypothesized. Statistically dividing the sample into a harmonious group (A) and an obsessive group (B) revealed a positive correlation between HP and vitality in group A ($r = .471, p < .01$) and a positive correlation between OP and general exercise levels in group B ($r = .419, p < .05$). These findings suggest that levels of passion may not necessarily influence daily indicators of well-being but they may exert an effect over time on more global indicators physical and mental health. The implications of these findings in the development of wellness interventions for women are discussed.

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D-168

SEASONAL VARIATION OF USAGE FOR A WEB-BASED SOCIAL MARKETING CAMPAIGN

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Background: Health behavior patterns fluctuate seasonally for much of the population. Social marketing campaigns have demonstrated utility of web-based programs that promote health; however, little is known about variability of website use across seasons. This study examined seasonal variation of use for Get Up and Do Something (GUADS), a web-based social marketing campaign. Methods: The GUADS campaign was created in 2000 to promote health throughout Delaware and was expanded to include a web-based format in 2006. Web utilization was defined as total number of unique visitors, visits and page views. Advanced Web Statistics version 6.9 collected data from January 2006 to December 2010. Analysis employed ANOVA to examine differences in web usage across seasons. Patterns of usage across the 5-year period were also explored.

Results: The mean number of unique visitors, visits, and page views were similar across seasons ($p > .05$). Significant differences were found for patterns of unique visitors from 2006 to 2010 ($p < .05$) with 2008 achieving the highest monthly visits ($X = 2,995.08, SD = 565.54$). Significant differences were also found for patterns of website visits from 2006 to 2010 ($p < .05$), with 2010 achieving the highest monthly visits ($X = 6,848.75.08, SD = 1,724.51$). Similar differences were detected when comparing page views from 2006 to 2010 ($p < .01$) with 2008 achieving the highest amount of monthly page views ($X = 21,762.08, SD = 9,142.30$).

Discussion: Use of the GUADS website remained constant across seasons and years studied; suggesting seasonal changes may not influence use of web-based health promotion media. Rather, access and availability of web-based health information may drive continued use. Web-based social marketing campaigns can provide a popular mode of health-message delivery to help individuals maintain healthy lifestyles. Future research should evaluate the impact of GUADS on health behaviors.

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D-169

PERCEIVED ENVIRONMENT, SAFETY AND THE RELATIONSHIP BETWEEN WALKING AROUND A NEIGHBORHOOD & PHYSICAL ACTIVITY AMONG CHURCHGOING LATINAS

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Over 47% of Latina women are physically inactive. Few studies that examined the association between neighborhood walkability and physical activity (PA) have involved Latina women. This research is important because walking in the neighborhood can facilitate reaching PA recommendations, and may be influenced by the availability of places to walk within a neighborhood, the perceived environment and perceived safety. The current analysis examines (1) Latinas' perceptions of the walkability of their neighborhoods and (2) the relationship between perceived neighborhood and PA levels. Two hundred nine churchgoing Latinas completed a baseline survey as part of a randomized controlled trial testing an intervention designed to promote PA. The average age of the women was 42 years (ranging from 18–65), with about 65% making less than \$2,000 a month. Moderate to vigorous physical activity (MVPA) data were collected through accelerometers and perceived neighborhood walkability was assessed using the Neighborhood Environment Walkability Survey. Most women (81.3%) reported having sidewalks in their neighborhood, and 89.2% reported that sidewalks are "somewhat" or "very well" maintained. However, more than half (54.5%) considered the street lighting to be poor or non-existent. When examining the relationship between PA and walking around the neighborhood, those who reported "some" or "always" walking were significantly more likely to meet MVPA guidelines of 150 mins/week compared to those who did not report walking around their neighborhood ($p < 0.05$). There is evidence that walking in the neighborhood is associated with meeting PA guidelines. Although participants reported that sidewalks are of good quality, over half reported poor street lighting. This augments previous research showing that the environment, including aspects like having sidewalks, street lighting, and having destinations to walk may play a role in PA and, for Latinas, meeting PA guidelines.

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D-170

A SYSTEMATIC REVIEW OF DIRECT AND INDIRECT MEASUREMENT OF PHYSICAL ACTIVITY IN OLDER ADULTS

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Purpose: Due to physiological and cognitive changes that occur with aging, accurate measurement of physical activity (PA) in older adults represents a unique challenge. The primary purpose of this study was to systematically review measures of PA and their use and appropriateness with older adults. A secondary aim was to determine the level of agreement between measures of PA in older adults.

Methods: Literature was identified through electronic databases (e.g., Ageline, Medline). Studies were eligible if they examined the agreement between at least 2 measures, either indirect and/or direct, of PA in older adults (> 65 years of age). The quality of studies was assessed using a checklist for evaluating the validity and suitability of existing activity and sedentary behaviour instruments.

Results: 36 trials met eligibility criteria. Indirect and direct measures of PA differed widely in their ability to address the key dimensions (frequency, intensity, time, type) of PA in older adults. Correlations between indirect and direct measures of PA was moderate ($r=0.38$), indirect and other indirect measures was weak ($r=0.29$) and direct with other direct measures was high ($r=r-0.84$) in real world; and $r=0.92$ in controlled settings). A clear pattern regarding the agreement between PA measures did not emerge, however, only a limited number of studies reported comparable units.

Conclusions: Despite the lack of a clear trend regarding the agreement of PA measures in older adults, the findings underscore the importance of valid, accurate and reliable measurement. To advance this field, researchers need to approach the assessment of PA in older adults in a standardized way (i.e., consistent reporting of results, appropriate validation tools). Until then, researchers should be cautious when choosing measures for PA research and in interpreting PA levels across studies

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Citation and Meritorious Poster

D-171

SOCIAL SUPPORT FOR PHYSICAL ACTIVITY AMONG SAN DIEGO COUNTY LATINAS

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Introduction: Social support is an important predictor of physical activity (PA) among Latinas. However, mediating factors including specific sources, types of, and satisfaction with social support have not been clearly defined. This study describes and compares perceptions of support for PA between those who did and did not meet CDC guidelines for moderate to vigorous PA (MVPA) (≥ 150 minutes per week).

Methods: Baseline data were collected from 209 Latinas between the ages of 18–65 participating in a randomized controlled trial. Latinas reported on their sources of support, satisfaction with, and types of support received.

Results: Overall, Latinas were 41.41 years old ($SD=9.8$), with a median household monthly income of \$1000-\$1499, and 34 % reported speaking Spanish often or almost always. Primary sources of support are partners (52 %) and children (48 %). Perceived levels of support and satisfaction were high (91 % and 94 %, respectively) and did not differ between those who met and did not meet PA guidelines. Notably, friends and most relatives were reported as being sources of support at higher rates by Latinas who did not meet guidelines than those who did (e.g., non-immediate relatives: 79 % vs 21 %, p -value: 0.043). Most types of support were also reported more frequently by this group (e.g., childcare during PA: 63 % vs 38 %, p -value: 0.49).

Discussion: Findings suggest that spouses and children play an important role in supporting PA among Latinas. Although we had anticipated finding a larger support network and more types of support received by those who were meeting PA guidelines, findings were mixed. It is possible that those who did not meet PA guidelines reported more support because they require higher levels of support to initiate PA than those who are already engaged in MVPA. Present findings reveal a complex picture of social support for PA as a predictor of MVPA among Latinas indicating the need for further research in this area.

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D-172

THE MODERATING EFFECT OF GENDER ON IDEAL-WEIGHT GOALS AND EXERCISE DEPENDENCE SYMPTOMS

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Exercise in conjunction with other secondary pathologies may result in dependency. Thus, exercise dependence is implicated in the development of eating disorders and muscle dysmorphic disorder. Although conceptually similar pathologies, they largely affect different genders and result in opposite body composition, appearance, and ideal-weight goals (i.e., to gain, lose, or maintain weight). Therefore, understanding individuals' ideal-weight goals related to engaging in exercise while simultaneously examining the moderating effect of gender on exercise dependence symptoms may help to identify those whom may be most at-risk for developing an eating disorder or muscle dysmorphic disorder. The purpose of our study was to examine the moderating effect of gender for exercise dependence symptoms in relation to weight gain, loss, or maintenance goals. Demographic questions, self-reported exercise behavior (i.e. Leisure-Time Exercise Questionnaire), and exercise dependence symptoms (i.e., Exercise Dependence Scale) were assessed in 513 undergraduate students (M age=19.88, SD=1.30; 76.22 % women; 59.65 % Caucasian; body mass index M=23.60, SD=3.40). Our analysis revealed a moderating effect for gender on ideal-weight goals [F (1, 493)=2570.09, $p=.01$] and exercise intensity [F (1, 505)=465.48, $p=.01$]. Furthermore, a gender difference in exercise dependence symptoms was found [F (6, 490)=5.05, $p=.01$] with men who wanted to gain weight had significantly higher scores than women who wanted to gain ($p=.01$), maintain ($p=.02$), or lose weight ($p=.01$). Specifically, men who were dissatisfied with their current weight reported more exercise dependence symptoms than women. These results support a growing body of research and extend our understanding of the relationships among exercise dependence and gender specific body-focused psychiatric disorders.

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D-173

PARENT AND YOUTH SELF-EFFICACY FOR PHYSICAL ACTIVITY IN YOUTH WITH AND WITHOUT PRADER-WILLI SYNDROME

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BACKGROUND: Physical activity (PA) requires regulation by an individual to consistently participate in this behavior and self-regulatory efficacy has been identified as a key factor in successfully being active (Bandura, 2004). Given that youths' PA is likely under regulation of both the parent and the youth one might expect the youth's self-efficacy (SE) and also the parent's SE to play a role. One situation where more parent regulation may be needed is when the youth has a disability. Prader-Willi syndrome (PWS) is a genetic disorder characterized by obesity, poor muscle tone, compulsive overeating, behavioral and cognitive impairments, and less spontaneous PA. With SE playing a stronger role when the behavior is challenging (Bandura, 1997), it might be speculated that parents' SE will have a more important role in youth with PWS compared to youth without PWS. This preliminary study explored how youth and parent SE predicted moderate-vigorous physical activity (MVPA) and how these relationships differed based on whether youth did or did not have PWS.

METHODS: Participants were 29 families: 12 youth with PWS and 17 youth without PWS. Parents rated their SE to manage their child's PA (9 items; Kraft, Wilson & Nelson, 2012). Youth completed a SE scale (8 items; Motl et al., 2000) and wore an accelerometer for eight days to assess MVPA.

RESULTS: The multiple regression predicting MVPA was significant ($R^2=.47$, $p=.01$). A significant interaction ($p=.05$) indicated that the effect of parent SE differed based on whether the youth did or did not have PWS. For those with PWS, parent SE was related to MVPA ($p=.03$) but youth SE was not related to MVPA ($p=.28$). For those youth without PWS, parent SE was not related to MVPA ($p=.80$) but youth SE was related to MVPA ($p=.01$). **DISCUSSION:** These preliminary findings highlight the role parents' play in regulating their child's PA when their child has PWS. Further, these results suggest that both parents and youth SE are important for youth MVPA and their contribution may vary in different situations.

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D-174

THE EFFECTS OF QIGONG EXERCISE ON QUALITY OF LIFE FOR PERSONS WITH CHRONIC FATIGUE SYNDROME: A RANDOMIZED CONTROLLED TRIAL

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Background: Persons with chronic fatigue syndrome (CFS) often experience greater distress and poorer quality of life (QOL). QOL is influenced by multidimensional factors. The relationship between QOL and these factors in CFS patients are yet to be explored.

Objectives: To evaluate the effects of qigong on QOL in persons with CFS.

Methods: A randomized controlled trial (RCT) was conducted with Qigong group (n=75, mean age=39) and control group (n=75, mean age=39). Sixteen sessions (twice a week for 8 weeks) of Qigong exercise (called Baduanjin) of 1.5 hours each was delivered. The changes of in physical and mental component scores (PCS and MCS) of SF-12 (a health-related QOL scale) between baseline and post-intervention (T1 - T0) were calculated. Fatigue, anxiety, depression, physical distress and spiritual wellbeing were measured by Chalder's Fatigue Scale Hospital Anxiety and Depression (HADS) and Body-Mind-Spirit Well-being Inventory (BMSWBI)-physical distress and spirituality subscales.

Results: At post-intervention the changes of MCS in qigong and control groups were 7.4 (9.9) vs. 2.0 (8.6) (p=0.001); the changes in PCS were 3.3 (7.4) vs. 1.7 (5.1), p=0.133; and the changes in fatigue were -11.8 (11.4) vs. -4.1(6.5) (p<0.001). Significant differences in changes in anxiety, depression, physical distress and spirituality (all p<0.05) between qigong and control groups were also observed. In multiple regression analysis, changes (T1-T0) in fatigue (B=-0.366, p<0.001), anxiety (B=-0.531, p=0.017) and BMSWBI-spirituality (B=0.126, p=0.002) were identified as the significant explanatory variables for changes in MCS of CFS patients.

Conclusion: Qigong exercise may significantly improve the MCS but not PCS of QOL of CFS patients. The changes in fatigue, anxiety and spiritual wellbeing were significant determinants for the improvement of QOL-MCS.

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D-175

FINDING THE FLOW: EXAMINING THE RELATIONSHIP BETWEEN SELF-DETERMINATION AND FLOW IN RUNNERS

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Prevention of health related issues is of rising concern, but finding the key to motivating individuals to exercise in order to avoid such issues remains a challenge. The current theory of motivation, Self Determination Theory, has been validated in many contexts including various forms of exercise (Ryan and Deci, 2000), shedding some light on what factors play into motivating someone to exercise. Additionally, Mihaly Csikszentmihalyi's (1990) concept of flow, in which individuals perform intrinsically motivated, fully involving activities, has been shown to be intricately connected to facilitating an individual's participation in an activity. The purpose of the present study is to examine the association between self-determination in runners and their experiences of flow while running, in an attempt to discover whether the connection between the two is one key to what motivates an individual to get off the couch to begin running and what promotes them to continue running day after day. Pearson correlations were run between runner's scores on the Dispositional Flow Scale - Physical (DFS-2-Physical) and the Behavioral Regulation Exercise Scale-2 (BREQ-2). We hypothesized that flow would be positively correlated with autonomous motivation and negatively correlated with external motivation and amotivation. Results provided an excellent fit of the model to the data confirming the hypothesis that ability to access flow while running is related to an individual's identified motivation.

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D-176

SOCIAL FACILITATION TO INCREASE EXERCISE INTENTIONS: THE UTILITY OF EVOLUTIONARILY RELEVANT STIMULI

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In the late 19th century Norman Triplett examined the now widely researched phenomenon of social facilitation. He observed that during cycling competitions "...the bodily presence of another contestant participating simultaneously in the race serves to liberate latent energy not ordinarily available" (p. 533; 1898). The current study examined social facilitation from an evolutionary framework, to more clearly understand how and why the presence or awareness of others may impact one's willingness to physically exert energy, and if this phenomenon might inform our efforts to increase physical activity behavior. This study used visual primes to test whether viewing photos of attractive members of the opposite or same sex would differentially increase individuals' cognitions related to mating and competition and thus facilitate intentions to exercise. Cognitions about mating were measured implicitly through a word-stem completion task (Miller & Maner, 2010), while cognitions about competition were measured explicitly following Li et al. (2010). Exercise intentions were measured using items derived from the Theory of Planned Behavior. In a sample of young, single, heterosexual men (N=52) and women (N=57), those who viewed photos of opposite sex individuals reported significantly higher implicit cognitions about mating and explicit cognitions about competitiveness. Among men, those cognitions were related to greater intentions to exercise in the coming week. Results indicate that the relationship between condition and exercise intentions was partially mediated by implicit cognitions about mating among men. These findings suggest that viewing photographs of target individuals who are particularly socially relevant for men can lead to increased intentions to exercise. Future research should examine if these intentions indeed translate into short term increases in energetic effort and/or longer term increases in exercise behavior.

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THE PSYCHOLOGICAL IMPACT OF A NEWLY INTRODUCED PRENATAL SCREENING TEST FOR PRE-ECLAMPSIA TO PREGNANT WOMEN

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Background: A new prenatal screening test for pre-eclampsia (PE), a severe hypertensive disorder of pregnancy that can harm both mother and fetus, has been introduced in the UK as part of routine antenatal care. Its psychological impact has yet to be evaluated. Informed by Leventhal's self-regulation model, this research aims to investigate the impact of the PE screening test on cognition, emotion and behaviour.

Methods: 10 high risk and 6 low risk women were interviewed within one month of receiving their risk result. The theoretically informed semi-structured interviews were analysed via Framework Analysis.

Findings: Women did not appear to make clear connections between the causes of the condition and the screening test, and questioned its usefulness. There was a tendency for women to minimise the threat presented by their test results, but this did not prevent them from developing a dependence on the increased monitoring that accompanied a high-risk result. Despite these findings, they showed positive behaviour changes.

Discussion: Receiving a positive PE screening result presents potential opportunities for health-promotion interventions. To make the most of these opportunities, it will be important for clinicians to understand how women perceive and respond to this screening test; the self-regulation model provides a useful framework in which to do this.

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DISSEMINATION OF PERINATAL MORTALITY GUIDELINES: AN EVALUATION

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Purpose: Stillbirth is recognised as a major public health problem, however almost one-third of cases are unexplained. The Perinatal Mortality Group of the Perinatal Society of Australia and New Zealand (PSANZ-PMG) developed guidelines for perinatal mortality audit, which includes a stillbirth investigation protocol. An educational program (Improving Perinatal Mortality Review Outcomes Via Education (IMPROVE)) was developed to assist with implementation. This study evaluates IMPROVE for perceived learning outcomes.

Methods: Questionnaires were administered before and after each workshop to assess confidence related to six stations: consenting for autopsy (S1: 3 items); placental and post mortem examination (S2: 3 items); investigation of perinatal deaths (S3: 3 items); examination of the deceased baby (S4: 3 items); perinatal mortality classification (S5: 2 items); and psychological and social aspects of perinatal bereavement (S6: 7 items). Participants who agreed or strongly agreed with all items for each station were categorized as confident.

Results: In 2010 and 2011, 647 health professionals attended an IMPROVE workshop, with 84.1 % providing data for this evaluation. The workshops were associated with an improvement in confidence as measured by the proportion of participants confident in each station (pre, post-workshop): S1 (15.2, 93.3 %); S2 (8.8, 79.9 %); S3 (18.6, 90.4 %); S4 (13.7, 88.3 %); S5 (14.5, 87.7 %); and S6 (22.8, 70.9 %).

Conclusion: IMPROVE workshops are successful in increasing knowledge and confidence about maternity and newborn care following perinatal death. The next phase of this study is to assess implementation of the guidelines in the clinical setting.

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PATHOPHYSIOLOGICAL MECHANISMS OF POST PARTUM DEPRESSION

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Post-partum depression (PPD) can have serious adverse health effects for both mother and child; however, often times it goes unreported and untreated. Although PPD is relatively common (self-reported in 10-15 % of mothers), there are still many unknowns about the pathophysiological mechanisms behind the disease. The present study aimed to compare mothers showing no symptoms of depression and those showing symptoms of depression across three biomarkers [cortisol, heart rate variability (HRV), and inflammatory markers (IL 2, 4, 6, 10, 17A, TNF, INF)] to better understand the physiology of women with PPD. Twenty women (10 control, 10 depressed) with singleton pregnancies were assessed 6 weeks post partum. The majority of women were Caucasian and African American, and married or living with a partner. The women with depressive symptoms reported less sleep than the control group $t(18)=1.9, p=.07$, while also reporting significantly more stress $t(18)=6.76, p<.001$. As expected, there was a positive correlation between morning cortisol and high frequency (HF) HRV for the control group, $r(9)=.75, p<.05$. However, there was no such relation for the depressed group. Additionally, there was a significant negative correlation between stress and HF HRV for the control group, $r(10)=-.77, p<.01$, however, no such relation existed for the depressed group. The depressed group demonstrated a negative correlation between pro-inflammatory markers and HF HRV, $r(8)=-.74, p<.05$. For the depressed group, the lack of a significant relation between cortisol and stress with HF HRV is surprising and suggestive of an abnormal parasympathetic response. The negative association between HF HRV and pro-inflammatory markers is suggestive of dysregulation of the cholinergic anti-inflammatory reflex. The results of this study highlight potential pathophysiological mechanisms via the cholinergic anti-inflammatory reflex, but not hypothalamic-pituitary axis, in post-partum depression.

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PERCEPTIONS OF CONTRACTING SEXUALLY TRANSMITTED INFECTIONS (STIS) AMONG LOW AND HIGH RISK SEXUAL BEHAVIOR INDIVIDUALS PREDICTS TESTING INTENTIONS

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Sexually transmitted infections (STIs) are increasing in the United States with 19 million new cases per year. This increase is especially true among young adults which represent 25 % of the sexually experienced population but account for nearly half of all new STI cases. Even though young adults are at the greatest risk for STIs, this population has one of the lowest testing prevalence. One potential explanation for this is they may not feel personally at risk for contracting an STI. The aim of this study is to determine how individuals in low and high risk behavior groups perceive their chances of contracting an STI and if these perceptions influence their intention to get tested. Furthermore, we are interested if testing intention is different across low and high risk sexual behavior groups. A sample of 259 college students, 178 low risk behavior and 81 high risk behavior, was surveyed regarding their perceptions about personally contracting 7 different STIs. Risk behavior group was determined by participants' answers to sexual history questions. Independent samples T-tests with a Bonferroni corrected alpha level of 0.007 were used to assess if intention to get tested is different between the low and high risk group. Results suggest that while individuals who engage in high risk sexual behavior correctly perceive their risk of contracting an STI to be significantly higher than those who engage in low risk sexual behavior, the intention to test between the two groups is not significantly different. The results imply that while interventions have successfully informed individuals who engage in high risk sexual behavior that their chance of contracting an STI is higher, they have not been successful in getting this population to understand that STI testing is an important and necessary service.

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D-182

OPTIMIZING A SHARED DECISION MAKING INTERVENTION FOR COMMUNITY-BASED PRIMARY CARE PRACTICE

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While shared decision making (SDM) is typically not done in community-based primary care practice, it is a promising strategy for preference-based decisions such as colorectal cancer screening. This study aimed to determine feasible opportunities to embed SDM and test tasks that should be employed to integrate shared decision making for colorectal cancer screening in rural primary care practice. Research staff conducted general clinical observations, patient interviews, and served as mock patients to determine current practice for recommending colorectal cancer screening to age-eligible adults. Subsequently, Plan, Do, Study, Act (PDSA) cycles were used to test the various tasks that were developed to incorporate SDM into primary care. Clinic observations and multiple interviews were completed (n=34 providers/staff, n=21 patients) and 5 mock-patient physicals were done. SDM was not used in practice. Most staff were concerned that projects "from above" and health system initiatives were not always a good fit for their clinic's needs and culture. Patients cited a MD or nurse most often (n=11) as the person who is involved in their health decisions and about half of the patients (n=12) preferred to receive printed health information to help them make a decision. All mock patients were given colonoscopy information, 2 were given FOBT information, and 2 were given flexible sigmoidoscopy information. As part of the PDSA, 7 tests were identified as necessary for SDM ranging from pre-visit processes to post-visit follow-up, each of which primarily added a few new tasks to normal work flow. However, the SDM encounter test included 38 new tasks that were deemed necessary for the actual SDM encounter within community-based primary care. After PDSA cycles, the majority of tasks were adopted with few adaptations. Conducting thoughtful formative work facilitates clinic provider/staff buy-in and the ability to develop and incorporate a comprehensive shared decision making intervention in primary care without substantial disruption to clinical practice.

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Citation and Meritorious Poster

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DOES THE EFFECTIVENESS OF INTERVENTIONS THAT CHANGE ATTITUDES, NORMS, AND SELF-EFFICACY DEPEND UPON THE CLASS OF HEALTH BEHAVIOR?

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Theoretically-based interventions often target attitudes, norms, and self-efficacy in order to promote health behavior change. The extent to which these constructs elicit behavioral change may depend, in part, on the class of behavior targeted. To assess the impact of behavior class on the effectiveness of cognition change interventions, we meta-analyzed 129 studies which met the following criteria: (a) at least one experimental and comparison condition, (b) significant changes in one of the cognitive constructs of interest, and (c) measurement of subsequent health-related intentions or behavior. A total of 21 different behaviors were examined in these studies, which could be categorized into three broad classes: frequent prevention behavior ($n=8$; e.g., exercise), infrequent prevention behavior ($n=8$; e.g., cancer screening), and maintenance/adherence behavior ($n=5$; e.g., diabetes care). Changes in the cognitive constructs resulted in small-to-large effects on behavior for all three behavioral classes; however, the magnitude of these changes depended on the class of behavior. Changes in attitudes produced small-to-medium effects for frequent prevention behaviors ($d=.23$), small effects for infrequent prevention behaviors ($d=.12$), and large effects for maintenance/adherence behaviors ($d=.68$). Changes in norms, on the other hand, produced small effects for frequent prevention ($d=.10$), large effects for infrequent prevention ($d=.74$), and small effects for maintenance/adherence behaviors ($d=.12$). Changes in self-efficacy engendered small-to-medium effects for all three behavior classes (frequent prevention- $d=.39$, infrequent prevention- $d=.33$, and maintenance/adherence- $d=.46$). These findings indicate that the class of behavior has an important impact on the effectiveness of attitude change and normative change interventions, and highlight the difficulty in changing behaviors that are performed on a regular basis.

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DECISIONAL CONTROL IN CLINIC-BASED SURGICAL CONSULTATIONS

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How do patients' preferences for control during a medical interaction correspond to their experiences? We surveyed patients ($n=235$) and surgeons in an outpatient surgery clinic. Prior to an initial surgical consultation, patients reported their preferences for decisional control, and then following the consultation they made ratings of satisfaction and adherence intentions and indicated how much control they were given over their treatment. Surgeons also rated the quality of the visit. A comparison between patients' preferences for and experience of decisional control indicated that some patients experienced less control than they wanted (34%), while others experienced more control than they wanted (21%); only a minority (45%) experienced their preferred level of control. Although no demographic variables predicted preferences for control, patients' education level was associated with their experiences with control, $r(170)=-.17$, $p=.02$. More importantly, one-way ANOVAs and simple effects tests comparing these three groups ("too much," "too little," and "just right") revealed that a disconnect between preferences and experiences had negative consequences, particularly when patients felt that they received less decisional control than desired. Compared to patients who received too much or just the right amount of control, patients who received too little control were less satisfied, $F(2, 169)=15.81$, $p<.0001$; felt less respected by the surgeon, $F(2, 167)=9.39$, $p<.0001$; and reported weaker adherence intentions, $F(2, 169)=5.54$, $p<.01$. In contrast, surgeons did not report differences in visit quality between these groups, $F(2, 163)=.47$, $p=.62$, suggesting that they were largely unaware of patients' discontentment.

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DOES PSYCHOPATHOLOGY MEDIATE THE PATHWAY FROM CHILDHOOD VIOLENCE EXPOSURE TO SEXUAL RISK IN LOW-INCOME, URBAN AFRICAN AMERICAN GIRLS?

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Low-income, urban African American (AA) girls are at disproportionate risk for violence exposure, which has been linked to sexual risk. The current study examines psychopathology as a mediator of the relationship between childhood violence exposure (CVE) and sexual risk, using a developmental framework that considers change over time. Participants are 177 AA girls recruited from mental health clinics serving low-income communities in Chicago. Beginning at ages 12–16, girls completed five interviews over two years and a 6th assessment of lifetime trauma history. CVE reflected sexual or physical victimization or witnessed violence before age 12. Sexual risk (number of sexual partners, inconsistent condom use) was assessed at each wave. Internalizing and externalizing psychopathology were assessed at Waves 1–5 with the Youth Self Report (Achenbach, 1991). Analyses used latent growth modeling to account for change over time. CVE was associated with more partners ($\beta=.24$, $p<.01$) and inconsistent condom use ($\beta=.20$, $p<.01$), and correlated significantly with externalizing, but not internalizing, problems at all five waves. Sexual risk increased over time, whereas psychopathology decreased over time. Results supported indirect pathways from CVE to number of partners (indirect $=.18$, $p=.01$) and inconsistent condom use (indirect $=.10$, $p<.05$) through an increased level of externalizing symptoms. Externalizing problems associated with CVE may help to explain its relationship with sexual risk in a vulnerable population of low-income AA girls. Behavioral interventions that address problems such as aggression, impulsivity, and general risk-taking may be most effective in reducing sexual risk among low-income AA girls with histories of violence exposure.

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CULTURAL CORRELATES OF CONDOM USE

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Hispanics are disproportionately contracting sexually transmitted infections relative to other ethnic groups. Interventions to increase condom use and reduce sexual risk may benefit from cultural sensitivity. This study assessed the relationships between condom usage, acculturation, and cultural values (i.e., familismo, religiosity, machismo, and marianismo) in a Hispanic college student sample. Participants ($N=456$) were recruited through Sona Systems, fliers, and in highly frequented areas on campus. After informed consent was obtained, participants completed demographic questions as well as measures of Hispanic cultural values and past condom use. A hierarchical regression analysis was performed; the dependent variable was condom use (lifetime), while independent variables include sex/gender and relationship status (step 1), cultural variables (step 2), and sex/gender by cultural variable interactions (step 3). Results indicated that lifetime condom use was reported to be inconsistent. Participants who were male ($\beta=.148$, $p=.003$) and in a relationship ($\beta=-.146$, $p=.002$) reported lower levels of condom use. The marianismo by gender interaction ($\beta=.232$, $p=.012$) was also significant, such that males who held stronger marianismo beliefs reported less condom use, and females who held stronger marianismo beliefs reported greater condom use. Implications include the need for prevention and intervention efforts, the targeting of couples and men (particularly those with higher levels of marianismo). Future research efforts may wish to include other cultural and psychosocial constructs, while future clinical efforts should assess the efficacy of assertiveness and sexual communication training in increasing condom use and reducing sexual risk.

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D-188

EXAMINING THE PREDICTORS OF SEXUAL PARTNER CONCURRENCY AMONG WOMEN SEEKING CARE AT A HEALTH DEPARTMENT IN THE SOUTHEAST

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Background: Adolescent women bear the largest burden of diagnosed sexually transmitted infections (STIs)—a burden estimated to be as high as 25 %. Among African-American adolescent women, the estimate may be closer to 50 %. These infections are associated with loss of fertility, adverse reproductive health outcomes, and mortality. Early sexual initiation and sexual partner concurrency (SPC) are known to contribute to the risk of these infections. Though several studies have focused on similar populations of women and their patterns of STIs, few have determined the characteristics that contribute to SPC among this group, which in turn contributes to the risk of acquiring STIs.

Purpose: to determine the characteristics that contribute to the behavior of sexual partner concurrency, which in turn contributes to increased risk of acquiring STIs among this population. **Methods:** Participants were assessed via ACASI, utilizing an internet-based questionnaire, as part of a larger survey related to sexual risk and the use of vaginal douche products.

Results: Female participants (N=303) were aged 14 to 25 years; 50 % had vaginally sexually initiated by the age of 15. Thirty-six percent of the population indicated SPC. In adjusted analysis, participants' perception of their main partner also engaging in SPC was the strongest predictor of SPC (OR 4.43 [2.43-8.09]). Participants engaged in SPC were also likely to: have had two or more oral sex partners in the last three months, have engaged in anal sex, have been diagnosed with gonorrhea, have been influenced to use douche products by the media, and to have had a main sex partner with a history of contact with the justice system.

Conclusions: SPC among adolescents is a risk factor for STIs. Practitioners should be aware of the causes that lead to the behavior so as to counsel their patients. Various media should be utilized in campaigns to reduce SPC among this population.

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DISENTANGLING RECIPROCAL RELATIONSHIPS BETWEEN DAILY AFFECTIVE EXPERIENCES, STRESS PHYSIOLOGY, AND QUALITY OF SLEEP

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Poor sleep is associated with negative affect and disrupted autonomic functioning, and may increase risk for cardiovascular disease via a variety of pathways, including heart rate variability (HRV). However, much of what we know about the effect of disrupted sleep on HRV comes from studies of patients with sleep apneas. It appears that few studies have manipulated sleep quality to examine its effect on HRV in healthy individuals. Regular wakings may make individuals vulnerable to autonomic upset. The specific aims of this study were to examine the effects of disrupted as compared to non-disrupted sleep on negative and positive affect, on HRV, and to explore the interrelationships between sleep quality and daily affective experiences.

Under the guise of a study on the stress of parenting a newborn, sleep quality was experimentally manipulated in healthy young adults (N=33; 29=female, M age=21.4) by having participants undergo two 24-hour monitoring periods during which Ps cared for an infant simulator overnight. In the Disturbed Sleep (DS) condition, Ps' sleep was disrupted several times during the night to attend to the infant simulator. In the Undisturbed Sleep (US) condition, the simulator allowed Ps to sleep relatively uninterrupted. HRV was continuously recorded for a mean of 19.2 hours per session. Ps were awakened significantly more often in the DS (3.29 times/night, SD=1.11) than in the US condition (2.11, SD=0.99; $t=-4.49$, $p<.001$). On average, participants experienced higher levels of negative affect following the DS condition than the US; additionally, overall, both waking low frequency power (MUS=-203.0, SD=688.7; MDS=-198.2, SD=706.7) and waking high frequency power (MUS=-362.5, SD=1428.3; MDS=-302.9, SD=991.1) were increased from Day A to Day B in both conditions. While the increase was greater in the US than the DS, this difference was not significant. Implications of these findings for behavioral medicine and interactions between sleep condition, affect, and HRV will be discussed.

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INFLUENCES OF POVERTY AND EDUCATION ON SELF-REPORTED SLEEP IN URBAN DWELLING RESIDENTS

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Socioeconomic status (SES) is recognized as a key determinant of health and sleep is posited as a potential underlying mechanism. Individuals of lower SES are more likely to experience sleep disorders and disturbed sleep is associated with poor health outcomes. Education and poverty are components of SES known to influence sleep, but little is known about their potential interactive influence on sleep. We investigated whether education, poverty and their interaction influence sleep duration and disturbances in a diverse sample of 1,207 adults enrolled in the HANDLS study. The sample had a mean age of 47 yr, mean education of 12.8 yr, was 50 % Black, 41 % male and 38 % living below poverty. Sleep duration and sleep disturbances were measured using the Pittsburgh Sleep Quality Index (PSQI). Multiple regression analyses, adjusted for age, sex, race, BMI, depression and stress, revealed a significant poverty by education interaction for both sleep duration ($b=-0.05$; $p<0.05$) and disturbances ($b=-0.18$; $p<0.05$). Among people living in poverty, those with lower levels of education reported shorter sleep durations and greater sleep disturbances than those with higher levels of education. Additional race stratified models examined racial differences in the above associations. For blacks, among people living in poverty, lower education was associated with greater sleep disturbances ($b=0.34$; $p<0.05$) but not sleep duration. For whites, among those living in poverty lower education was associated with shorter sleep durations ($b=0.07$; $p<0.01$) but not sleep disturbances. The influence of education on sleep was most potent for people living in poverty. However, education moderated the influence of poverty on sleep differently in blacks and whites. Understanding how race, education and poverty influence sleep hygiene can inform intervention programs aimed at reducing health disparities.

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COMPLIANCE WITH DAILY ADHERENCE PHONE CALLS PREDICTS SMOKING CESSATION IN A RANDOMIZED-CONTROLLED TRIAL EVALUATING THE EFFECTIVENESS OF VARENICLINE

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Smoking cessation remains an important focus of public health interventions. Several pharmacotherapies have proven to be moderately effective but a key determinant of their success is whether people take the treatment as prescribed. This study examines the utility of daily phone calls to promote adherence to medication prescribed in the context of a smoking cessation intervention. We hypothesized that compliance with daily adherence phone calls during the two week titration period would be associated with higher rates of smoking cessation at week 6 and week 12 follow-up assessments. Heavy smokers ($n=105$, 40 % female, M age=33) were randomized to 12 weeks of varenicline or placebo. At baseline, participants were given instructions in how to take their medication and were asked to call in every night to report whether they took their medication for the day. Each participants' rate of compliance with daily phone calls was computed by dividing total number of completed calls by total number of days between baseline and the 2-week follow-up. Each participant was scheduled for a quit attempt on Day 8 and we computed quit rates for retained participants at week 6 and 12. Consistent with our hypothesis, better daily phone call compliance between baseline and week 2 was associated with smoking cessation outcomes at week 6 ($t(1,85)=-2.68$, $p<.0001$) and week 12 ($t(1,72)=-3.39$, $p<.001$). Specifically, participants who quit smoking at week 6 or 12 had better daily phone call compliance ($M=.49$ and $.51$ respectively) as compared to participants who did not quit at week 6 ($M=.29$) or week 12 ($M=.26$). While daily phone calls is not a direct measure of medication adherence, results indicate that it is a strong predictor of treatment outcome. As such, providers of smoking cessation pharmacotherapies should closely monitor adherence early in treatment and provide stepped-up interventions to address noncompliance in order to promote better treatment outcomes.

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THE RELATIONSHIP OF SOCIAL INFLUENCES CONCERNING SMOKING AND QUITTING TO SMOKING CESSATION

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Objective. Few studies have compared the effects of a variety of social influence variables to see which are predictive of smoking cessation. This study examined the prospective relationship of seven social influence variables on smoking cessation endpoints.

Method. The sample comprised smokers who completed an interview as part of the Minnesota Adult Tobacco Survey Cohort Study (n=625 in 2008 and n=537 in 2009) and completed another interview a year later. In the first interview, participants completed questions measuring seven social influence variables: explicit verbal norms – advice from (1) family and friends and (2) health care providers; implicit descriptive norms – perceived proportion of (3) all adults who smoke, (4) members of the social circle who smoke, (5) all smokers who try to quit and (6) social circle members who had quit in the previous year; and injunctive norms – (7) reported number of public places where smoking is acceptable. We examined whether these variables were related to cessation endpoints a year later: intention to quit, quit attempts, use of smoking cessation treatments and 7-day point prevalence abstinence. All analyses were adjusted for socio-demographic characteristics and monthly cigarette consumption and used an alpha level of 0.05.

Results. Support from family and friends was significantly positively associated with all four outcomes. Health care provider advice to use cessation treatments was positively related to intention to quit, quit attempts and use of treatments, but was not related to abstinence. Injunctive norms and descriptive norms regarding smoking were not related to smoking outcomes, but descriptive norms regarding quitting were related to greater intention to quit and quit attempts. Participants who knew someone who had quit in the previous year were more likely to use treatments.

Conclusion. Explicit support for cessation from family and friends and recent advice from providers appear to be more effective than more distal descriptive and injunctive norms.

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PREDICTING SMOKING CESSATION FROM CLIENT COMPLEXITY DURING MOTIVATION-BASED TREATMENT

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Although recent meta-analyses show modest positive effects for MI on smoking outcomes, less is known about the mechanisms by which MI might promote cessation (e.g., Cupertino et al., 2011). The present study investigates a new potential mechanism: Integrative complexity, which measures the degree that persons show differentiation (viewing a subject from multiple dimensions) and integration (recognizing connections between dimensions). Based on a phase model of the complexity-smoking relationship, we hypothesized that (1) successful quitters would show lower complexity than people who tried to quit but failed and that (2) this effect would be more pronounced at the beginning of treatment than at the end. We transcribed and scored a subset of clients' discussions during their first and last MI counseling session for integrative complexity (n=48 sessions; n=24 participants). We compared clients' integrative complexity in three outcome groups: (1) Those who attempted to quit and succeeded, (2) those who attempted to quit and failed, and (3) those who did not attempt to quit at all. Analyses revealed significantly higher complexity overall for the failed attempters compared to the other two groups; the omnibus main effects were strong ($F's > 7.0$, $p's < .002$). Planned comparisons showed that successful quitters were significantly lower in complexity than failed attempters ($p < .001$). This effect was descriptively more pronounced at the end of treatment than at the beginning. Taken together, these results suggest that, while an increase in complexity may be necessary in the early phases of treatment, successful quitting in MI sessions may ultimately involve simplicity from clients by the end of treatment. This has implications for both understanding the pathways by which MI might operate and for improving smoking cessation interventions.

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RECRUITMENT, RETENTION, AND REASONS FOR PARTICIPATION IN A CESSATION INDUCTION TRIAL FOR SMOKERS WHO ARE UNMOTIVATED TO QUIT: THE KC QUEST EXPERIENCE

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Studies testing interventions to encourage unmotivated smokers to try to quit present recruitment challenges because eligible smokers may not be interested in a study designed to motivate them to quit. This study describes recruitment, retention, and reasons participants gave for participating in a randomized controlled trial for inducing quit attempts in unmotivated smokers. Daily smokers (N=255; 57 % male; 68 % African American) who were unmotivated to quit (mean motivation score=1.9, 1–10 scale) were invited to participate in a study to learn how health professionals should talk to smokers and informed that they would not be required to quit. Participants received up to \$150. Over 15 months, low cost recruitment approaches yielded 777 screened, 407 eligible, and 255 randomized. 89 % were retained at 6 months. At baseline participants were asked to write-in up to three reasons they participated in the study. Using a grounded theory qualitative approach, 11 categories were identified (inter-observer agreement was 87 %; kappa=0.81). Common reasons for participating and their frequency were as follows: to gain education and insight about smoking (22.5 %), study financial incentives (19.3 %), interest in research (11.6 %), help quitting (10.9 %), to help others (8.5 %), something to do (4.8 %), and the study was right for me (4.7 %). Results indicate smokers who are not motivated to quit can be successfully engaged in treatment research and that participants do so for a variety of reasons. Reasons for unmotivated smokers' interest in treatment can help practitioners and researchers design effective strategies to engage this population in treatment.

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AMONG LOW-INCOME HOUSING RESIDENTS WHO SMOKE IS MATERIAL HARDSHIP ASSOCIATED WITH THE DECISION TO QUIT?

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Smokers experiencing material hardship have been shown to be more likely to be interested in quitting than smokers not experiencing material hardship; and, some public health campaigns have stressed the money that can be saved by the household when quitting smoking. Nevertheless, interest in quitting does not often translate into actual quit attempts. One reason for the inconsistency may be that material hardship has been assessed with a single question. The purpose of this study was to use a more comprehensive measure of hardship to determine if smokers experiencing material hardship were more likely to be making quit attempts than those not experiencing material hardship. In this study, two indicators of material hardship were used: food insecurity and financial hardship. Data from the Health in Common (HIC) Study, an observational study examining cancer risk-related behaviors among residents of 20 low-income housing developments, comprised the sample for this cross-sectional analysis. Logistic regression models were used to obtain the odds of currently trying to quit among current smokers (N=170), adjusting for socio-demographic and psychosocial factors previously found to be associated with trying to quit smoking (i.e., distress, confidence in quitting, smoking patterns). Fully adjusted models revealed no statistically significant association between trying to quit smoking and indicators of material hardship (OR = 1.33(0.42-4.2) food insecure and financial hardship present; OR = 3.83(0.97-15.13) food insecure and no financial hardship). If replicable, these findings suggest that anti-smoking campaigns focused solely on financial aspects of quitting may not be sufficient to motivate quit attempts.

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6-YEAR QUALITY MONITORING AND OUTCOMES OF A HOSPITAL TOBACCO TREATMENT SERVICE

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Meta-analyses have demonstrated the efficacy of treating hospitalized smokers. Few hospitals have acted on these findings. UKanQuit (UKQ) is fully embedded in hospital systems and is staffed by counselors from the Dept of Preventive Medicine. Physicians and nurses refer patients to UKQ via the electronic medical record (EMR). Counselors assess craving/withdrawal and work with clinicians to add/increase nicotine replacement; assess readiness to quit; provide motivational or cessation counseling according to level of readiness; link smokers with medications and quitline counseling on discharge, and document activities in the EMR. In the past 6 years, 8,188 patients were referred to UKQ. Of these, UKQ met with 6,545 (80 %). Reasons for failing to meet include discharged (1,032/12 %), refused to meet (196/2.4 %), and other (415/5 %). Smokers seen were mainly White (83 %) or African American (22 %). On average, they smoked 16 cigarettes/day, had smoked for 29 years, and were motivated to quit (7, scale of 1–10). For post-discharge treatment, 21 % set a quit date, 21 % were prescribed a medication on discharge, and 34 % were fax-referred to quitline. In the first 5 years of service, of 5,649 patients treated, staff were able to reach 1,683 (30 %) at 6 months post-discharge. Reasons for failing to reach patients include phone disconnected (37 %) and unable to reach after 6 attempts (25 %). Of those reached, 470 (30 %) reported abstinence from tobacco. Only 2 % reported they had used the quitline but 29 % reported they had used medication to try to quit. Respondents believed the hospital should continue the UKQ service (95 %). The service reaches a broad population of patients, is well accepted, and achieves good outcomes given its low level intensity. Based on disappointing quitline use post-discharge, UKQ is conducting a clinical trial to test fax referral versus “warm handoff” referral of smokers to quitline, where staff call the quitline and help patients enroll in counseling as inpatients.

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BOLD RESPONSE IN THE DORSAL-LATERAL PREFRONTAL CORTEX IS NEGATIVELY CORRELATED WITH SUBJECTIVE CRAVING IN A SAMPLE OF TREATMENT-SEEKING SMOKERS

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Individual differences in smoking related cue-reactivity shows promise as a predictor of smoking cessation outcomes. Subjective craving and withdrawal symptoms are also key factors involved in smoking cessation and relapse. The present study uses functional magnetic resonance imaging (fMRI) to describe the relationship between blood oxygen level-dependent (BOLD) response to smoking cues and subjective ratings of craving. Forty-six treatment-seeking, heavy smokers (50 % female, M age=32.4) completed a smoking-cue task during the screening session for a larger randomized-controlled trial for smoking cessation treatment. During the task, participants viewed 7–14 second smoking related (e.g. smoking, lighting cigarette) and food related (e.g. food preparation/consumption) video clips in two 7-minute fMRI runs. All participants were asked to abstain from smoking for a minimum of 2 hours prior to the fMRI session. The Brief Questionnaire of Smoking Urges (QSU-Brief), a validated measure of craving, was administered prior to (M=4.32) and immediately following (M=4.52) the fMRI session. fMRI analyses focused on BOLD response differences between 1) smoking related videos and food related videos and 2) smoking related videos and a fixation baseline. Contrast images were computed for each participant and included in a group level analysis using a correlational approach with QSU difference scores (post minus pre). For both the smoking-food and the smoking-baseline, there was a significant negative correlation between post-pre QSU difference scores and BOLD response in bilateral DLPFC. This pattern of results suggests cue-elicited activation in the DLPFC plays an important role in subjective craving. Further research is needed to explore the utility of this association in predicting responses to smoking cessation interventions.

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D-199

PILOT STUDY OF A MOBILE HEALTH (MHEALTH) WELLNESS INTERVENTION FOR SMOKERS LIVING WITH HIV (WISH)

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Over 1/2 million people living with HIV in the US smoke cigarettes. Targeted cessation interventions are needed to reach smokers living with HIV (SLWH), including many not inclined to enroll in standard cessation programs. WISH was developed as an HIV-specific wellness program, with an emphasis on activating SLWH to quit smoking. We evaluated feasibility/ acceptability of the WISH mHealth protocol with 10 SLWH enrolled in a large regional health plan. Participants agreed to learn more about healthy living, but were not seeking cessation services or required to be ready to quit. Participants were mailed written HIV self-care and smoking cessation materials, were reimbursed \$50 for receiving up to 8 30-minute counseling calls and 16 text messages on their own cell phones, and were provided free NRT patches upon setting a quit date. 45 % of HIV+adults contacted (71 % of those eligible) were interested and enrolled. There were no drop-outs and 90 % completed all 8 phone sessions (range=4–8). Many indicated they would prefer a longer wellness program. Written materials were perceived as easy to understand and useful. Phone reimbursements and length, format and frequency of calls and texts were acceptable. It was feasible to use web-based software to send, receive, schedule, and archive texts. Focus of texts on action plans set during calls fostered treatment engagement and was perceived as supportive and individually relevant. At 3 months, 100 % reduced daily smoking levels, 80 % set a quit date, 70 % requested NRT, 70 % made a serious 24-hour quit attempt, and 40 % were abstinent >7 days. At 6 months, 20 % were abstinent >7 days. WISH may appeal to SLWH due to the program's remote mode of administration, HIV-specific focus, or wellness framework. Pilot findings suggest WISH is feasible, highly acceptable, and warrants further investigation.

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Meritorious Poster

D-200

AFRICAN AMERICAN SMOKERS REPORT GREATER ATTENTIONAL BIAS TO SMOKING CUES THAN WHITE SMOKERS: IMPLICATIONS FOR SMOKING CESSATION

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Compared to White smokers, African American (AA) smokers suffer from disproportionately high rates of tobacco-related morbidity. AA smokers also have lower rates of smoking cessation, but the psychological mechanisms underlying racial differences in smoking cessation are unclear. Recent research has examined the role of automatic cognitive processes in relapse to smoking, such as attentional bias (automatic attention capture by drug cues). However, scant research has examined attentional bias to smoking cues in AA smokers. We examined attentional bias in AA and White smokers in two studies in which participants completed the Subjective Attentional Bias Questionnaire (SABQ; a self-report measure of attentional bias) and the Smoking Stroop task (SS; a reaction time measure of attentional bias to smoking cues) at two laboratory visits, a non-abstinent session, and an abstinent session. In study 1, which involved non-treatment seeking smokers (99 Whites, 104 AAs), the SABQ asked participants to report on experiences “so far today”. Averaged across sessions, AAs reported higher attentional bias on the SABQ ($p < .001$), and they exhibited a marginally higher attentional bias on the SS ($p = .06$). In study 2, smokers enrolled in a smoking cessation study were followed from 2 weeks pre-quit through 4 weeks post-quit; 110 Whites and 74 AAs attended a quit-day session and attempted to quit. The SABQ asked participants to report on experiences “during the past week”. As in study 1, averaged across sessions AAs reported a greater attentional bias than Whites on the SABQ ($p < .005$). Higher attentional bias on the SABQ predicted relapse at Weeks 1 and 4 (Biochemical-verified Point Prevalence abstinence) ($p < .05$). In sum, AAs report greater subjective attentional bias than Whites, which may undermine cessation. Future research should further investigate the clinical relevance of attentional bias in AA smokers.

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D-201

TRAINING YMCA SMOKING CESSATION FACILITATORS: COMMIT TO QUIT YMCA

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Community-based smoking cessation intervention studies enable greater reach than compared to clinic-based trials. However, in order to maintain treatment fidelity and replicate findings across community setting, training protocols and supervision of community leaders must be developed. To enhance and monitor treatment fidelity, the NIH Behavior Change Consortium recommends using a training model that includes monitoring: provider training, treatment delivery, treatment receipt, and treatment enactment. This paper describes the application of this treatment fidelity model in the context of a community-based, randomized controlled smoking cessation trial that compared a cognitive-behavioral smoking cessation therapy+exercise (Exercise) with a CBT+Contact Control (Contact). The interventions were translated from a clinic to community setting and delivered through four local YMCAs. Overall, 29.7 % of participants quit (7-day PPA) at end of treatment and 13.9 % were continuously abstinent. In addition, the effect of YMCA site and group leader on program adherence and smoking outcomes were examined. Session ratings for both specific (group topic components) and non-specific (communication and rapport) treatment fidelity characteristics were high, with no statistical differences between any of the four YMCA sites, two group types (Exercise vs. Control), or eight group leaders. Overall, qualitative and quantitative results suggested that adaptation and implementation of the program were feasible, treatment fidelity was maintained, and adherence and outcomes did not differ according to individual site or leader. Thus, it appears that YMCA staff members were able to successfully lead these groups that had previously only been led by PhD level psychologists, albeit with extensive training and weekly supervision.

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D-202

MOTIVATIONAL INTERVIEWING IN PRIMARY CARE: CURRENT PRACTICES IN SMOKING CESSATION COUNSELING

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Smoking continues to be the leading preventable cause of morbidity and mortality in the U.S. Emerging evidence supports the efficacy of Motivational Interviewing (MI) for smoking cessation counseling, yet the actual content of MI interventions that are delivered in primary care settings has not been explored thoroughly. Objective: Examine the MI characteristics and behaviors of primary care physicians. Examine processes of MI and conduct exploratory analyses on their smoking cessation outcomes impact. Design: Mixed-methods, quasi-experimental cohort with objective coding of physician practice. Setting: Academic (2) and community practices (2). Participants: 39 patients; 5 physicians and one nurse practitioner. Intervention: Physician training and personalized feedback. Patients receive smoking cessation counseling followed by assessment at 1, 3 and 6 months. Primary Outcome: Methods and feasibility for determining MI characteristics in primary care. Secondary Outcomes: Physician MI counseling characteristics; patient smoking cessation outcomes. Results: Mean pre-training physician counseling sessions were lower than benchmarks for MI Spirit (3.6 vs. 4.0); and empathy (3.6 vs. 4.0), while directive counseling exceeded benchmarks (4.4 vs. 4). Smoking cessation rates post-training were increased at 1, 3 and 6 months (1 month-0 % vs. 14 %, $p=.04$; 3 months-4 % vs. 14 %, $p=0.3$; 6 months-13 % vs. 17 %, $p=.08$). Comparisons of baseline and post-training physician MI characteristics and behaviors will be reported. Analyses with hierarchical linear models will explore hypothesized mediators for effective brief MI-based interventions in primary care. Conclusions: Determining current MI practices of physicians and exploring hypothesized mechanisms of action for successful smoking cessation have the potential to improve translation of effective smoking cessation counseling into primary care settings.

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D-203

BEHAVIORAL INTENTIONS AND WILLINGNESS PREDICTING SMOKING: MODERATION BY SELF-CONTROL

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Behavioral intentions and willingness both predict risk behaviors but do so by different mechanisms. Intentions are more planned while willingness is more reactive to the environment. Self-control is associated with risk behaviors (Gerrard, Gibbons, Houlihan, Stock, & Pomeroy, 2008) but self-control may also moderate the association of intentions and willingness with health risk behaviors. Behavioral intentions, as more planful, should predict behavior best when self-control is high versus low. Behavioral willingness, as more reactive, should predict behavior best when self-control is low versus high. The current study used behavioral intentions and willingness, moderated by self-control, to predict smoking behavior. Data were collected from a multi-wave study of 276 romantic couples using the Actor-Partner Interdependence Model for analyses. Participants completed surveys every two weeks about their about willingness to smoke, intentions to smoke and cigarette smoking. Participants completed a self-control measure at baseline. Participants with higher behavioral intentions to smoke report more future smoking (estimate=.667, $p<.001$). Participants with higher behavioral willingness to smoke report more future smoking (estimate=.096, $p=.01$). Self-control was not significantly related to smoking (estimate=.01, $p=.42$). Analyses of interactions showed significant effects for the 2-way interactions of self-control and behavioral intentions to smoke (estimate=-.315, $p<.001$) and self-control and behavioral willingness to smoke (estimate=-.142, $p=.049$). Plots of the interactions showed that as self-control increased the strength of the association between intentions and smoking increased. However, the strength of the association between behavioral willingness and smoking decreased as self-control increased. The 2-way interactions supported our hypotheses. Behavioral intentions are a better predictor of behavior when self-control is high versus low and behavioral willingness is a better predictor of behavior when self-control is low versus high.

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D-204

COMPENSATORY RESPONSES, OR SOMETHING ELSE ALTOGETHER?

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Of the 45 million adult smokers in the U.S., as many as 68 % express an interest in quitting smoking (CDC, 2012; CDC, 2011), although few succeed for any sustained length of time. Respondent conditioning (RC), including conditional stimuli play an important role in cravings, relapse, and tolerance to drugs (Siegel, 1982; Siegel, 2005), and our first study examined the role of RC in smoking. Study 1(Machado, et al., in prep) found preliminary evidence for the role of conditional stimuli in eliciting a compensatory response in smokers, as indicated by a drop in carbon monoxide (CO) readings, after they viewed smoking-related stimuli. However, alternative phenomena may also explain this result. For example, duration and speed of breath exhalation can directly affect CO readings (Raiff, et al., 2010; West, 1984). In a follow up pilot study, we systematically manipulated exhalation duration of 1 smoker participant. Results showed that short (i.e., 7 s) and long (i.e., 17 s) duration exhalations resulted in CO readings that varied up to 30 % depending on length of exhalation, similar to results obtained by Raiff et al. (2010) and West (1984). Smoking stimuli may serve as cues (i.e., signals that nicotine will soon be ingested, or [in the case of nonsmoking stimuli] not soon ingested) that affect breathing and exhalation rates; thus, Machado et al. may not have identified compensatory responses, per se. In light of this data, we are replicating the methods of Machado et al., and carefully measuring whether smoker participants change their exhalation duration in the presence of smoking-related stimuli versus nonsmoking-related stimuli. Identifying behaviors that are affected by both operant and respondent conditioning will allow us to develop more effective smoking cessation interventions.

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D-205

THE PREVALENCE AND PREDICTORS OF SMOKING AFTER TRAUMATIC INJURY

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Background: The global median prevalence of smoking is 22 % and is associated with greater complications after surgery. Little is known about the prevalence or predictors of smoking in patients with traumatic injury. The aims of the present study were to examine: (1) the prevalence of smoking in patients who survived traumatic injury, and (2) the predictors of smoking after traumatic injury.

Methods: A total of 637 patients from a Level I trauma center were enrolled in the study and completed a structured clinical interview, battery of questionnaires, and underwent a physical exam. Chi-square analyses and logistic regression were employed to test the aims of the study.

Results: Of the 637 patients, 53 % of patients smoked prior to the trauma and 42 % after traumatic injury. Of those who smoked prior to trauma, 31 % stopped and 22 % continued smoking after the trauma. Twenty percent of patients started smoking after the injury. Males reported smoking more often than females before ($p < 0.001$) and after the trauma ($p = 0.04$). Smoking cigarettes prior to the traumatic event did not result in increased time on ventilation, days in the intensive care unit, or length of stay in the hospital when compared to those who did not smoke before the injury. Significant predictors of patients who continued smoking versus those who stopped smoking after the trauma included not having a lower extremity injury ($p = 0.01$). Trends were observed in that those who had lower scores on the SF-12 mental health domain ($p = 0.08$) or who received disability ($p = 0.07$) were more likely to continue smoking after the trauma. Having an upper extremity injury was predictive of not starting to smoke after the traumatic injury included ($p = 0.04$).

Conclusions: Patients who have experienced a traumatic injury had a higher prevalence of smoking than the general population. Intervention delivered before discharge from the hospital is important so patients have the skills needed before returning to environments that trigger tobacco use.

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D-209

A POSITIVE AFFECT FOCUSED STRESS REDUCTION INTERVENTION: EFFECTS ON DISCRETE POSITIVE EMOTIONS

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Positive affect has unique adaptive effects in the context of stress so may be uniquely beneficial as a target of stress reduction interventions. We developed a multi-component intervention aimed at increasing positive affect for individual's coping with significant life stress. The intervention covers 8 positive affect skills: 1) noticing positive events; 2) capitalizing/savoring; 3) gratitude; 4) mindfulness; 5) positive reappraisal; 6) personal strengths; 7) attainable goals; and 8) acts of kindness.

We have completed six small proof-of-concept pilot studies of the intervention and have combined the results in a meta analysis in order to 1) estimate the effect sizes for changes in general positive and negative affect from baseline to one-month follow-up and 2) explore the effect of the intervention on discrete positive emotions. Study samples were men undergoing treatment for methamphetamine addiction, patients with type 2 diabetes, people newly diagnosed with HIV, caregivers of dementia patients, and university employees. In total we had 61 participants complete emotion questionnaires at baseline and 1 month following completion of the intervention. Meta analysis indicated that overall, there was a significant increase in positive emotion (WMD=0.38, 95 % CI=0.14, 0.61) and a significant decrease in negative emotion (-.44, 95 % CI=-.67, -.22). Furthermore, awe (.44), happiness (.45), gratitude (.32), hope (.73), pride (.35), and contentment (.57) all increased significantly from baseline to one month following the intervention. Amusement, interest, and love did not change. Next steps include larger randomized controlled trials optimizing content and delivery method (e.g., online, via smartphone) to maximize the impact on positive emotion and reduce the deleterious effects of stress.

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D-210

THE EFFECTS OF ACCULTURATION AND PARENTAL STRESS ON CHILDREN'S SOCIO-EMOTIONAL AND COGNITIVE DEVELOPMENT

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Although previous studies have found associations between acculturation status, maternal stress, and infant health, few studies have investigated the influence of these factors on the socio-emotional and cognitive development of children during early childhood. The current study examined whether a mother's level of acculturation to mainstream U.S. culture and their level of parental stress were associated with their child's socio-emotional and cognitive development. Our sample consisted of 96 predominately low income Latina women (average age=23 years) and their children (average age=31 months, 57 % boys) who participated in a longitudinal study examining the effect of maternal stress on child health outcomes from pregnancy to 2-4 years postpartum. Mothers' acculturation level (Language-based Acculturation Scale) was assessed during pregnancy, while parental stress (Parental Stress Index) and the child's socio-emotional (Vineland Social-Emotional Early Childhood Scales) and cognitive development (Mullen Scales of Early Learning) were assessed at 2-4 years postpartum. Hierarchical regression analyses showed that mothers with higher levels of acculturation (i.e., more frequent English use), had children with better expressive language skills (cognitive development). In the same regression model, a significant acculturation by parental stress interaction was also found, such that mothers with low levels of acculturation and low levels of parental stress had children with better expressive language skills than women with low levels of acculturation and high levels of parental stress ($R^2 = .13$, $p < .05$). These results support the need to tailor scholastic programs that are designed to help improve the academic performance of children of mothers who are less acculturated and experiencing high levels of parental stress.

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D-212

DAILY DIARY STUDY OF THE RELATIONSHIP BETWEEN HOPE PATHWAYS AND AGENCY IN THE CONTEXT OF STRESS AND AFFECT

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Hope (Snyder et al., 1991) is important for health psychology because it is related to positive affect, coping, fewer depressive symptoms (Chang, 2003), greater pain tolerance (Snyder et al., 2005), and fewer lung cancer symptoms (Berendes et al., 2010). Compared to empirical evidence of what hope predicts, evidence pales for some of the assumptions of hope theory. The purpose of this study was to examine the assumed bi-directional nature of hope pathways and hope agency in a 21-day daily diary study of 66 emergency responders (72.7 % male; Mage=39.6 years, SD=9.16, 71.2 % non-Hispanic Caucasian). Multilevel modeling was used. Level 2 variables (grand-mean centered) included: optimism, depression, trait pathways and agency, and demographics. Level 1 variables (person-mean centered) included: positive and negative affect, stress when on calls, partner stress, and state pathways and agency. Our hypothesis was that increased agency would predict greater next day pathways and vice versa. Contrary to this, lower agency predicted higher pathways ($B = -.204$, $p = .012$). Low positive affect and low agency predicted higher pathways; low positive affect and high agency predicted lower pathways ($B = .436$, $p = .004$). High stress and low agency predicted increased pathways; high stress and high agency predicted decreased pathways ($B = -.144$, $p = .046$). High agency, high call stress, and low positive affect predicted decreased pathways. Lower pathways predicted higher agency ($B = -.143$, $p = .040$). Low pathways and low positive affect predicted higher agency ($B = .436$, $p = .001$). High pathways and high partner stress predicted lower agency ($B = -.136$, $p = .010$). Low positive affect, low call stress, and high pathways predicted lower agency ($B = -.230$, $p = .010$). Low positive affect, high partner stress, and high pathways predicted higher agency ($B = -.139$, $p = .049$). Agency or pathways may increase in response to the other one being low. This may be very important if positive affect is low; however, this relationship also needs to be taken within the context of stress level.

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D-213

THE REGULATION OF HPA ACTIVITY AND ANTI-AGING EFFECT OF QIGONG EXERCISE FOR PATIENTS WITH CHRONIC FATIGUE SYNDROME: TELOMERASE ACTIVITY AND SALIVARY CORTISOL

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Background Our previous RCT showed that Qigong exercise has effects of reducing fatigue level, improving quality of life, and also anti-aging effect on CFS patients.

Objectives In this RCT, the effects of Qigong exercise on fatigue as well as the relationships between fatigue and two biomarkers - telomerase activity and salivary cortisol level which designated theHPA axis activity were investigated.

Methods A RCT was conducted. 16 sessions of Qigong was delivered. The primary outcome was change of Chalder's fatigue scale. The telomerase activity in blood sample and salivary cortisol level at 5 time points in same day: awakening, 45 min after awakening, 12 pm, 5 pm and 9 pm ere collected. The mean of natural log of cortisol level (MNLSCCL) and area under curve (AUC) for 5 time points were calculated. The primary outcome and differences of biomarkers (T1-T0) between Qigong and control groups were compared using T-test. The correlations between fatigue level and biomarkers were also assessed.

Results The changes of Chalder's fatigue (T1-T0) were -11.8 (11.4) and -4.1(6.5) for Qigong and control groups respectively (p<.001). The changes of MNLSCCL were -0.405 (0.987) and -0.018 (0.595) (p=0.004), as well as -203.48 (444.03) and -13.49 (96.91) (p=.001) respectively in the changes of AUC (T1-T0). The differences of telomerase activity were 0.038 (0.203) and -0.105 (0.165) for Qigong and control groups respectively (p<.001). The correlations between change of fatigue with that of MNLSCCL was 0.294 (p<.001), and with that of AUC was 0.387 (p<.001).

Conclusion Qigong may reduce fatigue level and HPA axis activity and increase telomerase activity. Improvement in fatigue may possibly relate to the changes in HPA activity while the mechanism of changes in telomerase activity needs further investigation.

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D-215

POST-TRAUMATIC STRESS SYMPTOMS AND ALCOHOL-RELATED OUTCOMES AMONG MUNICIPAL FIREFIGHTERS: EXPLORING THE MEDIATIONAL ROLE OF DRINKING MOTIVES AND MALADAPTIVE COPING STRATEGIES

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Post-traumatic Stress Disorder (PTSD) is an anxiety disorder that occurs after an individual has been exposed to a traumatic event (NIMH, 2009). Due to the frequent exposure to a variety of such events, firefighters are at high risk for developing PTSD symptoms (Berger et al., 2011). Those with significant PTSD symptoms are more likely to misuse alcohol to manage stress and PTSD symptoms by self-medicating in order to cope with or alleviate psychological stress. The present study examined relationships between PTSD Symptoms and alcohol-related outcomes including At-Risk Drinking, Alcohol-Related Problems, and Alcohol Consumption in a large sample of municipal firefighters. The study also assessed Drinking Motives and Coping Strategies as possible mediators of such effects. Firefighters (n=740) completed a health assessment packet that included the PTSD Checklist Civilian Version (PCL-C; Weathers et al., 1993), and alcohol-related measures including the AUDIT (Babor et al., 2001), RAPI (White & Labouvie, 1989), and DDQ-M (Collins, Parks, & Marlatt, 1985). Drinking motives were measured by the DMQ-R (Cooper, 1994) and coping strategies were measured by the Brief Cope (Carver, 1997). Regression analysis indicated a significant association between PTSD Symptoms and all alcohol-related outcomes including At-Risk Drinking (b=.18, p<.001), Alcohol-Related Problems (b=.33, p<.001), and Alcohol Consumption (b=.11, p .01). Path and structural models assessing drinking motives and coping strategies indicated that coping and enhancement drinking motives, as well typical use of approach oriented coping strategies and substance use coping, mediated the effects of PTSD symptoms on the alcohol-related outcomes (p<.05 for all indirect effects). Overall, the results suggest that firefighters experiencing PTSD Symptoms engage in At-Risk Drinking and experience significantly more problems than those without PTSD Symptoms. They also suggest that maladaptive coping process largely account for these relationships.

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D-216

TO EXERCISE OR NOT TO EXERCISE?: POSING THE QUESTION TO WOMEN WITH SUBSTANCE USE DISORDERS

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Aims: Substance use disorder (SUD) treatments often yield modest effects. Strategies to improve outcomes & prevent relapse are important, especially for women. A promising therapeutic adjunct may be exercise, which is associated with decreased cravings and increased abstinence in cigarette smokers. However, few studies have examined effects of exercise on recovery from other SUDs. The purpose of this ongoing study is to identify facilitators and barriers to regular exercise in women with SUDs.

Methods: Participants completed surveys about substance use, mood, and health variables. Recruitment occurred at a CTN-affiliated residential women's treatment program. To-date, N=85 (final projected sample: N=120) women have completed the survey. Descriptive statistics were used to summarize findings.

Results: Participants were predominantly single (78 %) and AA (72 %) with average age of 40. Heroin (39 %) and crack/cocaine (38 %) were the most frequent drugs of choice, and three-fourths were smokers (75 %). Participants ranged in BMI from normal (28 %) to overweight (35 %) to obese (37 %), and over half endorsed medical problems upon admission (58 %). Over half (52 %) expressed strong interest in regular exercise; however, over one third (34 %) reported extreme to considerable pain upon admission, and over one half reported their current health limited their ability for moderate exercise (59 %). Over a third did not have athletic shoes (37 %) and nearly a third did not have clothing suitable for exercise (27 %).

Conclusions: There is significant interest among women with SUDs in exercise as a supplement to their treatment, and interventions that focus on overall health in this population may provide a unique opportunity to reduce relapse risks. Practical barriers to exercise may also need to be addressed. More research is needed to better understand how best to integrate exercise with SUD treatment and promote compliance.

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D-217

MULTIPLE HEALTH BEHAVIOR CHANGE IN SUBSTANCE ABUSE TREATMENT

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Introduction: Cardiovascular disease and cancer are the leading causes of mortality for people with a history of substance dependence. This is largely the result of behavioral lifestyle factors common to this group. The aim of the current study was to pilot test the 'Healthy Recovery Program', a multi-focused risk reduction program.

Method: Participants were attending residential substance abuse treatment provided by The Salvation Army (N=111). The treatment condition completed the 5-week Healthy Recovery Program (n=51). This is a 7-session group delivered intervention that aims to reduce participants' smoking, improve their diet and increase their level of physical activity. Participants in the control condition completed TAU (n=62). The study was not randomised. Participants undergoing treatment at sites in one Australian state (NSW) were in the treatment condition, and participants attending sites in another state (QLD) were in the control condition. All participants were current smokers.

Results: Participants completing the Healthy Recovery Program reported a significant reduction in their smoking (mean cigarettes per day=14.70 at baseline and 8.14 at 5-weeks) and a significant increase in their mean number of fruit and vegetable serves per day (3.31 at baseline to 4.60 at 5-weeks). When compared to the control condition, there were significant between group differences at 5-weeks for smoking (p=.01). There were also significant differences in physical activity, as rates of physical activity decreased in the control condition (p=.02). There was no difference for fruit and vegetable consumption (p=.13), with both conditions reporting increases.

Conclusion: The current study underscores the potential to conduct multi-focused behavioral interventions in substance abuse treatment settings.

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NOTIFICATION OF HEPATITIS C SEROSTATUS IMPROVES THE ADHERENCE OF HCV SEROPOSITIVE DRUG USERS RECEIVING METHADONE MAINTENANCE TREATMENT

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Methadone maintenance treatment (MMT) plays an effectively role in controlling HIV infection among drug users of China. However, the significant dropout rate in MMT clients compromises the effect of MMT outcomes. While Hepatitis C (HCV) is the most common comorbid infection disease among opioid users receiving MMT in China, the notification of HCV test results to the MMT clients has not been routinely adopted in MMT clinics. In addition, the awareness of HCV serostatus is very poor among drug users. The objective of this study was to explore the impact of notifying HCV test results on MMT client dropout rate and outcomes. 120 opioid dependent patients receiving MMT were surveyed in 2008 and were notified of their HCV test results during the 3-year follow-up years. Using data collected from the survey and the clinical records, we 1) assessed HCV knowledge and self-known HCV serostatus; 2) examined if increasing the awareness of HCV infection by notifying test results improves the MMT outcomes among opioid users. Results: 1) The HCV seropositive rate was 70 % in the surveyed opioid users and only 21.7 % knew their HCV serostatus correctly at baseline. Participants scored on average 11 correct out of the 20 items in the HCV knowledge questionnaire. 2) The rate of self-known HCV status increased to 93.9 % among the 82 participants who were still active in MMT in December 2011. We found HCV seropositive patients were much more adherent with MMT than seronegative patients, demonstrated by significantly longer retention ($P<0.05$), less consecutive missing 7 or 14 days ($P<0.05$) and less positive morphine urine test results ($P=0.201$) during the 3-years follow up. We also found HCV seropositive patients took higher dose of methadone than negative patients in terms of prescription dose and actual intake dose ($P<0.05$). Conclusion: Interventions that increasing the alertness/perception of HCV infection by informing the HCV test results to MMT clients can improve the adherence of MMT.

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Citation Poster

D-219

EXERCISE AND LAPSE FOLLOWING A CANNABIS QUIT ATTEMPT

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Rates of cannabis use disorders among veterans have increased over 50 % in the past 10 years. Unfortunately, the effectiveness of the many treatments for cannabis use disorders remains quite low. There are several reasons to believe that moderate-intensity exercise may be a particularly effective treatment for cannabis dependence among Veterans. However, the majority of the investigations of the association between exercise and cannabis have been cross-sectional or among non-treatment seekers, with none of the studies having been conducted among veterans. The present study examined the role of exercise intensity on lapse to cannabis use during the first 48 hours (2 days) of a quit attempt among 84 cannabis dependent military veterans (95 % male). Baseline exercise intensity was assessed using the International Physical Activity Questionnaire and the Timeline Follow-back was used to assess cannabis use over the course of the 2 days following a self-guided quit attempt. Findings indicated that exercise intensity predicted early lapse to cannabis use. Specifically, participants who engaged in low-intensity exercise (Day 1: 21.43 % lapsed; Day 2: 22.6 % lapsed) had greater risk for lapse within the first 48 hours following their quit attempt compared to participants who engaged in moderate-intensity exercise (Day 1: 5.95 % lapsed; Day 2: 5.95 % lapsed; $\chi^2=11.01$, $p=.00$). Indeed, those who exercised with moderate-intensity had almost 4-times lower odds of lapse during the first 2 days of post-quit. Findings suggest that moderate-intensity exercise interventions may be useful in augmenting treatment, particularly early in the cessation process.

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ASSESSING CULTURAL CONSTRUCTS AND SUBSTANCE USE IN HISPANIC COLLEGE STUDENTS

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Acculturation has been positively associated with substance use in Hispanics. Acculturation as a single measure has been criticized for the exclusion of multiple cultural factors that could impact behavior. This study assessed the relationship between multiple cultural constructs hypothesized to be risk or protective factors for substance use in Hispanic college students.

Hispanic college students ($N=133$; $Mage=21.83$, $SD=5.39$; 70.7 % female) were recruited from a university on the U.S./México border and completed tobacco, alcohol and marijuana use frequency questionnaires as well as two culturally-based measures: the Short Acculturation Scale for Hispanics (SASH) which assesses acculturation and the Latino/a Values Scale (LVS) which assesses familismo and cultural pride. The SASH and LVS are scored on likert-type scales in which higher numbers indicate greater acculturation or greater Latino/a values, respectively. Two linear regression analyses assessed the impact of weekend alcohol use (# of drinks), past 30 day cigarette use (yes/no), and lifetime marijuana use (yes/no) on SASH and total LVS score. Only the SASH model was significant ($R^2=.137$, $p<.01$), with a significant negative association with cigarettes use ($\beta=-.278$, $p<.01$) and a significant positive association with marijuana use ($\beta=.184$, $p<.01$).

Inconsistent with hypotheses familismo and cultural pride were not protective factors against substance use; however, limited literature assessing these emerging cultural constructs exists, necessitating further study of these relationships. Consistent with hypotheses, marijuana use and acculturation were positively associated which supports empirically and theoretically based (e.g., convergence) acculturation models. Inconsistent with past evidence and theory, acculturation was associated with not smoking, which may suggest campus and community based efforts within the U.S. are effective in reducing smoking rates. Future studies of Latino cultural constructs seem warranted.

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D-222

A PSYCHOSOCIAL PROFILE OF VETERANS WHO HAVE BEEN PROPOSED FOR TRANSPLANT SURGERY

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Emotional and physical stress associated with organ transplant increase risk for psychological disorders, especially anxiety and depression. Prospective transplant recipients with depression have higher mortality rates before and after transplant (DiMartini, Dew, & Trzepacz, 2005; Levenson & Olbrisch, 2000). Mental health assessments are an important part of the transplant evaluation process, though little is known about associated response patterns or psychosocial profiles.

Thirty-four veterans were evaluated for potential solid organ or bone marrow transplant. The sample was predominately male (97.1 %), Caucasian (64.7 %), and ranged in age from 31 to 68 years of age ($M=57.24$ years, $SD=8.96$). Data were collected via retrospective chart reviews, focusing on reports of clinical interviews and psychometric testing.

Results were mixed in relation to study hypotheses. Participants' mean anxiety and depression scores were below levels of clinical significance. However, average response bias scores showed significant positive impression management, consistent with expectations. Locus of control beliefs were found to be moderate for internal, powerful others, and chance dimensions. As hypothesized, participants reported greater impairment of physical than mental health functioning. Of the variables examined, only historical substance use disorders and current tobacco dependence were related to lower clinician ratings of transplant candidacy. In comparisons of liver and bone marrow candidates, liver patients were more likely to be socially isolated, but the two groups reported similar levels of past and current alcohol and substance use.

Mental health data for transplant candidates might be significantly influenced by presentation biases. Results provide preliminary normative data for common psychometric measures. Future studies should include larger samples to establish reliable norms, and further explore contributors to clinician ratings of suitability for transplant.

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D-223

CLINICIAN RATED JUDGMENT OF HISTORICAL COMPLIANCE WITH MEDICAL RECOMMENDATIONS IS ASSOCIATED WITH PRE-TRANSPLANT HOSPITALIZATIONS AMONG LIVER TRANSPLANT CANDIDATES

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Noncompliance with medical recommendations is among the few identifiable causes of increased morbidity and mortality among transplant candidates and recipients. The purpose of this exploratory study was to evaluate the relationship between pre-transplant compliance with health behaviors and pre- and post-transplant outcomes. The sample consisted of 108 adult (age=52±11), outpatient liver transplant candidates at an academic medical center who were evaluated between January 1, 2008 and December 31, 2009. As part of clinical practice, a psychologist conducted a psychosocial evaluation, including an assessment of historical compliance across 6 health behavior domains: diet, exercise, medication use, alcohol use, nicotine use, and illicit drug use. Each transplant candidate was rated on a 9-point Likert scale from 1 ("poor") to 9 ("excellent"). Outcome data (i.e. listed for transplant, hospitalized pre-transplant, hospitalized post-transplant, and mortality) as of December 31, 2011 were collected through a retrospective chart review and exhaustive external database search. Independent-samples t-test revealed that those patients who were listed for transplant (M=4.2, SD=2.4) received better compliance ratings than patients who were not listed (M=3.2, SD=2.4), $t(106)=2.10$, $p=0.038$. Additionally, patients who were hospitalized pre-transplant (M=4.2, SD=2.5) received better compliance ratings than those who were not hospitalized (M=3.2, SD=2.4), $t(106)=2.012$, $p=0.047$. Findings from this study emphasize the need for comprehensive pre-transplant psychosocial evaluations in which compliance is assessed and used in the listing process. Surprisingly, patients who were hospitalized prior to transplant received higher compliance ratings, perhaps reflecting more engagement in their medical care. Of note, results may be confounded by compliance-based selection bias by referring physicians.

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