# Wednesday
# April 11, 2012
# 12:00 PM–6:00 PM

## Seminar 01 12:00 PM–6:00 PM 1000

### NIH GRANT WRITING SEMINAR FOR EARLY CAREER RESEARCHERS

Susan M. Czajkowski, PhD,[1] Karina W. Davidson, PhD,[2] Stacey C. FitzSimmons, PhD,[3] Francis J. Keefe, PhD,[4] Wendy J. Nilsen, PhD,[5] Michael J. Stirratt, PhD[6] and Deborah J. Wiebe, PhD, MPH[7]

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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, 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 02 12:00 PM–6:00 PM 1001

### INTEGRATING EVIDENCE-BASED HEALTH COACHING INTO HEALTHCARE SETTINGS

Dawn L. Edwards, PhD,[1] Joanne D. Taylor, PhD[2] and Michael J. Stern, PsyD[3]

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The management of chronic illness accounts for a growing percentage of visits to healthcare providers, with 45% of the US population experiencing one or more chronic illness. Many of these conditions are caused or exacerbated by unhealthy lifestyle choices. The WHO estimates that 80% of heart disease, stroke, and type 2 diabetes, and 40% of cancers could be avoided through healthy diet, regular physical activity, and no tobacco use. The authoritarian approach, typically used by healthcare providers in their efforts to elicit behavior change in patients, often ends in frustration and dissatisfaction for both patients and providers. As we consider the theme for this year's meeting, “Engaging New Partners and Perspectives”, it seems fitting to look at ways to engage current partners (our patients) in new ways and incorporate their perspective into our treatment approach. Healthcare providers are trained to know "what" a patient should do to improve their health, but many have not learned “how” to most effectively partner with their patients to facilitate health behavior change.

This seminar reviews the basics of health coaching from two perspectives: it introduces the skills and tools a clinician needs to most effectively support health behavior change in their patients; and it offers guidance for individuals interested in promoting health coaching skill development in other healthcare providers. Following a review of the literature, philosophy, and techniques of effective health coaching, participants will choose one of two breakout sessions based on their learning goals. One breakout offers additional instruction to participants new to health coaching wishing to incorporate it into their own clinical practice. The second explores ways to promote and support health coaching skill development in others. Participants will learn through a combination of lecture, video demonstration, and practice exercises. Each participant will also receive a CD containing coaching tools, patient handouts, and supplemental readings.

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## Seminar 03 12:00 PM–6:00 PM 1002

### MINDFULNESS-BASED EATING AWARENESS TRAINING: AN INTRODUCTION TO CLINICAL USE

Jean L. Kristeller, PhD

Psychology, Indiana State University, Terre Haute, IN.

This seminar will introduce the conceptual background, briefly review research evidence, and present treatment components of the MB-EAT program that has been used effectively with individuals with compulsive eating problems and obesity (Kristeller & Hallett, 1999; Kristeller & Wolever, 2011; Kristeller et al., under review). It is intended for a range of practitioners, with particular value for those working with health behavior change, eating problems and obesity.

Mindfulness approaches to treating obesity offer substantial promise. An overview of two completed NIH-randomized clinical trial will be presented, along with expanded portions developed for addressing weight loss. Portions of a video of participants’ experiences will be shared. For these participants, meditation appears to act by rapidly promoting self-awareness, internalization of control and self-acceptance. Therefore, this approach may be useful not only for treatment for eating problems, but may help expand understanding of how self-awareness/ mindfulness may contribute to emotional, behavioral and physiological self-regulation.

Experiential work will include presentations of several key guided meditations. Mindfulness exercises with actual food will be used, in addition to other eating and general meditation exercises. In addition, substantial time will be allowed for group discussion of application to various populations.

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# Wednesday
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## Seminar 04 12:00 PM–2:45 PM 1003

### BEHAVIORAL MEDICINE IN ACTION: A PRACTICAL EXPERIENCE IN USING ENVIRONMENTAL AUDIT TOOLS IN RESEARCH AND APPLIED SETTINGS

Matthew P. Buman, PhD,[1,4] Eric Hekler, PhD,[1,4] Rebecca Hunter, MEd,[2] David X. Marquez, PhD,[3] Jennifer Otten, PhD,[4] Matthew Rufo, MCP, LEED AP,[5] Ariane Rung, PhD[6] and Sandra Winter, PhD[4]

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Behavior change can be strongly influenced by the built environments in which we live, work, and play. There is a critical need for methods to assess these environments to determine how they impact health and how they can be harnessed to improve the efficacy of our behavior change initiatives. The purpose of this seminar is to expose behavioral scientists to a broad range of audit tools currently being used to assess food and physical activity environments and to describe their scope of use in research and applied settings. The first section of our seminar will provide an overview of existing audit tools that can be used in different settings (e.g., neighborhoods, parks, food outlets), focused on different population subgroups (e.g., adults, youth, seniors), through different mediums (e.g., print- and electronic tablet-based) and types of data collectors (e.g., trained researchers, community stakeholders, local residents). In the second section we will travel to the nearby Central City neighborhood of New Orleans where attendees will have the opportunity to "test drive" the audit tools by assessing a local school, park, food outlets, and neighborhood residential and commercial streets. Central City is a primarily African-American, low-income neighborhood that has received attention in plans for post-Katrina redevelopment. The final section of our seminar will engage researchers with local New Orleans community stakeholders and policymakers in a discussion about how environmental audit tools can be used to enhance behavior change initiatives and inform policy. Participants of this seminar will gain broad insights into the current best practices of using environmental audit tools and will receive guidance on how these tools can be integrated into existing projects.

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## Seminar 05 12:00 PM–2:45 PM 1004

### A NEW TREATMENT PARADIGM FOR COPING WITH CHRONIC STRESS: THE RELAXATION RESPONSE RESILIENCY PROGRAM

Elyse R. Park, PhD, MPH[1] and Jeffery Dusek, PhD[2]

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Chronic daily stress causes significant physical, emotional, and financial implications for Americans, and levels of stress are increasing. Three decades ago, Dr. Herbert Benson's groundbreaking work highlighted how the mind and body function to adapt to stress and proposed the existence of an elicitable state, the relaxation response (RR). Achieving the RR can combat stress through down-regulation of the sympathetic nervous system and up-regulation of the parasympathetic nervous system. Resiliency is a multidimensional construct that provides a framework for understanding one's adjustment to stress as a dynamic process. An innovative 8-session treatment program: the Relaxation Response Resiliency Program ($R_3P$) was developed, which purports that 1) stressors can adversely affect one's core resiliency; 2) the RR is a physiological state that can be achieved through different strategies to counter-regulate stress reactivity; 3) mastery of relaxation response elicitation maximizes one's ability to benefit from a multimodal mind-body intervention (lifestyle modification, emotional regulation, cognitive strategies, and physical improvements). The $R_3P$ is grounded upon principles from stress management, cognitive behavioral therapy, and positive psychology and is comprised of 3 core components: 1. Eliciting the Relaxation Response; 2. Stress Appraisal and Coping; and 3. Growth Enhancement. The goal of the $R_3P$ is for individuals to learn how to maximize their own adaptive responses to stress and apply these skills to daily living. In this workshop we will present the theoretical basis of the three $R_3P$ components. We will also provide an overview of how the treatment program intervenes upon these three components. Lastly, we will review our treatment outcomes and recommendations for pre- and post-treatment assessment.

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## Seminar 06 12:00 PM–2:45 PM 1005

### RE-ENVISIONING HEALTH CARE: INTEGRATING COMMUNITY AND CLINICAL PREVENTION

Jeremy Cantor, MPH, Larry Cohen, MSW, Leslie Mikkelsen, MPH,RD, Rea Panares, MPH, Janani Srikantharajah, BA, Erica Valdovinos, BA, Sana Chehimi, MPH and Ann Whidden, MPH

Prevention Institute, Oakland, CA.

With unprecedented investments in population health, the Affordable Care Act (ACA) provides an opportunity to transform health care delivery in a way that not only increases quality and efficiency but also increases community health and health equity. Because research has shown that environments and behaviors have the greatest sum impact on patient health, effectively integrating community prevention into health services delivery will be critical to ACA implementation and overall efforts to expand coverage, improve quality, and reduce costs. This session presents the concept and elements of a "community-centered health home" (CCHH), which builds on both ACA investments in community prevention and health homes and the tradition of community-focused work in community clinics. The CCHH takes these models a step further: encouraging health care institutions to take an active role in strengthening their surrounding community, in addition to improving the health of individual patients. The defining attribute of the CCHH is active involvement in community advocacy and systems change. A CCHH not only acknowledges that factors outside the health care system affect patient health outcomes but also actively participates in improving them.

Health care providers, however, often do not have the tools or support systems to engage in community change. Through research and key informant interviews, Prevention Institute developed a set of elements for health care institutions to implement that comprise a comprehensive approach to patient health that integrates efficient clinical practice with community change. The approach mirrors the diagnosis, monitoring, and treatment framework employed by physicians for their work with individual patients, broadening it to the larger community as inquiry, assessment, and action.

The session will also identify the larger systems changes that need to be in place to support the community-centered health home, as well as detail the Spectrum of Prevention, a strategic tool that promotes a multifaceted range of activities for effective prevention.

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## Seminar 07 12:00 PM–2:45 PM 1006

### INTRODUCTION TO THE MULTIPHASE OPTIMIZATION STRATEGY (MOST) FOR BUILDING MORE EFFECTIVE BEHAVIORAL INTERVENTIONS

Linda M. Collins, PhD

Methodology Center, Penn State, State College, PA.

The majority of behavioral interventions in use today have been evaluated as a treatment package using a two-group randomized controlled trial (RCT). This approach is an excellent way to determine whether an intervention is effective. However, the treatment package approach is less helpful at providing empirical information that can be used to improve the intervention's effectiveness. In this seminar an innovative methodological framework for building more effective behavioral interventions, the Multiphase Optimization Strategy (MOST), will be presented. MOST is based on ideas inspired by engineering methods, which stress careful management of research resources and ongoing improvement of products. A comprehensive strategy, MOST includes a series of steps devoted to establishing the conceptual foundation of an intervention; gathering empirical information on individual intervention components via experiments designed for efficiency and conservation of research resources; making decisions based on the results of the experiments to develop the intervention; and evaluating the intervention via a RCT. MOST can be used to build a new intervention or to improve an existing intervention. Using MOST it is possible to engineer an intervention targeting a particular effect size, level of cost-effectiveness, or any other criterion.

This seminar will provide an introduction to MOST. Ongoing intervention development studies using the MOST approach will be used as illustrative examples. A substantial amount of time will be devoted to experimental design, which is an important tool in MOST. In particular, factorial experiments and fractional factorial experiments will be discussed. Time will be reserved for open discussion of how the concepts presented can be applied in the research of seminar attendees. Attendees will be given a handout with the Power Point slides and a list of articles containing additional information.

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## Seminar 08 12:00 PM–2:45 PM 1007

### PEER SUPPORT INTERVENTIONS: TRAINING, ENSURING COMPETENCIES, AND INTERVENTION TRACKING (THE PEERS FOR PROGRESS NETWORK)

Tricia S. Tang, PhD,[1] Guadalupe X. Ayala, PhD, MPH, MA[2] and Andrea L. Cherrington, MD, MPH[3]

[1]Medicine, University of British Columbia School of Medicine, Vancouver, BC, Canada; [2]Health Promotion and Behavioral Sciences, San Diego State University, San Diego, CA and [3]Medicine, University of Alabama, Birmingham, AL.

Peer support is an evidence-based approach for chronic disease prevention and control. However, models of peer support differ on several important dimensions including how peer supporters are prepared and trained to carryout their responsibilities, how training is evaluated to ensure competency, and how peer supporters are monitored and supervised to maintain intervention fidelity. This seminar will teach participants how to design feasible and high quality peer support programs by focusing on the fundamental components of training, ensuring competencies, and tracking intervention delivery. Instructors will draw on varied experiences with multi-ethnic populations and programs supporting diabetes self management in community settings and health centers in Alabama, California, and Michigan as part of Peers for Progress, a program of the American Academy of Family Physicians Foundation to promote peer support in health, health care and prevention. Participants will learn about various models for training peer supporters and how these models may differ based on the role and functions of peer supporters and contextual factors associated with populations and settings. Participants will receive examples of training materials and engage in a discussion on how these materials were conceptualized from both theoretical and practical perspectives. Participants will also learn different approaches to evaluating training outcomes. Finally, participants will learn about various methods to assess intervention fidelity during implementation. Concepts and strategies will be reinforced through case examples, active learning techniques, simulations, and a hands-on exercise.

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# Wednesday
# April 11, 2012
# 3:15 PM–6:00 PM

## Seminar 09 3:15 PM–6:00 PM 1008

### INTRODUCTION TO LATENT CLASS ANALYSIS FOR BEHAVIORAL RESEARCH

Stephanie T. Lanza, PhD

The Methodology Center, Penn State, State College, PA.

Latent class analysis (LCA) is a statistical technique that allows researchers to identify underlying population subgroups that cannot be directly measured. In LCA a latent class variable, comprised of two or more subgroups, is posited to explain individuals' responses to a set of variables. These subgroups provide a more holistic view of individuals' health and behavior than that which could be derived from a single measured variable. Depending on the area of study, there may be latent classes representing different disease presentations, patterns of substance use, treatment adherence patterns, baseline profiles that indicate likely response to treatment, and so on. In recent years, the advantages of this person-centered approach to analyzing health and behavioral data have been increasingly recognized; at the same time, user-friendly software such as SAS PROC LCA has become available so that applied scientists may readily conduct LCA. Despite the availability of such software, however, several technical aspects of this analytic approach must be understood in order to successfully conduct LCA. These include model identification and selection; predicting latent class membership; and predicting distal outcomes from latent class membership.

This seminar will provide an introduction to LCA. Empirical results based on publicly available behavioral data will be used to demonstrate this approach in order to facilitate understanding of the type of research questions LCA can be used to address. During the seminar, a freely-available procedure for SAS, PROC LCA, will be demonstrated in the context of an empirical example so that attendees learn the basics of how to fit latent class models. Time will be reserved for open discussion of research questions that LCA may be appropriate for answering questions in the research of seminar attendees. Attendees will be given a handout with the Power Point slides, a list of articles containing additional information, and sample SAS syntax and output.

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## Seminar 10 3:15 PM–6:00 PM 1009

### GOING DIGITAL: BUILDING EVIDENCE BASED EHEALTH AND MHEALTH INTERVENTIONS

Jennifer Duffecy, PhD,[1] Mark Begale, BA,[1] David C. Mohr, PhD[1] and William Riley, PhD[2]

[1]Center for Behavioral Intervention Technologies, Preventive Medicine, Northwestern University, Chicago, IL and [2]National Heart, Lung, and Blood Institute, Bethesda, MD.

Research and development of mobile technologies for health behavior assessment and intervention are growing rapidly. The development and evaluation of mHealth and eHealth interventions requires methodologies and technical skills that have not been part of traditional training for behavioral and clinical scientists. This pre-conference workshop provides an overview of mHealth and eHealth development and evaluation methodologies.

This workshop will provide “how-to” information that will include evaluating and selecting the most appropriate technology modalities for your intervention and how to choose and communicate with your technologist, including developing functional design specifications, defining scope of work, and navigating the culture and language of engineering/computer science. We will introduce principles of user-centered development, beginning with mock paper prototyping, moving to initial prototyping and function and usability testing to refine functionality under controlled conditions, and field testing to examine its function under real-world conditions. Issues of data security/handling will be reviewed. Trial implementation will be covered, including participant recruitment in a technologically savvy world and unique issues related to running trials of eHealth and mHealth interventions. Grant application issues related to mHealth and eHealth research will be discussed. We will conclude with a brief discussion of the implications for integration of behavioral theory with behavioral intervention technologies. There will be opportunities for question and answer between each topic of the workshop, so bring your ideas for discussion!

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## Seminar 11 3:15 PM–6:00 PM 1010

### THRIVE: A COMMUNITY-LED APPROACH TO ACHIEVE HEALTH EQUITY AND STRENGTHEN MULTIDISCIPLINARY PARTNERSHIPS

Xavier Morales, PhD, Rachel Davis, MSW and Menaka Mohan, MPH, MCRP

Prevention Institute, Oakland, CA.

This interactive seminar is designed to introduce an effective community led process to address social determinants of health. Through the introduction of both the Community Tool for Health and Resilience in Vulnerable Environments (THRIVE) and Collaboration Multiplier, participants will develop an understanding of social determinants of health and how to facilitate community led efforts to address local priorities. Building upon academic and practitioner research, THRIVE focuses on the environmental factors that affect equitable health in a language that has been validated with community practitioners and provides an accessible process for communities to take action to achieve health equity.

The seminar will begin with a presentation that will ground participants in the social determinants of health and highlight the inequities and the health burdens facing under-resourced and minority communities. The presenters will then engage the audience in a THRIVE assessment process designed to define strategies needed to address the prioritized determinants. The presenters will then lead the participants through a Collaboration Multiplier exercise that is designed to identify multidisciplinary collaborations to understand and leverage each other’s expertise and resources as they work to address community priorities.

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## Seminar 12 3:15 PM–6:00 PM 1011

### INNOVATIVE TECHNIQUES TO ADDRESS RETENTION IN BEHAVIORAL RANDOMIZED CLINICAL TRIALS

Michaela Kiernan, PhD

Stanford Prevention Research Center, Stanford University School of Medicine, Stanford, CA.

This seminar will identify effective techniques to enhance retention in behavioral randomized clinical trials. In particular, the seminar will focus on the novel application of using motivational interviewing techniques to diffuse ambivalence during interactive group-based orientation sessions prior to randomization. These orientation sessions address ambivalence about making health behavior changes, ambivalence about joining a randomized trial, and the possibility of unrealistic outcome expectations. During these sessions, potential study participants learn about the benefits of health behavior change as well as the value of the scientific method such as a trial’s study design, the importance of a control condition, random assignment, and the impact of dropouts on interpretation of study results. In the orientation sessions, participants are divided into groups of three or four, and asked to generate two pros and two cons of being assigned to a control condition and an active condition. Participants share their pros and cons with the larger group, while the investigator asks open-ended questions, engages in reflective listening, and avoids taking a ‘pro-change’ position. This seminar will provide the theoretical rationale as well as caveats for these orientation sessions; empirical examples from two weight-management randomized trials (with retention rates of 93% and 95% at 18-month clinic visits); a resource manual for conducting the orientation sessions; a video clip of a prior orientation session; mock orientation sessions among seminar attendees with role play exercises; and extensive discussion on how to tailor the techniques for seminar attendees’ ongoing and future trials. Seminar attendees are encouraged to read a background article prior to the seminar [Innovative techniques to address retention in a behavioral weight-loss trial. Health Education and Research, 20, 439-447 PMID: 15598664].

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## Seminar 13 3:15 PM–6:00 PM 1012

### TRAUMA-INFORMED CARE: HOW CAN MEDICAL AND DENTAL PROVIDERS EFFECTIVELY WORK WITH SURVIVORS OF TRAUMATIC EVENTS?

Sheela Raja, PhD[1] and Michelle Hoersch, MS[2]

[1]Univ Illinois, Chicago, IL and [2]U.S. Department of Health and Human Services, Office on Women's Health- Region V, Chicago, IL.

Exposure to trauma is perhaps the greatest threat to public health in the United States, causing both immediate and long-term psychological and physical health effects. Traumatic events include (but are not limited to) child abuse/neglect, domestic violence, sexual assault, elder abuse, and exposure to combat (as a civilian and/or a soldier). Healthcare professionals are very likely to treat patients who have experienced a wide range of traumatic events, but most providers rarely receive any specialized training on how to effectively interact with survivors of trauma in the medical and dental settings. The purpose of this seminar is for participants to explore ways to bring trauma-informed research and practice into their particular work settings.

Experiencing a traumatic event is highly likely to influence survivors’ experiences seeking dental and medical care both immediately after the event and in the years to follow. Current research suggests that trauma survivors may experience "secondary victimization" or "retraumatization" as a result of contact with the healthcare system. Survivors who are treated insensitively or receive fragmented servies may avoid accessing much-needed preventative services, which in turn may increase their level of psychological and physical health symptoms. On the other hand, survivors who have positive relationships with their providers may be more likely to engage in preventative care and follow up on medical treatments.

This seminar will: 1) review the current research on how survivors of traumatic events experience the medical and dental systems, 2) suggest ways that providers can sensitively interact with trauma survivors, avoid retraumatization, and engage in trauma screening and prevention as appropriate, and 3) discuss how these ideas can apply to participants specific clinical and research settings.

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# Wednesday
# April 11, 2012
# 6:30 PM–8:00 PM

## Poster Session A A–001

### DOES APPRAISED RISK AND SUSCEPTIBILITY MEDIATE THE RELATIONSHIP BETWEEN HEALTH LOCUS OF CONTROL AND INTENTIONS TO BE SCREENED FOR CRC?

Rebecca N. Adams, BS, Jennalee S. Wooldridge, BA and Terry A. Cronan, PhD

Psychology, San Diego State University, San Diego, CA.

Colorectal Cancer (CRC) is the second most deadly cancer in the United States. From 2002-2007, screening for CRC prevented about 50% of expected deaths and new cases from the disease. One third of adults aged 50 to 75 were not up-to-date on screening in 2010. Low-income, ethnically diverse groups tend to have screening rates that are lower than average, making them an important group to study. There is some evidence that screening intentions and/or behaviors are related to both perceived risk and health locus of control (HLC). However, no researchers have examined whether appraised risk and susceptibility to CRC mediate the relationship between HLC (specifically, powerful others) and intention to screen for CRC in a low-income ethnic group. It was hypothesized that mediation would occur.163 English-speaking participants who had not obtained screening within the recommended guidelines for CRC were recruited from low-income communities. Participants were 50 or older and self-identified as European American (35%), African American (31.9%), or Latino (33.1%). Participants completed questionnaires in the research lab to assess appraised risk of CRC, HLC, and intentions to be screened. Multiple regression was used to test for mediation between HLC and risk appraisal on intent to screen. HLC was tested for its overall effect on intent to screen. HLC had a direct effect on intent to screen ($b=.190$, $p<.0001$) and this association was still significant when controlling for risk appraisal ($b=.192$, $p<.0001$). Higher levels of HLC were related to a greater intent to screen. The relationship between HLC and risk appraisal was significant ($b=.202$, $p=.028$), but there was no significant relationship between risk appraisal and intent to screen, controlling for HLC. Higher HLC was associated with greater risk appraisal. Overall, the results indicated that the relationship between HLC and intent to screen was not mediated by appraised risk and susceptibility to CRC. Other mediators should be examined to enhance our understanding of the relationship.

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## A-002

### HYPNOTIC RELAXATION THERAPY FOR VASOMOTOR EVENTS IN PROSTATE CANCER PATIENTS: A CASE STUDY

Cassie Kendrick, MS, Lauren Koep, MS and Gary Elkins, PhD

Psychology & Neuroscience, Baylor, Waco, TX.

Vasomotor symptoms (hot flashes and night sweats) are commonly associated with menopause and are a known side effect of treatments for breast cancer in women. However, less emphasis and investigation has been given to the occurrence of vasomotor symptoms associated with treatments for prostate cancer, despite their prevalence as a treatment side effect. While treatment options vary according to individual patient characteristics and disease processes, vasomotor symptoms have been reported in up to 80% of males who undergo treatment for prostate cancer. Research on interventions for hot flashes in men is limited. Our prior research has demonstrated that hypnotic relaxation therapy can reduce hot flashes in women. However, to our knowledge no previous reports of hypnosis for vasomotor symptoms in men with prostate cancer exist. The present study reports on a 69-year-old male who presented with hot flashes and night sweats following a diagnosis of prostate cancer and subsequent prostatectomy. Baseline and outcome measures include sternal skin conductance ratings, daily symptom diaries, as well as the Hot Flash Related Daily Interference Scale. The hypnotic intervention involved 5 weekly sessions during which hypnotic inductions were completed with suggestions for relaxation, mental imagery for coolness, and symptom reduction. In addition, the patient was instructed in daily practice of self-hypnosis. Results indicated significant reduction ($p<.001$) in both subjective and physiologically measured hot flashes and night sweats. Hot flash scores were reduced by 84% from baseline to end point. Implications for clinical practice and further research will be presented.

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## A-003

### QUALITY OF LIFE OF AFRICAN AMERICAN BREAST CANCER SURVIVORS

Andrea M. Barsevick, PhD,[1] Patricia Bradley, Doctor of Philosophy,[2] Theresa Donnelly, BA[1] and Ellyn Micco, MS[3]

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Less is known about the survivorship experience of African American breast cancer survivors (AABCS) than Caucasians despite the potential for more problems in African Americans due to more advanced disease and poorer overall prognosis. This underscores the importance of looking at the unique situation of AABCS. The study is being conducted in three phases using a mixed method design (qualitative and quantitative). Phase I, the qualitative portion reported here, involved focus groups to evaluate the cultural relevance and completeness of the stress and coping model for evaluating primary appraisal of problems and secondary appraisal of coping resources as predictors of quality of life (QOL) for AABCS. The goal is to understand the survivorship experience of AABCS and inform a future population-based survey. Focus groups were conducted with AABCS in the Philadelphia area who were over 18 years of age and within five years of primary treatment. A semi-structured group interview format was used. The following questions were addressed in the focus groups: What themes representing survivor problems were identified in the focus groups? Which problem themes were described most frequently? Which themes were closely connected to each other? Directed content analysis was used to examine the frequency and order of occurrence of words, phrases, or sentences related to themes that represent survivor problems. Proximity analysis was used to reveal connections between problem themes, cultural factors, and quality of life. Salient themes included: 1) “isolation” from others or important information; 2) “economic problems”; 3) “psycho-emotional difficulties”; 4) “fertility after treatment”; and 5) “mental/memory problems”. Several themes were closely linked, indicating conceptual relatedness. These themes and other cultural issues related to QOL of AABCS will be discussed.

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## A-004

### MEASUREMENT INVARIANCE TESTS OF SOCIAL NORM MEASUREMENT FOR HEPATITIS B SCREENING ACROSS ASIAN SUBGROUPS

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Background: Few studies have explored the measurements of behavioral constructs of hepatitis B screening and assessed the measurement invariance across groups. A pre-test of the Maryland Asian American Liver Cancer Education Program assessed perceived social norms, injunctive norm and descriptive norm for hepatitis B screening from 877 adults including equal samples of Korean, Chinese and Vietnamese Americans. Injunctive norm, the perceived approval for hepatitis B screening by others, was measured by 4 Likert items with response categories from disagree (1), neutral (2), to agree (3). Descriptive norm, the perceived prevalence of hepatitis B screening, was measured by 3 Likert items ranging from none (1) to all (7). Objective: To examine measurement invariance of the social norm measurement models among three Asian American subgroups. Methods: Exploratory factor analyses (EFA) examined dimensional invariance of the measurement models for the social norms. And multi-sample two factor confirmatory factor analyses examined configural and metric invariance. Factor indicators were treated as categorical and used weighted least squares parameter estimator(WLSMV). Mplus's DIFFTEST compared the relative fit among most restrictive, least restrictive, and two partially invariant models with different levels of deviations from reference group's factor loadings. Results: EFA confirmed dimensional invariance. The least restrictive model, free factor loadings across the groups, fits significantly better than the most restrictive model with equal factor loadings ($p<0.0001$.) The least restrictive model had better fit than two partially invariant models ($p<0.0001$ for both.) The least restrictive model best fit with the data ($CFI=0.999$, $TLI=0.998$, $RMSEA=0.045$.) Conclusion: Dimensional and configural invariance of the two social norm measurements were confirmed, however, metric invariance was not supported by the data. This indicates that these two social norms may not have the same meanings across subgroups. Caution is required when comparing the level of social norms among the three Asian American subgroups in the study.

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## A-005

### EXPLORING THE PSYCHO-SOCIO-SPIRITUAL RESPONSES OF CANCER PATIENTS AND SURVIVORS

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Certain patients say they have changed for the better as a result of their illness. The present protocol is to ask the question, "What do they mean?" Once we know in detail, what they are talking about, then we can develop tests based on specific features of their experience. The purpose of this project was to explore how a small sample of cancer survivors experience their disease and treatment, psychologically, socially, and spiritually.

Nine Cancer patients or survivors were interviewed at the Smith Farm Center for Healing and the Arts or National Institutes of Health. The sample was diverse in that there were different types of cancer, racial background, and spiritual experiences.

Participants each had their own response to the process of diagnosis through treatment of cancer. During this process they often applied their life-long ways of coping to this new challenge. Using thematic analysis, we developed themes and codes from the interview transcripts. These experiences were categorized into five themes; awareness, healing, religion/spirituality, support, and transformation. Codes that suggested a relationship between the themes were listed under each respective theme. Interrater reliability was achieved by having more than one coder.

Overwhelmingly, support was the strongest theme among the participants. Some of the support received was not only through caregivers, but the participants' medical team. Having supportive physicians, nurses, and other team members, family, and friends seemingly made a positive impact in the participants' experiences. Participants also discussed using various other resources to cope with cancer. Participants reported becoming more aware of their mortality and researching their disease. Others experienced life transforming events during workshops and therapies.

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## A-006

### COGNITIVE MEDIATORS OF SOCIAL INFLUENCES ON PEDIATRIC CANCER SURVIVORS' PHYSICAL ACTIVITY

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Introduction: Physical activity (PA) has been targeted as a health promotion priority for childhood cancer survivors, but research indicates that a large proportion of survivors do not meet PA guidelines. As PA behavior in pediatric survivors is driven by a complex set of influences, it is important to understand the ways in which these influences interact to influence survivor PA. Following a social-cognitive theory framework, the aim of the present study was to determine the extent to which cognitive influences may explain the associations between family and peer support and child and adolescent cancer survivors' PA.

Methods: A structured telephone survey was conducted with 105 childhood cancer survivor ages 8-16 who were at least one year off treatment for any type of cancer. Survivors completed measures assessing their PA as well as proposed predictors of PA. Multiple mediation analyses evaluated relations between social support, cognitive influences, and survivor PA.

Results: Cognitive influences, including perceived benefits, barriers, and self-efficacy for PA, partially mediated the influence of family and peer support on survivor PA. Specifically, for family support, both the total effect ($c=.48$, $p<.001$; overall R2=.41) and the direct effect ($c'=.38$, $p<.001$) on survivor PA were significant. Evaluation of the proposed mediators indicated that the combined indirect effect of perceived benefits, barriers, and self-efficacy and the specific indirect effect of self-efficacy were significant. For peer support, both the total effect ($c=.46$, $p<.001$; overall R2=.43) and the direct effect ($c'=.38$, $p<.001$) on survivor PA were also significant. Evaluation of the mediators indicated that only the specific indirect effect of self-efficacy was significant.

Discussion: Consistent with SCT, social support has both direct and indirect influences on survivor PA. Indirectly, self-efficacy mediates the relations between social support and pediatric survivors' PA. Future interventions should target family and peer support as well as self-efficacy to increase survivor PA.

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## A-007

### CRC SURVIVORS' INTENTIONS TO PURSUE GENETIC COUNSELING TO DISCUSS HEREDITARY COLORECTAL CANCER: IMPLICATIONS FOR UNIVERSAL TUMOR SCREENING

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Purpose: Lynch syndrome (LS), the most common cause of hereditary colorectal cancer (CRC), confers a 50-70% lifetime risk of CRC. Diagnosing LS is critical for primary cancer prevention in at-risk family members. Although universal tumor screening can help identify LS, it will only be effective if patients pursue confirmatory genetic testing. To inform the implementation of universal tumor screening, attitudinal and risk-related factors associated with CRC patients' intentions to make an appointment to discuss genetic testing were explored.

Methods: Using results from a cross-sectional survey of CRC survivors, bivariate analyses compared patients who intended to make an appointment for genetic counseling ($n=18$) and those who did not intend to do so ($n=70$) based on the following: empiric risk for hereditary CRC; attitudes regarding perceived outcomes of genetic testing; and belief that they are an appropriate candidate for testing.

Results: The sample was predominately male (59%), White (94%), married (69%), retired (52%), had health insurance (98%), and at low risk for having hereditary CRC based on family and medical history records (59%). No significant differences were found based on empiric risk for hereditary CRC ($p=.36$) or the following attitudinal scales: inability to cope with positive results ($p=.06$); ability to prepare for the future ($p=.44$); and negative familial influence ($p=.24$). Compared to those with no intention, those with positive intention scored higher on the medical benefits scale ($p=.02$) and lower on the fear of discrimination scale ($p=.04$); they were also more likely to perceive themselves to be appropriate candidates for genetic testing regardless of empiric risk ($p<.001$).

Conclusions: Results may inform approaches for increasing patient intentions to pursue genetic counseling by addressing perceptions about the appropriateness of genetic testing and attitudes about potential testing outcomes.

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## A-008

### LOGICAL MEASUREMENT METHODS YIELD LOWER BREAST CANCER RISK

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US breast cancer incidence calculated by the NCI's SEER Survey Program use disparate data sources: registered 1st breast cancer cases vs census estimates. SEER scans <15% of the US population in 17 regions and has been vulnerable to census undercounts, inaccurately increasing publicized postmenopausal rates. Since 87% of 1st breast cancers appear after age 42, our goal was to calculate actual cumulative incidence using cancer findings from known sample sizes for defined durations in such women.

METHOD: Beginning in 1979 the UK Trial of Early Detection of Breast Cancer (TEDBC) recruited 39,973 cancer-free 44-64 year old women to two UK mammography centers. In 2001 it published breast cancer detection figures at initial and biannual re-screenings (120,000 screens) for four age cohorts. For each 5 yr cohort recruited, we calculated the cumulative incidence by totaling the incidence at first mammogram screening and incidence for all ensuing age period re-screenings up to age 70.

Additionally, we calculated the mean breast cancer incidence in 18 other studies of women >40.

FINDINGS: Cumulative breast cancer incidence (invasive and in-situ) in TEDBC by age 70 totaled 2.08% of all cancer-free women first screened at 45-49. While incidence at 1st screening rose with increasing age across cohorts, the cumulative incidence decreased (1.64% of all cancer-free women 1st screened after 60).

The 18 studies detected 26,301 incident cases in 1,910,341 women over an average duration of 7.9 yrs of screening. The mean incidence was 1.38% of the entire group of women.

INTERPRETATION: The cumulative incidence values found in TEDBC are compatible with the mean cumulative incidence calculated from the 18 international studies yielding substantially lower rates than the current widely publicized lifetime 12 -13% risk.

These incidence calculations based on prospective study data provide a more optimistic picture of breast cancer risk in cancer-free women after 40 than estimates based on more tenuous extrapolations mixing clinical and census data.

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## A-009

### IMPROVING COMMUNICATION OF GENOMIC TEST RESULTS FOR BREAST CANCER RECURRENCE RISK

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Purpose: Genomic testing for breast cancer recurrence risk is now widely used in clinical care. The best way to communicate results of these sometimes complex tests is not known. We assessed whether the standard genomic test report provided to doctors is a good approach for communicating results to patients.

Methods: During 2009-2010, we interviewed 133 patients with early-stage breast cancer and eligible for the Oncotype DX genomic test. In a randomized experiment, patients viewed 6 vignettes that presented hypothetical test results describing a low, intermediate, or high risk of cancer recurrence. Among the risk formats in the vignettes were the complex standard genomic report and our simpler "risk continuum" format that presented percent recurrence and the verbal interpretation (e.g. "low").

Results: Among women who received Oncotype DX, 63% said their doctors showed them the standard report. The standard report format yielded among the most errors in identification of whether a result was low, intermediate or high risk, while the risk continuum format yielded the fewest errors (17% vs. 5%; OR, 0.24; 95% CI, 0.11 to 0.55). For high recurrence risk results presented in the standard format, women made errors 35% of the time. Women rated the standard report as one of the least understandable and least liked formats, but they rated the risk continuum format as among the most understandable and most liked. Results differed little by health literacy, numeracy, receipt of the Oncotype DX test and actual test results.

Conclusion: The standard genomic recurrence risk report was more difficult for women to understand and interpret than other formats. A less complex report, potentially including the risk continuum format, would be more effective in communicating test results to patients.

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## A-010

### ARE BEHAVIORAL RISK FACTORS FOR CVD ADDRESSED AMONG LONG-TERM CANCER SURVIVORS?

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Recent IOM reports call for clinicians and researchers to better address chronic and late effects of cancer, including cardiovascular disease (CVD). This study describes the prevalence of self-reported CVD risk factors among long-term cancer survivors and recent discussion of health behaviors with physicians. Survivors ($n=1582$; 37.7% Non-Hispanic,White, 23.9% Black,14.0%Hispanic, 22.6% Asian) of breast, prostate, colorectal, and gynecologic cancers, 5-14 years after diagnosis, recruited from two California SEER registries, completed a mailed survey about post-treatment care. We assessed risk factors, as well as report of talks with a health care provider about health promotion, lifestyle change assistance, diet, exercise and smoking. CVD risk factors were common among survivors: 62.0% were overweight and 24.0% obese; 55.0% reported hypertension; 20.7% reported diabetes; 18.0% were inactive; and 5.1% were current smokers. A history of CVD (defined as ever diagnosis with irregular heartbeat, heart failure, cardiomyopathy, heart attack, angina, or pericarditis) was reported by 34.7% of survivors. Although obese survivors, and those with hypertension and diabetes were significantly more likely than other survivors to report talks with health care providers about health promotion, lifestyle change assistance, diet, and exercise (all $p<.05$), 15-30% of survivors with these risk factors did not report such talks. Smoking talks were reported by 87.3% of current smokers. Inactive survivors were not more likely to report exercise talks than their more active peers. Survivors with prevalent CVD were more likely than non-affected survivors to report lifestyle change assistance and exercise talks only [$X2=4.16$ & 4.97, $p<.05$]. Our results indicate that many cancer survivors with CVD risk factors may not be receiving advice from providers to help them make healthy lifestyle changes. Given that many survivors will die of CVD rather than cancer, optimal survivorship care must address CVD risk.

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## A-011

### SATISFACTION WITH TELEVIDEO SUPPORT GROUPS AMONG RURAL CANCER PATIENTS

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Cancer impacts individuals and families in rural areas, and the Midwest Cancer Alliance (MCA) was formed in an effort to expand the reach of the latest cancer prevention, treatment, and survivorship strategies. MCA leaders sought to close the access gap to cancer support services by partnering with Turning Point, a non-profit community organization specializing in comprehensive cancer educational and support services. There is a lack of published literature supporting the use of professionally-led support groups using televideo, but emerging evidence suggests that this modality is a promising strategy to facilitate cancer survivorship in rural areas. The current pilot project determined key feasibility strategies to combine community resources toward rural cancer care, provided cancer support services to rural patients via televideo, assessed satisfaction as part of a quality improvement effort, and compared televideo satisfaction with previously completed in-person cancer support groups. Attendees used a 6-item Likert scale and 5 open-ended items to rate the presenter, handouts, and overall value of the program. Televideo sites were also asked to comment about and rate the value of participating in the program over televideo. Four 1-hour support programs were completed with 3 rural sites (32 participants) over televideo, and were compared to 113 urban, in-person attendees receiving the same support topics. Mann-Whitney tests indicated that in-person attendees ranked higher the presenter's ability to communicate clearly ($z=-4.553$, $p=.00$) and to interact ($z=-4.016$, $p=.00$) as well as the overall value of program ($z=-5.437$, $p=.00$). However, over 79% ($n=29$) of those receiving the programming over televideo rated the value of this delivery method as good/excellent. Given the preliminary nature of televideo for cancer support, findings suggest further efforts toward refining televideo to best support rural cancer patients.

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## A-012

### NEGATIVE NETWORK ORIENTATION IS ASSOCIATED WITH WORSE HEALTH-RELATED QUALITY OF LIFE AFTER CANCER, BUT NOT BECAUSE OF DEFICITS IN SOCIAL SUPPORT

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Many cancer survivors describe receiving invaluable social support from family, friends, and others during and after treatment. However, not all survivors are comfortable mobilizing and receiving support. As described by research on network orientation (NO), some people hold stable negative attitudes about developing and mobilizing support in times of adversity; they feel that doing so is useless or risky. What happens when a person with negative NO is treated for cancer and must rely on support from others for some period of time? Based on research and theory, we hypothesized that they would have worse health-related quality of life (HRQoL), in part due to having a smaller network of potential support providers, lower perceived available support, and greater likelihood of receiving more negative and less positive support. These hypotheses were investigated in a sample of 262 hematological cancer survivors treated with a stem cell transplant. As hypothesized, correlations showed that survivors with a more negative NO had worse HRQoL ($r=-.24$), a smaller social network ($r=-.17$), lower perceived available support ($r=-.26$), and received more negative support ($r=.14$) and less positive support from others ($r=-.29$) (all $ps<.05$). Yet in a multivariate analysis controlling for potential confounds, the association between negative NO and poor HRQoL remained significant after controlling for these indicators of support deficits, despite significant unique effects of perceived available support and positive and negative received support. Thus, cancer survivors with negative NO are at risk for poor HRQoL, but not because of deficits in the availability or nature of their support. Findings have implications for intervention and suggest a need to examine individual or dispositional characteristics associated with negative NO (e.g., emotional isolation) as potential explanations.

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## A-013

### EXPLORATION OF DECISION MAKING PROCESSES OF INDIVIDUALS REGARDING A PREVENTATIVE VACCINE FOR COLORECTAL CANCER

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Background: The development of vaccines to reduce risks for common cancers will ameliorate the public health burden only to the extent that at-risk individuals are vaccinated in large numbers and practice existing risk reduction behaviors. This pilot study focused on these issues in at-risk individuals (with a history of advanced adenomas), enrolled in a phase I/II colorectal cancer (CRC) vaccine trial.

Methods: Participants were recruited after completion of vaccinations with MUC1-poly-ICLC. Informed consent was obtained (34 of 39 individuals in the trial [87%]); 9% non-White, mean age 58.5. A qualitative interview was conducted and self-administered questionnaires completed, including the Decision Regret scale and a face valid Vaccine Survey.

Results: Initial analysis of the qualitative data revealed that participants expressed no regrets about receiving the vaccine, supported by Decision Regret data: 97% agreed or strongly agreed that "It was the right decision" and 100% would make the same decision again. Participants' mean (SD) perceived risk of developing CRC (0-10) without the vaccination was 6.1 (2.7), which was reduced to 3.9 (1.3) after receiving the vaccination ($p< 0.001$). All participants were aware that they were in an early phase study, but 88% said they would have been willing to pay>$100 for the vaccine. Strikingly for this sample of individuals at risk for developing CRC, a third unaware of other things they could do that are already known to decrease risk.

Conclusion: Individuals at risk for CRC participating in a vaccine trial saw the vaccine as a way to decrease their risk. Nearly one-third, however, were unaware of other more established risk reduction behaviors. Findings suggest the importance of additional research to find ways to make new cancer prevention strategies such as vaccination support rather than undercut other health behaviors.

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## A-014

### THE RELATIONSHIPS BETWEEN SEEKING SUPPORT FROM HEALTHCARE PROVIDERS AND GROUPS, RACE/ETHNICITY, AND POSTTRAUMATIC GROWTH IN A DIVERSE POPULATION OF BREAST CANCER SURVIVORS

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Posttraumatic growth (PTG) after cancer can minimize the emotional impact of disease and treatment; however, facilitators of PTG are unclear. We examined the role of support-seeking on PTG by race/ethnicity among 573 breast cancer survivors ages 45-64 from the Health, Eating, Activity, and Lifestyle (HEAL) Study. Support group participation varied significantly, with African Americans (AA) less likely to report participating in support groups than non-Hispanic Whites (NHWs) (adjusted Odds Ratio: 0.16 (0.10, 0.27)). The mean PTG score was 47.9 (range 0-105). Support group participation ($\beta=11.7$) and confiding in healthcare providers ($\beta=13.8$) were associated ($P<0.05$) with higher PTG. In the stratified analyses, PTG was significantly higher in both NHW and AA support group participants vs. nonparticipants ($P<0.0001$). However, confiding in a healthcare provider was only associated with PTG for NHWs ($P=0.02$). Support group experiences and patient-provider communication should be examined to determine which attributes facilitate posttraumatic growth in diverse populations.

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## A-015

### LATENT STRUCTURE AND RELIABILITY ANALYSIS OF THE MEASURE OF BODY APPERCEPTION: CROSS-VALIDATION FOR HEAD AND NECK CANCER PATIENTS

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Background: Cancer and its treatments are associated with psychological distress that can negatively affect social functioning and quality of life. Head and neck cancer (HNC) patients are particularly susceptible to various psychopathologies including problems with self-acceptance and difficulties with social cognition and interpersonal interactions.
Objective: To cross-validate the Measure of Body Apperception (MBA) for head and neck cancer (HNC) patients.
Methods: We administered the 8-item MBA to 122 English-fluent, 20 to 88 years old, HNC patients. Patients responded to each item on a Likert scale ranging from 1=Disagree to 4=Agree. Latent structure and internal consistency of the MBA were calculated using Principal Components Analysis (PCA) and Cronbach coefficient alpha ($\alpha$). We used correlation analyses to determine convergence and divergence characteristics of the MBA with the Hospital Anxiety and Depression Scale (HADS), and patients' clinical and demographic variables.
Results: The PCA revealed a coherent set of items that explained 54.37% of the variance. The Keiser-Meyer-Olkin measure of sampling adequacy was 0.73 and the Bratlett' Test of Sphericity was statistically significant ($\chi2\ (28)= 253.64$; $p<0.001$), supporting the suitability of the data for dimension reduction analysis. The MBA has good internal consistency reliability ($\alpha=.72$), appropriate face validity, and adequate convergent and divergent validities as indicated by moderate correlations with the HADS ($p<0.01$) and non-significant correlations with clinical and demographic variables: tumor location, and age at diagnosis, place of birth (all ps>0.05).
Conclusion: The MBA is a valid and internally consistent tool for assessing body apperception for HNC patients.

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## A-016

### LOST IN THE MIDDLE: DIFFERENCES IN SCREENING BEHAVIORS OF BREAST CANCER SURVIVORS BASED ON TIME SINCE TREATMENT

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BACKGROUND: As the prevalence of breast cancer survivors (BCS) continues to increase (ACS, 2010), there is growing importance on long term surveillance, including regularly scheduled exams and mammograms (Khatcheressian et al., 2006). Although survivors often do not adhere to recommendations (Field et al., 2008) there is a paucity of literature examining long term rates of preventative behaviors or associations with QOL (Gurevich et al., 2004).
METHODS: This study examined 258 BCS free of recurrence who had completed treatment one to ten years prior. Participants completed a Health Behavior Survey to assess for screening behaviors and the Short Form-36 (SF-36) to measure QOL. Participants were divided into three groups based on time since treatment (Group 1: 1-2 years post-treatment, Group 2: > 2-5 years, Group 3: >5 years).
RESULTS: Results indicate Group 2 BCS were significantly more likely to not have had a clinical breast exam ($p<.01$) or a mammogram in the past year ($p<.001$) as compared to Group 1 or3. This was despite reporting they were significantly most likely to have had a physician recommend a mammogram ($p<.05$) and engage in routine screenings such as yearly gynecological exams ($p<.05$). There was a negative correlation ($r=-.217$) between mammogram frequency and the Mental Health subscale of the SF-36 ($p<.05$). In addition, there was a trend for Group 2 to report lower QOL related to role functioning because of emotional limitations ($p=.07$).
CONCLUSION: There may be unique risk factors associated with women who fall into the mid-range of recovery and they may be less likely to take necessary steps to detect recurrence, perhaps due to emotional issues related to returning to previous roles as family members or employees (Hansen et al., 2008). Findings are important and suggest that engagement in screening and prevention is needed for BCS who are navigating the unique physical and psychological vulnerabilities associated with long term survivorship.

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## A-017

### WHO'S MISSING? PREDICTORS OF ATTRITION FOLLOWING PARTICIPATION IN CULTURALLY-TARGETED EDUCATIONAL BREAST & CERVICAL CANCER OUTREACH PROGRAMS FOR LATINAS

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Latinas have higher morbidity and mortality rates than non-Latina whites for a number of diseases, including breast and cervical cancer. Breast cancer is the most commonly diagnosed cancer among Latinas in the US, cervical cancer mortality rates are nearly 50% higher than non-Latina whites. Rates of mammography for Latinas in the United States are increasing but are still significantly lower than non-Latina whites while an estimated 80% of deaths from cervical cancer could be prevented through regular Pap screenings. These figures suggest that more education and awareness about screening is needed. A peer-led breast and cervical cancer education outreach program, Esperanza y Vida (EyV) was developed to spread awareness of cancer and screening methods to the Latina community. After the program non-adherent participants were contacted to receive assistance with appointments for free or low-cost screening exams. The purpose of the present study was to identify characteristics of participants who were unable to be contacted for follow-up assistance. Nearly 1,800 Latinas participated in breast and cervical education and outreach programs at three different sites (New York City and Buffalo, NY and Arkansas). Participants completed questionnaires before and after the educational program that assessed their knowledge, perceptions and beliefs about breast and cervical cancer as well as demographic information. A logistic regression was performed to assess predictors of attrition ("lost to follow up") at 2 months post the program. Results indicated that the major factors influencing attrition were age and feeling unmotivated by the survivor's story to make an appointment for screening. These findings have implications for future breast and cervical cancer outreach programs and interventions and suggest that the impact of peer role models may vary according age.

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## A-018

### ALCOHOL OUTLET AVAILABILITY AND EXCESSIVE ALCOHOL CONSUMPTION IN BREAST CANCER SURVIVORS

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Breast cancer survivors are at increased risk of recurrence and have worse prognosis when they consume excessive alcohol. Because the environments in which people live shape many health behaviors, there has been increased attention as to how neighborhood environments (e.g., access to alcohol outlets) may influence alcohol consumption. We hypothesize that proximity to alcohol outlets increases the likelihood of more than one drink per day among breast cancer survivors independent of the characteristics of the woman or her neighborhood.

We assessed alcohol consumption during the past 30 days and related covariates by telephone interview one year after diagnosis. We obtained the street address of all alcohol outlets in Missouri licensed by the Division of Alcohol and Tobacco Control and calculated the road network distance between each participant's address of residence and the nearest alcohol outlet using a geographic information system. We used logistic regression to determine if distance was independently associated with consuming more than one drink on average per day.

Overall, 18.4 percent of study participants reported consuming more than one drink on average per day. Women who lived within 3 miles of the nearest alcohol outlet had higher adjusted odds of excessive alcohol use (OR: 2.09; 95% CI: 1.08 - 4.05) than women who lived 3 or more miles from the nearest outlet controlling for age, perceived income adequacy, smoking, and census tract poverty rate.

Counseling breast cancer survivors about alcohol use by primary care physicians and oncologists, particularly those who live within three miles of alcohol outlets, may be warranted.

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## A-019

### DIFFUSION OF THE DISTRESS MANAGEMENT GUIDELINE INTO ONCOLOGY PRACTICE

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Purpose: The National Comprehensive Cancer Network (NCCN) developed the Distress Management Guideline (DMG) in 1999. Despite widespread evidence supporting the guideline, distress continues to be under-assessed and managed resulting in sub-optimal patient care outcomes. The purpose of this study was to examine the diffusion of the DMG into practice.

Design: descriptive, correlational survey.

Sample/Setting: 418 (21%) of 2000 randomly selected Oncology Nursing Society members working in an outpatient setting.

Methods: sixty item survey completed on-line (65%) or by mail (35%).

Findings: Respondents were mostly bachelor prepared, certified and in a staff nurse role. Only 15% were very familiar with the DMG; 38% were not at all familiar. The largest barriers to screening were lack of time and uncertainty about how to identify distress and distress treatment options. Those who worked at NCCN institutions (30%) were more likely to be using the DMG (x2=18.94; p<.05). Nurses who used the DMG were more comfortable discussing distress with patients and scored lower on perceived barriers to distress screening (p<.01). Regardless of DMG use, higher levels of comfort discussing distress corresponded with lower perceived barrier scores (p<.001). Valuing screening did not correlate with barrier scores. Those more comfortable discussing distress also reported more of their patients experienced distress and required further intervention, reported higher levels of physicians valuing distress screening and easier access to a psychologist, counselor or navigator. Only 28% reported never or only sometimes screening for distress and 38% were "not at all" to "somewhat likely" to use a screening tool if available.

Conclusions: Oncology nurses remain unfamiliar and do not use the DMG. Further inquiry into the perceived barriers to screening is warranted. Interventions to promote adoption of the DMG and improve skills in managing distress may improve screening and intervention of cancer-related distress thereby improving patient outcomes across the cancer trajectory.

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## A-020

### EXPOSURE TO STRESSORS AND CANCER RECURRENCE: A SYSTEMATIC REVIEW

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Background: Despite evidence for the biological plausibility of stressor exposure and cancer, the role of stressors in the etiology of cancer onset and recurrence remains unclear. A systematic review examining the causal role of exposure to stressors and cancer recurrence was conducted.

Methods: The authors screened the scientific literature published from December 1979 through March 2011. Prospective studies or randomized control trials that examined the link between exposure to stressors or the stress response and cancer recurrence were included in the review.

Results: After extracting a total of 917 studies, 13 papers met the quality review criteria (10 longitudinal, 3 randomized control trials). Studies examined stressor exposure (life event questionnaires) and/or multiple indices of the stress response (mood, anxiety, depression, biological, and immune measures). Review of the thirteen studies indicated that 77% reported no relationship between stressor exposure and recurrence, 38% observed a positive relationship, and 31% reported an inverse relationship. Five studies reported mixed results. One of three randomized control trials reported a positive relationship between stress reduction and reduced risk of recurrence.

Conclusions: The scientific literature to date depicts an inconsistent picture for a causal relationship between stressor exposure or stress response and cancer recurrence. While additional high quality research is needed to provide a more definitive answer, the evidence to date does not support this hypothesis.

However, this review does not negate the relationship among stressors and long term and late effects that cancer survivors experience over time. Despite the lack of current evidence supporting a relationship between stressor exposure and/or stress responses and cancer recurrence, attending to the reduction of a cancer survivor's stress response can improve emotional well-being, fatigue, and pain.

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## A-021

### EFFECTS OF OPTIMISM, BENEFIT-FINDING, AND SPIRITUALITY ON DEPRESSION AND LIFE SATISFACTION IN CANCER CAREGIVERS

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Impact of cancer has been reflected in higher depression and lower life satisfaction among cancer caregivers. One disposition shown to be effective against adversity in other contexts is optimism. This study tested (a) associations between optimism and long-term adjustment outcomes, such as depression and life satisfaction and (b) potential psychological pathways, such as benefit finding and spirituality.

Caregivers (n=372) participated in a nationwide longitudinal study 2 years (T1) and 5 years (T2) after their care recipient's initial cancer diagnosis. The study has measures for optimism (LOT-R), benefit finding (Benefit Finding Scale; BFS), and spirituality (FACIT-Sp) at T1 and depressive symptoms (CES-D) and life satisfaction (SWLS) at T1 and T2.

Results from SEM revealed that optimism was directly related to depression ($\beta$=-.16,) and life satisfaction ($\beta$=.13, ps<.01) at T2. When the proposed mediators were included, optimism positively related to three subscales of the BFS: acceptance, appreciation, and positive self-view, $.12 \leq \beta s \leq .13$, ps<.05, and marginally related to the empathy subscale ($\beta$=.08, p=.08). Optimism also related to three subscales of the FACIT-Sp: meaning, peace, and faith, $.25 \leq \beta s \leq .58$, ps<.05. Only empathy and family subscales of the BFS were related to depression at T2 ($\beta$s=.13, -.15, ps<.05); controlling for T1 depression. Direct effects of optimism on T2 depression remained significant, although slightly reduced, when benefit finding and spirituality were included. No mediators of the optimism-life satisfaction link were found.

Findings indicate that optimism shares substantial similarity with benefit finding and spirituality, particularly, the capacity to find meaning from adverse events and acceptance of what happened. However, earlier optimistic outlook per se was the only long-term predictor of adjustment outcomes. Findings suggest cancer caregivers may benefit from programs designed to boost their optimistic outlook.

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## A-022

### "I DIDN'T KNOW WHAT TO THINK. I THOUGHT I WAS GOING TO DIE". LATINAS' UNDERSTANDING AND ATTITUDES TOWARDS AN ABNORMAL PAP TEST RESULT

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Background: There is a disproportionate burden of cervical cancer among Latinas compared with non-Latino White women. This is thought to be attributed to both low rates of screening and poor adherence to recommended diagnostic follow-up after an abnormal Pap test. The purpose of this study is to assess knowledge, attitudes, barriers and facilitators to follow up after an abnormal Pap test result in Latinas.
Methods: We conducted 26 semi-structured interviews among Latinas aged 21 to 64 years old who had an abnormal Pap test result in rural Eastern Washington. Interviews were conducted in the participants' preferred language. Interviews were transcribed verbatim and uploaded into Atlas.ti for coding and analysis.
Results: One of the main themes that emerged as a potential barrier to follow up were misconceptions and secrecy around an abnormal Pap test result. Upon receiving the result, all women instantly believed they had cancer, and many felt desperate and embarrassed to talk to close family and friends. Transportation, lack of insurance and pain from the procedures were also mentioned as very important barriers to follow up. For those participants who had shared their result, family support was mentioned as a key facilitator to follow up. Interestingly, trusting oneself and having faith in God were also mentioned by some as facilitators to follow up. Within our participants, unlike previous studies, "Fatalismo" did not emerge as a barrier.
Discussion: Latinas seem to have misconceptions about the implications of having an abnormal Pap. There are important cultural barriers that derive from these misconceptions that may be affecting the uptake and follow up of cervical cancer screening in this population. Our results will inform an intervention to increase cervical cancer screening in Latinas in Eastern Washington.

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## A-023

### QUALITY OF LIFE AND CANCER-RELATED NEEDS IN CHOROIDAL MELANOMA SURVIVORS

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Background: Choroidal melanoma (CM) is a rare cancer of the eye about which little is known from a psychological perspective. We sought to assess quality of life (QOL) and cancer-related needs in patients treated for CM and to investigate associations with treatment type and sociodemographic variables. We particularly focused on explanatory variables that could be assessed easily by clinicians.
Methods: Ninety-nine patients treated for CM within the past 5 years completed questionnaires assessing vision-specific role functioning, physical and mental QOL, depressive symptoms, cancer-related needs, demographic, and vision-related variables.
Results: QOL in this sample of CM patients was more positive than in other oncology samples and was comparable to healthy samples on certain outcomes. Each QOL indicator was regressed on all explanatory and demographic variables. Models explained 13% - 39% of the variance in QOL. Vision-related variables (i.e., years since diagnosis, visual acuity, treatment type) were not significantly associated with QOL outcomes except treatment type (enucleation versus radiotherapy) was associated with worse role functioning related to vision ($B$=-.57, $p$<.05). Number of comorbidities was significantly associated with worse role functioning ($B$=-.28, $p$<.01), physical QOL ($B$=-.30, $p$<.01), and more depressive symptoms ($B$=.24, $p$<.05). Total unmet cancer-related need was associated with worse role functioning ($B$=-.25, $p$<.05), psychological QOL ($B$=-.30, $p$<.05), and more depressive symptoms ($B$=.46, $p$<.001). Experiencing a major stressful life event in the past 12 months was significantly associated only with more depressive symptoms ($B$=.58, $p$<.01).
Conclusions: On average two years after treatment, number of physical comorbidities and level of unmet cancer need explained the most unique variance in physical and psychological quality of life indicators in a sample of CM survivors. Vision-related variables such as visual acuity or treatment type played a smaller role at least at this phase of survivorship. Assessing these variables may help identify patients most at risk for compromised quality of life.

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## A-024

### TO LIVE CLOSE TO A PERSON WITH CANCER - EXPERIENCES OF FAMILY CAREGIVERS

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A cancer diagnosis affects not only the patient, but also Family Caregivers (FCs) and close friends. The purpose of this study was to obtain an in-depth understanding of the experiences of FCs living close to a person with cancer. A convenience sample of 15 FCs, five men and 10 women age 35 to 77, was recruited through the Norwegian Cancer Society' special interest groups. Nine were spouses, five were sons/daughters and one was a sister. FCs participated in individual interviews using a thematic interview guide. Audio-taped interviews were transcribed and analyzed using qualitative hermeneutic analysis.
Two major themes emerged from the interviews: The first theme that became apparent was that living close to a cancer patient over the course of his or her illness affected many aspects of FCs' lives in significant ways. Most challenging were changes and disruptions in daily life, more responsibilities on the part of the FC, changes in roles, social life, in relationships and personal strength in different ways than before. The second major theme was that living close to a cancer patient is to live and work in a world of constant tension, conflicting interests and dilemmas. FCs experienced a constant need to balance different demands, needs, the known with the unknown, and to manage uncertainty and the experience of being helpless and skilled at the same time.
This study contributed to deeper insights into FCs experiences than previously reported in the literature. It also became apparent that FCs could greatly benefit from support that help them fulfill their desired roles as primary source of social and emotional support for patients, while being able to maintain their own health and well-being at the same time.

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## A-025

### SUPPORTING POST-TREATMENT CANCER SURVIVORS: CAPACITY OF SCREENING TOOLS AND SYMPTOM ASSESSMENT TO IDENTIFY INDIVIDUALS IN NEED

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Purpose: The ongoing and late effects of cancer treatment can interfere with quality of life and adoption of healthy behaviors, thus potentially impairing recovery and impacting survival. Identifying individuals in need of support is crucial; however there exists little information regarding the ability of screening measures to identify individuals that possess interest in supportive services. This can result in poor use of limited resources. The current study examined the ability of screening measures of distress and symptomatology to identify individuals who desired to speak with a health professional.
Method: 342 cancer survivors (M age=62.8 years, female=70%, M years since treatment=10) completed measures of physical symptoms, psychosocial issues, self-efficacy, social support, quality of life and distress, as well as whether they would like to speak with a health professional.
Results: 13% (N=45) of participants endorsed a desire to speak with a health professional. While there were no significant differences in the demographic characteristics of those who did and did not want to speak with a health professional, those who did reported significantly lower scores on measures of quality of life, social support and coping self-efficacy (ps<.001). AUC and regression analysis revealed that the number of psychosocial problems reported by a patient was better able to discriminate those individuals who desired follow-up than physical symptoms or scores on validated distress measures (HADS, DT).
Conclusion: Post-treatment cancer survivors may experience ongoing symptom burden and late-effects of treatment, yet identifying those in need and desiring of support is a complex clinical task. The current study suggests that the number of psychosocial stressors endorsed by survivors is the most accurate indicator of those who desire follow-up with a health professional. These results are important in guiding the development of effective survivorship care, and contribute to the growing literature describing the adjustment and care needs of survivors.

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## A-026

### SOCIAL SUPPORT CHANGE OVER TIME IN EARLY STAGE BREAST CANCER PATIENTS AND CONTROLS

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In breast cancer patients, low perceived social support has been linked to various negative psychosocial and health outcomes, but less is known about factors associated with social support change in patients, especially relative to same-aged women without breast cancer (controls). Interviews at 7 weeks (T1) and 6, 12, and 24 months after surgery (patients) or a normal/benign screening mammogram (controls) measured demographic and psychosocial variables in participants (547 controls and 549 patients [34% DCIS, 66% stage I/IIA, 65% lumpectomy, 30% mastectomy, 5% bilateral mastectomy]; 76% White, 22% Black; mean age 57.8 [SD=10.6], range 40-91). A latent trajectory model was used to model the intercept and slope (change over time) aspects of scores from the MOS Social Support Survey. We report slope-related analyses here. In patients, social support had a negative slope (p=.05) that significantly varied among individuals (p<.001), but there was no significant mean of slope or variance of slope for controls. To determine which predictors at T1 explained variance in the slope, all predictors were entered into the model together, testing unique effects. In patients, social support slope was predicted by race (p<.003) and surgery type (whether coded as bilateral mastectomy vs. other [p=.005] or lumpectomy vs. mastectomy [p=.04]). Blacks (vs. Whites) and mastectomy patients (especially bilateral mastectomies vs. other surgeries) had steeper social support declines, though these groups did not differ significantly at T1. Age, employment status, cancer stage, type of insurance, self-reported overall health, negative affect, body image, and comorbidity did not predict the slope of social support in patients. In controls, none of the demographic or psychosocial variables tested as predictors were significantly associated with social support slope. Patients showed initially high levels of social support and considerable variability in extent of social support change over time. Clinicians may consider psychosocial interventions for patients at risk for steep declines in support, such as Blacks and patients receiving bilateral mastectomies.

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## A-027

### VALIDATION OF THE CANCER WORRY SCALE FOR BREAST CANCER PATIENTS: EXPLORATORY AND CONFIRMATORY FACTOR ANALYSES

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Although there are several existing measures for cancer worry in cancer survivors, there are few brief, validated measures available. The purpose of this study was to assess the factor structure of an existing cancer worry scale modified for use with breast cancer survivors (Cancer Worry Scale; mCWS). We also assessed the convergent, discriminant, and concurrent validity of the mCWS. We hypothesized that the scale would be unidimensional and more strongly related to other measures of cancer worry, and to perceived risk of recurrence and mental health than to measures of physical quality of life. Sample 1 comprised 217 breast cancer patients 42 months post-treatment who completed the mCWS and measures of perceived risk of breast cancer recurrence, depression (CES-D), and quality of life (SF-36). Sample 2 included 155 breast cancer patients 6-24 months post-treatment who completed the mCWS and the Fear of Cancer Recurrence Inventory (FCRI). The exploratory factor analysis in sample 1 revealed a single-factor solution for the mCWS with the one factor solution accounting for 52% of the variance. The mCWS had good internal reliability, Cronbach's alpha=.80. Further, the mCWS had moderate correlations with perceived risk of recurrence ($r$=.40), depressive symptoms ($r$=.51), and the mental health component score of the SF-36 ($r$=-.39), demonstrating convergent validity; and had a smaller correlation with the physical component score of the SF-36 ($r$=-.29), demonstrating discriminant validity ($p$s<.001). A confirmatory factor analysis in sample 2 reproduced the single-factor solution. The mCWS also demonstrated excellent concurrent validity in sample 2 with a large, positive correlation with another measure of cancer worry, the FCRI ($r$=.84, $p$<.001). In conclusion, the mCWS demonstrated excellent psychometric properties as a brief, unidimensional measure of cancer worry in cancer survivors. Additional studies should determine whether this scale would be useful as a screening instrument.

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## A-028

### GRAPHIC CIGARETTE PACKAGE WARNING LABELS: HOW DO ADOLESCENT MALES REACT?

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BACKGROUND: The U.S. Food and Drug Administration (FDA) recently released graphic cigarette package warning labels that could have an especially large impact by preventing smoking initiation. We sought to examine the potential impact of graphic warning labels on adolescent males' interest in smoking.
METHODS: A national sample of 386 non-smoking American males ages 11-17 participated in Fall 2010, before the new labels were released. We randomly assigned them to one of four conditions in a 2 x 2 between-subjects online experiment. Participants viewed warning labels that described a concrete or non-concrete threat (lung cancer vs. addiction, respectively) using text only or text plus an image currently in use on European cigarette packs. Linear regression assessed main and interaction effects of experimental condition, controlling for demographic variables.
RESULTS: Warning labels discouraged most adolescents from smoking, but lung cancer warning labels discouraged them more than addiction labels (60% vs. 34% were "very discouraged," p<.001). Including an image had no effect on willingness to smoke; Image and concreteness of threat manipulations did not interact. Perceived risk of lung cancer was lower for younger adolescents exposed to image than text labels (means 3.8 vs. 4.1, range 1-5), but older adolescents gave lower ratings regardless of label imagery (3.9 vs. 3.7) (p=.04).
DISCUSSION: Adolescent males were more discouraged from smoking by lung cancer warning labels than by labels describing addiction, but the addition of images had little impact. Our findings also suggest that cigarette warning labels may affect adolescents differently, depending on their age. More research is needed to better understand the impact of tobacco warning labels across the lifespan.

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## A-029

### CANCER SURVIVORS, COPING AND ADJUSTMENT

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Introduction: Recent evidence argues that distress and wellbeing may represent distinct constructs rather than opposite anchors of a unipolar dimension (Ryff et al., 2006). Further, research has linked positive indicators to resilient outcomes and negative indicators to vulnerability in health samples (Kraaj et al., 2009). The present study sought to explore this discriminant validity phenomenon in a cohort of cancer survivors. It was hypothesized that strategies acknowledged to be beneficial (support seeking, acceptance, active/planning) would be positively related to wellbeing and unrelated to distress. Likewise, maladaptive strategies (distraction, denial, venting, self-blame) would be positively related to distress and unrelated to wellbeing.
Method: 320 individuals(M age=62 years,70% female) were assessed by questionnaire on several psychosocial indicators roughly 7 years after their initial cancer diagnosis. Measures included the HADS, FACT-G, and Brief Cope.
Results: The correlation between distress and wellbeing was r=-.81, p<.001. Distress was retained as a significant covariate in analyses predicting wellbeing and vice versa. Contrary to predictions, denial and blame had implications for both wellbeing and distress. By contrast, acceptance emerged as the only positive predictor of wellbeing and was unrelated to distress. Notably, higher levels of active coping/planning, a strategy heralded to be adaptive, predicted greater levels of distress.
Conclusions: Findings both challenge and support the idea that distress and wellbeing are distinct among cancer survivors. The high correlation between these constructs suggests one common dimension; however, the emergence of distinct associations between a subset of strategies and outcomes suggests a more complex picture. Results argue for interventions that seek not only to alleviate distress but also to enhance wellbeing. Finally, consistent with research in other health domains, findings suggest that cognitive rather than behavioral or emotional strategies are the most important predictors of wellbeing and should be a strong focus of clinical attention.

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## A-030

### CANCER DISPARITIES AMONG GAY MEN: RATES AND RISK FACTORS

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Research has shown disparities exist in rates of cancer diagnoses, disease progression and quality of life post-cancer. One recent study found gay men have higher rates of cancer diagnoses than heterosexual men (Boehmer, Miao, & Ozonoff, 2011). As of yet, the factors underlying this disparity are unknown. The Minority Stress Model (Meyer, 2003), which posits that health risk factors among gay men increase with exposure to chronic stress and societal discrimination, may provide a framework for understanding health disparities. Also, these risk factors may persist post-cancer. The current study examined risk factors associated with cancer, as well as rates of these risk factors in gay and heterosexual men with and without cancer. Analyzing data from 173 gay and 5544 heterosexual men collected for the Behavioral Risk Factor Surveillance System survey in 2009 in California, we found that rates of cancer diagnoses differed significantly between gay and heterosexual men, with gay men more likely to report diagnoses of cancer ($\chi2=4.53$, $p<.05$, $OR=1.53$). Across all men, binomial logistic regression revealed cancer diagnoses were associated with a lifetime history of smoking ($\chi2=31.95$, $p<.001$, $OR=2.12$), alcohol use ($\chi2=42.47$, $p<.001$, $OR=1.80$), and lack of vigorous exercise ($\chi2=69.18$, $p<.05$, $OR=1.55$). Gay men were more likely to report a lifetime history of smoking ($\chi2=6.97$, $p<.01$, $OR=1.61$), alcohol use ($\chi2=6.33$, $p<.05$, $OR=1.71$), and lack of vigorous exercise ($\chi2=9.36$, $p<.01$, $OR=1.55$). Furthermore, gay men with cancer reported higher rates of smoking ($\chi2=4.62$, $p<.05$) and alcohol use ($\chi2=5.14$, $p<.05$). The current study offers an initial perspective on risk factors that may lead to higher rates of cancer among gay men and impact health outcomes post-cancer diagnosis. Studies should examine the longitudinal effect of behavior and minority stress on rates of cancer among sexual minority populations. Interventions aimed at reducing the impact of these behavioral and stress-related risk factors are vital for reducing cancer disparities and incidence.

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## A-031

### FARMERS' MARKETS: PROMOTING HEALTH BY CONNECTING COMMUNITY MEMBERS IN UNDERSERVED ENVIRONMENTS

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Farmers' markets provide the potential to improve individual- and community-level health in underserved communities by creating environments that support connections to resources through the social interactions taking place therein. However, there is limited empirical examination of the types of social interactions occurring at farmers' markets. In the present study, ethnographic observations were used to examine the social interactions at a farmers' market located in an underserved, rural community in a region with well-documented cancer-related health disparities. The farmers' market, which was developed using a participatory approach, operated at a federally qualified health center (FQHC). Over a 3-month time period, trained research observers recorded the social interactions taking place at the market. Thematic analysis of field notes collected across 39 observations revealed social interactions focused on the procurement of economic, social, and personal resources. For example, economic resources garnered through interactions at the farmers' market included opportunities for farmers to market produce directly to consumers as well as negotiations on food prices between farmers and consumers. Connections to social resources included fellowship and conversation between market attendees (farmers, consumers) directly or indirectly related to shopping at the market. Opportunities for connections to personal resources included education on farming, health education, and recipe sharing, as well as farmers exchanging farming strategies and supplies. Although the acquisition of economic, social and personal resources was not the primary goal of the farmers' market, they may be important conduits for individual- and community-level health promotion in underserved communities.

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## A-032

### UNMET PSYCHOSOCIAL AND EDUCATIONAL NEEDS OF MEN TREATED FOR PROSTATE CANCER: A PRELIMINARY ASSESSMENT

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For prostate cancer survivors, many are at risk for and develop psychosocial effects of cancer treatment that may lead to premature morbidity and mortality. While there is sufficient evidence regarding the effects of treatment for prostate cancer, there is a paucity of evidence related to the psychosocial and educational needs of men. Participants were men treated with surgery and were sampled from a larger study examining quality of life in men treated for prostate cancer. Men ranged in age from 54-85 ($M=67.44$;$SD=7.19$), were a mean of 65.24 months from their surgery ($SD=55.20$) and were a mean of 68 months from their diagnosis ($SD=54.25$); Gleason scores ranged from 5-7 ($M=6.54$;$SD=0.58$). the Cancer Survivors' Unmet Needs Measure (CaSUN) was administered to assess the unmet psychosocial needs of participants. The specific unmet needs endorsed most often included accessing complementary and/or alternate therapy services (33.3% of participants), having complaints regarding care properly addressed (30%), obtaining help with managing side-effects and/or complications of treatment (26.7%), and obtaining help to adjust to changes in quality of life (23.3%). Only employment status was related to unmet needs in this sample; participants who were disabled/on leave (14%) reported more total unmet needs and more unmet needs in the area of existence and survivorship issues than participants who were working (34%) or retired/homemakers (52%), ps<.05. Unmet needs identified in the domains of existential and survivorship issues, comprehensive healthcare, information, quality of life, and relationships within the subcategories of length of years since last treatment and demographic variables will be presented. These findings will assist in the development and testing of targeted psychosocial and educational resources and interventions to minimize the impact of the burden of treatment among men treated for prostate cancer.

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## A-033

### LAY HEALTH ADVISORS AND PROSTATE CANCER: A COMMUNITY-BASED MODEL FOR ENHANCED INFORMED DECISION MAKING AMONG AFRICAN AMERICAN MEN

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Background: Although prostate cancer mortality rates are on the decline, rates in African American (AA) men remain more than twice as high as those in white men. Men at risk for prostate cancer are encouraged to gather information that can be useful in their decision making process to determine the most appropriate strategy for screening and prevention. Previous research indicates that lay health advisors (LHAs) are effective in reaching underserved populations, such as AA men, to improve access to cancer information and services.
Methods: LHAs were recruited from the local community to facilitate outreach with AA men and aid in the implementation of a community-based participatory research (CBPR) study. A comprehensive training curriculum for the LHAs was developed, which consisted of four learning modules, each representing an important domain of IDM on prostate cancer and CBPR. These modules included facts on prostate cancer, conducting research, community outreach, and multimedia approaches to health. Furthermore, simulation activities were developed to prepare the LHAs for fieldwork in the community. The training was evaluated through the administration of pre and post-tests.
Results: A comprehensive, didactic, and interactive LHA training program was established to enhance their knowledge of prostate cancer and to cultivate their skills in community outreach and networking with the AA community. Evaluative assessments of the LHAs demonstrated that the training program resulted in increased knowledge regarding prostate cancer and research methodologies and enhanced skills in community outreach and technological applications. Additionally, the LHAs were reported improved self-efficacy and empowerment to provide resources and support to their local community.
Conclusions: LHAs can be successfully trained to conduct a multi-level CBPR study using a tailor-made curriculum. LHAs can serve as an effective conduit to facilitate community awareness and informed decision making among AA men, an underserved population.

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## A-035

### HEART RATE VARIABILITY BEFORE CORONARY ARTERY GRAFT SURGERY RELATED TO POSTOPERATIVE COGNITIVE DECLINE AT 6 WEEKS

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Background: A serious complication after coronary artery bypass graft surgery (CABG) is significant cognitive decline based on results from neuropsychological testing. Inflammation is often cited as a cause of brain injury, but there may be other biomarkers that help elucidate the injurious surgical response. The goal of the current study was to examine the role of heart rate variability (HRV) on postoperative cognitive decline (POCD) in patients with coronary artery disease. HRV measures balance of parasympathetic and sympathetic activity of the autonomic nervous system. Since unhealthy HRV has been shown to have negative outcomes for patients, it was hypothesized that HRV could be a possible mediator of POCD.

Methods: 13 patients underwent neuropsychological testing 2-7 days before and 6 weeks after scheduled CABG surgery (mean age: 69). At each session, HRV was also measured. POCD was defined as a decline of at least 20% on one or more neuropsychological tests.

Results: Six of the thirteen participants were classified as having POCD. A t-test analysis showed that the HRV for these six patients before surgery was significantly different than those who did not experience postoperative decline ($p < 0.05$). The psychological health of the participants also changed after surgery. Patients' perceived health scores rose and perceived interpersonal support scores fell ($p = 0.003$, $p < 0.001$)

Conclusions: This study shows that HRV is associated with POCD and may have predictive value. Poor cardiac health as measured by HRV may be a possible mediator of POCD, as HRV could be an indicator of oxygen deprivation that leads to POCD or HRV could be involved in the post-surgical inflammatory response that leads to brain injury after surgery.

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## A-036

### SPIRITUAL WELL-BEING MAY BUFFER ANXIETY SYMPTOMS IN PATIENTS WITH IMPLANTABLE CARDIOVERTER DEFIBRILLATORS (ICD)

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Background: Anxiety is common in patients with ICDs and has been associated with a worse prognosis. Various characteristics that may positively impact this condition have recently received attention in the literature. We sought to evaluate whether spiritual well-being may be associated with reduced anxiety in a sample of patients with ICDs.

Methods: We used the Functional Assessment of Chronic Illness Therapy - Spiritual Well-Being (FACIT-sp) questionnaire and the Hospital Anxiety and Depression Scale (HADS) to measure spiritual well-being and anxiety, respectively, in a group of ICD outpatients followed at the UMass Memorial Medical Center. Multivariate linear regression was used to explore the relationship between spiritual well-being and anxiety. Next, in order to evaluate whether higher baseline FACIT-Sp scores predicted anxiety after 2 months of follow-up, we examined this association in a subset of patients who completed the HADS survey 2 months later.

Results: 44 outpatients (30 M, 14 F) aged 43-83 years (mean 65.2) completed a series of baseline questionnaires. 83% were in New York Heart Association class II or higher; mean ejection fraction was 0.29. 39% had significant (HADS>7) anxiety at baseline. Baseline HADS scores were inversely correlated with FACIT scores ($r=-0.67$, $p<0.001$); there was no correlation between HADS scores and race, education, severity of clinical condition, ICD type and time since ICD implantation. In multivariate regression models, baseline FACIT-Sp scores were inversely associated with anxiety ($F=0.001$; R squared: 0.71; $\beta=-0.29$, CI: -0.41, -0.17) after adjustment for age, marital status, psychiatric comorbidities, gender, and socioeconomic status. Similar significant associations were observed with HADS scores measured after 2 months.

Conclusion: Higher spiritual well-being is independently and inversely associated with anxiety at baseline and predicted lower anxiety symptoms after two months of follow-up. Spiritual well-being may act as a protective factor against anxiety in patients with ICDs.

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## A-037

### FREQUENT PRIVATE SPIRITUAL ACTIVITY DOES NOT REDUCE CARDIOVASCULAR RISK IN AGING WOMEN

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Background Spiritual practices have been associated with improved cardiac autonomic balance, but their association with cardiovascular (CV) mortality and morbidity is not well-studied. We examined whether frequency of private spiritual activity is associated with reduced CV risk in postmenopausal women enrolled in the Women's Health Initiative observational study.

Methods Time spent in spiritual activity (prayer, Bible reading, meditation) was self-reported at year 5 of follow-up. Outcomes from medical records (CV mortality and CV events - a composite of angina, coronary and carotid revascularization, stroke, transient ischemic attack, congestive heart failure, peripheral arterial disease, and myocardial infarction) were centrally adjudicated. Risk of CV mortality and events across frequency of spiritual activity (daily, more than once/week, weekly vs. never) were estimated from multivariate Cox proportional hazard regression models adjusted for demographics, CV risk factors, and lifestyle and psychosocial variables. Time was computed in years from year 5 to death or last follow-up (FU). Survivors were censored at the date of last contact or loss to FU.

Results Final models included 43,708 women (mean age, 68.9 years) free of CV disease through year 5 of FU (median FU duration: 7.0 years). CV events increased with frequency of spiritual activity from 5.1% for never to 6.3% for daily activity. CV mortality was 1.01% for never and 1.05% for daily. In multivariate models, women reporting daily spiritual activity had a higher risk of CV events than the "never" group (HR: 1.14, CI: 1.01, 1.29). There was no association with CV mortality but the number of deaths was low.

Conclusion In aging women, increased frequency of private spiritual activity was not associated with a reduction in cardiovascular morbidity and mortality. Further studies are needed to understand the implications of this finding.

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## A-038

### HYPERTENSION KNOWLEDGE OF AFRICAN AMERICAN WOMEN IN MEDICALLY UNDERSERVED AND NON-UNDERSERVED AREAS

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Hypertension is common in African Americans (AA), who have a greater risk of related health problems than Caucasians. Low health literacy is associated with reduced medication adherence and use of preventative healthcare, and increased disease-related conditions. We compared AA women living in a medically underserved area (MUA) to AA women in non-MUAs. We expected participants MUA participants to have less knowledge about cardiovascular and blood pressure health and dietary and physical activity needs to manage hypertension compared to non-MUA participants.

Methods: Participants were 571 adult AA females with hypertension enrolled in a research project at one of three health centers in Mississippi: Jackson, South Jackson (SJ) and Hazlehurst. Hazlehurst is located in an MUA (designated by the Health Resources & Services Association). The other sites are in non-MUAs. Participants completed questionnaires assessing knowledge of cardiovascular health, dietary and exercise needs related to hypertension. Lower scores indicated less knowledge.

Analyses: A MANCOVA tested the role of site on scores on cardiovascular health (CH), hypertension symptoms (HS), prevention (HP), and causes (HC). ANCOVAs were run with site as the IV and hypertension diet (HD) and physical activity (PA) scores as DVs. Age and education were covariates.

Results: The MUA site scored lower on CH ($p=.001$) and HS ($p=.001$) than both non-MUA sites. Jackson participants scored higher than those in the SJ ($p<.001$) and MUA ($p<.001$) sites on HD. MUA participants had lower PA scores than Jackson participants ($p<.001$), but higher than SJ participants ($p=.011$). SJ participants had lower PA scores than Jackson participants ($p<.001$).

Discussion: For AA women, limited access to healthcare may be an obstacle in health literacy related to cardiovascular and hypertension symptoms and treatment. Other demographic variables may be a risk factor for reduced health literacy. Interventions for specific regions and sub-groups are needed in order to improve health literacy related to hypertension.

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## A-039

### NUTRITION & EXERCISE STAGE OF CHANGE PATTERNS IN ADOLESCENTS

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Research on stages of change suggests behavioral interventions are effective in increasing adolescents' readiness for change. Examining progression through stages may inform clinicians and researchers about treatment effects. Purpose of this study was to examine patterns in progression through nutrition and exercise stages of change among adolescents participating in a lifestyle intervention.

Sample was 140 adolescents (M age=16.2; 27% girls; 46% Hispanic, 37% Black, 10% White, and 8% Other) with elevated blood pressure. Participants were randomly assigned to a treatment condition varying in demand: minimal (n=47; single visit); moderate (n=47; 10 group sessions, 3 months); or intense (n=46; 6 individual and 12 group sessions, 6 months). Each participant completed Stages of Change (SOC) measure every 3 months for 9 months. SOC measured participant's readiness to reduce intake of fatty/fried foods and readiness to engage in exercise (Pre/Contemplation [C], Preparation [P], Action [A], Maintenance [M]). Repeated Measures Latent Class Analysis was used to examine patterns of progression through stages over 9 months. Missing was coded as a response.

Patterns consisted of Occasional Fatty Food Eaters (41%;P-P-P-P), Fatty Food Reducers (38%;C-P-P-P), Occasional Exercisers (38%;P-P-P-P), and Exercise Maintainers (40%;M-M-M-M). Fatty Food Eaters (20%;C-Miss-Miss-Miss) and Physically Inactive (22%;P-Miss-Miss-Miss) completed SOC at time 1, but missed follow-ups. Compared to minimal, intense participants were more likely to be Occasional Fatty Food Eaters (OR=8.63;95% CI 1.62, 45.90) or Fatty Food Reducers (OR=3.7;95% CI 1.00, 13.47) than Fatty Food Eaters. Intense compared to minimal participants were more likely to be Occasional Exercisers (OR=2.6;95% CI .63, 10.96) or Exercise Maintainers (OR= 6.86;95% CI 1.68, 27.91) than Physically Inactive. Moderate condition did not significantly differ from the minimal or intense.

Long-term interventions appear to be most effective in helping adolescents progress or remain stable in the preparation stage or higher over nine months. Future studies should compare patterns on changes in diet and fitness.

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## A-040

### DOES HAPPINESS CONTRIBUTE TO INCREASED PHYSICAL ACTIVITY AMONG AFRICAN AMERICAN WOMEN?

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Cardiovascular disease is the leading cause of death among American women. African American women who have high rates of obesity and overweight (78% and 50% respectively) are at an increased risk of developing heart disease. Engaging in at least 30 minutes of moderate physical activity reduces the risk of heart disease. Existing evidence suggests that women who engage in physical activity report greater happiness and increased positivity. Rarely have these effects been examined among African American women.

Data were obtained from the Alabama Collaboration for Cardiovascular Equality, 2008. Happiness was assessed using the Lyubomirsky and Lepper Subjective Happiness scale obtained from patient self-report. Physical activity was assessed using patient responses to the Rapid Assessment of Physical Activity (RAPA) questionnaire. Associations were quantified using logistic regression, comparing physically active to physically inactive. We adjusted for multiple confounders including age, education, and income.

Our sample consisted of 415 African American women with an average age of 53.6 +/- 9.8 years. Approximately 32.4% of our sample reported inactivity. Participants reporting no physical activity had a happiness score of 4.64 compared to participants reporting any activity scoring 5.33 (p= 0.0002). With each one point increase in happiness the odds of being physically active increased by 23% (OR: 1.23, CI: 1.08 - 1.41).

Our findings indicate that physical activity increases as happiness increases. Longitudinal studies are needed to determine the direction of causality. These findings open the door for more studies exploring the psychological benefits of physical activity, particularly among African American women.

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## A-041

### SOCIAL SUPPORT AND QUALITY OF LIFE IN CHILDREN WITH INTERNAL CARDIAC DEVICES

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Despite the increased life expectancy for children with internal cardiac devices (ICD; pacemakers, defibrillators) (Taylor et al., 2001), evidence suggests that this pediatric population suffers significantly decreased quality of life (Sears et al., 2011). According to psychosocial stress theory, social support acts as an important protective factor against the effects of chronic stressors on several aspects of functioning (Lazarus & Folkman, 1984). This theory has been supported in prior research as social support appears to be significantly associated with quality of life (Libby et al., 2010). However, the relationship between perceived social support and quality of life has not been adequately examined in children with ICDs. This study examined the associations between perceived types (Esteem-enhancing, Informational and Tangible) and sources (Family, Friends, Classmates, Teachers, Doctors/Nurses) of social support and children's self-reported health-related quality of life (HRQOL). Thirty-one 8-18 year olds with an ICD completed measures of HRQOL (General and Cardiac module) and social support (Types and Sources). As hypothesized, each type of support was positively associated with General HRQOL. The amount of social support received from all sources was also positively correlated with General QOL, except for support from Doctors/Nurses. Family and Friends were the sources of support most consistently associated with higher General HRQOL. In the Cardiac HRQOL module, only Tangible support was significantly associated with higher Cognitive HRQOL. Similarly, Family and Friends were the only sources of support significantly associated with Cognitive HRQOL. These findings demonstrate that not all types and sources of social support have the same impact on children's perceived HRQOL. This study raises important implications for the development of future social support and coping interventions for children and adolescents with internal cardiac devices, and stresses the importance of involving family and friends in such programs.

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## A-042

### DO SOCIAL CONTROL MOTIVES MODERATE THE IMPACT OF ETHNIC DISCRIMINATION AND DENIGRATION ON CARDIOVASCULAR DISEASE RISK?

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Chronic exposure to ethnic discrimination and denigration has been linked to increased cardiovascular disease (CVD) risk. Our prior research with urban youth has revealed three motivational profiles with differing implications for CVD risk: Agonistic Striving (AS) to influence, manage, or control other people; Transcendence Striving (TS) to control, change, or improve the self; and Dissipated Striving (DS), failure to assert control; youth with the AS profile exhibited significantly higher levels of ambulatory blood pressure (BP) than did youth with TS/DS profiles. The present study tests the prediction that adults exposed to perceived ethnic discrimination (PED) and denigration (DEN) exhibit elevated ambulatory heart rate (HR) and BP, and that these tendencies are greatest in persons with the AS profile.

Participants were young adults (age=32+3 yrs) who had participated in Project Heart studies during high school, N=148 (66% Black,72% female). PED was assessed with the Perceived Discrimination Scale; DEN was assessed with a scale developed for this study. AS, TS, and DS profiles were identified with the Social Competence Interview. Ambulatory BP/HR was monitored over 48-hours.

PED and DEN were positively correlated with DBP (both, r=.18) and MAP (r=.15, r=.18). ANCOVA analyses controlling for BMI and Sex indicated that PED and DEN interacted with Profile to predict HR: PED (t=2.09; t=1.99); DEN (t=3.16; t=1.97). The relationship between DEN and HR was (a) positive in persons with the AS profile, b=.83; (b) negative in persons with the TS profile, b=-.81; and (c) nonsignificant in persons with the DS profile. PED was related to increased HR only in persons with the AS profile, b=.78. All test statistics, $p<.05$.

Findings support the hypotheses that: (a) AS, TS, and DS profile associations with CVD risk in adolescents also characterize young adults; (b) perceived ethnic discrimination and denigration increase CVD risk; and (c) these effects are magnified by the AS profile and attenuated by the TS profile.

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## A-043

### EVALUATING THE RELATIONSHIP BETWEEN STRESS, BODY MASS INDEX AND ABILITY TO LOWER BLOOD PRESSURE OVER A 6-MONTH PERIOD IN HYPERTENSIVE VETERANS

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Uncontrolled hypertension increases the risk for stroke and coronary artery disease. Stress and obesity are postulated to be important modifiers of hypertension effects; however, the relationship between them is still unclear. We evaluated if change in perceived stress level (PSL) or body mass index (BMI) is related to blood pressure (BP) lowering over a 6-month period. The study sample ($N=533$) included veterans with uncontrolled hypertension enrolled in a randomized control trial of a behavioral intervention to improve BP control. Veterans were monitored for changes in BP between baseline and 6-month visits using the mean of 6 automated readings. Veterans' PSL was measured at baseline and 6 months using the Perceived Stress Scale (range 0 - 40). Robust regression analysis was conducted independently on systolic (SBP) and diastolic (DBP) BP changes regressed on changes in PSL and BMI while controlling for age, body fat percentage (BF), cardiovascular exercise, education, and intervention arm. At 6 months ($n=474$), average changes in SBP and DBP were -4.29 and -2.84 mm Hg, respectively. Changes in PSL were not associated with changes in SBP or DBP when controlling for demographic and health factors. Alternatively, a 1point increase in BMI over 6 months was associated with a 2.31 mm Hg increase in SBP ($p<0.01$) and a 1.22 mm Hg increase in DBP ($p<0.01$). Following these results, it was hypothesized that high PSL may indirectly influence BP through BMI or BF based on the stress-induced effects of cortisol. However, regression analyses showed that the relationship between changes in PSL and BMI and BF was insignificant. While veterans' PSL was not associated with lowered BP at 6 months, changes in BMI were correlated with observed reductions in BP. This suggests that a reduction in BMI due to improved diet and exercise habits may lower BP over a 6-month period. Accordingly, clinicians may find success in lowering patients' risk of BP-related complications by assisting them in reducing BMI.

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## Meritorious Poster

## A-044

### RACIAL DIFFERENCES IN THE RELATION OF SUBJECTIVE SOCIOECONOMIC STATUS TO CARDIOVASCULAR DISEASE RISK IN THE HEALTHY AGING IN NEIGHBORHOODS OF DIVERSITY ACROSS THE LIFESPAN STUDY

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Higher rates of cardiovascular (CV) disease and its risk factors are well documented among those with objective indicators of lower socioeconomic status (SES) such as income, education, and occupation. However, relatively little is known about the relations of subjective SES to CVD risk, particularly within different racial groups. Here we examine relations of subjective SES to CV risk profile in 2,415 socioeconomically diverse African American and White adults enrolled in the Healthy Aging in Neighborhoods of Diversity Across the Lifespan (HANDLS) Study. At the baseline visit, participants were given a comprehensive medical exam and psychosocial questionnaires on a mobile research vehicle. Excluded for the present data analyses were those with a medical history of any type of CV disease. The sample had a mean age of 47.68 years, was 57% female, 56% African American, and 39% below 125% poverty status. CV risk was calculated using the Framingham 10-year CV risk equation. Subjective SES was assessed using the MacArthur Scale of Subjective Social Status. First, a hierarchical linear regression was computed to assess the relation of subjective SES to CV risk, after adjusting for race, prescription medication use, illicit drug use, alcohol use, body mass index, cancer, depression, as well as neurological, metabolic, and inflammatory diseases. In the full sample, results showed that SES was associated with greater CV risk after full covariate adjustment ($\beta=-0.06$, $F(1,1712)=6.44$, $p=.01$). However, when the analysis was race-stratified, results showed that subjective SES was a significant predictor of CV risk in Whites ($\beta=-0.14$, $F(1,789)=15.99$, $p<.001$), but not African Americans. These results suggest that although subjective SES might be helpful in predicting CV risk in Whites, it may not be useful in African Americans. Therefore, the relation between SES and CVD risk may vary depending on the race of the sample and how SES is measured.

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## A-045

### ASSOCIATION OF SLEEP APNEA WITH METABOLIC MEASURES, BODY WEIGHT, AND DIETARY INTAKE IN PATIENTS WITH METABOLIC SYNDROME

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Objective: Among adults with metabolic syndrome, we compared those with and without sleep apnea on metabolic measures, body weight, dietary intake, and depression scores.

Methods: Participants were 110 obese individuals with metabolic syndrome who participated in a dietary intervention trial. Presence of obstructive sleep apnea was determined by a validated questionnaire. HDL cholesterol, triglycerides, glucose, HbA1c, weight, height, blood pressure, and waist circumference were collected. Three 24-hour dietary recalls were used to assess habitual diet, and the Center for Epidemiological Studies Depression Scale was used to assess depression symptoms. Two-sample t-tests were used to compare differences between participants with and without sleep apneas, and multiple regression models were used for further comparisons adjusting for covariates.

Results: Participants were mostly female (78%) had an average age of 51 years old [standard deviation (SD): 10.5], and an average body mass index (BMI) of 35 kg/m2 (SD: 5.6). 43% of participants met criteria for sleep apnea. Participants with sleep apnea had significantly higher fasting glucose, insulin, and HbA1c and were more insulin resistant per HOMA-IR. Adjustments for BMI were not altered in these results.

Conclusions: Sleep apnea is highly prevalent in obese patients with metabolic syndrome, our data suggest that patients with sleep apnea have higher glucose and insulin independent of weight.

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## A-046

### CHRONIC STRESS MODERATES THE RELATIONSHIP BETWEEN CENTRAL OBESITY AND CARDIOVASCULAR REACTIVITY

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Central obesity and chronic stress have been shown to have independent effects on cardiac autonomic regulation, and may interact in important ways to affect cardiovascular (CV) reactivity. This study examined the effects of central obesity, chronic stress, and their interaction on CV stress responsivity. We hypothesized that, in addition to their main effects, central obesity and chronic stress would interact and predict attenuated CV reactivity across multiple indices of CV functioning. Participants were 122 college undergraduates (29% men) with a mean age of 20 years. Twenty-three (19%) met criteria for high central obesity (waist-circumference [WC] $\geq$100 cm for men and$\geq$85 cm for women). Chronic stress was measured with the Inventory of College Students Recent Life Experiences scale. CV change scores were computed as the differences between stress tasks (speech and arithmetic) and baselines for heart rate (HR), systolic blood pressure (SBP), diastolic blood pressure (DBP), mean arterial pressure (MAP), pre-ejection period (PEP), and respiratory sinus arrhythmia (RSA). All hierarchical regression models were adjusted for the effects of age, gender, exercise, and respective baseline CV levels. Results indicated that higher WC significantly predicted attenuated SBP change ($\beta=-.322$, $p<.01$), while chronic stress was not directly associated with any measures of CV reactivity. Furthermore, there was a significant interaction between central obesity and chronic stress on SBP ($\beta=-.285$, $p<.05$) and MAP ($\beta=-.294$, $p<.05$) change such that among participants with larger WC, higher chronic stress was significantly associated with reduced SBP and MAP reactivity. This interaction did not predict reactivity in HR, DBP, PEP, or RSA. Results suggest that obese individuals may be unable to mount an appropriately-sized stress response to social-evaluative threat, especially when they are under high levels of chronic stress. This may reflect a blunted autonomic response system, which has important implications for cardiovascular regulatory processes.

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## A-047

### PERCEIVED SOCIAL SUPPORT IS ASSOCIATED DIFFERENTIALLY WITH CARDIOVASCULAR RISK FACTORS IN AFRICAN AMERICAN AND WHITE MEN AND WOMEN

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Low levels of social support have been associated with increased cardiovascular morbidity and mortality. Relatively less is known about the relation of social support to risk factors for cardiovascular disease, and whether these associations differ as a function of race and sex. We examined whether perceived social support was associated with select cardiovascular risk factors in 1,703 community-dwelling, African American and White adults who were participants in the Healthy Aging in Neighborhoods of Diversity Across the Life Span Study after excluding for stroke, dementia, neurological disorders, psychiatric disorders, cancer, HIV+, and dialysis treatment ($n=542$). Participants underwent a medical history, physical examination, blood chemistries, clinical assessment of blood pressure, and completion of psychosocial measures including emotional and instrumental support scales. Outcome variables included systolic and diastolic blood pressure, waist circumference, body mass index (BMI), fasting glucose levels, triglycerides, and total, HDL, and LDL cholesterol. Multiple regression analyses for each outcome variable were stratified by sex and race and adjusted for age, education, SES, cardiovascular and metabolic comorbidities, antihypertensive and statin use, use of tobacco, alcohol, and illicit drugs, stress, anxiety, anger, depression, and BMI (where relevant). Results indicated that, in White women, higher levels of emotional support were associated with lower BMI ($p=.024$), waist circumference ($p=.01$), and triglyceride levels ($p=.034$); in addition, greater instrumental support was related to lower HDL cholesterol ($p=.047$). In African American women, greater instrumental support was associated with lower total cholesterol ($p=.036$). In African American men, instrumental support was associated with higher HDL cholesterol ($p=.033$). Thus, the relations of perceived social support to cardiovascular risk factors vary by race and sex. White women may obtain particular benefit from perceived interpersonal support.

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## A-048

### SOMATIZATION IN PEDIATRIC NONCARDIAC CHEST PAIN

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Chest pain is a prevalent and distressing problem for children and adolescents; however, in many cases there is no medical explanation. Chest pain with an unknown cardiac etiology may be classified as noncardiac chest pain (NCCP). This condition is related to functional impairment (e.g., decreased ability to participate in athletics, increased rates of school absenteeism) and can be the cause of repeated medical evaluation. An emerging evidence base supports a biopsychosocial diathesis-stress conceptualization of pediatric NCCP onset and maintenance. Some researchers have suggested that pediatric NCCP may be a symptom of a broader somatization condition, while other research indicates that most patients report singular chest pain unaccompanied by other physical symptoms. This study investigates group differences in somatization between children and adolescents with NCCP and benign cardiac conditions (BCC; e.g., heart murmur, palpitation).

Data were collected as part of a larger study examining the course of pediatric NCCP. The sample consisted of 89 patients with NCCP and 69 with BCC. The sample was 54% female, 62% White, and the mean age was 12.6 years ($SD=3.0$). An independent samples t-test was conducted between the NCCP and BCC groups to compare somatization as measured by the Childhood Somatization Inventory (CSI). Patients with BCC ($M=16.3$; $SD=10.8$) reported significantly more somatic symptoms than patients with NCCP ($M=9.8$; $SD=9.5$), $t(156)=-3.92$, $p<.001$. Both group means fell within the average range in comparison to the CSI normative sample. This suggests that pediatric patients with NCCP report somatic complaints comparable to those of other children. It may be that most cases of pediatric NCCP represent a singular, unique condition distinct from broader somatization difficulties. Our findings add to the existing theoretical understanding of pediatric NCCP and highlight the importance of investigating factors other than somatization in this population. These data may help inform treatment of this condition.

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## Citation Poster

## A-049

### AGONISTIC STRIVING, BLUNTED PARASYMPATHETIC CONTROL, AND HEART RATE RESPONSE TO ANGER IN LOW-INCOME YOUTH: EARLY MECHANISM OF CARDIOVASCULAR RISK?

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Two large community-based studies of lower income Black and White youth have shown that agonistic striving (AS), a motivational state involving recurring efforts to influence others, predicts increased hypertension risk indexed by elevated ambulatory blood pressure (ABP). The association of AS with ABP is not explained by race, gender, body mass, or anger. We tested the hypothesis that AS increases risk by blunting parasympathetic (PNS) control of the heart, reflected in lower vagal regulation indexed by resting respiratory sinus arrhythmia (RSA). Blunted PNS regulation is predicted to cause increased heart rate (HR) reactivity to social stressors in persons the AS profile.

Participants were 176 adolescents (46% female; 41% Black, 38% White) in an urban public high school in low- to middle-income neighborhoods of Syracuse, NY. AS was assessed with the Social Competence Interview (SCI). PNS control was assessed by the mean level of RSA recorded during 4 min of quiet rest prior to a 3-min anger recall (AR) task. HR reactivity was estimated by subtracting the mean HR during the 4-min baseline from the mean HR recorded during AR.

Hypotheses were tested with multiple regression analyses in which HR reactivity was predicted by AS, RSA, and their interaction, controlling for gender, race, and body mass index. Results disclosed a significant effect of AS in predicting greater HR reactivity ($b=-94.83$, $SE=30.07$, $p<.01$), and a significant AS by RSA interaction ($b=74.51$, $SE=40.83$, $p<.05$). HR reactivity was highest in persons with the AS profile who exhibited blunted PNS regulation.

Findings suggest that the adverse cardiovascular consequences of blunted PNS control may be exacerbated in adolescents with the AS profile, and point to a possible psychological mechanism—persistent agonistic motivation—that may undermine heart health early in life.

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## A-051

### THE ROLE OF SELF-REPORTED UNFAIR TREATMENT ON THE HEALTH-RELATED QUALITY OF LIFE OF LATINOS WITH COMORBID CONDITIONS

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Diabetes and depression are two debilitating conditions disproportionally affecting ethnic minorities. Perceiving racial/ethnic unfair treatment among ethnic minorities is associated with adverse mental and physical health. This study examined the association between self-reported ethnic/racial unfair treatment and health-related quality of life among Latino adults with comorbid depression ($BDI >11$) and Type 2 diabetes, and who reported experiencing some unfair treatment (Rarely/Not Often=68%; Often=32%). The present study was part of a randomized, controlled trial "Community Approach to Lifestyle Modification for Diabetes." We focused on data of Latinos who completed the baseline interview ($N=119$). Multivariate linear regressions with mental and physical health dimensions as dependent variables revealed that after adjusting for covariates (age, gender, income, work status, education, marital status), experiencing unfair treatment "often" compared to experiencing it "rarely/not often" was associated with poorer mental ($B=-0.35$, $p<.001$) and physical health ($B=-0.21$, $p<.05$). Further analyses evaluating the subscales of the mental and physical health dimensions revealed that after adjustment of covariates, reporting unfair treatment "often" compared to "rarely/not often" was associated with mental health subscales, including poorer role limitations due to emotional problems ($B=-0.25$, $p<.05$); lower levels of vitality/energy ($B=-0.24$, $p<.05$); poorer emotional well-being ($B=-0.38$, $p<.001$); and worse social functioning ($B=-0.29$, $p<.01$). Unfair treatment was not associated with any of the physical health-related quality of life subscales. Consistent with the literature on the relation between unfair treatment and health, our results showed a more robust and consistent association between unfair treatment and mental health rather than physical health. Implications of these findings suggest further examination of the pathways linking ethnic/racial unfair treatment to poor mental health, particularly among persons with comorbid health conditions.

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## A-052

### THE SELF-AS-DOER FOR DIABETES: A DISEASE-SPECIFIC MOTIVATIONAL MEASURE FOR DIABETES SELF-CARE BEHAVIORS

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Self-as-doer identity, a construct wherein action and self are combined in working memory and result in one's identification with doing a behavior (Houser-Marko & Sheldon, 2006) has been found to predict increased self-care behaviors (SCBs) in persons with diabetes (Authors, 2008). Given the need to measure the self-as-doer in this population, we developed a diabetes-specific standardized doer-identity measure.

The Self-As-Doer for Diabetes (SAD-Diabetes) was constructed in part from a content analysis of 522 doer statements created by 97 persons with Type I or Type II diabetes mellitus (T1DM and T2DM, respectively) with modifications suggested by diabetes experts. The SAD-Diabetes was administered to a unique sample of 370 patients with T1DM and T2DM who completed a survey which also contained measures of self-determinism, locus of control, illness identity, outcome expectancies, and self-efficacy. Based on results from a principle components analysis, parallel analysis, and tests of reliability and construct validity, the SAD-Diabetes was reduced to 42 items. A seven factor solution explained 55.24% of the total variance for the final measure. Extracted components were moderately and significantly correlated with one another and with the aforementioned measures, demonstrating construct validity and that the self-as-doer scale items adequately describe the latent construct, self-as-doer identity (DeVillis, 2003). The SAD-Diabetes was found to be a significant predictor of diabetes SCBs (except for blood glucose monitoring) and glycemic control over and above demographics and other relevant psychological variables for persons with T1DM, but not for those with T2DM.

Results provide preliminary evidence of the validity of the SAD-Diabetes in clinical populations. That the doer identity predicts diet, foot care, medication adherence and exercise behaviors in persons with T1DM suggests that regulating self and identity in a way which is consistent with viewing oneself as the doer of behaviors may be associated with the frequency of enacting those behaviors.

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## A-053

### THE EXPERIENCE OF SOCIAL SUPPORT: A QUALITATIVE ANALYSIS OF ADOLESCENTS WITH TYPE II DIABETES

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The rates of Type II diabetes mellitus (T2DM) among adolescents are growing (CDC, 2009) but how adolescents experience and cope with T2DM is not well understood. Some evidence for social support on self-care in adolescents with T2DM has been established (Auslander et al., 2010), but more research is needed to understand how adolescents perceive social support in order to develop effective interventions. The purpose of this study is to explore how adolescents with T2DM experience social support.

Semi-structured interviews were conducted with eight adolescents, 12-17 years old, recruited from the local children's hospital diabetes clinic. Participants were asked about their experiences of social support from friends, family and medical professionals. Data were qualitatively analyzed using the Consensual Qualitative Research methodology (Hill et al., 1997).

Results demonstrate that youth assign great value to social support for their diabetes. All participants expressed both emotional and self-care behavior-specific support from friends and family. Participants also described a supportive friend as one who would provide both instrumental and emotional support. Some adolescents identified that knowing others with diabetes created a sense of belongingness which helped them cope with their diabetes. While many participants indicated that disclosing their diagnosis was important, most expressed fear of disclosing their diabetes to others. Fear of disclosure was often associated with a lack of support and in some cases perceived ridicule from others about self-care.

Our findings suggest that youth with T2DM perceive social support from both peers and family as important and that an ideal supporter is one who offers both self-care behavior-specific and emotional support. Future research should continue to examine the link between fear of disclosing and barriers to receiving support.

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## A-054

### THE RELATIONSHIP BETWEEN WIDOWHOOD AND TYPE 2 DIABETES INCIDENCE IN MIDDLE-AGED AND OLDER ADULTS FROM THE LIFESPAN PERSPECTIVE

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Over 90% of people in the U.S. marry, and nearly all marriages eventually end in divorce or widowhood. Research suggests that there is generally a positive relationship between marriage and a number of measures of health and that being/becoming unmarried (i.e., separated, divorced, widowed) is negatively correlated with health. However, married individuals are more likely to be overweight or obese than are widows, and both overweight and obesity are strongly and positively correlated with diabetes. Little research has explored the impact of marital dissolution on diabetes onset or management in a sample representative of U.S. adults over 50 years of age. We used life course and life cycle concepts within a lifespan perspective to see if transitioning from marriage to widowhood (the most common transition in adults over 50) influenced diabetes onset. Longitudinal Health and Retirement Study data (1998-2008) on adults over 50 (n=2,821) showed that the incidence of diabetes was higher in married individuals (15%) than in those who became widowed (10%), although this difference was not statistically significant before or after controlling for early life, ascribed, achieved, and health status factors (OR=.62, p>.05; OR=.67, p>.05, respectively). While widowhood did not significantly predict diabetes, several factors did. In line with the lifespan perspective, widows who reported lower childhood SES and less than a high school diploma/GED were more likely to develop diabetes than were those reporting higher childhood SES and at least a high school diploma/GED. Although widowed adults over 50 were no more likely to develop diabetes than were married adults, there is more work to be done on this topic. Both gender and SES have been shown to moderate the relationship between widowhood and health, so potential differences in diabetes incidence in older adults who remained married and those who became widowed may have been hidden. In addition, it may be important to study how management of diabetes is influenced by marital transitions.

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## A-055

### PREVALENCE AND FACTORS CONTRIBUTING TO HYPERGLYCEMIA-RELATED POSTTRAUMATIC STRESS IN ADULTS WITH TYPE 1 DIABETES

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Recent research has investigated the prevalence of posttaumatic stress disorder (PTSD) and significant contributors to posttraumatic stress (PTS) symptomatology, regarding hypoglycemia experiences, among individuals with type 1 diabetes (DM1; Myers, Boyer, Herbert, Barakat, & Scheiner, 2007). However, no study has examined PTS symptomatology in relation to hyperglycemia experiences in this population. The current study investigated the prevalence of hyperglycemia-related PTSD and PTS severity in 239 individuals with DM1, using the posttraumatic stress diagnostic scale (PDS: Foa, 1995). PDS was subjected to two symptom cluster scorings (Standard PDS scoring according, and more conservative scoring requiring greater symptomatology to meet item significance). Additionally, this study aimed to identify whether diabetes-related complications, hyperglycemia experiences, cognitive appraisals, self-care, and glycemic control (HbA1c) predicted PTSD/PTS. Over 30% of participants met criteria for current PTSD related to hyperglycemia experiences with standard symptom cluster scoring, and over 10% with more conservative scoring. Hierarchical multiple regression analyses identified that perceived helplessness (Partial R=.237, p=.012) and HbA1c (Partial R=.228, p=.016) significantly predicted PTSD with standard scoring; while perceived death threat (Partial R=.29; p=.002), helplessness (Partial R=.224, p=.016), and self-care (Partial R=-.184, p=.049) significantly predicted PTSD with more conservative scoring, and perceived death threat (Partial R=.346, p<.001), helplessness (Partial R=.417; p<.001), and HbA1c (Partial R=.280 , p=.002) predicted PTS severity. Diabetes-related complications, hyperglycemia-related fear, and hyperglycemia-related experiences (e.g., number of hyperglycemic episodes; hospital, ER, and ICU visits due to hyperglycemic episode) did not predict PTSD or PTS severity. Implications for self-management interventions and future research directions will be suggested.

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## A-056

### TELEPHONE-DELIVERED HEALTH COACHING VERSUS SELF-MANAGEMENT BOOKLET FOR PRIMARY CARE PATIENTS WITH TYPE 2 DIABETES: A PILOT FEASIBILITY STUDY

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Health coaching, with emphasis on empowering patients to become active in self-managing chronic conditions, has been recommended as an important adjunct to traditional disease management in primary care. Research investigating the feasibility and acceptability of such interventions for primary care patients is limited. Forty-five adult primary care outpatients (58% male; mean age=59 years; 96% Caucasian) diagnosed with type two diabetes were randomly assigned to receive a diabetes self-management workbook or health coaching. In this study, health coaching involved approximately 7 telephone calls over 12 weeks, emphasizing motivation enhancement and self-management action plans (collaborative goal setting). Results suggest that health coaching is acceptable to patients. When asked, they stated that they liked having someone to talk to about their health, helped keep them on track with goals, and provided clarification on health issues. Univariate analysis comparing groups on change scores (week 12 end of treatment assessment - baseline) failed to demonstrate a statistically significant increase (p=.058) in goal setting level among those receiving health coaching compared to workbook alone (mean change 1.3 vs -0.4). This suggests a positive effect for health coaching, but the small sample size limits our ability to detect group differences this small. Among health coaching participants, 70% reported behavioral changes, 70% shared goal information with others, and 85% increased diabetes self-management confidence. These findings suggest that health coaching embedded within primary care is acceptable to patients and increase goal-setting frequency. A larger randomized trial is required to evaluate efficacy of health coaching over more minimal interventions on health behavior and glycemic control.

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## A-057

### ASSESSMENT OF DULCE MOTHERS: A FORMATIVE STUDY IN THE RISK REDUCTION OF DIABETES AFTER GDM

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Techniques used in the Diabetes Prevention Program (DPP) were adapted to address the specific needs of Latino women with a history of gestational diabetes mellitus (GDM). The Dulce Mothers program consists of eight, peer-led group educational sessions targeting improved nutrition (specifically, fruit and vegetable intake, decreasing fat intake, portion control) and physical activity (addressing barriers). Knowledge about diabetes, fatalistic beliefs regarding the development of diabetes, and perceived health status were also addressed. Community health workers (Promotoras) were trained to deliver the culturally-adapted curriculum to 70 Latino women, recruited from community clinics in Northern San Diego County. The majority of women were uninsured (82%), low income (92% reporting<$1999/month), reported less than a high school education (73%). Clinical and self-report assessments were conducted at baseline, post-intervention (month-3), and follow-up (month-6). Hierarchical linear modeling analyses controlling for age, socioeconomic status, and attendance indicated statistically significant improvements between baseline and month-6 in diabetes knowledge ($\beta$=.10, p=.02), fatalism ($\beta$=-.03 p=.04), and subjective health status ($\beta$=.04, p=.04). Findings from this pilot study provide preliminary evidence that the Dulce Mothers curriculum was effective in improving factors that may, in turn, delay or prevent the development of type 2 diabetes (i.e., knowledge of diabetes, perceived health status, sense of control over health). These data can be used to inform the development of additional rigorous and culturally appropriate diabetes prevention programs in this high-risk population.

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## A-058

### PREDICTORS OF PARTICIPATION IN A COMMUNITY-BASED TRANSLATION OF THE DPP

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Objectives: Previous research has shown that participation in lifestyle behavior change programs, like the DPP, is associated with significantly reduced risk of developing diabetes. Therefore, we evaluated participation rates and characteristics that predicted participation in a community-based adaptation of the DPP called PLANFORWARD (PFD). PFD is a 16-week diet and exercise behavior change intervention delivered by YMCA staff. Participants were identified as at risk of diabetes through a partnership between 9 primary care practices in Indianapolis, Indiana University, and the YMCA.

Methods: Effects of age, BMI, ADA diabetes risk score (possible range of 0-22), number living in household, gender, income (<15K vs>=15K), and race (African-Am vs White vs Other) on the number of intervention sessions attended (0-16) were tested using regression, 2 sample t-tests, and analysis of variance. Spearman rank correlation was used to assess association between sessions attended and BMI due to skewed distributions.

Results: The 257 participants in the PFD were predominately female (72.8%), African-Am (57.6%), obese (Median BMI=35.4 kg/m2, range: 23.9-71.7 kg/m2), and low-income (53.5% household income of<$15,000). Overall, 164 participants (63.9%) participated in at least 1 PFD session and 76 (29.6%) participated in 12 or more weekly sessions in the first 6 months. The median time to first session for people who did attend was just over 1 month but ranged from 3 days to 1.8 yrs. Higher BMI and ADA risk scores were associated with attending more total sessions as well as more sessions within the first 6 mo. For every 5 kg/m2 increase in BMI, an average of .64 more sessions were attended, p=.013. For every 5 point increase in ADA risk score, an average of 1.72 more sessions were attended, p=.005. None of the remaining patient characteristics were associated with PFD session attendance.

Conclusion: This dissemination of DPP lifestyle intervention by the primary care community partnership has successfully engaged a high-risk population of middle-aged adults who are predominantly of low SES, minority race/ethnicity, and higher BMI.

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## A-059

### ATTACHMENT STYLES PREDICTING LONGITUDINAL TRENDS IN ADOLESCENT DISCLOSURE TO AND SECRECY FROM MOTHERS REGARDING TYPE 1 DIABETES CARE

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Adolescents who disclose more information to, and keep fewer secrets from, their parents have fewer externalizing and internalizing problems (e.g., Stattin & Kerr, 2000; Tilton-Weaver et al., 2011), and better management of type 1 diabetes (Osborn et al., 2011). However, research has not addressed how the relational histories of parent-adolescent dyads could influence adolescents' choice to disclose or keep secret information. We examined how attachment styles in adolescents were associated with longitudinal trends in adolescent reports of disclosure to and secrecy from mothers regarding diabetes management. One-hundred thirty-seven adolescents [M age at time 3=13.52, SD=1.52] responded to questionnaires that assessed their levels of attachment security, avoidant and anxious attachment with their mothers. Levels of voluntary disclosure and secrecy regarding diabetes management were assessed at three subsequent time points six-months apart. Multilevel modeling analyses revealed that adolescents with more secure attachments were initially found to disclose more to mothers (ps=.00), and tended to decline less in disclosures over time (ps=07) than adolescents with less secure attachments. More securely attached adolescents also initially kept fewer secrets from mothers (ps=.00), but did not differ in changes (i.e., slope) of secrecy over time, than those with less secure attachments. Adolescents with more avoidant attachments initially disclosed less to, and kept more secrets from, mothers than those with less avoidant styles (ps=.00).. Finally, no differences in initial levels, or changes over time in disclosures and secrecy, were found for adolescents with high versus low anxious attachment styles. Possible mechanisms responsible for these associations, and benefits of applying attachment-based practices to diabetes-specific interventions, will be discussed.

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## A-061

### VARIATION ACROSS DISCIPLINES IN KNOWLEDGE, ATTITUDES AND SELF-EFFICACY FOR EVIDENCE-BASED BEHAVIORAL PRACTICE

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The Evidence-Based Behavioral Practice (EBBP) project was launched in 2006, and nine interactive learning modules are now freely available at www.ebbp.org. We compare baseline knowledge, attitudes, and self-efficacy about the EBBP Process among psychologists(n=149), physicians(n=29), nurses(n=52), social workers(n=124), public health specialists(n=63), and other health professionals (n=41) who voluntarily completed pre-test assessments.

Professional groups differed in their initial knowledge about EBBP [F (5,429)=5.0, p<.001]. Tukey post hoc tests indicated that psychologists= 62.6(SD=18.4) scored higher than social workers=52.8(SD=20.8) and other professionals=48.5(SD=19.2) on the per cent of 10 multiple choice questions answered correctly. The remaining professions scored intermediately on EBBP knowledge: nursing=60.8(SD=22.5), public health=59.8 (SD=21.2), medicine=55.5(SD=23.5). Attitudes toward EBBP also differed [F(5,458)=3.5, p<.004], with nurses=4.1(SD=0.73) expressing more positive attitudes than other professionals=3.6(SD=0.62) and the remaining groups scoring intermediately: medicine=3.9(SD=0.79), psychology= 3.9(SD=0.59), social work=3.8(SD=0.71), public health=3.7(SD=0.63), where 5=most favorable and 1=strongly unfavorable attitude toward EBBP. Self-efficacy also varied across the professions overall [(F(5,475)= 2.5, p<.029] but showed no discipline-specific differences: nursing=3.3 (SD=0.99), public health=3.3(SD=0.98), psychology=3.2(SD=0.90), social work=3.0(SD=0.96), other=2.8(SD=0.92), medicine =2.8(SD =0.92), where 1=not at all confident and 5=very confident.

Health professions varied significantly in their knowledge, attitudes, and self-efficacy about evidence-based behavioral practice. Nurses reported the most positive attitudes toward EBBP and joined public health in expressing greatest self-efficacy about engaging in it. Psychologists had the greatest knowledge about EBBP but reported only intermediately positive attitudes and self-efficacy about engaging in it.

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## A-062

### REDUCING THE NURSING SHORTAGE BY INCREASING EDUCATIONAL CAPACITY IN WYOMING

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As many as 581,000 new RN positions will be created by 2018, leading to a shortage of as many as 260,000 nurses by 2025. Increasing educational capacity is one approach to resolving the nursing workforce shortage and to ensure competent, safe nursing care to the U.S. population. The goal of this study was to identify barriers and opportunities for increasing educational capacity in Wyoming. Nursing faculty (n=120) at the only state University and the seven community colleges were sent an email invitation to complete the online survey. Survey items, adapted from the Wyoming Department of Employment (2008) survey and the National League for Nursing Faculty Role Satisfaction survey (2005), focused on job satisfaction, workload issues and plans to retire. Seventeen (23.4%) of the 71 educators would be considered ‘new faculty’ with <1 year teaching, yet more than half are >45 year old. Seventy-five percent of those teaching 2-5 years were older than 45 years as well. Workload (49.3%), salary (43.7%), and work hours (35.2%) were the most frequently identified reasons to leave the profession. Five satisfaction factors, age and “years as a faculty person” were used to predict “job satisfaction” and “plans to retire”. Stepwise linear regression revealed that higher satisfaction with the “financial aspects” of the job and “job opportunities” (e.g. continuing educations) accounted for35% of the variance in job satisfaction. In logistic regression, satisfaction with job opportunities was the only predictor of plans to retire in more than 5 years. Initial results suggest that recruiting and retaining new nurse educators needs to focus on increasing the pipeline of new and younger graduates, improving salaries, and providing opportunities for continuing education.

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## A-064

### CONTEXT AND CORRELATES OF HIV TESTING AMONG IMMIGRANT LATINO MSM IN A NON-TRADITIONAL MIGRATION DESTINATION

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Background: Since 1990, the immigrant Latino population of the US has grown exponentially, especially in the Southeast. Concurrently, the region faced an ongoing HIV epidemic among people of color. Counseling and testing is a recommended strategy to address the disproportionate burden of HIV among racial/ethnic minorities, however, little is known about HIV testing among immigrant Latino men who have sex with men (MSM), a particularly vulnerable group.

Methods: Our community-academic partnership recruited 190 immigrant Latino MSM via respondent-driven sampling for in-depth behavioral assessments. We explored past HIV testing and tested demographic, psycho-social, and behavioral predictors of HIV testing using a forward stepwise procedure to construct a multiple logistic regression model.

Results: Of 190 participants, most (69%) reported receiving HIV counseling and/or testing in the past year. Most participants (54%) reported going to a public health clinic for HIV testing. A smaller proportion (16%) reported going to a private health care provider; few reported going to an AIDS service organization (9%), community-based organization (5%), or private hospital (4%) for HIV testing. Among participants reporting a history of multiple HIV tests, 33% had 1 previous HIV test, 30% had 2 previous HIV tests, and 37% had 3 or more previous HIV tests.

In bivariate analyses, we identified 14 potential demographic, psychosocial, and behavioral predictors of HIV counseling and/or testing. In multiple variable models, however, only three variables were associated with the outcome: condom use efficacy (aOR 13.382; 95% CI=3.289, 54.446); STD knowledge (aOR 2.860; 95% CI=1.546, 5.290); and number of past STD diagnoses (aOR 1.963; 95% CI=1.216, 3.160).

Discussion: These findings add to our emerging understanding of HIV testing behavior and serve to inform future research, interventions, and policy for immigrant Latino MSM in the Southeast US.

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## A-065

### EFFECTS OF AGING AND CD4+LYMPHOCYTE COUNT ON COGNITION IN HIV-INFECTED INDIVIDUALS: A LOGITUDINAL STUDY OF THE LOS ANGELES MULTICENTER AIDS COHORT STUDY (MACS)

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A major neuropsychological complication of HIV-1 infection is cognitive motor impairment. Epidemiological findings suggest that increasing age is a significant risk factor for HIV-1-associated dementias and neurodegenerative diseases. Several findings from studies focusing on HIV-1 infection have directly measured cognition in younger and older HIV-1-infected adults, but findings have been mixed, in part, because of small sample sizes and other methodological differences between studies. This thesis presents findings from data derived from the Los Angeles Multicenter AIDS Cohort Study focusing on cognitive functioning in 246 HIV-1-infected younger (aged 20-39 years) and older (aged 40 years or older) adults. In order to assess cognitive functioning in these subjects, neuropsychological tests, including Trails A and B, and the Grooved Pegboard Test were used to measure neuropsychological performance throughout a ten-year (1996-2006) time frame after HIV-1 infection and post Highly Active Anti-Retroviral Therapy (HAART). It was expected that older patients and more immunocompromised patients would evidence poorer performance on all tests. The hypothesis was only partially supported. Older adults actually performed better (faster) on Trails A. An interaction between age and CD4 count was also observed, with older subjects with greater immunocompromise evidencing significantly poorer performance on fine motor speed compared to all other patients. Although HIV-1 infection affects cognition independent of age, longitudinal studies involving large numbers of older individuals are needed to determine whether there are more severe differences due to age in the prevalence, nature, and severity of HIV-1-associated cognitive dysfunction. Also, other neuropsychological assessments should be conducted to determine if other cognitive decrements are taking place beyond those looked at in this study.

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## A-066

### WILLINGNESS AND FEASIBILITY OF E-TECHNOLOGIES FOR HIV PREVENTION TARGETING CHINESE MSM

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The advent of the digital age has altered the worldwide landscape of sexual partner seeking and HIV/AIDS risks. Public health researchers have tried to harness the strengths of e-technologies as HIV prevention tools and although they have been demonstrated to be efficacious targeting men who have sex with men (MSM) in Western countries, little is known about how these work for MSM in China. Thus, the purpose of this study was to describe and examine willingness and feasibility of of e-technologies for HIV research and prevention among a sample of MSM in China. Using a cross-sectional design, 605 self-identified MSM (200 HIV+and 405 HIV-) were recruited by a non-governmental organization in Chengdu, China to participate in a paper-and-pencil survey including (1) socio-demographic characteristics; (2) mobile phone, Internet and instant messaging usage. For each, participants were asked if they would be willing to be contacted in the next 3 months, for contact information, and reasons why they would want to participate in such research. If no, they were asked to provide a brief reason for their refusal. Across all technology types, over 75% agreed to be contacted again for future research, with 89% providing QQ/twitter information, 53% email, and 52% giving a phone/text number. Overall, not providing contact information / refusal was associated with being HIV- (OR=0.57; 95% CI 0.37-0.89), being married (OR=0.30; 95% CI 0.10-0.90) and low education (OR=0.49; 95% CI 0.24-0.99). The largest reported hurdles for providing contact information were privacy concerns and convenience. On the other hand, those who provided contact information indicated that they wish to 1) learn to protect themselves and others from HIV and 2) be supportive of HIV research.

This research is a preliminary step to establish an e-HIV-prevention network among Chinese MSM. Future research will focus on providing messaging and research to address the needs of this high-risk population.

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## A-067

### DEVELOPING A SHORT, RELIABLE DISEASE STIGMA SCALE: VALIDATION FOR HIV/AIDS STIGMA MEASUREMENT

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Stigmatizing someone for acquiring a disease often leads one to provide little monetary and personal assistance to that person. Weiner's attribution theory, which provides a framework for conceptualizing disease stigma, states that one's cognitive attributions (i.e., controllability, responsibility, and blame) lead to an emotional response (i.e., anger or sympathy), which determines behavior (e.g., helping). Several studies have applied this theory to assess disease stigma, but have done so with varying measures and results. For instance, some measures assess controllability and responsibility separately whereas others combine these attributions in a single scale. Ensuring the validity of disease stigma scales may help to resolve such discrepancies and improve our understanding of disease stigma. To create a short, reliable measure of disease stigma grounded in Weiner's attribution theory, we created a pool of 85 items, which were either adapted from past studies of disease stigma or written by the authors. Participants (183 undergraduates) read a vignette describing a hypothetical HIV/AIDS patient as acquiring his or her condition through risky sexual behavior (high onset-controllability), blood transfusion (low onset-controllability), or unknown means (unknown onset-controllability). They then rated the hypothetical patient using all items. Normally-distributed items with the highest factor loadings and effect sizes were retained, yielding a 31-item scale with reliable subscales (ranging from $\alpha$=.78 to $\alpha$=.96; except for institutional help, $\alpha$=.37). Because the cognitive attribution subscales were highly correlated, a single cognitive attributions subscale was created ($\alpha$=.96). A series of MANOVAs revealed that participants judged high onset-controllability targets as more responsible for acquiring HIV/AIDS, felt more anger toward these individuals, and were less willing to help them. These results were comparable to those found for an existing measure of disease stigma. Future research is needed to apply this scale to measure other types of disease stigma and assess disease stigma among other populations.

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## A-068

### SUBJECTIVE EXPECTATIONS AND ADHERENCE TO ANTIRETROVIRAL TREATMENT: EVIDENCE FROM TANZANIA

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Evidence suggests that even in a setting where medications are free, HIV positive patients do not always follow doctors' recommendations to take antiretroviral therapy (ART). In Tanzania, a country disproportionately affected by the HIV/AIDS epidemic, 80% of HIV-positive persons in our study sample do not fully adhere to their medication regimen. Individuals who take ART face a tradeoff between decreasing risk of death due to HIV and increasing risk of adverse side effects. The decision of whether or not to start and continue ART depends on the patient's subjective expectations about the realization of health outcomes under different levels of adherence.

This paper combines new and innovative data on probabilistic expectations and elicited discount rates with self-reported measures of adherence to analyze individual beliefs about the effectiveness of available medication, and more specifically, how these beliefs influence individuals' decisions to adhere to a medication regime. Comparing elicited expectations with realized outcomes, we find that individuals who report imperfect adherence dramatically overestimate their chances of becoming sicker when compared to individuals who perfectly adhere. This provides counter-evidence to the assumption that people hold expectations consistent with realized outcomes (Rational Expectations).

Examining changing expectations over time, we find that individuals update their expectations consistent with a Bayesian updating framework in which current expectations are determined by prior beliefs and new information. In addition, the changes in beliefs over time prove to be an important predictor of future ART adherence.

Overall, this paper provides an analysis of individual subjective expectations data in an HIV/AIDS context. We find that certain classic assumptions of individual expectations hold (such as Bayesian updating), but that others do not (such as Rational Expectations). These results provide evidence of the validity of these assumptions in an HIV context and thus yield a more thorough analysis of the adherence decision process by including elicited individual expectations.

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## A-069

### SUBSTANCE ABUSE, PSYCHOLOGICAL DISTRESS, AND CO-OCCURRING HEALTH-RISK BEHAVIORS AMONG HIV+MEN AND WOMEN

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HIV+individuals experience high rates of substance abuse and co-occurring mental health difficulties. Alcohol and drug dependence may exacerbate mental health difficulties and contribute to health compromising behaviors. To inform the development of secondary prevention and health promotion programs for HIV+ individuals, this study examined the association of substance use to psychological distress and health behaviors. 223 HIV+clinic patients (44% women; 42% African-American) completed a cross-sectional survey assessing demographics, problem alcohol (AUDIT) and drug (DAST) use, psychological distress, adherence to antiretroviral therapy (ART), and sexual risk behaviors. The aims of this study were to: (a) characterize the prevalence of problem alcohol and drug use among an outpatient sample; and (b) examine the association between problem substance use, psychological distress, and health risk behaviors using multivariate logistic and linear regression analyses. 39% had either problematic alcohol use and/or drug use and was more prevalent among men ($\chi2$=5.73; p=.019) and ethnic minorities ($\chi2$=5.65; p=.020). Problem substance use was associated with higher depressive symptoms ($\beta$=.17, p=.01) and greater likelihood of ART adherence problems in the past three months (AOR=1.99, p=.03). During the last sexual encounter, problem substance use was associated with using alcohol (AOR=2.9, p=.001) or drugs (AOR=5.7, p=.001) and having a partner who was using alcohol (AOR=3.0, p=.01) or drugs (AOR=4.5, p=.001). However, alcohol and drug use problems were not associated with unprotected sex for the last occasion of sexual activity. In addition, problem substance use was not associated with serostatus disclosure to sexual partners or number of sexual partners in the past year. Results confirm high prevalence of substance abuse among HIV+patients and indicate overlapping risk between substance use and other health risk behaviors. Substance abuse interventions for HIV+populations are needed and should incorporate content to address co-morbid mental health difficulties, improve ART adherence, and reduce sexual risk behaviors.

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## A-070

### GENDER-BASED VIOLENCE, ALCOHOL USE, AND SEXUAL RISK AMONG FEMALE PATRONS OF INFORMAL DRINKING PLACES IN CAPE TOWN, SOUTH AFRICA

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In South Africa, a country that is among the highest in HIV prevalence, women comprise the majority of HIV infections (UNAIDS, 2010). Gender-based violence is a well recognized risk factor for HIV infection among women (Campbell, 2002; UNAIDS, 2005). Research suggests that alcohol use and sexual risk behavior may explain the link between gender-based violence and HIV risk (Jewkes et al., 2006; 2010). However, these relations have not been examined in the literature, particularly among female patrons of alcohol-serving venues. This is important given that South Africa also has a high prevalence of drinking (Parry, 2005). The purpose of this study is to examine the association between recent abuse by a sex partner with alcohol use and sexual risk behavior. Specifically, to determine whether sexual risk behaviors are associated with gender-based violence after controlling for alcohol use. We surveyed 1,388 women (mean age=33) attending informal drinking establishments in Cape Town, South Africa to assess recent history of gender-based violence, alcohol use, and sexual risk behaviors. Gender-based violence, operationalized as reporting being hit by a sex partner in the last four months, was associated with alcohol use and sexual risk behaviors after controlling for demographics among the women. A hierarchical logistic regression analysis showed that after controlling for alcohol use, sexual risk behavior remained associated with gender-based violence, particularly with meeting a new sex partner at the bar ($OR=1.75$, $p<.01$) and recent STI diagnosis ($OR=3.40$, $p<.001$). This finding suggests that addressing alcohol use alone is not sufficient to change HIV risk behavior or gender-based violence, and that gender-based violence is a robust determinant of HIV risk. Implications for HIV prevention and intervention for women in South Africa will be discussed.

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## A-072

### THE RELATIONSHIP BETWEEN SOMATIC SYMPTOMS AND DEPRESSION EXPLAINED BY RUMINATION

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Somatic symptoms represent a significant burden to our healthcare system, and previous research has demonstrated that depression and somatic symptoms often co-occur. Few studies, however, have explored the mechanism by which depression relates to somatic symptoms. Research demonstrates that rumination is a cognitive vulnerability in the development and maintenance of depression, and that this vulnerability is much more prevalent in women. This present study sought to examine the role of rumination in explaining the relationship between depression and somatic symptoms in women. We hypothesized that 1) people who have higher levels of depression would have higher levels of both rumination and somatic symptoms; and 2) rumination would mediate the relationship between depressive symptoms and somatic symptoms. Undergraduate females ($N=84$) were recruited from a liberal arts university in an urban area in the Pacific Northwest. Participants completed the Center for Epidemiologic Studies Depression Scale (CESD), the Ruminative Responses Scale (RRS), and the Modified Somatic Perception Questionnaire (MSPQ). We used path analysis to examine the relationship between depression and somatic symptoms with a bootstrapping method to estimate the significance of the indirect effect. Results indicated that 28% of the variance in somatic symptoms was explained through direct paths from depression ($\beta=.41$) and rumination ($\beta=.17$). The indirect path from depression to somatic symptoms via rumination was also significant ($\beta=.11$). These results suggest that rumination significantly contributes to the presence of somatic symptoms and that it may partially explain the relationship between depressive and somatic symptoms. Future research and clinical care may benefit from considering the role of rumination in medical patients who present with depression and multiple somatic symptoms.

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## A-073

### HOSTILITY, HEALTH BEHAVIORS, SOCIAL SUPPORT, AND VIRTUOUS BEHAVIORS AS PREDICTORS OF HEALTH

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An abundance of research supports the link between hostility and poor health outcomes. The present study investigated hostility, social support, health behaviors, and virtuous behaviors as predictors of health. Participants were 689 undergraduate students ($M=19.9$ years; 71.2% female). Participants completed questions about hostility (Cook Medley Hostility Scale), psychological health (Brief Symptoms Inventory), health behaviors (Healthy Lifestyle Questionnaire), social support (Interpersonal Support Evaluation List), physical health (Pennebaker Inventory of Limbic Languidness), and virtuous behaviors (Values in Action Inventory of Strengths Scale, Virtuous Behaviors Scale).

Hierarchical regressions were conducted with hostility, health behaviors, social support, and virtuous behaviors as predictors of health. Hostility ($\beta=.45$, $p<.001$), health behaviors ($\beta=-.26$, $p<.001$), and social support ($\beta=-.10$, $p=.007$) were significant predictors of psychological health for females, whereas only hostility ($\beta=.412$, $p<.001$) and health behaviors ($\beta=-.16$, $p=.02$) were significant predictors of psychological health for males. Hostility was a significant predictor of physical health for females ($\beta=.29$, $p<.001$) and males ($\beta=.32$, $p<.001$). Health behavior was also a significant predictor of physical health for females ($\beta=-.15$, $p=.002$) and males ($\beta=-.24$, $p=.001$).

We also used the Baron and Kenny approach to test social support and health behaviors as potential mediators of the hostility-health link. Results indicated that social support did not meet criteria for mediational analysis. However, health behavior was a significant partial mediator for physical health ($\beta=-.20$, $p<.001$; Sobel $p<.001$) and psychological health ($\beta=-.27$, $p<.001$; Sobel $p<.001$).

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## A-074

### ATTITUDES TOWARDS WORKING ALLIANCE IN E-COUNSELING. A SURVEY AMONG PRACTITIONERS

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Background: The combination of fast developing communication technologies and an emphasis on cost-effective delivery of psychological interventions has led to the emergence of E-Counseling as an important new method of delivering behavioral interventions. Although there is a significant push in this direction, there are some open questions. A primary question is whether common factors, like working alliance, translate to the online environment. The purpose of this study was to explore practitioners' attitudes about online working alliance.

Method: 54 practitioners (mean age=44.31, $SD=13.59$; mean licensure time=17.22 years, $SD=12.09$; 59% women; 91% White; 42% having a Cognitive-Behavioral therapeutic orientation) recruited from professional listservs (SBM, APA, ABCT, SPR) completed an online survey including professional and demographic characteristics, and attitudes towards online and face-to-face working alliance.

Results: A paired sample t-test revealed that practitioners were significantly more confident in their ability to create a strong working alliance in the face-to-face setting (face-to-face confidence mean=4.44, $SD=.53$; online confidence mean=3.39, $SD=1.10$; $t(53)=7.36$, $p<.001$). Neither professional nor demographic characteristics predicted the confidence gap (all $ps>.20$), face-to-face confidence (all $ps>.20$), or online confidence (all $ps>.20$).

Discussion: Despite increasing interest in online behavioral intervention approaches, front line practitioners lack confidence in their competence to complete a basic task of counseling online - creating a strong working alliance. It would seem that prior to widespread implementation of E-Counseling, training in online working alliance is needed.

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## A-075

### MULTI-SITE EVALUATION OF THE QUALITY AND SAFETY OF ONLINE DEPRESSION SOCIAL NETWORKING SITES AND FORUMS

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Mental health consumers increasingly use online social networking sites (SNS) and forums to exchange information and support for depression, but site alignment with clinical quality metrics and safety measures is unknown.
We undertook a structured evaluation of depression-focused online SNS and forums for: a) alignment of central content with DSM-IV diagnostic criteria and clinical standards; b) safety practices governing content and transparency; c) normative patterns of responding to emergent posts; d) presence and transparency of pharmaceutical, alternative treatment and clinical advertising; e) privacy policies and data protections.
Across 17 sites, quality was variable: 76% had central content reflecting core DSM-IV diagnostic criteria; notable gaps in other areas concerned diagnostic thresholds (53%), screening tools (35%), and information about disease treatability, types and risk factors (35%). Safety was mixed, with gaps in external checks on central content (29% used audits and 6% used association links), and internal checks via moderation (24% gap); number/credentials of moderators and options for members to flag unsafe content were inconsistently available. Normative patterns of peer response to emergent posts showed a tendency for rapid, clinically aligned response, but 43% had a mean peer response time of >12 hours. 47% of sites had direct-to-consumer (DTC) marketing of pharmaceuticals or alternatives, and 91% have DTC marketing of therapy of which 55% did not identify content as advertisements. Privacy policies were accessible for 76% among which only 41% reported security measures for protecting identifiable information.
Variable quality/safety of depression sites reflects information gaps, poor safety practices, low transparency of advertising content and poor privacy. Recommendations for protecting vulnerable consumers include use of: "peer-review" to boost clinical alignment and transparency; privacy protecting technologies; established professional ethics codes governing promotion/delivery of therapy adapted to the online environment.

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## A-076

### PLUGGED IN BUT NOT CONNECTED: INDIVIDUALS’ VIEWS OF AND RESPONSES TO ONLINE AND IN-PERSON EXCLUSION

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Research suggests that being excluded by others produces negative health and well-being outcomes. As more social interactions become remote (e.g., texting, email, etc), it is important to examine responses to “virtual” ostracism. Two studies investigated perceptions of and reactions to in-person or online ostracism. STUDY 1: 276 participants (75% female; M age=20.34) read a vignette describing either in-person or online ostracism, then completed surveys estimating their mood, self-esteem, and interpersonal responses as if they experienced such ostracism. Participants reported significant decreases in anticipated positive affect (PA), self-esteem (SE), and an increase in anticipated negative affect (NA; all ps<.01). Ostracism method predicted NA, with greater NA increases anticipated for in-person exclusion (relative to online; p<.01). A significant interaction between gender and ostracism method predicted anticipated belonging (p<.05). Males anticipated higher belonging in the in-person condition (relative to online); females anticipated more belonging in the online condition. STUDY 2: 77 participants (51% male; M age=19) experienced actual in-person or online ostracism during a brief interaction with study confederates. Before and after exclusion, participants completed the same measures as in study 1. Ostracism in both conditions resulted in similar reports of low levels of inclusion and control, high levels of exclusion, significant decreases in PA (p<.01) and NA (p=.01), yet no main effect on SE (p>.13). Ostracism method moderated SE effects (p<.02); chat room participants indicated an increase in SE following ostracism, whereas in-person participants reported a slight decrease. Males and females were similarly affected by both conditions (ps>.22). These studies demonstrate that online experiences of ostracism, and by extension social (dis)connections that occur online, may be as potent as those experienced in-person. This may benefit clinical practice via the remote dissemination of supportive (and other) interventions.

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## A-077

### PERCEIVED SOCIAL SUPPORT IS ASSOCIATED WITH POORER COGNITIVE PERFORMANCE IN AFRICAN-AMERICAN MEN

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Higher levels of perceived social support have been associated with better cognitive function in predominantly White samples. We examined relations of social support to cognitive performance in 1,178 African American (AA) and White participants in the Healthy Aging in Neighborhoods of Diversity across the Life Span (HANDLS) study - a community-based, epidemiological study of an area probability sample of Baltimore, MD. After excluding those with stroke, dementia, neurological disorder, HIV+, TIA, cancer, and psychiatric disorder (n=411), baseline participants (44% male; 44% White; M age=47; M education=12.8) completed the MacArthur emotional and instrumental support scales and the Benton Visual Retention Test, California Verbal Learning Test (CVLT), Digit Span, Trail Making Test, and Animal Fluency. Multiple regression analyses, computed separately for emotional and instrumental support, were stratified by race and sex and adjusted for age, education, poverty status, literacy, medical comorbidities, antihypertensive use, alcohol, tobacco, and illicit drug use, negative emotions, body mass index, systolic blood pressure, cholesterol, and glucose . In AA men only, significant associations were noted between greater emotional support and poorer performance on Digits Backward (p<.02) and Trails B (p<.001); greater instrumental support was associated with lower CVLT (p<.05), Digits Forward (p<.04) and Backward (p<.03), and Trails B (p=.002). Thus, among AA men, greater emotional support was related to worse performance on tests of attention, concentration, verbal learning, and mental flexibility. These unexpected findings may reflect the potentially burdensome impact of social support. Alternatively AA men with poorer cognitive function may be more likely to seek social support than AA women or Whites.

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## A-078

### PREVENTION OF BEHAVIORAL HEALTH ISSUES IN COMMUNITY-BASED ALCOHOL AND DRUG SERVICES PROGRAMS

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It is now recognized that a majority of individuals with alcohol and drug (AOD) disorders are affected by, or at high risk of developing, co-occurring behavioral health disorders (CODs). Even with the high prevalence of CODs in AOD clients, one survey estimates that only about half of AOD treatment programs offer dual AOD and behavioral health treatment services (Mojtabai, 2004). Although some research has focused on coordinated or integrated treatment services for individuals with severe CODs (Sterling, Chi, & Hinman, 2011), little research in this area has focused on prevention. Thus, the current study focused on the prevention of behavioral health issues in AOD clients, through coordinated AOD and behavioral health services. Behavioral health specialists were integrated into 13 AOD treatment programs to screen and identify clients who exhibited behavioral health concerns, prior to their development of severe behavioral health issues. Behavioral health specialists within the programs also provided linkages to additional services, consultations to AOD staff, education and brief counseling, and support for prevention, treatment, and recovery of CODs. Nine-hundred fifty-one clients were screened at baseline for anxiety, depression, anger, memory problems, psychosis, and substance use issues. Of those who met criteria for behavioral health intervention, 94 were assessed 6 months later. Paired sample t-test comparisons of baseline and follow-up responses were conducted to examine the impact of the coordinated services on behavioral health outcomes. Results demonstrate statistically significant improvement in the domains of depression (t(93)=2.33, p<.05) and substance use (t(92)=3.70, p<.001). Marginally significant improvements were made in the domains of anxiety (t(93)=1.84, p=.07), memory problems (t(93)=1.87, p=.07), and overall behavioral health (t(93)=-1.68, p=.10). Results demonstrate the effectiveness of providing coordinated behavioral treatment services for those at high risk of having serious COD health concerns.

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## A-079

### PHYSICAL FUNCTION, COGNITION, AND HEALTH-RELATED QUALITY OF LIFE AMONG OLDER ADULTS FROM ACTIVE

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There is a robust association between physical fitness and cognition, particularly among older adults. However, little is known about the extent to which cognition is conditional on physical function, and the degree to which physical function contributes to the association between changes in cognition and future health status. Given that immobility could decrease engagement in cognitively stimulating activities, we hypothesized that more mobility impairment predicts lower levels of cognition and decline over time. We further hypothesized that 5-year-cognitive change moderates the effect of immobility on temporally distal health status. Participants (N=698, Mage=74 years, range 65 to 94) were drawn from the no-contact control group of the Advanced Cognitive Training for Independent and Vital Elderly (ACTIVE) study. Turn 360 balance, self-reported falls over past two months, episodic memory, inductive reasoning, speed of processing, and health-related quality of life were assessed. Partial support was found for our hypotheses. Conditional latent growth curve analyses suggested that turn 360 balance predicted baseline levels of memory, reasoning, and speed, whereas incidence of falls predicted change in all three cognitive measures. Cognitive change also moderated the relationship between baseline physical functioning and subsequent self-reported health status. Together, these findings suggest that impairment in physical function impacts both the level and change in cognitive functioning, which is an important predictor of older adults' quality of life. Researchers and clinicians should monitor physical function as a potential screening criterion for cognitive impairment.

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## A-080

### RAPID TRANSLATION OF A QUALITY IMPROVEMENT PROJECT INTO A NATIONAL PROGRAM TO RE-ENGAGE VETERANS WITH SERIOUS MENTAL ILLNESS

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Persons with serious mental illness (SMI) experience a disproportionate burden of medical comorbidity that may lead to impaired functioning and premature mortality. Continuity of care is essential to mitigate risks associated with medical morbidity in this vulnerable population. A Veterans Health Administration (VHA) quality improvement (QI) study conducted from 2007-2009 employed a population-based approach and used VHA data registries to identify 3315 at-risk SMI Veterans for targeted re-engagement care efforts. Within the targeted cohort, Veterans not re-engaged had a 12-fold risk of premature mortality relative to those successfully re-engaged. Because of the success of this study, VHA sought to replicate this program on a national scale. The proposed presentation will describe the efforts by VHA leaders to rapidly translate this QI study into routine clinical care. We will describe the process of forming collaborative partnerships between central program leaders (VHA Office of Mental Health Services); operational partners who provide technical assistance, data, and outcome monitoring; and local points of contact at each facility who champion and conduct outreach efforts. Data on pilot implementation was collected through the use of mixed methods through meetings and conference calls with regional and facility level stakeholders, protocol testing at five VHA facilities with 126 Veterans (mean age=49 yrs, 10% women, 29% African-American, 26% homelessness history), and creation of an implementation tool kit. Results will be compared with original QI study findings and extrapolated to the current cohort of Veterans identified for re-engagement (n=15000). Implementation lessons learned from this VA program may generalize to outreach and re-engagement efforts for similar vulnerable populations.

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## A-081

### NEEDS ASSESSMENT RESULTS GATHERED FROM A PARTNERSHIP WITH AN AMERICAN INDIAN HEALTH CENTER AND THE UNIVERSITY OF MICHIGAN

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American Indian Health and Family Services of Southeast Michigan (AIHFS) and the University of Michigan collaborated on a 2008-2011 needs assessment of American Indian and Alaska Native (AI/AN) community members and service providers entitled "Gda'shkitoomi: We are Able!" We report on results emphasizing the need for traditional Native healing. The first phase of this tripartite project included qualitative interviews of community members (N=27; age 12-82) and service providers (N=11; age 26-70); the second phase involved talking circles (N=9 groups; N=73 participants; age 12-77), a traditional method of Native group communication; and the third phase involved secondary analysis of health data collected regionally from AIs/ANs (N =389; age 18-65+) by the Bemidji Area Office of Indian Health Service (IHS). Qualitative data were analyzed manually and with NVivo and select interview themes indicated a need for traditional healing as a complement to Western medicine; select talking circle themes indicated a need to overcome treatment barriers and provide more culturally relevant services. Quantitative data complemented the qualitative data and logistic regression indicated that participation in traditional services was associated significantly with ages 45-54; having received healthcare services in the past 12 months; wanting to see more traditional healing, health, and wellness; discrimination in healthcare settings; and knowing somebody with an addiction. The manner in which this study was conducted supports the need for academia to collaborate with AI/ AN communities to assist in gathering much needed data and recognize the need to utilize both traditional Native healing and Western oriented treatment to be able to effectively reduce AI/AN health disparities. This research was supported by SAMHSA Grant # (1HS5 SM05 8836-01).

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## A-083

### COMPARISON OF SEMI-STRUCTURED INTERVIEWS AND FOCUSED OBSERVATIONS IN WEIGHT MANAGEMENT RESEARCH: "WEIGHING" THE ADVANTAGES OF THESE QUALITATIVE METHODS

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Background: The strength of observational methods is that they provide data on behaviors (what you do), but can be more costly and time-intensive than interviews (self-report of what you do). This research compares the effectiveness of these two methods when investigating weight management.
Methods: To determine successful weight practices and barriers, semi-structured interviews followed by observation of the kitchen cupboard(s) and pantry were conducted with 20 participants in their homes. Interview transcripts and field notes were coded to determine discrepancies between the interviews and observations.
Results: Participants had a mean age of 49.3 years, BMI of 32.24 (sd=6.52) and were 75% female. Observations identified 68 data points of specificity not obtained through interview alone, including (1) participant did not mention the icing eaten out of the can until it was observed, (2) noticed the multiple containers of frozen vegetable soup made with vegetables from the garden, but she didn't mention making soup, (3) asked whether the Fruity Pebbles were for her or her grandchildren, and she said she ate them, or (4) participant said he drank only water, but then said sweetened iced tea in the refrigerator was his.
Conclusions: Using in-home observations to supplement individual interviews provided additional data needed to understand the home-based practices of individuals striving to control their weight.

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## A-084

### USING SEARCH ENGINE QUERY DATA TO MEASURE PATTERNS IN PUBLIC INTEREST OF BEHAVIOR CHANGE: EVIDENCE FOR NEW YEAR'S RESOLUTIONS

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Background. The three leading preventable causes of death in the U.S. are tobacco, poor diet and physical inactivity resulting in a need for effective interventions and policies that can instill long-term maintenance of healthy behaviors. Such efforts could be aided by the use of publicly available search engine query data which can provide researchers/practitioners insight into public interest for behavior change. The purpose of this study is to assess patterns of public interest in behavior change topics of weight, diet, fitness, and smoking using search engine query data via Google Insights for Search.
Methods. Google searches for weight, diet, fitness, and smoking conducted in the U.S. between January 4th, 2004 and July 24th, 2011 were analyzed. Google Insights provides weekly search activity data on a normalized (0-100) and relative scale (total number searches performed for term versus total number of searches over time). Based on our hypotheses, one-way analysis of variance tests were used to test whether differences existed within each search term by month (as compared to January) and week (from the third week of November to the second week of January) from 2004 to 2011.
Results. Search activity was significantly higher in the month of January compared to all months for fitness, diet and weight. Search activity for smoking was significantly higher in January compared to June through September and December only. Search activity increased significantly from the third to the fourth week of December for fitness, diet and weight. Search activity increased significantly from the fourth week of December to the first week of January for diet and smoking.
Conclusions. These findings provide evidence for increased public interest in four areas of positive behavior change that are directly related to the three largest preventable causes of death in the U.S. at a time that overlaps with major holidays of Christmas, Hanukkah, and New Year's. These findings may serve practitioners and researchers targeting these behaviors through timely interventions and policies.

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## A-085

### MODULATING SUBJECT BELIEFS OF TREATMENT ALLOCATION AND EFFECTIVENESS

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Introduction: A better understanding of the mechanisms of placebo effects is necessary to design appropriate RCTs. We consider if a supportive patient-practitioner relationship can increase placebo effects and belief in treatment. Methods: Data was gathered in a three-week randomized controlled trial (n= 262) testing the therapeutic effect of an Augmented (supportive) patient-practitioner relationship, versus a Limited patient-practitioner relationship, versus wait list in reducing the symptoms of Irritable Bowel Syndrome. All treatments were given in the context of biweekly sham acupuncture treatments to allow the effects of patient-practitioner relationship to be isolated. The published main trial results indicate that the supportive relationship reduced IBS symptoms more effectively than any drug. Symptom data and beliefs concerning blinding were collected at baseline, and after 3 weeks of treatment. Expectations of treatment group assignment (real or placebo) and symptom improvement were collected after the first treatment and in the week before week 3 data collection. Results: Immediately after the first treatment, expectancies and beliefs about treatment assignment were significantly but weakly associated with improvement at 3 weeks. For all six of our expectancy and belief variables, the Augmented group had higher levels of confidence in their study assignment compared to the Limited Group; three differences were statistically significant ($p<0.05$), two showed trends ($p<0.10$). At the 3-week data collection, improvement in IBS symptoms was strongly associated with expectancy for continued improvement with continued treatment ($r=.54$, $p<.001$). In addition, the Augmented group had higher expectancies for improvement than did the Limited group, ($p<0.02$). Conclusion: These findings suggest that the subjects' experience of improvement and qualities of the patient-practitioner relationship influence subjects' expectations about continued improvement and belief and confidence in study assignment.

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## A-086

### PREDICTIVE VALIDITY OF THE ATTITUDES TOWARD MEDICAL HELP-SEEKING SCALE

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While attitudes have been found to be associated with medical help-seeking, measures typically examine a specific attitude and have untested or inadequate psychometric properties. To our knowledge, no psychometrically sound comprehensive measure of attitudes has been published. In a prior study we developed such a measure. The Attitudes toward Medical Help-Seeking Scale (ATMHS) consists of 35 items with excellent factorial and congruent validity. The prime attitude element, the pro-action subscale, consists of 12 internally consistent (alpha=.83) items. In a subsequent pilot study to examine predictive validity, the subscale was correlated with a medical contacts measure at simultaneous ($r=.52$, $p<.001$) and later (mean 7.8 weeks) time points ($r=.45$, $p<.01$), providing preliminary evidence for predictive validity. The present study further examined predictive validity in a larger sample. College women ($N=46$) completed the ATMHS and a medical contacts measure at baseline and approximately two months later. The medical contacts inventory consists of 5 Likert-type items assessing how recently the person saw a health professional, number of physician visits in past year, plans for having an annual physical, scheduling of next appointment, and routine scheduling of medical checkups. Scores were computed by dichotomizing (e.g., contact vs. no contact) and summing each response. Consistent with our prior study, the attitude scale demonstrated high (>.80) internal consistency and test-retest reliabilities; reliability of the medical contacts measure was somewhat lower (alpha=.59, test retest $r=.60$). After adjusting attitude and medical contact scores for skew, T1 attitudes were correlated (p's<.05) with medical contacts at T1 ($r=.32$) and at T2 ($r=.31$). T2 attitudes were associated with T2 medical contacts ($r=.44$). The present results are consistent with our earlier findings supporting the predictive validity of the pro-action attitude scale. The strong psychometric properties of the ATMSH support its use in research examining factors associated with medical help-seeking.

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## A-088

### FATHER'S PERCEPTIONS ON INFANT FEEDING

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Aims: Breastfeeding improve maternal and child health and is strongly recommended exclusively the first six months of life. The current study aimed to explore the perceptions and attitudes related to infant feeding of expecting fathers. Methods: Data were collected through 6 focus groups of separate groups of Black and White expecting fathers. The focus group study was initiated by the U.S. Department of Health and Human Services to obtain data on salient messages that would inform a national campaign to promote breastfeeding. This study was a secondary analysis of that data using a modified grounded theory approach. Results: Male partners of pregnant women had generally favorable attitudes toward breastfeeding, though they did not articulate specific benefits to mothers or babies. Men expressed empathy for their partners' pregnancy and anticipated feeding experience, and tended to defer to their partners' feeding decisions. The participants had negative attitudes toward breastfeeding in public, and conceptualized their future role in terms of their relationship to the baby, rather than in terms of how they could help the mother. Conclusion: Prenatal and breastfeeding education can help expectant fathers by teaching them more about the specific benefits of breastfeeding for mothers and babies, by helping them to develop strategies for breastfeeding in public, and by informing them of laws protecting mothers' rights for breastfeeding in public. New parent education should emphasize practical ways in which fathers can support and assist mothers so that mothers are free to breastfeed on demand.

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## A-089

### NUTRITION BEHAVIORS OF EGYPTIAN YOUTH BY GENDER AND WEALTH STATUS

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Of major concern for the health of adolescents is the obesity epidemic affecting almost all countries worldwide. Lower/middle income countries are increasingly affected by the epidemic,Egypt being one country where obesity among adults and adolescents has been increasing.
Purpose: To examine nutrition data for Egyptian youth for key behaviors contributing to overweight/obesity.
Method: Data analyzed from the Survey of Young People in Egypt (SYPE), a household-based, nationally-representative survey, focused on soda-drinking, fast food-eating, and pastry-eating with ages 10-24 (n=9,489).
Results: The sample was about evenly distributed for gender (~52% male), most were unmarried (96.5%), and currently in school (71.1%). Majority were 10-14 years (44%). The majority were rural residents (60.1%) compared to urban and slum combined (39.9%). Wealth quintiles showed an even distribution ranging from 21% in the lowest quintile to 17.5% in the highest quintile. Boys had a greater frequency (1-3 times combined with >3 times) for the previous week for each of the behaviors examined than girls (<0.001): soda-drinking (74.4% vs 51.7%); eating fast food (49.1% vs 29.9%); and eating pastry (70% vs 65%). Frequency of the three behaviors were highest in the top two wealth quintiles (<0.001). At the highest wealth quintiles, gender differences in eating pastry were non-significant, but significance remained between boys and girls for the other two behaviors.
Conclusions: Youth of the wealthiest households engaged in drinking sodas and eating more fast foods than those in the lower wealth categories, perhaps more able to afford these "imported" type behaviors; while pastry-eating, more indigenous to the country, was not as differentiated between boys and girls as the other two behaviors, and actually were non-significant among the wealthiest. Data from other studies have shown that Egyptian girls have higher weight levels than boys; therefore, additional research examining both nutrition and physical activities are needed to continue to evaluate behaviors leading to obesity in Egypt.

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## A-090

### NUTRITION DISCUSSIONS IN DENTAL HYGIENE VISITS

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The purpose of this project was to examine, using in-depth interviews, the attitudes and behaviors of dental hygienists(DH) about nutrition discussions relating to oral and general health in the dental visit.
Methods: Twenty DHs from our dental practice-based research network or the Cleveland Dental Hygiene Association were interviewed by one investigator using a 15-item, semi-structured questionnaire; interviews were audio-taped and transcribed. Four investigators independently coded transcripts for thematic content then summarized them to identify attitudes/behaviors relating to nutrition and patient communication. Agreement between raters on the presence of themes initially ranged from 40-90% after independent coding, but eventually reached consensus.
Results: DHs were female, had been practicing for 22 years (1-40yrs), worked in general dental offices and spent 50 minutes (20-90min) with adult patients. Conversations around dietary habits were cued predominantly by seeing dental decay and were confined to oral health. Dietary assessment was informal and varied; no DHs completed a caries risk assessment form. The most prevalent barrier reported was lack of time for further nutrition discussion. Other concerns were scope of practice, insufficient knowledge about nutrition, fear of offending patients, 'preaching' and frustration with patients' lack of adherence to behavior change advice. Most DHs wanted to facilitate behavior change among their patients, but were repeating patterns of directive advice/education that were ineffective.
Conclusions: DHs provide information about dietary habits regarding dental health, as indicated by oral exams. Nutrition discussions beyond the scope of oral health are perceived to be beyond the scope of practice and compete with current time demands. The interviews revealed an underlying concern with patient behavior change and adherence to advice. DHs are looking for alternative methods to provide the best patient-centered interaction during the hygiene visit.
Supported by the CWRU/Cleveland Clinic CTSA Grant UL1 RR024989

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## A-091

### VALIDATION OF THE EATING MOTIVES INVENTORY

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The Eating Motives Inventory (EMI) was based on Gray's (1980) two factor learning theory. The EMI was developed to measure eating-specific appetitive and aversive motivation and was modeled after the Carver and White (1992) BIS/BAS scales. It incorporates additional motivational constructs (eating activation to manage negative affect; eating inhibition from non-reward or food anhedonia). The purpose of this study was to examine the convergent validity of the EMI against existing eating assessments. METHODS. College students (n=524) completed an online survey examining eating beliefs and practices. Assessments included the Eating Motives Inventory (EMI), Carver and White BIS/BAS scales, Eating Expectancies Inventory (EEI), and Three Factor Eating scales (3FE). RESULTS. Appetitive subscales of the EMI were positively correlated with all subscales from the EEI, including eating to manage negative affect, eating for pleasure, and out-of-control eating (average r =. 49, all p values<.01). The EMI subscale assessing food anhedonia negatively related to eating to manage negative affect and eating for pleasure (average r=-.23, p values<.05), but positively related to out-of-control eating (.19, p<.001). The EMI punishment subscale was positively correlated with eating to manage negative affect and out-of-control eating (average r=.32, p values<.001), but negatively related to eating for pleasure (r=-.28, p<.001). In relation to the 3FE, EMI appetitive subscales (drive, reward, and escape from punishment) positively correlated with dietary disinhibition (average r=.54, p values<.001) and negatively correlated with dietary restrain (average r=-.13). EMI aversion subscales (i.e., food anhedonia and punishment) positively related to dietary restrain (average r=.15, p values<.001). The Carver & White BAS scales exhibited little to no relationships with the EEI and 3FE subscales. The Carver & White BIS scale negatively correlated with all subscales of the EEI and 3FE, but did not distinguish between eating inhibition and disinhibition. Summary. The EMI demonstrated convergent validity with existing eating assessments.

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## A-093

### STAGE OF CHANGE IN A PRE-BARIATRIC SURGERY SKILLS PROGRAM

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Physical activity improves weight loss. Formal exercise instruction is not a standard of care in many bariatric surgery programs. This study examines the efficacy of a 3 session exercise skills class on patient's stage of readiness to alter exercise behavior based on the Transtheoretical Stages of Change model.

METHOD: 131 patients in a pre-bariatric surgery skills education group were assessed on a 1-5 Likert Scale identifying Stage of Change (SC)for 6 exercise domains before and after a brief (3 session) Exercise Essentials class. Repeated measures ANOVAs were used to identify differences.
RESULTS: No gender differences existed so results were collapsed across gender. Patients had significant movement on stages of change pre-post the brief intervention.
Pedometer use (F=11.71, p<.01); Cardiovascular exercise (F=10.96, p<.01); Strength training (F=121.06, p<.01); Warm up/Cool down (F=39.25, p<.01); Stretch (F=96.26. [<.01); but there was not a significant change in
Lifestyle activity (F=2.43, p=.12). Data related to the influence of medical factors (e.g., diabetes, obstructive sleep apnea, hypertension) and mental health concerns (e.g., depression and anxiety) on stage of change will also be reviewed.
DISCUSSION: Our study showed that a brief exercise education intervention can create significant movement within the Stages of Change model. Patients report more commitment to engage in specific exercise behaviors during the time period leading up to bariatric surgery.

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## A-094

### SELF-OBJECTIFICATION AND INTERNALIZED WEIGHT BIAS OUTCOMES AMONG WEIGHT LOSS TREATMENT-SEEKING ADULTS

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Background: Self-objectification (SO), valuing one's body for appearance rather than for performance, often results in negative consequences (e.g., body dissatisfaction). Research has primarily examined SO in normal-weight women, a major limitation given obesity rates as well as the susceptibility men may have to this view of their bodies. Because of pressure to conform to an appearance based thin ideal, overweight/obese individuals are at risk of experiencing weight stigma and internalization of these negative beliefs. This investigation used structural equation modeling to examine SO, body image, internalized weight bias (IWB), depression, and disordered eating in adults prior to participating in a behavioral weight loss program (BWLP). We hypothesized a process of Internalized Objectification (SO, IWB, poor body image) contributed to Psychosocial Outcomes (depression, disordered eating).
Method: One hundred sixty nine predominately Caucasian (86.9%) and female (77%), overweight/obese adults (Mean BMI=39.9, SD=8.6) participated. Data was compiled over a 3 year period as part of larger studies investigating a stepped-care approach to weight loss. All analyses were conducted on baseline measures prior to participants' involvement with BWLP materials, and treatment outcomes were not examined.
Results: Examination of the unstandardized partial coefficients and residuals showed all observed endogenous variables loaded significantly on their respective, hypothesized latent constructs and all residuals were less than 2, with Internalized Objectification predicting Psychosocial Outcomes ($p<.001$). In addition to an insignificant $\chi2$ (4, N=169)=6.22, $p>.05$, examination of other goodness of fit indices (CFI=.99, NFI=.975, RMSEA=.057) suggest the proposed measurement model is good fit for the relationships among the observed data.
Conclusion: These findings suggest that SO is likely a relevant construct in the lives of most women as well as men. Without interventions directed at changing this way of viewing one's body, continued negative outcomes may result.

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## A-095

### SELF-OBJECTIFICATION AMONG OVERWEIGHT AND OBESE WOMEN: AN APPLICATION OF STRUCTURAL EQUATION MODELING

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Background: Self-objectification (SO) research has traditionally used samples of young, normal weight women which greatly limit the ability to generalize the results to other groups. Objectification theory posits individuals can be concerned with their appearance regardless of body size. However, given their greater distance from the impossibly thin body standard it is plausible that the particular mechanisms through which one experiences SO may differ for those who are overweight/obese. This study tested two proposed measurement models of the relationship of body image in the processes of weight based objectification using objectification theory as a guiding framework. We hypothesized weight based objectifying experiences would contribute to a process of Internalized Objectification (SO, internalized weight bias, poor body image), possibly culminating in poor Psychosocial Outcomes (depression, disordered eating). The alternate hypothesized model included poor body image as a Psychosocial Outcome.
Method: Participants were 413 female students at a large university in NW Ohio. Women in the Normal Weight sample (n=212) had an average BMI of 21.02 (SD=1.55) while women in the Overweight sample (n=201) had an average BMI of 30.69 (SD=5.48). Women in both samples were predominately Caucasian (NW=88.2%; OW=84.6%) first year students (NW=72%; OW=62%).
Results: Structural equation modeling indicated a differing role for body image depending on weight status, fitting as an observed measure of Internalized Objectification for the Overweight Sample while occurring as a Psychosocial Outcome within the Normal Weight sample. Additional analyses of the structural models also indicated for the Overweight sample, the relationship between Objectifying Experiences and Psychosocial Outcomes is fully mediated by the process of Internalized Objectification.
Conclusions: These findings provide support for the notion that SO is likely a relevant construct in the lives of most women albeit consisting of group specific manifestations and requiring different methods of measurement.

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## A-096

### SOCIOECONOMIC STATUS, FOOD REINFORCEMENT AND OBESITY

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Obesity is reliably related to lower socioeconomic status (SES). One possible mechanism for this effect is the increased reinforcing value of food. Lower SES is associated with restricted access to healthier low-energy-dense foods as well as food insecurity marked by periods of deprivation or limited access to food. These contextual factors could lead to an increase in food reinforcement, which in turn could result in positive energy balance and obesity. We measured the reinforcing value of food ($RRV_{food}$), the reinforcing value of alternatives to food ($RRV_{reading}$) and ad libitum energy intake from high-energy-dense snack foods in a sample of 264 adults of varying body mass index (BMI, $kg/m^2$). Multiple regression showed that SES was related to BMI, energy intake and $RRV_{food}$; BMI was related to energy intake; and $RRV_{food}$ was related to energy intake and BMI; controlling for age, sex, minority status and $RRV_{reading}$. Mediational analysis showed that the relationships between lower SES, higher energy intake and greater BMI may be due in part to greater $RRV_{food}$. These findings support the hypothesis that elevated food reinforcement, arising from the obesogenic environment associated with low SES, is implicated in the relationship between SES and obesity. Consideration of ways to reduce food reinforcement may be particularly important in preventing or treating obesity in low-SES individuals.

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## A-097

### THE EFFECTS OF REALITY TELEVISION ON WEIGHT BIAS: AN EXAMINATION OF THE BIGGEST LOSER

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Introduction: Weight bias and discrimination is pervasive and increasingly well-documented. Research has indicated that the media reinforces the perpetuation of weight bias. While obese individuals are underrepresented in television, when they are featured, they are often denigrated or perpetuate common obesity myths. Weight loss reality television shows, such as the Biggest Loser, feature obese persons struggling to lose weight. While there is some research suggesting that these shows fuel anti-fat attitudes and stereotypes, others suggest that it may serve as an inspiration and motivator for those trying to be healthy. The goal of this investigation was to examine how exposure to 40-minutes of The Biggest Loser impacted participants' levels of weight bias.
Methods: Fifty-nine participants (70% Caucasian, 66% females) were randomly assigned to either an experimental (one episode of The Biggest Loser) or control (one episode of a nature reality show) condition. The Implicit Associations Test, the Obese Person Trait Survey, and the Anti-fat Attitudes scale were used to measure weight bias at baseline and after viewing the episode (one week later).
Results: Participants who viewed The Biggest Loser had significantly higher levels of dislike of overweight individuals and more strongly indicated that they believed weight is under one's personal control. No differences between condition emerged for implicit bias or traits associated with obese persons. Moderation analyses indicated that participants who had lower BMIs and were not trying to lose weight had significantly higher levels of dislike of overweight individuals following exposure to The Biggest Loser compared to similar participants in the control condition.
Discussion: These results indicate that, contrary to popular belief, watching 40 minutes of The Biggest Loser did not improve anti-fat attitudes, but rather, exacerbated them. This investigation takes a first step in discovering the effect of weight-loss reality television shows affect on weight bias, and has implications for interventions to reduce weight bias.

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## A-098

### ACCEPTANCE AND THE TREATMENT OF OBESITY: WEIGHT LOSS, HEALTH BEHAVIORS, AND PSYCHOLOGICAL ADJUSTMENT

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Objective: Recent efforts to better understand the psychological processes involved in weight management suggest that greater acceptance of uncomfortable weight-related thoughts and feelings may positively impact treatment outcomes. This investigation replicates previous findings from this emerging literature and expands on links between acceptance, health behaviors, and psychological functioning. Method: Sixty-two overweight/obese adults ($BMI>27$ kg/m2; mean BMI of 38.3, $SD=7.7$, 86% Caucasian, and 79% female) participating in one of two weight loss interventions completed measures at baseline and post treatment. Results: Greater improvement in acceptance was related to greater weight loss, increases in healthy eating and improvements in body image and internalized weight bias, as well as decreases in unhealthy, emotional and binge eating. Discussion: This study provides support for the positive contribution of acceptance in promoting weight loss and other adaptive weight related outcomes.

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## A-099

### TOBACCO USE AND SUBSTANCE USE DISORDERS AS PREDICTORS OF POSTOPERATIVE WEIGHT LOSS TWO YEARS AFTER BARIATRIC SURGERY

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Extensive psychosocial assessments, including history of smoking and substance use, are conducted prior to bariatric surgery to determine patients' appropriateness for surgery. However, the impact of tobacco and substance use disorders (SUDs) on postsurgical weight loss as well as whether quitting tobacco 6 months pre-surgery results in long-term smoking cessation remain unknown. This study describes presurgical tobacco use, history of SUDs, and relationships between these variables and postsurgical weight loss among 61 U.S. Veterans who underwent bariatric surgery. Whether Veterans who quit smoking 6 months prior to surgery remained abstinent from smoking following surgery was also assessed. Height, weight, tobacco use, and substance use were obtained from medical charts at presurgical evaluation and 6, 12, and 24 months post-surgery. Percent of excess BMI lost (%EBL) was calculated for each postsurgical time point. Analyses of covariance were conducted predicting % EBL at 6, 12, and 24 months post-surgery from presurgical tobacco use and SUD status, controlling for demographics and banding vs. bypass surgery. Thirty-three Veterans (55%) were former or recent tobacco users; 11 were recent tobacco users who quit within 6 months before surgery. Quitting smoking within 6 months of surgery was associated with increased weight losses at 6 ($p=.01$) and 12 ($p=.04$) but not 24 months ($p=.14$) post-surgery. All Veterans who quit smoking within 6 months before surgery resumed smoking within two years after surgery. Eight (13%) patients had a history of SUDs diagnosis (alcohol $n=5$; cocaine $n=3$). History of SUDs was related to marginally worse weight loss at 12 ($p=.08$) and 24 months ($p=.09$). Bariatric surgery candidates with history of smoking and/or SUDs may benefit from additional treatment for smoking cessation, relapse prevention, and behavioral weight management.

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## Meritorious Poster

## A-100

### WEIGHT-BASED DISCRIMINATION AND MEDICATION ADHERENCE: MEDIATION BY TRUST IN PHYSICIANS AND PATIENT SELF-EFFICACY

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Background: Discrimination based on height/weight, which increased to 12.2% in 2004-2006, has been linked to several adverse health outcomes. Health care professionals are frequent sources of such discrimination. Objective: To examine the association of weight-based discrimination with medication adherence and determine if the relationship was mediated by trust in physicians and patient self-efficacy.

Design, Setting, and Participants: This cross-sectional study analyzed data from the TRUST Cohort, which enrolled 963 participants with hypertension from an inner-city public hospital in the South. The dichotomous exposure was reported weight-based discrimination, adapted from the Experience of Discrimination Questionnaire and the Weight Discrimination Scale. Medication non-adherence was defined as endorsing any item of the Morisky Medication Adherence Scale. Trust and medication self-efficacy were measured by the Trust in Physicians Generally Scale and Medication Adherence Self-Efficacy Scale. Results: Of 963 participants, 70.1% were women and 85.2% were African American. The average age and weight were 53.6 yrs and 208 lbs. Weight-based discrimination was reported by more women than men (33.4%, 22.0%; $p<0.01$) and by fewer African Americans than Whites (28.0%, 40.2%; $p<0.01$). Weight-based discrimination was associated with increased medication non-adherence (Odds Ratio=1.64; 95% Confidence Interval [CI]=1.10-2.45) among African Americans after adjusting for gender, education, income, and weight. This association was partially mediated by trust (8.5%; 95% CI=1.3% - 25.4%) and self-efficacy (30.6%; 95% CI=15.0% - 61.2%). No association was found among Whites.

Conclusion: Programs that prevent weight-based discrimination among health care providers may build trust and self efficacy, thereby enhancing medication adherence in vulnerable populations.

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## A-101

### STAYING FIT: A PILOT STUDY OF A SCHOOL-BASED ONLINE UNIVERSAL AND TARGETED HEALTHY WEIGHT REGULATION/EATING DISORDER PREVENTION PROGRAM

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The prevalence of obesity in adolescents has grown steadily in recent years. Widely disseminable, cost-effective programs that address weight and body image issues without increasing stigma are necessary for adolescents.

This study aimed to establish the feasibility of a universally-delivered targeted online program that encourages weight maintenance and improved body satisfaction.

All students in a 9th grade class were provided one of two program tracks: students at risk for obesity (BMI>85th percentile) were offered a weight management (WM) track; other students were offered a healthy weight regulation (G) track. Tracks appeared identical and addressed the same general topic areas. The 10-week program included a monitored discussion group and interactive logs. Measures included self-report height and weight, YRBS nutrition and physical activity data, and the Weight and Shape Concerns Scale (WCS). Data were analyzed only for the students who returned parental informed consent (55%).

Students identified primarily as Hispanic/Latino (59%). Teachers and students reported satisfaction with program content and implementation. Students in the WM track showed a decrease in average BMI (27.5 to 26.6; $es=.18$) while students in the G track did not show a significant change (20.3 to 20.7). Students in the G track reported increased consumption of low-calorie, high-nutrient foods; students in the WM track did not show significant change. Girls at high risk for eating disorder onset (pre $WCS>46$) showed a significant reduction in risk (pre $WCS=63$, post $WCS=50$; $es=1.0$).

A school-delivered, universal and targeted online intervention may be a feasible and acceptable way to encourage weight maintenance without increasing eating disorder risk.

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## A-102

### BODY IMAGE SATISFACTION AMONG AFRICAN AMERICANS

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Satisfaction with body size is an important factor related to health outcomes. We conducted an interviewer administered household survey in three urban, African American neighborhoods in New Orleans, Louisiana. We examined the relationship between satisfaction with body image and perception of body size to determine if those who under or over-estimated their body size were more or less likely to be satisfied with their body image than those who correctly-estimated their size. We asked respondents to indicate their actual and ideal body size using a figure rating scale. They also reported their weight, height and level of satisfaction with their body size. We developed prediction models of satisfaction. Only 42.2% of all respondents were satisfied with their body image and 44.1% correctly- perceived their body size. Most respondents chose an ideal image in the normal body mass index range with over half choosing an ideal image smaller then their current size. Misperception was greatest among the heaviest respondents. There is an inverse relationship between perception of body size and satisfaction with it. Females, those who over-estimated their body size, those with an education beyond high school and were active in order to lose weight were less likely to be satisfied. Those who were active but not trying to lose weight were more likely to be satisfied. This suggests that perception of body size and satisfaction with body size may play a role in health behavior decisions.

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## A-103

### MEASURING FIDELITY TO ENHANCE DELIVERY OF OBESITY TREATMENT AND ITS FUTURE TRANSLATION INTO PRACTICE: APPLICATION IN THE ASPIRE-VA SMALL CHANGES WEIGHT LOSS TRIAL

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Effective treatments are urgently needed to address the obesity epidemic. However, treatments shown to be effective in trials often fall short when translated into practice; often because the high level of interventionist expertise and controlled environment cannot be replicated reliably. Lack of fidelity reporting has also limited progress. The ASPIRE-VA multi-site RCT is testing effectiveness of a theoretically-driven small changes treatment approach to weight loss that focuses on patient-driven choices in monitoring and setting small but manageable dietary and physical activity goals relative to baseline behaviors, among Veterans. A comprehensive fidelity monitoring system, linked to coach supervision, was prospectively built into the trial. A sample of group and individual sessions were recorded and scored for the degree to which interventionists delivered treatment as intended along five theoretically-driven dimensions: self-monitoring and goal attainment; core psycho-educational content; action planning; interventionist characteristics; and process quality. Based on preliminary data, 118 of 2169 delivered sessions were recorded and scored on a 0 (absent) - 2 (100% present) scale. Interventionists were consistently effective in helping patients self-monitor and in checking goal attainment (scoring an average of a perfect 2 at the beginning and end of a 16-month measurement period). They showed dramatic improvement in delivering core psycho-educational content over the same period (improving .68 to 1.78) but continue to struggle with action planning (1.2 to 1.54). Using undergraduate coaches may be an affordable way to promote translation of weight management interventions into practice. Furthermore, fidelity measures provide detailed information needed to judge viability of translating a program into a particular setting.

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## A-104

### THEORETICAL CORRELATES OF OVERWEIGHT IN A HISPANIC COMMUNITY SAMPLE

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In the U. S., Mexican-Americans show significantly higher rates of overweight and obesity relative to other ethnocultural groups. However, there is a dearth of literature on theoretically-based constructs related to weight control. The aim of this study was to assess theoretically-based correlates of weight in an overweight / obese Hispanic sample to inform future intervention efforts.

Two hundred and thirty-one Hispanic participants (65% female) were recruited from a community healthcare clinic. Inclusion criteria included: being Hispanic, aged 18 or over, and having a body mass index (BMI) of 25 or greater. Participants completed measures that included demographics and theoretical constructs from Social Cognitive Theory (SCT; e.g., perceived self-efficacy), Self-Determination Theory (SDT; e.g., perceived competence), and the Transtheoretical Model (TTM; e.g., pros and cons of weight loss). Participants' height, weight, and waist circumference were also measured.

Descriptive analyses assessed participant characteristics and weight-related risk factors. Inferential analyses included three hierarchical regression models with weight as the dependent variable and constructs from SCT, SDT, and TTM entered into the second steps of Models 1, 2, & 3, respectively, after controlling for age, sex and height in step 1. Descriptive findings suggest a large portion of the sample met clinical recommendations for weight loss (beyond BMI). Inferential findings suggest there were no associations between weight and SCT constructs; greater weight was associated with decreased SDT perceived competence ($\beta$=-.216, p=.032); and greater weight was associated with increased TTM pros of weight loss ($\beta$=.364, p=.003), and increased TTM helping relationships ($\beta$=.246, p=.015).

Implications include a clear need for intervention within this population perhaps focusing on SDT and TTM-based components, specifically social support, decisional balance, and perceived competence.

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## A-105

### GENDER MODERATES THE LINK BETWEEN OBESITY AND PTSD IN A TREATMENT-SEEKING SAMPLE

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Epidemiological studies demonstrate greater prevalence of mood and anxiety disorders in obese individuals, compared to those of normal weight (Faith et al., 2002). These studies have also found that gender moderates the relationship between obesity and some psychiatric disorders, such that obese women have higher rates of depression, social anxiety disorder, and posttraumatic stress disorder (PTSD; Barry et al., 2008; Perkonigg et al., 2009). The current study investigates the interactions between gender and obesity on PTSD diagnosis and clinical characteristics within an outpatient psychiatric sample. It was hypothesized that, as in epidemiological samples, obese women would have the highest rates of PTSD. Within the group with PTSD, obese women were expected to have the most severe clinical characteristics, including presence of comorbid Axis I disorders, worse social and occupational functioning, and greater global impairment.

Psychiatric outpatients (n=3,200) participated in a structured interview to assess Axis I disorders and related impairment. There were 348 (11%) patients who met current criteria for PTSD, including 252 women (31% obese, n=77) and 96 men (25% obese, n=24). Gender moderated the relationship between obesity and PTSD diagnosis, with obese women most likely to have current PTSD (B=-0.64, p=.04). Within the PTSD group, gender moderated the link between obesity and presence of a comorbid substance use disorder such that obese men were most at risk (B= 3.07, p=.001). Additionally, the gender by obesity interaction for time out of work was marginally significant, such that obese women with PTSD had the most time out of work (B=-1.50, p=.057). There were no significant gender by obesity interactions for other clinical characteristics, but there were main effects of obesity on time out of work, presence of comorbid disorders, and current social functioning. Thus, the effect of obesity on PTSD diagnosis and a few related clinical characteristics depends on gender. Implications for treatment will be discussed in the context of existing literature linking trauma/PTSD and obesity.

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## A-106

### CAREGIVER FEEDING STYLE, ACCULTURATION AND OBESITY IN LATINO CHILDREN ENROLLED IN AN OBESITY PREVENTION PROGRAM

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Background: Low socioeconomic status (SES) Latino children are at high risk of becoming obese. Caregiver feeding styles and their cultural context may be contributing factors. This study assessed whether feeding style was associated with acculturation and child weight status among low SES Latino children 2-4 years of age.
Methods: Data (child body mass index (BMI), the Caregiver Feeding Style Questionnaire (CSFQ), and the Brief Acculturation Scale for Hispanics) from 164 low SES Latino children participating in a primary care-based obesity prevention study (n=205) were analyzed. Feeding styles were categorized as authoritarian, authoritative, indulgent or uninvolved based on demandingness/responsiveness. Parent- and child-centered behaviors were scored using the dimensional scale of the CFSQ. Linear acculturation scores were calculated to assess Anglo or traditional orientation. Chi-square and stepwise regression assessed child weight status as a function of gender, feeding style, and acculturation.
Results: Of 164 children (36.6±9.2 mo), 81 (49%) were female, and 63% were of Puerto Rican ethnicity. 50% were overweight (20%) or obese (30.5%). 51% of caregivers were traditionally Hispanic. Authoritarian (39%) and indulgent (37.2%) feeding styles were most common, followed by authoritative (12.2%) and uninvolved (11.6%). Children whose parents used authoritative feeding styles were less likely to be overweight/obese (p<0.004, OR=0.21 (0.07, 0.65)). Feeding style did not differ by acculturation. In the regression model, child-centered feeding behavior was the only significant predictor of BMI percentile (p<0.03), and had a protective effect.
Conclusions: Non-responsive feeding styles were common in these families, and were not associated with acculturation. More research is needed to determine the causal relationship between various feeding styles and child weight status and whether feeding practices are amenable to intervention.

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## A-107

### VETERANS' HEALTH ADMINISTRATION MOVE!® WEIGHT MANAGEMENT PROGRAM FOR VETERANS: PROVIDERS' PERCEPTIONS OF ATTRITION

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Motivating individuals to adhere to obesity treatment can be difficult. Many effective weight management programs experience significant attrition in their early stages, which severely limits patients' chances of success. The Veterans Affairs' [VA] MOVE! program is the largest evidence-based, individually tailored weight management program. Similar to other programs, more than half of MOVE! patients only attend one or two sessions. This study examined providers' perceptions of attrition from MOVE! as an initial step in prevention of withdrawal. MOVE! clinicians and other providers that interacted with patients about participating in MOVE! (N=900) from VA sites throughout the United States completed a web-mediated survey. Low motivation was cited as a main reason for dropout (M=4.0 of 5), particularly among MOVE! clinicians (vs. other providers; p<.01). Providers also indicated that veterans experienced practical barriers to attendance, such as transportation (M=3.7) and health problems other than obesity (M=3.6). Perceptions that veterans who dropped out of MOVE! disagreed with their treatment plans were related to perceptions of these veterans as satisfied with treatment results and confident in continued weight loss (ps<.001). Veterans who dropped out of MOVE! and had insufficient results were perceived as dissatisfied with their weight loss, but unable to adhere to their treatment plans (p<.001). These results indicate that providers perceive low motivation as a key contributor to early attrition from MOVE!. A subset of early dropouts may be satisfied and confident in ongoing weight management, but most early dropouts are perceived as dissatisfied and unable to adhere to treatment plans. Further research is needed to identify those likely to withdraw from MOVE! before achieving their goals.

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## A-108

### THE EFFECT OF REGULATORY FOCUS ON WEIGHT-LOSS MAINTENANCE

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The two self-regulatory orientations specified by regulatory focus theory (Higgins, 1997)—promotion and prevention focus—have been shown to have unique effects on people's ability to initiate and maintain behavior changes (Fuglestad et al., 2008). Building on these findings, we examined the role of regulatory focus in a longitudinal study of people who had lost at least 10% of their weight in the past year on their own initiative. Participants in an intervention for weight-loss maintenance (randomly assigned to guided or self-directed conditions) completed the Regulatory Focus Questionnaire (Higgins et al., 2001) and were weighed at baseline, 12 and 24 months (N=419; 82% female; 87% white; age M=47; BMI M=28; 75% still trying to lose weight). Participants higher (evaluated at 1 SD above the mean) in promotion focus gained less weight (predicted weight gain=5.12 lb) than those lower (evaluated at 1 SD below the mean) in promotion focus [predicted weight gain=10.6 lb; F(2,641)=11.42, p<.001]. Unexpectedly, participants higher, versus lower (evaluated at 1 SD above and below the mean), in prevention focus gained more weight [predicted weight gain=10.83 lb versus 4.88 lb; F(2,641)=7.82, p<.001]. However, prevention focus interacted with weight loss goals [F(2,632)=3.82, p<.05] such that the deleterious effect of prevention focus was isolated to those participants who were far (e.g., > than 50 lbs) from their weight loss goals (higher versus lower prevention focus weight gain=12.84 lb versus 4.69 lb). Consistent with and extending prior findings, promotion focus was important for remaining eager and motivated to engage in weight control behaviors over time. Moreover, prevention focus appears to undermine efforts of people far from their weight loss goals. High prevention people may feel discouraged and disengage from the behavior change process when they have exerted great effort, but are still far from their goals. As such, tailored intervention efforts may be warranted for high prevention people who have lost weight, but are still far from their weight loss goals.

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## A-109

### DELAYED GRATIFICATION, IMPULSIVITY, & SELF-CONTROL IN OBESE & HEALTHY-WEIGHT CHILDREN

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Purpose: Delay of gratification, impulsivity, and self-control are overlapping constructs commonly assessed in children. Research has been mixed regarding the ability of obese and healthy weight children to delay gratification. This project assessed obese and healthy weight children's ability to delay gratification of monetary rewards and compared this with self-control and impulsivity self-report measures.
Methods: As part of a neuroimaging study, 29 children (19 males) aged 10-14 (mean=11.8 years) completed the Kirby Monetary Choice Questionnaire, the Barratt Impulsivity Scale, and the Self-Control Scale. Sixteen participants were healthy weight (MBMIz=-0.003) and 13 were obese (MBMIz=2.280).
Results: Delay discounting of monetary rewards was not significantly associated with participants' weight. Similarly, delay discounting was not associated with self-report measures of impulsivity or self-control. However, obesity was significantly related to several Barratt Impulsivity subscales, including greater attentional impulsivity (r=.397, p=.033), motor impulsivity (r=.528, p=.003), and non-planning impulsivity (r=.383, p=.040). Obesity was also significantly related to less child-reported self-control (r=-.421, p=.023).
Conclusion: Obesity was significantly associated with less child-reported self-control and more child-reported impulsivity. However, the ability to delay gratification for monetary rewards was not related to weight group, reported impulsivity, or self-control. It is possible that children have difficulty evaluating monetary values. Future research including pediatric participants should consider developing a modified version with adjusted scenarios, potentially using food-rewards instead of monetary rewards.

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## A-110

### CORRELATES TO CALORIC BEVERAGE CONSUMPTION

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Background: Restaurants have been identified as a high risk food environment, linked to excessive caloric intake. One strategy for managing caloric intake in restaurants is reducing the consumption of caloric beverages; yet, little is know about what is related to caloric beverage consumption. This study examined the relationships between frequency of consuming caloric beverages and frequency of eating at different types of restaurants and emotional eating.
Methods: The convenience sample (n=35), recruited through ads, consisted of women 40-59 years old who ate out at least 3 times per week. The sample was 54% white, 29% Hispanic, and 17% African American with a mean BMI of 31.8 (SD=6.8). Participants completed a Background Information Survey and the Emotional Eating Scale. Data on restaurant eating and caloric beverage consumption was derived from three 24 hour dietary recalls.
Results: Consumption of caloric beverages over the 3 days sampled ranged from 0 to 5 (mean=1.4, SD 1.3). Frequency of caloric beverage consumption was positively related to fast food frequency (r=.51, p=.002) and Mexican restaurant frequency (r=.34, p=.04). It was not significantly related to the frequency of eating at Italian, Asian or Steak/Seafood restaurants. Frequency of caloric beverage consumption was also negatively related to emotional eating (r=-.43, p=.01).
Conclusions: Participants who ate out more frequently at fast food and Mexican restaurants, but not Italian, Asian or Steak/Seafood Restaurants, more frequently consumed caloric beverages. Possibly the value meals at fast food restaurants and the margaritas associated with Mexican restaurants may have influenced the choice of beverages consumed. Further examination of restaurant eating patterns may be useful in identifying how specific types of restaurants influence caloric beverage intake.
Higher levels of emotional eating were associated with less frequent caloric beverage consumption, suggesting that emotional eating may be linked to other sources of caloric intake. Possibly those engaged in emotional eating may try to offset the calories being consumed by choosing beverages without calories (water, diet drinks).

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## A-111

### HOMEWORK FOR BEHAVIOR CHANGE: VALUE ADDED OR ADDITIONAL BURDEN?

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Background: Developing self-efficacy is an important factor for successful behavior change. To improve self-efficacy, some researchers assign homework (goal setting and practice of skills) as an intervention strategy. Additional expectations from participants may increase the burden of the study and affect participation. Thus, the usefulness and feasibility of assigning homework to participants of a small group, 6-week intervention to prevent weight gain was examined.
Methods: From a convenience sample of women, 40-59 years old who ate out at least 3 times per week, 19 participants were randomly assigned to the intervention group. The intervention group was 47% white, 26% Hispanic, and 26% African American with a mean BMI of 33.9 (SD=7.2). Homework logs, which included goal achievement and how often specific skills were practiced (mindful eating, mini-meditations, rating hunger/fullness) were turned in weekly (n=14). Participants were assigned to practice each specific skill at least daily. Additional information about goal setting and homework was collected during an exit interview.
Results: The frequency that participants practiced the assigned homework skills varied by the skill. From the 14 homework logs turned in, mindful eating was practiced at least 3 days/week by most participants (85%), while mini-meditations were practiced at least 3 days/week by 50% of the participants, and hunger/fullness ratings were practiced at least 3 days/week by 42% of participants. Of the 19 participants, 10 spontaneously identified the weekly, individualized goal setting as being the most useful homework assignment.
Conclusions: Participant's engagement in assigned homework varied greatly by individual with some not even turning in homework logs. Multiple, daily homework assignments were unrealistic, and participants focused on the portion of the homework of particular interest to them. Individualized goal setting was perceived as being particularly useful to participants. Perhaps because it is individualized, it can provide practice of skills judged important to the participant and therefore is not an additional burden.

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## A-112

### IS THERE A CRITICAL TIME WINDOW FOR PHYSICAL ACTIVITY TO AFFECT ADIPOSITY IN ADOLESCENCE?

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Introduction: Excess weight among youth is one of the top public health problems in Canada. Physical activity (PA) may help prevent and treat adolescent obesity. It is important to identify critical times when PA is most likely to reduce the risk of excess adiposity in adolescence.
Purpose: To identify the most critical time to participate in moderate-to-vigorous PA (MVPA) throughout adolescence (i.e., early, mid, and late adolescence, corresponding with Mages 13.3, 14.8, and 16.2yrs) to prevent accumulation of adiposity at Mage 17.1.
Methods: A population-based sample of 738 youth aged 12-13 yrs at baseline completed 19 self-report assessments of MVPA and had anthropometric measures taken 2 times over a 5-yr period. Residual MVPA scores were calculated by creating std. scores partialing out the shared variance of earlier MVPA for mid and late adolescence. These residual scores and a std. score for early adolescent MVPA were entered into separate sex-specific regression models for BMI, tricep and subscapular skinfold thickness (TSFT, SSF), waist circumference, and percent body fat (%BF) outcomes, controlling for SES, diet, smoking, and respective baseline adiposity.
Results: MVPA participation at age 15.5 was significantly related to lower TSFT and %BF at age 16.7 for boys. Based on these results, one bout of MVPA of 5 min or more over a week at 15.5yrs resulted in a decrease of .55 mm in TSFT as well as a decrease of .70 % in BF in boys as they reached 16.7yrs. There were no significant findings for girls. Conclusion: Our findings suggest the need to target interventions aimed at promoting PA in 15yr-old boys to lessen the burden of obesity. More work is needed to better understand MVPA and adiposity in girls.

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## A-113

### LATINO BEAUTY SALONS, A PROMISING SETTING TO REACH AND PROMOTE HEALTH AMONG LATINO IMMIGRANTS IN NORTH CAROLINA

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As Latino immigrants acculturate to the U.S., critical health behaviors such as diet, alcohol consumption and physical activity change, leading to an increased risk for chronic disease. In partnership with The NC Beauty and Barbershop Advisory Board, a study was conducted to determine if Latino beauty salons would be an appropriate setting to reach and promote health. In-depth interviews with salon owners (4) and stylists (12), customer focus groups (2 groups, 19 participants) and customer interviews (21) were conducted. On average, salon customers were 35.5±10.4 years old, and have been in the US for 8.2±5.4 years, 65% were from Mexico, 75% were married and 40% had full time work. Seventy four percent of customers reported visiting the salon at least once a month, and spent between 30 - 120 minutes per visit. Stylists reported the most common topics of conversation with clients were work, family and health, but they preferred that the clients start the conversation. Clients consider the salon a place to relax from life's activities and had positive opinions about the idea of promoting health in the salon. Common topics that clients wanted information about are: weight gain, mental health and access to care. Latino beauty salons in NC appear to be a promising place to reach Latinos and promote health. Implications of these results for planning salon-based interventions will be discussed.

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## A-114

### A REVIEW OF FAMILY AND ENVIRONMENTAL CORRELATES OF HEALTH BEHAVIORS IN HIGH-RISK YOUTH

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Disparities in the prevalence of obesity in youth place minority and low socioeconomic status youth at increased risk for the development of chronic disease, such as metabolic syndrome and type 2 diabetes. Contributing factors to the increases in obesity include a decline in positive health behaviors, such as making healthy dietary choices, engaging in physical activity, and limiting sedentary behaviors. Family and physical environmental contextual factors related to health behaviors are increasingly the focus of health behavior interventions in line with the bioecological model that encourages a system-focused perspective on understanding health behavior influences. Therefore, the current review seeks to highlight the importance of investigating influences of behavior beyond individual characteristics in understanding factors related to the risk of developing metabolic syndrome and type 2 diabetes in youth at high risk for developing chronic disease. The current study reviews the non-intervention literature on family and physical environmental factors related to health behaviors (i.e., diet, physical activity, and sedentary behavior) in youth who are considered to be at-risk for developing metabolic syndrome and type 2 diabetes. Results on 38 published articles of diet, physical activity, and sedentary behaviors were summarized and effect sizes were calculated. Results showed support for the role of parenting and physical environmental factors, particularly parental monitoring and neighborhood context, such as social cohesion, as they relate to health behaviors in high-risk youth. Modest support was found for parental social support. No consistent conclusions could be reached regarding home availability and access. Effect sizes calculated as proportion of variance accounted for were generally small to medium (R2 ranged from .01 - .14). Results highlighted a number of methodological and conceptual considerations including high reliance on self-report and low utilization of measures at multiple ecological levels. Implications and recommendations for future research are discussed.

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## A-115

### BODY ESTEEM MEDIATES THE RELATIONSHIP BETWEEN RACE/ETHNICITY AND SELF-REPORTED HEALTH AMONG COLLEGE STUDENTS

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Background: Race/ethnicity has a documented relationship with self-reported health among older adults in the U.S. Specifically, African Americans report poorer perceived health compared to Caucasians. However, few studies have examined this relationship and its possible mechanisms in younger adults. We sought to determine whether race/ethnicity was associated with self-reported health among college students. We also explored whether body esteem, a factor related to race/ethnicity and perceived health, was a potential mediator of this relationship.
Method: This was a cross-sectional study of 372 college students recruited from colleges/universities in the northeast. Participants answered a single question on perceived health status and completed the Body Esteem Scale. Controlling for age and sex, regression analyses were performed to determine whether race/ethnicity was indirectly associated with self-reported health through body esteem.
Results: Students were 54% female, 51% Caucasian, 22% African American, 11% Hispanic, and 23% were another race/ethnicity. Mean age was 19.7 (SD=1.7) and mean body esteem was 100.8 (SD=18.7). Race/ethnicity was a significant predictor of self-reported health. However, after including body esteem in the model (B=.016, SE=.003, p=<.001), the association between race/ethnicity and perceived health was no longer significant, indicating that body esteem mediated this relationship. Specifically, African American students reported higher body esteem and better health status compared to Caucasians.
Discussion: These findings suggest that race/ethnicity indirectly affects perceived health among young adults due to differences in body esteem. Interestingly, African Americans report more favorable health in their youth despite a high prevalence of chronic disease in older adulthood. Future research should investigate how perceived health and its influencing factors affect health behaviors among young adults so that health outcomes may be improved later in life.

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## A-116

### LEVERAGING COMMUNITY BASED PARTICIPATORY RESEARCH: THE LIVING WELL BY FAITH HEALTH AND WELLNESS PROGRAM FOR AFRICAN AMERICANS

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Background: Poor diet and nutrition practices, along with a sedentary lifestyle are known risk factors for many chronic diseases and contribute to significant health disparities in the U.S. With funding provided by the National Center for Minority Health and Health Disparities (NCMHD),and using Community Based Participatory Research as a guiding framework,a faith-based diet, nutrition and physical activity intervention for African Americans was implemented and evaluated as a small scale randomized trial.
Methods: Five churches were recruited (intervention=3, control=2) resulting in an enrolled sample of 106 (intervention=74, control=32) men and women. The control group received a minimal intervention consisting of one educational workshop. Based on recommendations obtained from church members as part of four CBPR community summits, the Living Well By Faith intervention group received a more intensive 8-week program. Classes were held twice a week and included educational workshops, as well as exercise sessions. Both interventions were delivered at participating churches. Assessments for program evaluation occurred at baseline and 2-month follow-up. These included weight, blood pressure, resting heart rate, percent body fat, and physical fitness using the step test.
Results: The sample was predominantly African American, female and well educated. At baseline, no significant differences between intervention and control groups were found for any of the primary endpoints. At 2 months follow up, the intervention group, compared to the control group, showed significant decreases in weight ($p<0.02$), BMI ($p<0.05$), systolic blood pressure ($p<0.10$), and % body fat ($p<0.03$), with a significant increase in physical fitness ($p<0.02$).
Conclusion: This study provides an exemplar of CBPR research. Despite the fact that the intervention was only of 2 months duration, significant short-term effects were found.

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## A-119

### CLINICIANS VIEWS ABOUT VACCINE ADVERSE EVENT REPORTING

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Background: Health care providers are required to report certain vaccine adverse events (VAEs) following vaccination and are encouraged to report clinically important VAEs, even if they are uncertain that the event is causally related to the vaccine. The US Vaccine Adverse Event Reporting System (VAERS) is a passive surveillance system used to monitor post-licensure vaccine safety and can identify potential unexpected vaccine safety concerns. Clinician knowledge of VAE reporting requirements and accurate reporting to VAERS is critical for ensuring a quality public health surveillance system.
Purpose: A two phase qualitative study was conducted to inform the development of a survey instrument that explores clinicians' knowledge, beliefs, practices, and influences regarding VAE reporting and help guide future communication strategies to improve clinician reporting.
Methods: Phase I consisted of interviews with clinicians (n=27) from three medical specialties (pediatrics, family medicine, and obstetrics/gynecology). Phase II consisted of pilot testing a web survey and cognitive interviews with clinicians (n=27). Key topics explored were factors affecting VAE reporting, decision-making around VAE reporting in response to clinical scenarios, reporting practices, and communication strategies.
Results: The qualitative study identified influences on clinicians' beliefs about what constitutes a VAE (e.g., type and severity of symptoms, patient history, and time between symptoms and vaccination) and reporting practices (e.g., determining whether the event was related to the vaccine). Findings also suggest that a critical step will be to educate clinicians about reporting requirements and the need for reporting to improve public safety.
Conclusions: Qualitative findings from a small number of clinicians suggested many factors affect decisions about VAE reporting. Findings from an online survey of 450 clinicians will offer insights for educating clinicians.

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## A-120

### LIMITS OF THE STAGE OF CHANGE MODEL IN PREDICTING MULTIPLE HEALTH BEHAVIOR CHANGE

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Approximately 75% of the US population does not consume enough fruits and vegetables (FV), 90% exceed the recommendations for saturated fat intake (Sat), and 30% do not engage in physical activity (PA). Some researchers have found support for stage of change (SOC) as a predictor of treatment outcome (e.g., Velicer et al., 2007), while others have found no relation (e.g., Apodaca et al., 2009; Borsari et al., 2009). We analyzed secondary data from the Making Better Choices (MBC) clinical trial to determine whether baseline SOC moderates the effect between treatment condition and diet/activity changes at 17-week follow-up.

One hundred ninety-one participants reporting 4 health risk behaviors [(< 5 daily servings of FV, > 8% kcal/day from Sat, < 60 minutes/day of PA, and >90 minutes/day of sedentary leisure screen time (Sed)], were randomized to 4 possible treatment conditions that each simultaneously target one diet and one activity behavior. The mean age of the sample was 32.8 years ($SD=11.0$), 75% were female, and 53% were White. All participants completed questionnaires assessing SOC as part of their baseline assessment. Behavior change outcomes were assessed at two time points during the three-week prescription phase, and at 8 time points during the 17-week maintenance phase.

Four separate ANCOVA models were calculated. The mean z-scores for FV, Sat, PA, and Sed across each of the time points controlling for baseline values were used as the dependent variables. Treatment condition and SOC were used as the independent variables, in addition to the condition x SOC interaction term. Main effects for treatment condition were significant for FV ($p<.001$), PA ($p=.03$), and Sed ($p=.01$). The main effect for SOC for PA was also significant ($p=.04$). However, the interaction between condition and SOC was not statistically significant for FV ($p=.48$), Sat ($p=.81$), PA ($p=.15$), and Sed ($p=.50$).

These findings suggest that the efficacy of the MBC intervention did not vary by individuals' baseline SOC. Future research is needed to determine whether multiple behavior change interventions tailored to SOC provide additional benefit.

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## A-121

### A CULTURALLY TAILORED INTERNET-DELIVERED EXPERT SYSTEM INTERVENTION TO PROMOTE BLOOD DONATION BEHAVIOR IN BLACKS: FINDINGS FROM A PILOT TEST

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Blacks are more likely to suffer from diseases that require blood transfusions (e.g. Sickle Cell Disease) but are less likely to donate blood compared to Whites. Many views, experiences, and behaviors associated with blood donation are unique to Black culture and evidence suggests that culturally tailored health promotion programs might help with increasing blood donation among Blacks. Pilot test results of an internet-based intervention program that is theory driven (Transtheoretical Model), empirically tailored on participant assessments and culturally tailored- for Black adults are examined. One hundred and fifty adults were recruited from the general population in the Northeast region of the United States. All participants completed one intervention session and completed a post-test assessment and evaluation. The majority of the sample had a history of blood donation (77%). Importantly, 95.3% of participants indicated that they would recommend the program. Ratings were positive with the majority of participants 'agreeing' or 'strongly agreeing' with all 14 evaluation items. Feasibility was demonstrated by recruiting and engaging Black adults from the general population, the majority of which were not regular blood donors. Pre and post assessments indicate increases in intention to make behavioral changes regarding blood donation. Notably, 46.9% of those pre-Action stages (Precontemplation, Contemplation, or Preparation) progressed at least one stage between pre and post assessment ($n=46$). Pre-action participants were also significantly more likely to consider donating blood after completing the intervention program $t(98)=3.36$, $p<.001$, with the overall sample reporting that they were more likely to consider donating blood $t(15)=3.56$, $p<.001$. The findings support the acceptability, feasibility, and initial efficacy of a brief, online intervention for Blacks in all stages of readiness to donate blood. This program shows promise to offer an efficacious and cost-effective intervention to promote blood donation behavior in Blacks.

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## A-122

### ASSOCIATIONS BETWEEN ILLNESS BELIEFS AND PSYCHOSOCIAL ADJUSTMENT AMONG ADULTS WITH CYSTIC FIBROSIS

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Adjustment to serious illness is thought to be influenced in important ways by the personal manner in which patients interpret their condition. CF patients contend with difficult symptoms, considerable treatment burdens, and a foreshortened future. Illness beliefs, as highlighted by Leventhal's self-regulation model, may play an important role in adaptation, but they have yet to be explored in this patient group.

Participants were adults being followed in a regional CF center. Median age at diagnosis was 2.0 years old, average age at study enrollment was 27.8, and 52.4% had no more than high school education. Emotional adjustment was assessed using the Hospital Anxiety and Depression Scale (HADS). Illness Beliefs were evaluated with selected scales from the Revised Illness Perception Questionnaire. It was hypothesized that greater perceptions of (1) illness coherence, (2) personal control over the illness, and (3) treatment control, would each be related to reduced concurrent distress. No predictions were offered regarding perceptions of the illness as chronic (as opposed to brief), given the protracted course of CF.

In bivariate analyses, each of the hypothesized illness beliefs was significantly related to less distress, as predicted (illness coherence: $p=.004$; personal control: $p=.049$, treatment control: $p=.004$). Timeline beliefs were not associated with distress. In multiple regression analyses that examined these predictors simultaneously, adjusting for significant medical and demographic covariates, illness coherence was independently related to reduced concurrent distress ($\beta=-.31$, $p=.01$). Results suggest that a clearer understanding of one's condition is tied to enhanced well-being. Patients' personal beliefs about CF (e.g., perceptions of coherence and control) warrant further attention in longitudinal studies.

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## A-123

### ADHERENCE TO AIRWAY CLEARANCE THERAPY IN CYSTIC FIBROSIS: EFFECTS OF TREATMENT BELIEFS AND SELF-EFFICACY

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Adherence to treatment has been a longstanding concern among Cystic Fibrosis (CF) patients, in view of the extremely demanding and time-consuming regimens that these individuals must manage. Adherence to daily airway clearance therapy is thought to be especially problematic. Compared with research on children with CF, however, few studies have focused on adherence among adults.

This study examined adherence in a CF clinic serving a rural Southern region. Median household income was modest, average age was 27.8 (9.9), and mean FEV1% predicted was 66.5 (25.8). Self-reported adherence to airway clearance was assessed with the Cystic Fibrosis Treatment Questionnaire, a validated measure. We anticipated that adherence would be related to personal beliefs about treatment (Beliefs about Medications Questionnaire-Specific), self-efficacy for airways clearance, and perceived social norms, drawing on Social Cognitive Theory and the Theory of Reasoned Action.

Only 30.0% of participants reported being fully adherent to airway clearance therapy; an additional 20.0% indicated missing no more than 1-2 treatments per week. In bivariate analyses, greater adherence was associated with stronger concurrent beliefs about the necessity of airway clearance ($p=.0004$), fewer concerns about adverse effects/inconveniences ($p<.05$), and stronger self-efficacy for managing airway therapy despite obstacles ($p=.0003$). Social norms were not significant. In logistic regression analyses controlling for disease severity, social desirability bias, and any significant clinical/demographic covariates, greater perceived necessity remained significantly related to adherence ($OR=1.20$, 95% CI: 1.01-1.43, $p<.05$). Findings suggest that adherence to airway clearance, (a notoriously difficult problem), is tied to personal beliefs about its benefits. These beliefs may represent useful targets for efforts to enhance adherence, and merit further study in longitudinal investigations.

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## A-124

### SEEKING AND FOUND GLOBAL MEANING AMONG CYSTIC FIBROSIS PATIENTS: ASSOCIATIONS WITH QUALITY-OF-LIFE OUTCOMES

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A stronger sense of meaning in life may be a valuable resource for individuals facing life-threatening illness. Theorists have distinguished between seeking vs. found global meaning. These dimensions have begun to receive attention from health investigators, but have yet to be evaluated among cystic fibrosis (CF) patients. Questions of meaning in life may be especially significant for these individuals, as survival rates have been extended from childhood into young or middle adulthood. Participants in the current investigation were recruited from a regional CF Clinic; mean age was 27.8, and 38.1% were women. Seeking and found global meaning were assessed using the Meaning in Life Questionnaire (which avoids confounding meaning with emotional well-being). Study outcomes included physical and mental health functioning, measured using the SF-12. We hypothesized that found meaning would be associated with better concurrent outcomes, while seeking meaning would be related to poorer functioning.

In bivariate analyses, each dimension of meaning was significantly related to each outcome, in the expected direction (p's=.03 to .0004). In regression models that evaluated both meaning variables simultaneously while controlling for significant demographic/medical covariates, increased found meaning was associated with enhanced concurrent mental health functioning ($\beta$=.26, p<.05), whereas seeking meaning was related to poorer mental health functioning ($\beta$=-.25, p<.05). Moreover, stronger found meaning was related to better physical functioning ($\beta$=.31, p<.01); seeking meaning was not predictive. Results suggest that seeking and found global meaning have differential associations with quality-of-life outcomes among young adults coping with the severe challenges of CF. Longitudinal research is needed to further examine both seeking and attained global meaning, and their temporal relationships with quality-of-life outcomes.

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## A-125

### WHITE COAT ADHERENCE IN PEDIATRIC INFLAMMATORY BOWEL DISEASE

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“White coat adherence” (WCA) refers to a pattern of increased drug adherence observed among pediatric patients several days prior to clinic visits (Matsui,1997). No studies to date have examined WCA in the inflammatory bowel disease (IBD) population. Assessment of WCA in pediatric IBD is important because physicians often rely on lab values drawn at the time of outpatient IBD appointments to evaluate whether medication is at a therapeutic level. Thus, short-term increases in adherence around the time of appointments may contribute to provider misperceptions of inflated adherence. Given that medical follow-ups occur every 3-6 months as a standard part of pediatric IBD care, the issue of WCA is salient for this group. Although data collection is ongoing, we examined adherence data from 22 youths ages 11-18 prescribed a daily oral IBD medication using electronic monitoring over a six-month period. We also performed medical record reviews to identify dates of clinic visits during that same interval. Using electronic monitoring data, two separate estimates of adherence were calculated. Typical adherence was operationalized as the percentage of prescribed doses taken during the six months excluding the three days prior, day of, and three days after each clinic visit. WCA was operationalized as the percentage of prescribed doses taken during the week of the clinic visit. Results indicated 77% (17/22) of youths demonstrated increased adherence during the clinic visit week, and 82% (14/17) of those youths had perfect adherence during that time. Among youths who demonstrated WCA (17/22), typical adherence was 80.92%, but this increased to 92.44% during the clinic visit week (t (16)=4.17, p<.001), a statistically significant increase, and the equivalent of a large effect size (eta squared=.52). Thus, findings support the presence of WCA in this population. Future research is necessary to identify subgroups at increased risk of WCA, as well as reasons for WCA (e.g., fear of provider criticism, perceived risk of medication escalation, or efforts to present oneself favorably). Increased awareness of WCA in this population may enhance clinical assessment and medication management.

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## A-126

### FACTOR STRUCTURE OF THE MULTIDIMENSIONAL HEALTH LOCUS OF CONTROL IN AFRICAN AMERICAN YOUNG ADULTS

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Health locus of control beliefs have been identified as an important correlate of health related behaviors. And although various methods have been developed to assess such attitudes, a dearth of research has addressed the measurement of this construct in ethnic minority populations. The present study is an initial attempt to redress this gap in the literature. Specifically, I surveyed a sample of 158 African American college students at a large Midwestern university and asked them to complete the Multidimensional Health Locus of Control Scale (Wallston, 1978). My goal was to test the factor structure of both the original 16-item version of this scale, as well as an abbreviated 9-item measure developed by Malcarne and colleagues (2009), with an African American sample. Both a three-factor model and a four-factor model were tested with the 16-item inventory. While the three-factor analysis accounted for approximately 48% of the variance, the four-factor model accounted for approximately 55% of the variance. In both of these models, internal locus of control separated distinctly from the other factors, while powerful others and chance both loaded heavily on the other factors less discriminately. The 9-item measure was tested using the method described by Malcarne and colleagues. These nine items explained 62% of the variance, and all of the items had communalities greater than .5. This three factor solution indicated strong and consistent loadings on the following factors: Internal locus of control, chance, and powerful others.

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## A-127

### GENDER DIFFERENCES IN THE ASSOCIATION BETWEEN FINANCIAL HARDSHIP AND ORAL HEALTH

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Poor oral health is linked to a number of systemic health conditions, but has received little attention in behavioral medicine. Low socioeconomic status (SES) is a potential determinant of poor self-rated oral health (SROH). Yet, most studies reporting associations between SES and SROH use traditional measures of SES such as income and none have adopted alternative SES measures such as financial hardship to investigate disparities in SROH. Additionally, no studies have examined the differential association in SROH and financial hardship for men and women. The purpose of this study was to determine the association between financial hardship and SROH among older adults and to identify potential gender differences. Cross-sectional analyses were conducted using the 2008 Health and Retirement Study Dental Health Module (N=1,414). Four financial hardship questions were summed to create a count of financial hardships. Gender-stratified modified Poisson regression models were used to obtain the relative risk of poor SROH (fair/poor) compared to good SROH (very good/good), adjusting for socio-demographic characteristics and health status. Unadjusted models showed a negative graded association between financial hardship and SROH, but the association was significant for women only. Women reporting three or more financial hardships were 2.76 times more likely to report poor SROH compared to women reporting no financial hardships (p<.001). Fully adjusted models revealed non-significant associations between financial hardship and SROH. Additional analyses testing the associations between individual financial hardships and SROH suggested statistically significant protective associations between being on Food Stamps and Medicaid and SROH for men but not for women. The results suggest that (1) financial hardship is differentially associated with SROH for men and women and (2) use of public assistance programs is associated with improved SROH for men. Identifying the role of financial hardship in SROH disparities is an important first step in developing interventions/policies that improve oral health.

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## A-128

### THE ASSOCIATION BETWEEN LANGUAGE PROFICIENCY AND OUTCOMES OF ELDERLY ASTHMATICS

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The inability to speak English is a significant barrier for adequate patient-provider communication. We evaluated the association between limited English proficiency, self-management, and outcomes of elderly asthmatics.
Methods: This prospective cohort study included elderly asthmatics receiving care at two primary care clinics in NYC and Chicago. Asthmatics were classified into 3 groups based on their English proficiency: non-Hispanics, English proficient Hispanics, and Hispanics with limited English proficiency. Outcomes included asthma control (Asthma Control Questionnaire), lung function (forced expiratory volume in 1 second [FEV1]), asthma-related acute resource utilization, quality of life (Asthma Quality of Life Questionnaire) and medication adherence (Medication Adherence Report Scale), at baseline and 3 months of enrollment. Univariate and multiple regression analyses for repeated measures were used to assess the association of English proficiency with these outcomes.
Results: Of the 268 patients in the study, 68% were non-Hispanics, 18% were English-proficient Hispanics, and 14% were Hispanics with limited English proficiency. Unadjusted analyses showed that Hispanics with limited English proficiency have worse asthma control ($p<0.0001$), lower FEV1 ($p=0.001$), poorer quality of life ($p<0.0001$), increased likelihood of inpatient visits (OR: 3.5 CI 1.6-7.7) and poorer adherence (0.27, 0.13-0.59). We also found significant associations between limited English proficiency with poorer quality of life ($p=0.01$), and lower medication adherence (OR: 0.29, 0.11-0.74) after adjusting for demographics, asthma history, health literacy, depression and anxiety. In similarly adjusted models, limited English proficiency also associated with inpatient visits (2.3, 0.82-6.4) and decreased FEV1 ($p=0.02$).
Conclusions: Limited English proficiency was associated with poorer self-management and worse outcomes among elderly patients with asthma. Further research is necessary to understand the pathways underlying this relationship.

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## A-129

### ASTHMA BELIEFS AND MEDICATION ADHERENCE IN OLDER ASTHMATICS

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Background: Asthma medication adherence is needed for optimal asthma outcomes. We examined asthma beliefs and adherence in older asthmatics.
Methods: Asthmatics ≥60 were recruited from primary care practices in New York City and Chicago ($n=253$). Adherence to controller medications was assessed using the Medication Adherence Report Scale. We selected illness beliefs specific to Common Sense Model of Self-Regulation domains: identity (symptom recognition), timeline (duration/curability), and control (medication responsiveness). Based on Brief Illness Perceptions Questionnaire (BIPQ) items, we asked patients if they only have asthma with symptoms (no symptoms no asthma), their MD can cure their asthma (MD can cure), and if their asthma will persist (not always have). Treatment beliefs were evaluated with Beliefs about Medications Questionnaire domains on medication concerns and necessity, and a BIPQ treatment item. The association of beliefs with adherence was examined with multivariate logistic regression.
Results: Forty-six percent reported low adherence. No symptoms no asthma (58% low, 32% adequate $p<0.001$), not always have (33%, 12% $p=0.001$) and MD can cure (23%, 8% $p=0.004$) beliefs were more common among these patients. Those believing asthma would last less time ($p=0.003$) and feeling more symptoms ($p<0.001$) were less likely to adhere. Those more convinced that medication does not work ($p=0.002$), concerned about its use ($p=0.004$), and sure that it is not needed ($p=0.001$) were less likely to adhere. Adjusting for beliefs, adherence was less likely among patients more strongly believing medication is not needed (OR 0.90, CI 0.83-0.97), symptoms are severe (0.85, 0.75-0.94), and that no symptoms means no asthma (0.51, 0.26-0.99).
Conclusion: Asthma beliefs are associated with poor medication adherence in older adults. Interventions to modify these beliefs warrant study to determine if medication adherence is improved.

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## A-130

### SELF-EFFICACY IS ASSOCIATED WITH TREATMENT PERSISTENCE, BUT NOT MISSED DOSES, DURING ANTIVIRAL TREATMENT FOR CHRONIC HEPATITIS C

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Background: Medication adherence is critical to antiviral treatment efficacy for chronic hepatitis C viral (HCV) infection. Psychological factors that may influence adherence to HCV treatment are poorly understood. Self-efficacy (SE), or confidence in one's ability to engage in goal-direct behavior, has been associated with medication adherence in other medical populations, but has not been investigated in HCV patients during antiviral therapy.
Aims: To examine SE's bivariate associations with baseline patient characteristics, and association with longitudinal medication adherence during the first 24 weeks of antiviral treatment.
Methods: Baseline ($n=384$) and treatment week 24 (TW24) ($n=254$) data from a prospective, longitudinal study (VIRAHEP-C) were used. Baseline SE was measured using a modified version of the Aids Clinical Trial Group self-efficacy instrument adapted for HCV treatment. The SE scale yields a global SE scale and four underlying subscales related to communication, physical coping, psychological coping, and adherence SE. Medication adherence was subdivided into (1) missed doses of daily, oral ribavirin (RBV) tablets, measured using electronic monitoring pillcaps, and (2) nonpersistence, defined as premature study or medication discontinuation. Generalized estimating equations and Cox proportional hazards models were used to assess the association between baseline SE and RBV missed doses and treatment nonpersistence, respectively.
Results: Higher global SE was associated with lower depressive symptoms ($r=-.62$, $p<.0001$) and higher social support ($r=.52$, $p<.0001$). RBV missed doses increased from 7% during the first week to 15% at TW24. Unadjusted models demonstrated that higher baseline global SE conferred a lower risk of nonpersistence by TW24 ($p=.0016$); however, SE did not predict missed doses of RBV. Findings were comparable for the four SE subscales.
Conclusion: Lower baseline SE was associated with lower social support, higher depression, and greater risk of dropping out of antiviral treatment, but not missing doses of RBV. These findings may have implications for newer antiviral treatment regimens.

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## A-131

### IDENTIFYING PERSPECTIVES OF HEALTH IN ADULTS WITH INTELLECTUAL DISABILITIES THROUGH ENGAGEMENT IN PARTICIPATORY RESEARCH

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People with intellectual disabilities (ID) have been identified as being more sedentary and having more health concerns than people without intellectual disabilities. Although the health conditions recorded in this population are largely preventable, health promotion interventions have been slow to meet these needs. It is disturbing how rarely the literature represents perspectives collected directly from this group, considering the marked health inequities they experience. Neglecting to include them in research or relying on proxy measures can decrease the effectiveness of interventions and may be representing the concerns of only academia and caregivers thereby contributing to the daily experience of health inequities. The aim of this study was to identify and define those factors that may act as determinants to participation in healthy lifestyle behaviors through the direct solicitation of information from the participants, 30 adults with intellectual disabilities. A community-based participatory research (CBPR) method was used, based on a partnership between researcher and participants. This joint venture included the participants in the research process and incorporated the insights and lived experiences of the participants' thereby co-creating knowledge. Photovoice, the method chosen for this study, offers equity of power and is accessible to people with ID regardless of skill level. Research participants took photographs of their context and experiences as they relate to health and health barriers. The results combine data from photo-elicited individual interviews, group discussions, and contextual observations of the participants. This method assisted in identifying attitudes towards health (physical, emotional, social, and spiritual) and contextual factors related to healthy lifestyle behaviors, as perceived by the participants. The insights and experiences of people with ID are necessary in order to develop effective health programs. This study begins that process by offering a voice to a community that often goes unheard when more traditional data collection methods are used.

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# A-132

## CORRELATES OF MEDICATION BELIEFS IN AN UNDERGRADUATE POPULATION

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Medication beliefs have been shown to be correlated with many psychosocial and demographic factors in adult populations. However, few studies are specific to undergraduate students, a group characterized by increased independence and responsibility that may influence health behaviors. Therefore, this study aims to examine the relationship of medication beliefs, perceived social support and substance use in this group, as these factors are known to influence health behaviors and are especially important in an undergraduate population. It was predicted that beliefs about medication concerns will be associated with low perceived social support and higher substance use; while beliefs about medication necessity will be associated with having a health condition, higher perceived social support, and also higher substance use.

Data were collected from 132 undergraduate students in the US: 81.1% were female, 67.4% were Caucasian, and 31.1% had a health condition. Participants completed the Beliefs about Medication Questionnaire (Concern and Necessity subscales), Demographics Questionnaire, Medical Screener, Multidimensional Scale of Perceived Social Support, and Substance Use Screener. Beliefs about medication concerns were associated with not having a health condition (r=-.39, p<.001), alcohol use (r=.20, p=.02) and marijuana use (r=.19, p=.03), but were not related to perceived social support. Beliefs about medication necessity were associated with having a health condition (r=-.18, p=.04), higher perceived social support (r=.19, p=.03), and marijuana use (r=.21, p=.02).

Participants who expressed concerns about medications were more likely to use alcohol and marijuana, while marijuana use and perceived social support were associated with beliefs about medication necessity. Further, participants with health conditions were less likely to have concerns about medications, but appear to question their necessity. This suggests areas of intervention to modify medication beliefs and increase understanding of their necessity, which could link to better adherence in undergraduate students.

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# A-133

## HEALTH LOCUS OF CONTROL, MEDICAL ADHERENCE, AND DISTRESS IN COLLEGE STUDENTS

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Health locus of control (HLOC) has been studied as a predictor of health behaviors. While some research suggests internal HLOC is predictive of adherence to health recommendations (Hong et al., 2006), other research does not (Meyers & Meyers, 1999). HLOC has been related to mood and stress, but the results are similarly incongruent. One explanation for these inconsistencies is a neglect of external HLOC dimensions (Powerful Others and Chance) on health behaviors (O'Hea et al., 2005) and psychological distress. The aim of the study was to examine the association between internal and external HLOC, adherence to medical recommendations, and emotional distress among college students.

A total of 96 undergraduate college students were recruited from a northeastern urban university as part of a larger IRB-approved study. Participants completed the Multidimensional Health Locus of Control, Form A (MHLC-A; Wallston & Wallston, 1978) the Depression, Anxiety, and Stress Scales-21 (DASS-21; Henry & Crawford, 2005), and a screen that assessed adherence to medical recommendations.

Pearson product-moment correlations found statistically significant relationships between external HLOC dimensions and medication adherence, and between external dimensions and emotional distress. Specifically, greater External-Chance was correlated with better adherence to medications (r=.21, p=.05), while Internal HLOC (r=.08) and External-Powerful Others (r=.18) were not. Greater External-Chance was also correlated with less stress (r=-.28, p=.01), depression (r=-.29, p=.01) and anxiety (r=-.20, p=.05). Greater External-Powerful Others was correlated with less depression (r=-.23, p=.05). Results suggest that including external HLOC dimensions is important in understanding adherence and mood in college students. External HLOC may serve an adaptive function when coping with health behaviors. It is hypothesized that students who externalize control are less distressed due to decreased pressure to personally control their health and are more adherent with advised medication regimens as a result.

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# A-134

## OBSTETRIC FISTULA IS ASSOCIATED WITH DEPRESSION, PTSD, AND NEGATIVE COPING

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Obstetric fistula (OF) is a devastating consequence of obstructed labor that occurs almost exclusively in low- to middle-income countries. Past research in OF has highlighted high levels of stigmatization and deficits in general mental health in this population, but has not focused on specific features of mental health. The objective of the current study was to assess baseline psychological symptoms and coping in women with OF compared to control women without OF. We hypothesize that women with OF will have increased negative coping and psychological symptoms, specifically depression, posttraumatic stress disorder (PTSD), and somatic symptoms, compared to controls. Participants included women recruited from Gynecology Clinics at the Kilimanjaro Christian Medical Centre in Moshi, Tanzania. All fistula patients (n=37) were awaiting inpatient fistula repair, and controls (n=22) were recruited from outpatient clinics. Results supported hypotheses, with OF patients reporting significantly greater levels of depression (p<.01), PTSD (p<.01), somatic symptoms (p<.05), and negative coping (p<.05). These results have specific implications for the development of integrated, evidence-based psychological treatment for women awaiting OF repair.

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# A-136

## SELF-EFFICACY AND PAIN CATASTROPHIZING IN PATIENTS RECEIVING SPINAL CORD STIMULATOR IMPLANTS FOR PERSISTENT PAIN

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Spinal cord stimulation (SCS) is a surgical treatment for individuals with otherwise medically and surgically intractable pain. While SCS can reduce pain in many patients, the majority of patients continue to report significant levels of pain following SCS surgery. Patients vary in their ability to manage this pain and return to a more functional lifestyle. Cognitive-behavioral factors such as self-efficacy and catastrophizing have been found to be important predictors of adjustment to pain in other patient populations, but they have not been studied in SCS patients. The current study examined levels of self-efficacy and catastrophizing in 48 patients with chronic back and/or extremity pain who were referred for SCS but had not yet received the surgery. We also examined associations between self-efficacy and catastrophizing with measures of pain severity, disability, and psychological distress. Patients were 50% female with a mean age of 49.5 years (SD=13.8); all were Caucasian. Their mean duration of pain was 8.6 years (SD=9.4). Patients reported low levels of self-efficacy for managing pain (mean=44.7, SD=17.8) and moderate levels of pain catastrophizing (mean=13.7, SD=8.2). Results of regression analyses controlling for demographic variables and pain duration indicated that patients reporting lower self-efficacy reported significantly higher levels of pain severity, pain interference, disability, pain behaviors, and depression (all p's<.001). Patients reporting higher levels of pain catastrophizing reported significantly higher levels of affective pain, pain behaviors, pain interference, depression, and anxiety (all p's<.01). These findings indicate that self-efficacy for pain management is quite low among patients referred for SCS, and that self-efficacy and catastrophizing are meaningfully associated with important domains of functioning. This suggests the possibility that peri-surgical cognitive-behavioral interventions focused on increasing self-efficacy for pain management and decreasing pain catastrophizing may help optimize outcomes for these patients.

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### PATIENT REACTIONS TO SPIRITUAL ASSESSMENT IN A PAIN MANAGEMENT SETTING

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Background. Health care practitioners (HCPs) are increasingly acknowledging the role of spirituality in holistic treatment (Handzo & Koenig, 2004; D'Souza, 2007), as patients wish to discuss personal spiritual beliefs (MacLean et al., 2003; McCord, 2004). Assessment methods are outlined to help HCPs discover these beliefs and their impact on health outcomes (Puchalski & Romer, 2000; Borneman et al., 2010). For chronic pain patients (CPPs), spirituality can both help (Wachholtz et al., 2007) and hinder coping (Rippentrop et al., 2005). Given the role of spirituality in pain coping, understanding CPP's reactions to spiritual assessment seems warranted.

Aim. To provide pilot descriptive data on the appropriateness of spiritual assessment in the context of chronic pain management.

Methods. We conducted standard psychological intake interviews with 28 patients at an outpatient pain clinic. Spiritual assessment was blended into the hour-long interview using the HOPE method (Anandarajah & Hight, 2001). Patients were informed about the study and asked to complete a brief anonymous questionnaire including demographics, religious beliefs/practices, pain experience, and opinions about spiritual assessment.

Results. Only 15/28 patients were consented due to time constraints. Of these, 11 submitted complete surveys. Most respondents were White, female, middle-aged and married. Most ($n=7$) identified with a specific religion, Baptist. Though 45% reported religious service attendance of <1x/month, 82% reported praying daily. Average pain intensity was 7.3/10; most patients ($n=6$) experienced pain for 10+ years. All reported comfort with spiritual assessment for various reasons, though most ($n=7$) endorsed surprise that it was addressed in the pain setting. The majority ($n=8$) wished to continue discussing spiritually-related issues with the HCP.

Conclusion. This small sample of CPPs appreciated the inclusion of spiritual assessment and welcomed the opportunity to integrate spirituality into their chronic pain care. Future studies could determine whether results generalize across larger samples or in different geographical regions, and how assessment can guide treatment using spirituality-based themes for improved pain coping.

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## A-138

### PAIN TOLERANCE IS INFLUENCED BY SOCIAL NORMATIVE MESSAGES

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Pain is a clinical health problem and a known trigger for substance abuse. The present investigation uses a previously untested approach to manipulate pain tolerance. Participants were randomly assigned to one of four conditions with different information about the length of time that most people keep their hand in cold water: 1) control with no message about time, 2) low expectancy with below norm time, 3) high expectancy with above norm time, and 4) high expectancy plus with above norm time and statement about positive characteristics. Two pilot studies consisting of 40 undergraduate students each (59% female, 41% Caucasian, 28% Hispanic) were conducted. In Study 1, the message was delivered in a letter and framed as a "challenge;" in Study 2, the message was delivered in a video and not framed as a challenge. Participants were instructed to keep their hand in a circulating water bath chilled to 0°Celsius for as long as tolerable. Time elapsed between hand immersion and withdrawal from the water was the dependent variable. In Pilot 1, those in the high plus condition ($M=134.0$, $SE=25.5$) had significantly longer pain tolerance time than those in the low condition ($M=33.1$, $SE=25.5$), $F(3, 39)=2.17$, $p=.039$. In addition, males ($M=115.78$, $SE=18.2$) had significantly longer pain tolerance times than females ($M=54.45$, $SE=18.6$), $F(1,39)=5.54$, $p=.025$. Although the interaction was not significant, visual inspection of data suggested a gender difference which was confirmed when splitting the file: a condition effect was present among men ($F(3,19)=3.28$, $p=.048$) but not women ($F(3,18)=.78$, $p=.52$). In Pilot 2, results followed similar trends but did not reach statistical significance. Notably, women responded to the Pilot 2 manipulation better ($M=99.2$, $SE=24.8$) than Pilot 1. Future studies are recommended to understand how to effectively use social norm messages to increase pain tolerance with consideration to gender differences.

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## A-139

### PERSONALITY ASSESSMENT AND OPIOID MISUSE: AGGRESSION PREDICTS SELF REPORTED ABERRANT BEHAVIORS

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Opioids are commonly prescribed for the management of chronic pain. Opioids also carry significant abuse potential, which is a major public health concern. Opioids are now the second leading cause of unintentional death in the US. Identifying patient characteristics leading to misuse is of primary importance. Scant research exists about what personality traits are most strongly associated with aberrant behaviors.

MMPI-2 RF (Minnesota Multiphasic Personality Inventory-2 RF) data were obtained from 66 chronic pain outpatients. Hypotheses(1) Distinct personality typologies predict self reported aberrant behaviors (2) Specific psychological problems further predict opioid misuse potential. Multiple regression analyses were used to evaluate psychiatric indicators that predict total SOAPP-R score. Model (1) indicated that all Higher Order (H-O) scales significantly predicted opioid misuse potential: Emotional/Internalizing Dysfunction (EID; $p<.05$), Thought Dysfunction (THD; $p<.05$) and Behavioral/Externalizing Dysfunction (BXD; $p<.01$). Overall the model ($F(8, 52)=5.93$, $p<0.001$) explained 48% of the variance in SOAPP-R scores. BXD was the variable of greatest impact in the model ($\beta=.35$, $p<.01$). Model (2) examined the Somatic/Cognitive, Internalizing and Externalizing scales of the MMPI-2-RF. Overall the model ($F(23, 37)=1.93$, $p<0.05$) explained 55% of the variance in SOAPP-R scores. Aggression (AGG) significantly predicted opioid misuse and was the variable of greatest impact in the model ($\beta=.43$, $p<.05$).

Results suggest that aggressive behavior predicts future aberrant behaviors above and beyond all other study variables of interest. In today's climate of increased scrutiny towards pain medications, it is vital to consider individual differences that may contribute to medication misuse. These data support that personality assessment serve as an effective adjunct to risk stratification, and that patients with externalizing tendencies may warrant increased attention and safeguards from a risk mitigation perspective.

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## A-140

### ASSOCIATION BETWEEN SOCIAL WELL-BEING AND PAIN AMONG UNDERSERVED CHINESE AMERICAN CANCER PATIENTS

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Perceived social support is associated with better adjustment to cancer and may influence cancer-related symptoms. Little is known, however, about these associations in underserved patients with health disparities. This study evaluated social support and pain characteristics, including pain intensity, pain distress and pain interference, in 170 ethnic Chinese cancer patients with active cancer recruited from a large community-based oncology practice. Social support was measured by the Functional Assessment of Cancer Therapy-General-Chinese Social Well-Being subscale. Pain characteristics were measured by the Brief Pain Inventory-Short Form-Chinese and the Memorial Symptom Assessment Scale-Short Form-Chinese. The mean worst pain severity on a 0-10 numeric scale was 4.7 ($SD=2.4$), with 28.2% of patients rating their worst pain at >7 of 10. Overall, 48.2% reported low levels of pain distress, 36.9% had moderate distress, and 14.9% had high distress. In univariate analyses, social well-being and being employed were negatively associated with all pain characteristics, while metastatic disease was positively associated (all $Ps<.05$). In multivariate regression analyses, social well-being ($\beta=-.11$ $p<.01$) and being employed ($\beta=-1.18$, $p<.04$) explained 13.7% of the variance in pain intensity and 10.1% of the variance in pain distress ($\beta=-.025$, $p<.01$; $\beta=-.41$, $p<.03$). Social well-being ($\beta=-.08$, $p<.01$), being employed ($\beta=-1.22$, $p<.01$) and metastatic disease ($\beta=.88$, $p<.01$) explained 19.4% of the variance in pain interference. These data confirm the importance of social well-being in the pain experience of ethnic Chinese patients with cancer pain. Future studies should evaluate various aspects of social support (enacted social support; social network and embeddedness) and potential modifiers (e.g., acculturation; psychological distress; treatment-seeking; adherence) of these associations to guide treatment strategies for pain in underserved populations.

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## A-141

### PAIN AND SLEEP DISTURBANCES IN PEDIATRIC HEMATOLOGY/ONCOLOGY

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Symptoms such as pain, fatigue, and sleep disturbance may negatively impact children's ability to cope with chronic health conditions and impede children's daily functioning. Although problems with frequent pain and sleep disturbance have been identified in children with a range of medical conditions, there is a paucity of research on these symptoms in outpatient pediatric hematology/oncology samples. Participants were 199 caregivers (91% mothers; 41% married) of 117 African-American children with sickle cell disease (SCD; M age=8.26 years; 40% female) and 82 children with cancer (M age=9.19 years; 46% female; 43% African American; M years since diagnosis=3.36). Caregivers attending regular hematology and oncology outpatient visits for their children completed the Family Symptom Inventory that assesses family resources, medical history, and psychosocial functioning. Most children with SCD (57%) and cancer (62%) experienced aches and pains during the past month. Sleep disturbances (trouble falling asleep, staying asleep, or sleeping too much) also occurred commonly in children with SCD (38%) and cancer (50%). Hierarchical linear regressions examined demographic (age, gender, BMI, time since diagnosis) and psychosocial (anxiety, depression, behavior problems, inattention/hyperactivity) factors associated with pain and sleep disturbances. More frequent pain was predicted only by increased depression in children with SCD, b=.84, t=3.92, p<.001, R2=.31, and cancer, b=.56, t=2.50, p=.02, R2=.24. Similarly, in children with SCD, increased depression, b=.56, t=2.83, p=.01, R2=.17, was the only significant predictor of sleep disturbances. In contrast, in children with cancer, older patient age, b=.04, t=2.02, p<.05, and increased anxiety, b=.63, t=3.34, p=.001, emerged as significant predictors of sleep disturbances, R2=.23. Results suggest that pain and sleep disturbances are common in children with SCD and cancer in the outpatient setting. Similar to other chronic medical conditions, symptoms of depression and anxiety were consistently related to reports of pain and sleep disturbance in this population and warrant further investigation.

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## A-142

### VALIDATION OF A NEW THREE FACTOR MODEL OF CATASTROPHIZING IN A CLINICAL SAMPLE

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Previous factor analysis of a composite catastrophizing measure (CCM) in a nonclinical sample yielded a three factor model with content related to pain preoccupation (PCAT), depressive ideation (DCAT), and hypochondriacal manifestations (HYP; worst-case scenarios). The primary goals of this study were to determine 1) if factor analysis of the CCM administered to a clinical sample yielded factors consistent of that produced previously, 2) if factors are significantly correlated with Beck Depression Inventory (BDI-II) and Beck Anxiety Inventory (BAI) scores, and 3) the ability of factors to predict pain severity on the West Haven-Yale Multidimensional Pain Inventory (MPI) pain responsivity scales (pain severity; SEV and pain interference; INT) above and beyond anxiety and depression. 103 participants from a local headache clinic were asked to provide demographic information as well as complete a battery of assessments: including BAI, BDI-II, MPI, and the CCM. Confirmatory factor analysis was used with previous data from a nonclinical sample. Model fit criteria suggested reasonably good correspondence between the model and the data indicating that the three previously identified factors are consistent in clinical and nonclinical samples. Pearson correlations yielded strong significant correlations between each of the catastrophizing factors and BDI-II and BAI scores. Multivariate multiple regression indicated that the catastrophizing factors were predictive of both SEV and INT as a group. However, no factors made unique contributions to the prediction of SEV and only PCAT made a significant unique contribution to INT. For both SEV and INT, BDI-II and BAI scores significantly increased the predictive ability of the CCM but neither added a significant unique contribution to the prediction of SEV or INT. These findings indicate that each of the catastrophizing factors is a separate construct from depression and anxiety. Further, depression and anxiety, aside from negative pain-related cognitions are shown to be predictive of pain.

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## A-143

### MEASURING CATASTROPHIZING: A NEW LOOK AT COMPONENTS OF THE CONSTRUCT

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Catastrophizing is an important factor in the pain experience. Research suggests the current available measures of catastrophizing do not adequately capture its key components. The purpose of this study was to revise the most commonly used catastrophizing measure, the Pain Catastrophizing Scale (PCS), to expand and refine the construct of catastrophizing. The primary goal of this study was to determine the factor structure of a group of items measuring pain catastrophizing and other related maladaptive thoughts. A composite catastrophizing measure (CCM) was developed using 79 items from the current PCS as well as items from six other pain scales: Pain Appraisal Inventory (PAI), Cognitive Coping Strategies Inventory (CCSI), Coping Strategies Questionnaire (CSQ), Cognitive Errors Questionnaire (CEQ), Pain Anxiety Symptom Scale (PASS), and the Inventory of Negative Thoughts in Response to Pain (INTRP). Thirteen items constructed for this study were also included. Approximately 200 undergraduate students at The University of Alabama participated in this study. Participants were asked to reflect on a previous experience of pain and complete the CCM based on that experience. Exploratory factor analysis (EFA) was used to determine how items on the CCM related to the underlying factors contributing to the construct of catastrophizing. Hierarchical cluster analysis (HCA) was used to create item parcels that were well-correlated. The original 92 items were reduced to 66 variables of one to three items. EFA was then preformed on the 66 variables yielding three important factors with content related to pain preoccupation (PCAT), depressive ideation (DCAT), and hypochondriacal manifestations (HYP; worst-case scenarios). A confirmatory factor analysis (CFA) was performed on the three factor model yielded by the EFA and the original 92 items. Model fit criteria suggested reasonably good correspondence between the model and data. These factors are broader than those previously reported and provided a more comprehensive assessment of these cognitions.

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## A-144

### AUTONOMIC RESPONSE AND RECOVERY AFTER EXERCISE IN PATIENTS WITH FIBROMYALGIA

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The main objective of this ongoing study are to determine if training and practice in a brief focused breathing technique is associated with increased autonomic recovery after sub-maximal exercise testing in patients with fibromyalgia. We also compared patient responses to exercise testing to pain-free controls matched on age, height, and weight. Patients were diagnosed with fibromyalgia (n=10), with an average pain duration of 100 months. Study participants completed an initial baseline laboratory assessment including a diaphragmatic breathing training session. Participants were instructed to practice the technique for three ten-minute sessions each day, and returned to the lab for a second visit after two-weeks.

Preliminary results from this study indicate significant improvements in patient self-reports of fatigue and pain management self-efficacy (p<.05) between pre and post-training assessments. Mean pain severity scores changed from 4.7 to 3.2 (p<.01) on a 0-10 Visual Analog Scale with 10 being the worst. Patients showed significant differences in autonomic recovery after baseline sub-maximal exercise test compared to controls, with lower parasympathetic activity in both time domain and frequency domain HRV indices (p's<.05). However, rate of vagal recovery after post-intervention exercise test improved in patients.

Preliminary results of this study suggest training and practice of a brief diaphragmatic breathing technique is associated with significant changes in a number of areas of physiological and psychological functioning in patients with fibromyalgia. In particular, autonomic changes after sub-maximal exercise testing may represent a significant improvement in physiological resilience. Further, the significant reduction in pain severity between time one and time two suggests regular use of a self-regulatory training technique may be associated with a reduction in subjective pain measures.

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## A-146

### MEANINGS, MOTIVATIONS, AND STRATEGIES FOR ENGAGING IN PHYSICAL ACTIVITY AMONG WOMEN WITH MULTIPLE SCLEROSIS

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Purpose: The goal of the current study was to identify factors associated with the adoption and maintenance of physical activity among women with multiple sclerosis (MS).

Method: Participants (N=11) were women with MS who had low levels of disability and who engaged in varying levels of physical activity. Participants completed two semi-structured, audio taped interviews focusing on their beliefs, motivators, and experiences of physical activity.

Results: Across all activity levels participants reported similar beliefs and motivations related to being physically active including the desire to be "normal", savoring current health, enjoyment of the activity, "feeling good" after activity, weight control, and maintenance of physical function. Active and inactive participants differed in the practical strategies they reportedly used to adopt and maintain physical activity, such as prioritizing and scheduling physical activity, managing disease-specific barriers, and building social support networks.

Conclusions: The consideration of these factors is important for designing behavioral interventions to increase physical activity among women with MS.

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## A-147

### ACUTE YOGA VERSUS AEROBIC EXERCISE: EFFECTS ON INHIBITION AND WORKING MEMORY

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Despite an increase in the prevalence of yoga exercise, research focusing on the relationship between yoga exercise and cognition is limited. The purpose of this study was to examine the effects of an acute yoga, relative to aerobic exercise, on inhibition and working memory. A repeated measures design was employed where college-aged participants (Mage=20.07, SD=1.95) completed three counterbalanced testing sessions: a yoga exercise session, an aerobic exercise session, and a baseline assessment. Repeated measures ANOVAs showed that cognitive performance after the yoga exercise bout was superior with significantly shorter reaction times (RT) and increased accuracy (AC) as compared to the aerobic and baseline conditions for inhibition (incongruent flanker trials, AC: F (2, 27)=8.635, p=.001, partial η2=.39) and working memory (0-back AC: F (2, 27)=7.948, p=.002, partial η2=.371; 1-back RT: F (2, 27) =3.963, p=.031, partial η2=.227, AC: F (2, 27) =7.78, p=.002, partial η2=.366; and 2-back RT: F (2, 27) =5.417, p=.011, partial η2=.286, AC: F (2, 27) =9.702, p=.001, partial η2=.418) tasks. Interestingly, the post-hoc analyses showed the baseline performance comparable to the acute aerobic condition. These findings contradict previous research that suggests improved cognitive performance after acute exercise bouts, and highlight the need to explore the effects of non-traditional modes of exercise on cognition and the underlying mechanisms. Given the cardiorespiratory and metabolic differences between aerobic and yoga exercise, future research should address the relationship between yoga exercise, cerebral blood flow, and cognition to provide additional insight into the relationship between cognition and yoga exercise.

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## A-148

### FACTORS ASSOCIATED WITH PHYSICAL ACTIVITY AMONG KOREANS IN LOS ANGELES

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Physical activity (PA) and factors associated with meeting PA guidelines were examined among Koreans.

Koreans (n=240, 59% women, 56% uninsured, 48% with no usual source of care), ages 18 or older and able to walk without assistance, were recruited from two LA churches and completed interviewer-administered Korean language surveys assessing PA levels, PA knowledge and beliefs, psychosocial and demographic factors. The International Physical Activity Questionnaire (IPAQ) was used to measure PA levels and to categorize participants by whether they met minimal PA guidelines (i.e., >/= 30 minutes of moderate PA on >/= 5 days weekly or equivalent).

A third (33%) of the sample failed to meet minimal PA guidelines; this proportion was equal by gender. Most participants (86%) overestimated recommended guidelines for weekly minutes of PA. Those who knew that 5 or more days of PA are recommended weekly (54%) were more likely to meet minimal guidelines than others (76 vs 56%, OR=2.63, p=.002), particularly among men (79 vs 51 %, OR=4.19, p=.007). Lack of time was the most frequently reported barrier to PA (41%). Men reporting lack of time were less likely to meet PA guidelines than others (51 vs 79%, OR=.30, p=.03). Participants diagnosed with hypertension, heart disease or diabetes (39%) were more likely to meet PA guidelines than others (OR=3.09, p=.002), particularly among women (OR=5.69, p=.001).

Results demonstrate a need for interventions to increase PA among Korean American (KA) women and men. Compared with US population estimates based on the IPAQ,* fewer KAs in the sample met minimal PA guidelines. Findings of equal PA levels among women and men in the sample contrast with published findings regarding other US population groups where women are less active than men. Increasing knowledge regarding PA guidelines may be an important intervention focus, particularly for men. In this population where uninsurance rates are high and many lack a usual source of care, chronic disease diagnosis may serve as teachable moment to increase PA, especially among women.

*Bauman, et al, 2009. International Prevalence Study on PA: results from 20 countries. IJBNPA, 6, 1-11.

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## A-149

### RASCH ANALYSIS OF THE REVISED PHYSICAL ACTIVITY SELF-WORTH INVENTORY (PASWI): AN INSTRUMENT TO MEASURE PHYSICAL ACTIVITY RELATED SELF-WORTH IN WOMEN

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Background: The relationship between self-worth (SW) and physical activity (PA) participation is inconclusive. Some have found increases in SW as a result of PA, others have found little change in global SW and PA and suggest domain specific self-perceptions be used to elucidate this relationship. The aim of this study was to develop a tool to assess the relationship of the non-physical domains of SW (Knowledge, Emotional, Social) to PA participation in women.

Methods: Three hundred thirty five women (mean age=36.69±15.94 yrs, BMI=24.87±4.56) completed a revised draft of the PASWI, General SW Scale of the Adult Self-Perception Profile, and the Godin Leisure-Time Exercise Questionnaire. The Rasch model was used to evaluate the responses from the PASWI.

Results: The Rasch analysis identified three subscales that were consistent with the initial development of the PASWI. Thirty six good items were retained (Knowledge 14, Emotional 14, Social 8) which demonstrated construct validity, good internal consistency (Cronbach's alpha=.89, .87 and .72) and test re-test reliability (r=.79, .70, .81). Women who reported often participating in regular leisure-time PA during a typical week had significantly higher Knowledge, Emotional, Social, and General SW than those who engaged in some or no leisure-time PA (p<.01). There were low correlations between all subscales (Knowledge, Emotional, Social) and the General SW Scale (r=.207, .130, and .220). Knowledge and Emotional SW showed stronger correlations with PA (r=.344, .273) than did General SW and PA (r=.133).

Conclusions: The PASWI is the first tool to measure PA related SW across non-physical domains of SW. This is one of few studies to use the Rasch model for tool development in PA promotion research. The PASWI demonstrated good internal consistency, reliability, and the Rasch model provided evidence for construct validity. As a domain-specific SW tool, the PASWI demonstrated stronger relationship with PA than did a general SW tool. More tool refinement is needed.

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## A-150

### MEASUREMENT ISSUES WITHIN THE STAGES OF CHANGE FOR EXERCISE

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The stages of change (SOC) can describe individuals' relationship with exercise. Individuals not currently exercising regularly comprise the intentional group (precontemplation, contemplation, or preparation stage) whereas those engaged in regular exercise comprise the behavioral group (action or maintenance stage). To test the validity of the SOC the present study examined how participants' activity levels, measured with the 7-day Physical Activity Recall, was related to their stage classification. The behavioral criterion for the SOC was 150 minutes per week of moderate to vigorous activity. It was hypothesized that those in the intentional group would report less than 150 minutes of weekly activity. Two SOC measurement forms, a ladder (visual analog scale) and an algorithm (questionnaire), were compared within a sample of young (M years=21; SD=4.32) White (55%) and Latina (45%) women (N=112) who had no contraindications to exercise. Although there was a positive relationship between the two measures (Spearman's rho=.76, N =111, p<.001), there were critical differences in how the two measures staged individuals. The algorithm staged participants in significantly higher stages than the ladder (z=-5.23, p<.001) and placed more participants in the behavioral group (38%) than the ladder (21%). Correspondingly, the algorithm placed fewer individuals in the intentional group (62%) than the ladder (78%). The measures were similar in that those in the intentional group were at right around 150 minutes of weekly activity (M algorithm=131.57, SD=148.08 & M ladder=152.07, SD=157.06). However, the overlap in minutes of activity between the intentional and behavioral groups across both measures (intentional range=0 - 466 and behavioral range=45 - 555) suggests that the staging mechanism does not uniformly translate to activity level. Finally, those in the preparation stage were compared across both measures and only a small correlation was found (r=.22, N=111, p<.05), casting further doubt on the equivalence of these two measurement forms.

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## A-151

### FROM COUCH POTATO TO IRON MAN: COMPARING THE EFFICACY OF EPPM-BASED MESSAGES FOR CHANGING MEN'S PHYSICAL ACTIVITY BEHAVIORS

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The majority of men are insufficiently active (Colley et al., 2011). Men's tendencies to participate in risky behaviors and their inactivity likely contribute to their increased risk of morbidity and mortality (Courtenay, 2000). Physical activity decreases the risk of developing many chronic conditions and may be an optimal behavior to target in men's health interventions. However, educational resources promoting physical activity for men are lacking (Coles et al., 2010). To address this gap, we tested the efficacy of messages based upon the Extended Parallel Process Model (EPPM; Witte, 1992) to increase men's physical activity intentions and behaviors. Men who were not meeting physical activity guidelines (n=611) were randomly assigned to read high or low efficacy physical activity messages paired with high or no health risk information. Participants read four brief messages on four consecutive days. Intentions were assessed at baseline and the first follow-up (Day 5). Manipulation check measures were assessed at Day 5. Physical activity behavior was assessed at baseline and the second follow-up (Day 14). Although men's intentions to be active increased over the course of the study regardless of the messages they received (F (1, 345)=5.59, p=.019), only men who received risk information significantly increased their physical activity levels (F (1, 157)=7.29, p=.008). Men who received low efficacy and risk information were less likely to meet the physical activity guidelines at Day 14 than men who only received low efficacy information (OR=2.15, 95% CI: 0.963-4.80, Wald=3.49, p=.062). From these results, we suggest preliminary recommendations for the development of physical activity messages for men and areas for future EPPM-based research.

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## A-152

### POWER CHALLENGE PERSONAL: MOTIVATING HEALTHY BEHAVIOR THROUGH LOW-MAINTENANCE TECHNOLOGY AND GAMIFICATION

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Maintaining a healthy lifestyle in our fast-paced society is challenging, even though it may be the key to avoiding chronic diseases (e.g. Leitzmann, et al., 2007; Choe, et al., 2011; Vermeire, et al., 2001). We present a four-week case study that qualitatively examined five participants in a sensor-enabled mobile-phone-based health program, the Power Challenge Personal (PCP). PCP differs from similar health programs in its use of novel low-maintenance sensor technology, which can integrate information from multiple sources, and its simple interface that focuses only on program goals. PCP challenged participants to meet fitness and sleep goals (10,000 steps per day, 20 minutes per day with heart rate above 100 beats per minute, 7 hours of sleep per night) by leveraging the elements of goal setting and gamification (goal setting, leveling, rewards, and performance feedback). Time-stamped metrics (heart rate, activity, body angle relative to gravity, temperature, and intra-electrode impedance) were collected using the Proteus Fitness and Wellness Monitor (the Wellness Patch), a miniaturized datalogger that can be attached to the skin for up to seven days by adhesive.

Participants found steps to be the most engaging daily goal, followed by heart rate and sleep goals. Participants were highly engaged by leveling, but few were motivated by rewards. Overall, the simplicity of the Wellness Patch and PCP interface was well received, although participants with technical occupations wanted access to more detailed data. We saw the strongest behavioral change in participants who previously struggled to motivate desired activity levels.

This case study showed how a simple interface and a low-maintenance technology could motivate positive health behaviors. However, to fully leverage the capability of the Wellness Patch, we need to provide equal motivation across all metrics. Upcoming research will examine how to make the sleep and heart rate goals more engaging. Future studies will also expand PCP across newer metrics (glucose measurements and medication adherence goals) to evolve PCP into a simple system that can be used to motivate a range of important health behaviors.

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## A-153

### OUTCOMES OF A PHYSICAL ACTIVITY INTERVENTION FOR SURVIVORS OF CANCER: A PILOT STUDY

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Background:Although a lack of physical activity is related to diminished physical fitness, reduced functional status, impaired cognition, and diminished quality if life, exercise prescription is not a standard treatment support for patients or survivors of cancer. A possible explanation for the limited utility of physical activity is the limited understanding of the influence physical activity can have on physiologic and behavioral variables simultaneously. Objectives: To determine specific physiologic and behavioral effects of a monitored physical activity intervention designed for survivors of cancer.

Research Design: Eleven female participants (mean age=53.35 yrs.) post-treatment from various types of cancer (45% breast, 18% colon, 9% ovarian, 9% follicular lymphoma, 9% breast and colon) were enrolled in a 10-week physical activity based rehabilitation program. Participants engaged in individual and group exercise sessions. Assessments (baseline and final) of participant's functional capacity, RPE, cardiovascular fitness, depression and fatigue were performed.

Results: Significant differences from baseline to final assessment were determined for 30-second Chair Stand, Beck Depression Inventory-II and Brief Fatigue Inventory. Significant main effects for Time for RPE and significant interactive effects for Time and stage of the Modified Bruce Protocol. Significant bivariate correlations between 30-second Chair Stand performance change and change in fatigue. Conclusion: These results indicate a monitored physical activity intervention designed for survivors of cancer can significantly influence both physiologic and behavioral variables of participants. Future Plans: With the identification of the multifaceted effect physical activity can have on survivors of cancer, further study in the design of standardized protocols is warranted.

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## A-154

### ACCEPTABILITY AND ADHERENCE TO YOGA PRACTICE: DOES TYPES OF INSTRUCTION MATTER?

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Yoga holds promise for reducing risk factors for type 2 diabetes; however, little is known about the sustaining effects of a yoga intervention among persons at high risk for type 2 diabetes. This pilot study aimed to compare two types of yoga instruction (e.g., face-to-face vs. home DVD-based program) in terms of acceptability and adherence to yoga practice. This study employed a 6-month randomized controlled trial design. Fourteen overweight sedentary adults (12 females; 4 Non-Whites; mean age: 58.6±5.4 years; mean body mass index: 31.8±5.8 kg/m2) were randomly assigned to either a face-to-face yoga group where they attended weekly yoga sessions guided by a certified yoga instructor (Face Group), or a home-based yoga group where they practiced yoga at home with yoga DVD (DVD Group). During the follow-up period, two booster sessions were available for both groups. Measurements included program satisfaction (10-point scale, 0% to 100%) and adherence (class attendance and exercise log). Mann-Whitney Test was conducted to compare groups. Face Group was more satisfied with their instruction method than DVD Group (88.3 vs. 58.3, p=.013). Participants enjoyed the supervised yoga and wanted longer and more frequent classes. Participants found yoga to be relaxing and that it increased strength, flexibility, balance, and mind-body awareness. Retention rate was 85.7% at 2 months and 71.4% at 6 months. For the 2-month active intervention period, Face Group practiced yoga more than DVD Group (75 vs. 53.4 minutes/week); however, during the 4-month follow-up period, DVD Group showed better adherence rates to yoga practice than Face Group (100% vs. 67%). Direct guidance of an instructor was preferred over the self-learning method of using a DVD at home. Participants practiced more yoga with face-to-face group sessions; however, when asked to practice on their own in the follow up period, the self-learned practice resulted in better adherence to yoga. Additional research with a larger sample is warranted to further evaluate adherence to yoga programs in this population.

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## A-155

### STUDYING NATURALLY-OCCURRING CHANGES IN PHYSICAL ACTIVITY OVER 24 MONTHS AMONG PERSONS WITH MULTIPLE SCLEROSIS

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Background: There is strong evidence for physical inactivity among persons with MS. By comparison, very little is known about naturally-occurring changes in physical activity over time in persons with MS. Such an inquiry is important for identifying the rate and patterns of change for the design of behavioral interventions in this population.
Objectives: The present study conducted latent growth curve modeling (LGCM) and latent class growth analysis (LCGA) for understanding the rate and patterns of change in physical activity over a 24-month period among persons with MS.
Methods: On three occasions separated by 12-month periods, persons (N=275) with relapsing-remitting MS (RRMS) completed a battery of questionnaires that included assessment of physical activity behavior. The battery was delivered and returned through the US postal service. Data were analyzed using LGCM and LCGA in Mplus 3.0.
Results: The LGCM indicated that a linear growth model provided a good fit to the data (χ2=3.94, p=.05, CFI=.987, SRMR=.025), however, the slope (M=0.078) was non-significant indicating no change (p>.05). There was significant slope variance and we conducted LCGA for identifying any inter-individual differences in intra-individual change. We tested a 2-class solution, and based on the Lo-Mendell-Rubin likelihood ratio test, this model fit the data better than the 1-class solution. The 2-class solution consisted of highly active (20%) and inactive (80%) persons, but there was minimal change in physical activity over time. We then added disability and sex as predictors of class status, and the inactive class was predicted by both variables.
Discussions: The findings suggest that there is little inter-individual and intra-individual change in physical activity over 24 months in this cohort of persons with RRMS. The rate of inactivity in this cohort of MS identifies the importance of behavior interventions and the point in the early disease process wherein physical inactivity originates.

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## A-156

### PHYSICAL ACTIVITY, SYMPTOMS, AND WALKING IMPAIRMENT OVER TIME AMONG PERSONS WITH MULTIPLE SCLEROSIS

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Background: Physical activity has been identified as an important correlate of walking impairment in aging and persons with chronic disease, and symptoms such as fatigue and pain may serve as intermediaries in the association between those variables. We are unaware of published evidence that has examined the associations among changes in physical activity, symptoms of fatigue and pain, and walking impairment over time in persons with multiple sclerosis (MS).
Objective: The present study used a panel model for examining associations among changes in physical activity, fatigue, pain, and walking impairment over an 18-month period among persons with MS.
Methods: On two occasions separated by an 18-month period, persons (N=276) with relapsing-remitting MS (RRMS) completed a battery of questionnaires that assessed physical activity, pain, fatigue, and walking impairment. Those study materials were delivered and returned via the United State Postal Service. The data were analyzed with panel analysis.
Results: Regarding baseline data, physical activity had a direct effect on fatigue (path coefficient=−.19, p=.001), but not pain (path coefficient=−.01, p=.45), and physical activity (path coefficient=−.15, p=.002), fatigue (path coefficient=.44, p=.000), and pain (path coefficient=.19, p=.000) had direct effects on walking impairment. Regarding 18-month follow-up data, change in physical activity had a direct effect on residual change in fatigue (path coefficient=−.11, p=.02), but not pain (path coefficient=−.01, p=.46), and change in physical activity (path coefficient=−.08, p=.02) and fatigue (path coefficient=.14, p=.000), but not pain (path coefficient=.06, p=.06), had direct effects on residual change in walking impairment.
Discussion: This study suggests that fatigue and pain are potential mediators, and important determinants, of the association between changes in physical activity and walking impairment over time among persons with MS.

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## A-157

### TEACHING OLD DOGS NEW TRICKS: PERCEPTIONS OF SMARTPHONE-NAïVE MIDLIFE AND OLDER ADULTS ON USING SMARTPHONES TO IMPROVE HEALTH BEHAVIORS

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Midlife and older adults are at increased risk for chronic conditions associated with physical inactivity and prolonged sitting. The Mobile Interventions for Lifestyle Exercise & Eating at Stanford (MILES) pilot study evaluated the use of Smartphone applications (Apps) designed to increase physical activity and reduce sitting time in midlife and older adults. Participants were healthy physically inactive adults (N=23, women=15, men=8, mean age=58.2 years) who did not use a Smartphone. At the end of the 8-week study participants used a Likert scale to report their perceptions of Smartphones (strongly disagree=1, strongly agree=5) and the Apps (strongly disagree=1, strongly agree=6). Only 9.7% of participants found Smartphones uncomfortable to use, 16.1% felt intimidated by the complexity of Smartphones and 28.8% felt Smartphones were frustrating to use. Most participants (93.6%) reported the Apps were easy to use. Participants agreed that the Apps: 1) made them aware of their physical activity (78.3%, mean=4.35) and sitting time (87.0%, mean=4.65); 2) helped them track their physical activity (60.8%, mean=3.91) and sitting time (73.9%, mean=4.22); and 3) motivated them to increase physical activity (54.2%, mean=3.87) and reduce sitting time (69.6%, mean=3.91). In the final survey and exit interviews participants' common concerns were: discomfort wearing the Smartphone (required to capture physical activity and sitting time); costs of Smartphone devices and plans generally; difficulty using the touch screen and seeing the screen, and poor cell coverage. These initial results are encouraging, and will be evaluated further in a larger study.

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## A-158

### ASSOCIATION BETWEEN MENTAL HEALTH AND PHYSICAL ACTIVITY ENGAGEMENT AMONG IRAQ/AFGHANISTAN WAR VETERANS

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Background: Emerging evidence indicates that depression and post-traumatic stress disorder (PTSD) place Iraq/Afghanistan War Veterans at increased risk for cardiovascular disease.(1) To our knowledge, no prior studies have documented prevalence and mental health correlates of physical activity in this population. Examining rates and correlates of moderate-to-vigorous physical activity (MVPA) engagement in this population is critical, as MVPA engagement is likely to help prevent or offset the deleterious health consequences of mental health burden. Thus, the present study examined prevalence and correlates of MVPA among Veterans Affairs (VA)-enrolled Iraq/Afghanistan War Veterans.

Methods: The sample was Iraq/Afghanistan Veterans who were administered a survey at intake to a VA post-deployment clinic (May,2005-August,2009; N=316). The outcome was total minutes of weekly MVPA assessed using the International Physical Activity questionnaire—short form.

Results: The majority of Veterans were male, Caucasian, unmarried, employed, had an annual income less than $35,000, and served in the Army. Nearly half had some college education. Median weekly MVPA minutes was 180 (Mean=374.8 (SD=465.1)). Depression symptom severity was negatively associated with MVPA engagement after adjusting for a host of sociodemographic characteristics (i.e., gender, age, ethnicity, marital status, educational attainment, employment status, and income) in a linear regression model; Standardized Beta=-.181, p=.019. PTSD symptom severity was not associated with the outcome.

Conclusions: MVPA engagement among Iraq/Afghanistan Veterans was high overall. Veterans experiencing symptoms of depression should be targeted with interventions that promote engagement in MVPA to prevent onset or progression of cardiovascular disease and its risk factors.

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## A-159

### DO 7-DAY PHYSICAL ACTIVITY LOGS MEASURE EXERCISES THAT ACCELEROMETERS CAN'T? RESULTS FROM LOGS RETURNED OVER 12 MONTHS BY POSTPARTUM WOMEN

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Physical Activity (PA) logs have been used to measure PA for over 25 years, but have rarely, if ever, been used with postpartum women. Logs are important since they can measure PA intensity that an accelerometer can't (e.g., pushing a stroller, carrying a baby) and PA like swimming. Within a randomized trial designed to increase Moderate-to-Vigorous Physical Activity (MVPA) in new mothers, both 7-day PA logs and accelerometers were used to measure MVPA. Women were randomly assigned to a PA intervention tailored to new mothers or general PA materials. PA logs were completed at baseline, 3, 6, and 12mo. Participants recorded the time/type/intensity of PA lasting ≥10 min for 7 days nad specifically noted PA in water or PA when pushing a stroller. MET values were assigned using the Compendium of Physical Activities, with MVPA defined as MET≥3. At baseline, 235 women (84.5% of sample) completed PA logs, of those, 70.2% recorded ≥7 days. At 12mo, 153 women (78.5% of retained sample) returned PA logs and 82.4% were complete. At 12mo, only 7.4% of PA was done while pushing a stroller and 1.2% while carrying baby, a slight decrease from baseline (8.0% and 2.5%, respectively). PA in water constituted only 1.9% of PA at both time points. Walking, ccupational, and home activities represented 84.3% of PA at baseline and 75.6% at 12mo. Overall, 7.1% (baseline) to 9.7% (12mo) of reported PA was performed while not wearing the accelerometer. Using paired t-tests (n=142), MVPA significantly increased (t=-4.14, p<.0001) from 98.6 min/wk at baseline to 194.8 min/wk at 12mo, with no main effect for condition. The percentage meeting PA recommendations (150 min/wk MVPA) increased from 24.7% at baseline to 47.1% at 12mo, with no differences by condition. This study found very high compliance with PA logs in new moms over 12months. Although new moms could potentially be doing PA that accelerometers cannot capture, such PA was not frequently reported on the logs. The use of PA logs in addition to accelerometers may not be warranted for this population.

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## A-160

### INVESTIGATING SOCIAL COGNITIVE FACTORS OF PHYSICAL ACTIVITY IN ELEMENTARY SCHOOL-AGED CHILDREN

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There is a large literature base showing that Social Cognitive Theory (SCT) predicts physical activity (PA) and is useful in planning PA interventions. However, fewer investigations have addressed SCT in children's PA. Therefore, the purpose of this study is to examine the influence of SCT predictors of PA in elementary school children. We hypothesize that self efficacy, social support, and PA enjoyment will predict PA in this population. Children from 4 urban elementary schools in the 4th and 5th grade from Denver, Colorado (N=258, mean age=10.22 (SD=.774), 49.2% female, 46.5% Hispanic, 26.5% white, and 27% "other") completed self-reported questionnaires. Means for the SCT predictors were: self efficacy, 3.18 (SD=.763)(range 1-5), PA enjoyment, 4.31 (SD=.728)(range 1-5), and social support, 6.20 (SD=1.53)(range 0-8). On average children engaged in 232.23 (SD=134.82) strenuous PA minutes per week, 160.59 (SD=130.53) moderate PA minutes per week and 136.73 (SD=125.38) mild PA minutes per week. Multivariate regression analysis for strenuous PA was significant (F=19.70, df=252, p<0.01) and explained 18.20% of the variance in PA; moderate PA was significant (F=8.78, df=251, p<0.01) and explained 8.50% of the variance in PA; mild PA was significant (F=5.62, df=247, p<0.01) explaining 5.3% of the variance in PA. Standardized beta values for strenuous and moderate PA revealed that all SCT predictors were significant (strenuous PA: betaSE=.255, betaSS=.197,betaPA enjoy=.189,p<0.05) (moderate PA: betaSE=.144, betaSS=.136,betaPA enjoy=.167,p<0.05). While beta values for mild PA revealed that only self efficacy and PA enjoyment were significant predictors of PA among children (betaSE=.126,p=.05, betaPA enjoy=.187,p<0.05). Results indicate that all SCT measures are related to higher levels of strenuous and moderate PA. Therefore, social cognitive theory predictors should be addressed when intervening with children's PA.

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## A-161

### PHYSICAL ACTIVITY AND RISK FOR METABOLIC SYNDROME IN YOUNG MINORITY CHILDREN

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This study evaluated children's physical activity (PA) in relation to metabolic syndrome (MS). We predicted that children with lower amounts of daily moderate-vigorous (MV) PA would show more risk factors for MS. Accelerometers were used to measure PA in 86 children (95% Hispanic) in grades K-1 from lower income schools. Anthropometric measures included BMI and waist and hip circumference; health measures included SBP percentile; total cholesterol; HDL; LDL; triglycerides; blood glucose; plasma insulin; and insulin resistance based on fasting glucose and insulin (HOMA). The mean age of participants was 5.6 years; 59.3% were female. Results indicated that children wore the accelerometer for a mean of 13.2 hours per day and engaged in an average of 35.63 minutes of MV PA per day. When corrected for the time worn, children had an average of 2.7 minutes of moderate to vigorous activity per hour, per day. Only 12 children (16.4% of the sample) engaged in the CDC recommended amount of MV PA. Twenty-one % of the sample met criteria for MS using HOMA as the measure of insulin resistance. There were significant correlations between MV PA and SBP percentile (p<.05) and blood glucose (p<.03). T-tests were conducted to compare children who met or exceeded CDC physical activity recommendations with children who did not meet the 60 minutes per day cutoff. Groups were compared on anthropometric and health outcome variables that indicate risk for MS. Results indicated that children engaging in ≥60 minutes of daily MV PA had significantly lower SBP (p<.05) and smaller hip circumference (p<.05). These findings indicate that 1) very few young minority children meet the recommended amount of daily MV PA, and 2) with greater amounts of MV PA, children's SBP, fasting glucose, and hip circumference are lower, suggesting that increased PA in young children may reduce risks for MS. Interventions to increase daily MV PA in young minority children are needed.

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## A-163

### EXERCISE DURING PREGNANCY: PERSPECTIVES OF AFRICAN AMERICAN WOMEN

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Background: Despite the benefits of physical activity during pregnancy, many pregnant women, and particularly pregnant African American women, do not engage in the recommended levels. This qualitative study explored the perspectives of pregnant and early postpartum African American women regarding exercise.
Methods: Semi-structured interviews were conducted with 25 pregnant and 8 early postpartum African American women (N=33) who were overweight or obese during pregnancy in Columbia, South Carolina. Women from early, mid, and late pregnancy were included. Interviews were recorded, transcribed verbatim and analyzed thematically using QSR NVivo 8 data analysis software. The primary focus of analysis included views of safe and unsafe practices, risks of exercise, and barriers and motivators to exercise.
Results: The mean age of the sample was 26.1±4.9 years. Ninety-four percent of women reported walking as the safest exercise during pregnancy (n=31). Women also listed swimming (n=21), yoga (n=11), and biking (n=10) as safe exercises. Exercises listed as unsafe included running or jogging (n=18), lifting heavy objects (n=12), sit-ups or crunches (n=10), and push-ups or pull-ups (n=8). Commonly cited risks of exercise were falling (n=13), premature labor (n=11), miscarriage (n=10), and having the umbilical cord wrap around the baby's neck (n=7). Reported barriers to exercise included fatigue (n=21), discomfort or pain (n=20), nausea in the 1st trimester (n=18), and laziness (n=15). Seventy percent of women reported limiting pregnancy weight gain as a motivator to exercise (n=23). Other motivators to exercise included improvements in personal health (n=20), easier labor (n=19), and postpartum weight loss (n=17).
Conclusions: This qualitative investigation can help inform intervention recommendations for pregnant women, including: encouraging exercises commonly perceived as safe, such as walking and swimming; increasing education to address commonly cited misconceptions regarding unsafe exercises and risks of exercise; and developing strategies to overcome highly cited barriers to exercise.

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## A-164

### PRENATAL GENETIC TESTING FOR GENOMIC DISEASES AND TRAITS: WHAT DO CHINESE AMERICANS THINK?

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Purpose: This study examined Chinese Americans' perspectives regarding prenatal genetic testing for various genomic diseases and traits.
Background: Prenatal genetic testing for early and accurate assessment of complex genomic diseases and traits will be a reality in the near future. To reduce genomics-related health disparities, the voice of racial/ethnical minorities should be considered.
Methods: We conducted semi-structural, in-depth, individual interviews with 49 participants from two major Chinese American communities in the southern United States. Hypothetical scenarios were used to assess if participants would be interested in testing their fetuses for any genomic diseases and traits.
Results: The majority of participants favored prenatal genetic testing. The four most frequently identified diseases and traits included family-history-related diseases, genetic disorders, intelligence quotient, and psychological/mental disorders. Participants' attitudes towards prenatal genetic testing might be associated with Chinese culture, lack of genetic knowledge, and unawareness of available resources for families and children with special needs.
Conclusion: Chinese Americans in this study generally supported prenatal genetic testing. Culturally competent genomic education addressing this particular group's beliefs, norms, and needs is urgently required.

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## A-165

### RELIGIOUS COMMITMENT PREDICTS LOWER INCIDENCE OF PRETERM BIRTH IN RURAL APPALACHIAN WOMEN

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The ability to predict preterm birth (PTB) is important because predictive variables might lead to interventions to reduce the incidence of PTB. In a recently completed longitudinal study, which enrolled women during the first trimester of pregnancy, we measured many physical, cultural, and psychological variables throughout pregnancy. In the current investigation, we attempted to determine whether religious commitment was predictive of the rate of PTB. This hypothesis stemmed from two previous findings. First, stress has been shown to predict preterm labor, and second, we have recently shown that reported stress levels are significantly lower in women who report a certain type of religious commitment, Surrender to God (SURR). In the current study we measured both SURR and Frequency of Attendance at Religious Services (ATT) and had complete data on 291 women. ATT was not predictive of PTB (p=.68) independently, and SURR only approached significance (p=.051), therefore, in order capture religiosity in both words and actions, we created a composite variable (Religious Commitment [RC]) containing two items from Wong-McDonald and Gorsuch's (2000) Surrender Scale and the religious service attendance item from the Brief Multidimensional Scale of Religiousness and Spirituality (BMMRS, Fetzer, 1999). RC was then used as a predictor of PTB measured on a five point scale (Extreme PTB <32 wks gestation, Moderate PTB 32-33 wks gestation, Mild PTB 34-36 wks gestation, Early term 37-38 wks gestation, and Term 39+ wks gestation). Multiple regression showed that RC was a significant predictor of lower rates of PTB (p=.043, Beta=0.121) when controlling for Insurance Type (Public Assistance vs. Private Insurance; p=.732, Beta=-0.021) and Marital Status (Married vs. Unmarried; p=0.013, Beta=-0.156). No PTBs prior to 34 weeks gestation were reported for those dichotomously identified as RC. The RC women carried pregnancies to term (39+ weeks) 62.2% of the time compared to 54.3% for non-RC women.

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## A-166

### CORRELATES OF PREGNANCY AMONG ADOLESCENT WOMEN RECEIVING MENTAL HEALTH TREATMENT

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A national decline in pregnancies among adolescent females between 1991 and 2009 has been documented; yet, the US continues to have higher rates of teen pregnancies compared to other developed nations. Prevalence data on pregnancy among adolescent women diagnosed with psychological disorders are lacking, although research demonstrates a link between mental illness and high risk sexual behavior, suggesting that this population is at high risk of pregnancy. This study sought to assess the prevalence of pregnancy and to examine correlates of pregnancy in this population.
Eligible participants were between ages 13-18, received a psychological diagnosis, and in- or out-patient mental health treatment. Adolescents completed a computerized interview assessing sociodemographic characteristics, sexual history, and psychosocial characteristics.
The study sample comprised 264 sexually active females with a mean age of 15.33 (sd=1.26). Of these, 17.4% reported a pregnancy in their lifetime. Over half of the sample was composed of African Americans (56.1%), followed by Caucasians (30.3%) and Latinas (11.4%). The majority of adolescents came from low income families (<$20K/year) (55.7%), and 56.1% reported having no father in the home. A multivariable logistic regression analysis controlling for covariates suggests that females perceiving their parents to have positive norms toward sex (AOR=0.47; p=.049) and those reporting having a father in the home (AOR=0.29; p=.007) were less likely to have had a pregnancy.
Findings corroborate prior research with general population adolescents suggesting that positive parental norms toward sex and presence of a father in the home may deter early sexual initiation and pregnancy. Efforts to reduce the incidence of adolescent pregnancy among females receiving mental health treatment must address not only individual emotional, psychological and developmental factors and behaviors but also family dynamics.

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## A-168

### COMFORT WITH CONDOMS AND IMPLICIT CONDOM ASSOCIATIONS WITH THE SELF

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Explicit attitudes towards condoms predict condom use; however, much less is known regarding the relationship between implicit attitudes and condom use. This study tested the extent to which implicit associations of condoms with disease, the self, sex, one's partner, and valence (good/bad) predicted an indirect behavioral assessment of comfort with condoms (time holding a condom). Individuals completed an implicit association task (IAT; Greenwald et al., 1998) and were given a demonstration of proper condom use. During the demonstration participants were randomly assigned to hold a condom ($n=113$) or a small notebook ($n=106$) ostensibly as a favor to the experimenter. We hypothesized that more positive implicit associations would predict greater condom holding time, but not notebook holding time. In a series of tests predicting holding time, an implicit attitude X condition interaction was found for implicit associations with condoms and the self ($\beta=-.25$, $p=.02$). Results indicated that people with low associations of condoms and the self held the condom longer than those who held the notebook, potentially suggesting that those more psychologically distant from condoms were more comfortable with them. These findings suggest that implicit associations of condoms with the self may not translate into comfort with condom use.

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## A-169

### RISK PERCEPTIONS PREDICTING DIABETES SELF-CARE BEHAVIORS

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The study assesses relationships among perceived risk, diabetes self-care and glycemic control in individuals participating in a behavioral intervention that improved glycemic control and self-care. The Improving Diabetes Outcomes study was a randomized controlled trial of a telephonic behavioral intervention in a diverse sample with sub-optimal control of type 2 diabetes ($n=526$). Change scores were evaluated for measures of self-care (Summary of Diabetes Self-Care Activities), perceived risk (Risk Perception Survey-Diabetes Mellitus) and glycemic control (HbA1c). Interaction product terms were evaluated in regression models with main effects terms and covariates followed by post-hoc probing of moderation analyses. Participants were: mean age 56+7.3 years, 67% female, 62% Black, 23% Hispanic. Results indicate a significant interaction between changes in optimistic bias and intervention predicting changes in exercise adherence ($\beta=-0.87$, $SE=0.42$, $p=.04$). Post-hoc tests revealed significant intervention effects only at low levels of changes in optimistic bias, $p=.03$, mean+SE change -.37+1.00 for print and .92+1.00 for telephone group. There was a significant interaction between changes in risk knowledge and intervention predicting changes in dietary adherence ($\beta=0.30$, $SE=0.12$, $p=.02$), with significant intervention effects only at high levels of changes in risk knowledge, $p<.01$, mean+SE change .55+1.79 for print and 1.41+1.79 for telephone group. Results showed that the intervention had a greater impact on self-care in those who showed positive changes in perceived risk, namely decreases in optimistic bias and increases in risk knowledge. Although the intervention did not significantly influence risk perceptions, findings suggest that the impact of behavioral interventions may be increased by targeting aspects of perceived risk in patients with sub-optimal diabetes control.

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## A-170

### GENETIC COUNSELING CONTENT: IMPACT ON SHORT-TERM OUTCOMES

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Though studies have examined the impact of genetic counseling on short-term outcomes, research linking actual content of genetic counseling sessions to such outcomes is scant. Using a Self-regulation Model Framework, we explore the impact of cognitive and affective content in genetic counseling for familial breast-ovarian cancer on short-term outcomes.

Men and women ($N=97$) at elevated risk of familial breast-ovarian cancer participated in a longitudinal study to examine the impact of genetic counseling on short-term outcomes. Counseling sessions were analyzed with Linguistic Inquiry and Word Count software. Indices of proportions of counselee cognitive (cog) and affective (aff) content and counselor cog and aff content during sessions were used as predictor variables in multiple regression models. Dependent variables were distress, perceived risk, and 6 knowledge measures (Meaning of Positive Test; Meaning of Negative Test; Role of Personal Behavior in developing cancer; Practitioner Knowledge of if and when an individual will develop cancer; Mechanisms of Cancer Inheritance; Frequency of Inherited Cancer) from pre- to post-counseling.

Knowledge increased for 5 measures and decreased for Personal Behavior, Distress and Perceived Risk ($p$'s$<.05$). All outcomes had significant content-related predictors and controlling for age and education were significant/marginally significant for 3 measures. More counselor cog and aff was associated with decreases in knowledge of Personal Behavior ($p<.05$). More counselee and less counselor aff was associated with gains in Practitioner Knowledge ($p<05$). More counselor cog, and interaction of counselor cog and aff , were associated with higher perceived risk ($p<.08$).

In sum, genetic counselors largely dictate the focus of counseling sessions. Therefore, their content is tied more closely to short term outcomes. Counselees may be overloaded with information, and this can pose problems for understanding of complex concepts.

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## A-171

### ALCOHOL-RELATED CRASHES IN RURAL GEORGIA: A COMMUNITY-BASED PREVENTION CASE STUDY

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Bulloch County, Georgia, a rural county with a population of 67,761, has been identified as having a higher rate of alcohol-related traffic crashes than the state average. Needs assessment results revealed the highest crash rates were among White males between the ages of 25-34 within the city of Statesboro. Social and community norms related to alcohol consumption, low perceived risk of getting caught, and low perceived risk that buzzed driving is dangerous were identified as predictors of alcohol-related traffic crashes. To reduce the number of alcohol-related traffic fatalities in Bulloch County, a community-driven prevention process (ONE Bulloch) employing environmental strategies (e.g., media advocacy, social norms marketing, sobriety checkpoints) was used to develop community capacity to address alcohol-related harms, including alcohol-related traffic crashes. The purpose of this evaluation study was to evaluate the process and outcomes of ONE Bulloch's efforts to change social norms and behaviors related to DUI, with emphasis on 25 - 34 year old White males. The RE-AIM evaluation framework utilizing mixed methods (e.g., observation, intercept interviews, and secondary data analysis) was used to assess community, system, and environmental process and outcomes. Combined results provided insight into the contributing factors to social and community norms related to drinking and DUI for the target population. Overall, ONE Bulloch represents a community-based approach to increasing capacity to address alcohol harms, and provides insight into barriers to implementation (e.g., lack of a coordinated prevention system, competing demands) and evaluation (e.g., delays in implementation which prevent readiness for outcome evaluation).

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## A-172

### COLLEGE STUDENTS' PERCEPTIONS AND WILLINGNESS TO PARTICIPATE IN GENETIC BIOBANKS: PROJECT GATHER-SMU

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Background: Genetic biobank research is typically limited to community-dwelling or international samples. Participation in genetic biobanks could occur with young adults of any age, but is usually with adult samples in the US. While international studies suggest that age and education may play a role in adults' willingness to participate in genetic biobanking. Currently in the US, no studies have assessed young adults (e.g., college students') perceptions about genetic biobanks and their willingness to participate.
Purpose: The goal of this study was to examine college students' perceptions of genetic biobanks and to identify their willingness to participate in genetic biobanks.
Methodology: A total of 250 students from private and public colleges completed an 18-item questionnaire that assessed sociodemographics, health behaviors, perceptions, and willingness to participate in genetic biobanks. Participants received a genetic biobank description after answering an initial perception question. Descriptive, chi-square, and qualitative analyses were conducted.
Results: Participants were primarily white (73%), female (66%), young adult age (M=20, SD=2; range 18-31), early college years (M=13, SD=1) at a private college (66%). While 27% were racial minorities, 15% also self-identified as Hispanic/Latino. Prior to paragraph, 36% of sample heard of the term genetic biobank; post-paragraph, 64% were willing to participate (x2=.523; p>.05). Demographic factors related with greater initial awareness of term was being white vs. non-white (x2 =8.041; p=.005), later vs. early college years (x2 =9.703; p=.002) and over vs. under age 20 (x2 =6.267; p=.012). Six primary themes were identified. Privacy, lack of time, and personal reasons were barriers compared to scientific advances, altruism, and prevention/treatment of disease as facilitating factors.
Conclusions: Once informed, the majority of college students were willing to participate in genetic biobanks and provided commonly discussed reasons to participate in the adult literature. With college students being receptive to genetic research, genetic biobanks in the US could be conducted across the lifespan.

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## A-174

### EXPLORING ASSOCIATIONS BETWEEN TESTOSTERONE AND SAFER SEX BEHAVIORS

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Higher testosterone (T) is tied to risky behaviors, most notably in financial domains, but also in health behaviors relevant to acquiring sexually transmitted infections (STIs). Men with higher T might be expected to engage in high-risk sexual behavior, because of links between higher T and risk-taking. Or, the opposite link between T and sexual risk might exist, because safer sex behaviors could themselves carry "social risk" due to sexual stigma or the status accorded to highly sexually active men. We examined associations between salivary T and safer sex behaviors in 78 first-year male college students. Higher T was associated with a higher likelihood of engaging in safe sex, r(73)=.33, p<.01. For men who were sexually active, those with higher T showed more comfort purchasing condoms, r(32)= 0.37, p<.05, had higher likelihoods of following through with condom use in the face of barriers, r(32)=0.36, p<.05, and tended to report that condoms were less likely to interfere with sexual pleasure, r(31)=0.31, p= 0.085. The results of this study suggest that safer sex is positively linked to T in men, suggesting that safer sex may be paradoxically perceived as the more socially "risky" or high status choice even as it decreases STI risk.

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## Citation Poster

## A-175

### ASSOCIATIONS BETWEEN A DOPAMINE D4 RECEPTOR GENE, ALCOHOL USE, AND SEXUAL BEHAVIORS AMONG ADOLESCENT AFRICAN-AMERICAN FEMALES

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Among adolescent females, alcohol use has been related to sexual risk-taking. African-American adolescent females initiate alcohol use later and consume less alcohol than Caucasian peers; however, they also report earlier onset of first sex and more lifetime partners than Caucasian peers. Impulsivity has been implicated in the association between alcohol and sexual risk, and the variable number tandem repeats (VNTR) polymorphism in exon III of the human dopamine D4 receptor gene (DRD4) has been correlated with impulsivity, alcoholism, and sexual risk behavior. Thus, the goal of this study was to explore the role of a biological marker of impulsivity (DRD4) as it relates to alcohol use and sexual activity among African-American adolescent females. Participants were 319 African-American adolescent females enrolled in an HIV prevention program who completed a baseline survey assessment (prior to randomization) and provided a saliva sample from which DRD4 VNTR was genotyped. Adolescents with at least one DRDR 7-repeat allele (7R+) were more likely to report a history of alcohol use (p=.035). History of alcohol use was associated with greater lifetime number of vaginal sex partners (p=.009). An interaction between history of alcohol use and DRD4 (7R+) indicated that for non-alcohol users, those with7R+had more sex partners than those without (M=10.83 vs 4.03, respectively), but among alcohol users those with 7R+reported fewer sex partners than those without (M=8.41 vs 11.50, respectively). Impulsivity, as assessed by DRD4, was related to both alcohol use and sexual activity, but the direction of its association with sexual behavior varied as a function of alcohol use. Thus, additional research is needed to gain a greater understanding of the nuanced role of impulsivity and the intersection of both risk behaviors in this population.

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## Citation Poster

## A-176

### INTERACTION BETWEEN 5-HTTLPR POLYMORPHISM AND ABUSE HISTORY ON ADOLESCENT AFRICAN-AMERICAN FEMALES' CONDOM USE BEHAVIOR FOLLOWING PARTICIPATION IN AN HIV PREVENTION INTERVENTION

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Not everyone exposed to an efficacious HIV intervention will reduce sexual risk behaviors, yet little is known about factors associated with "failure to change" high risk sexual behaviors post-intervention. History of abuse and polymorphisms in the serotonin transporter gene (5-HTT) may be associated with failure to change. Thus, this study sought to identify genetic and life history factors associated with adolescent African-American females' failure to change their condom use behaviors post-participation in an HIV prevention intervention. Participants were 266 African-American adolescent females enrolled in a randomized controlled trial of a demonstrated efficacious HIV prevention program who completed baseline and 6-month post-intervention follow-up assessment, and provided a saliva sample from which a polymorphism in the SCL6A4 (serotonin transporter [5-HTT]) gene polymorphism known at the 5-HTT linked promoter region (5-HTTLPR) was genotyped. Adolescents with a history of abuse had greater probability of being non-responsiveness to the intervention (i.e., no increase in condom use) at 6-month assessment compared to those with no abuse history (RR=1.50, 95% CI: 1.12-2.00; 52.7% vs. 35.2%, respectively). When separately examined by 5-HTTLPR status, the association between abuse and non-responsiveness to the intervention was only observed among adolescents with the s allele of the 5-HTTLPR (RR=2.31, 95% CI: 1.34-4.01; 53.3% vs. 23.1%, respectively). STI/HIV interventions for adolescent females may consider providing a more in-depth discussion and instruction on how to manage and overcome fear or anxiety related to being assertive in sexual decisions or sexual situations. Doing so may improve the efficacy of STI/HIV prevention programs for adolescent women who have experienced abuse in their lifetime.

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## A-178

### SLEEP AND FIBROMYALGIA

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Fibromyalgia (FM) symptoms include pain, fatigue, disturbed sleep, and depression, yet little is known about FM etiology. The Sleep and Pain Diathesis (SAPD) model of FM suggests that sleep is an upstream, etiological factor driving a cognitive feedback loop that maintains FM symptoms. The current study sought to preliminarily validate the SAPD model with cross-sectional data from 35 women diagnosed with FM (M age=47, SD=10.36; M years with pain=13, SD=9.07; 73% Caucasian, 20% Black, 6% Hispanic). Participants were recruited for one of two ongoing FM studies. Inclusion (age >18 years, female, physician-confirmed diagnosis) and exclusion criteria (comorbid autoimmune illness, history of cancer) were similar for both studies. Data were extracted from participants' initial screening questionnaires, including Pittsburgh Sleep Quality Index scores (PSQI), McGill Pain Questionnaire affective and sensory scores (MPQ-A & MPQ-S), The Emotion Amplification and Reduction Scales (TEARS-EA & TEARS-ER), Beck Depression Inventory scores (BDI), and Fibromyalgia Health Assessment Questionnaire disability scores (FHAQ). Consistent with the SAPD model, PSQI and BDI were related (β=1.81, p<.05). This relationship was mediated by pain (βMPQ-A= 9.04, p<.01) and TEARS-ER (βTEARS-ER=-4.26, p<.05). Inclusion of pain and TEARS-ER fully mediated the relationship between PSQI and BDI (βPSQI=.453, ns; Sobel z=2.48, p<.05), but only pain (MPQ-A) met full criteria for mediation. PSQI also predicted FHAQ (β=.075, p<.05) as did pain (βMPQ-A=.233, p<.05). Pain also partially mediated the relationship between the PSQI and FHAQ (βPSQI=.038, p<.05; Sobel z=2.48, p<.05). Collectively, the PSQI, TEARS-ER, and MPQ-A accounted for 79.5% of the variance in the BDI and 61.3% of the variance in the FHAQ. These data are consistent with the SAPD model, suggesting that sleep problems play a key role in the onset and maintenance of FM. However, because these are cross-sectional data, treatment and longitudinal data are needed to support the causal trajectory implied by the SAPD model.

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## A-179

### THE DISCREPANCY BETWEEN SUBJECTIVE AND OBJECTIVE MEASURES OF SLEEP IN OLDER ADULTS RECEIVING CBT FOR COMORBID INSOMNIA

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Clinical research on insomnia has found that it is common for individuals with this sleep disorder to exhibit a significant discrepancy between their subjective reports of sleep parameters and objective measures of the same parameters. This study sought to more closely examine this discrepancy by comparing sleep parameters derived from diary estimates to those from home-based polysomnography (PSG) in a population of 60 older adults with comorbid insomnia enrolled in a randomized clinical trial testing CBT for insomnia (CBT-I) vs. a placebo control. Consistent with previous research, results show that self-report measures significantly underestimated sleep as measured by PSG, with the greatest discrepancy occurring with regard to sleep onset latency. A higher percentage of stage 1 sleep was a significant predictor of discrepancy. Participants receiving CBT-I showed greater improvement in self-reported sleep compared to the control condition, but no significant differences in PSG measures of sleep were shown at post-treatment. CBT-I participants demonstrated significantly reduced discrepancy at post-treatment, particularly with regard to sleep onset latency. Increased self-reported sleep efficiency and reduced stage 1 percentage were independent predictors of decreased discrepancy. Additionally, high discrepancy at baseline was a significant predictor of positive treatment outcome by self-report, suggesting that CBT may be well-suited to patients with higher baseline discrepancy.

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## A-181

### SMOKING SUSCEPTIBILITY, SOCIAL NORMS, AND SMOKING AMONG BEST FRIENDS: THE ROLE OF CULTURAL BELONGING IN A SAMPLE OF HISPANIC ADOLESCENTS IN A TEXAS - MEXICO BORDER COMMUNITY

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Adolescents in the Texas - Mexico border region are more likely to smoke than their non-border peers, and youth in neighborhoods with low educational attainment and high poverty rates may be particularly susceptible to smoking because of a variety of contextual influences. In our most recent research project assessing smoking prevalence, smoking susceptibility, social norms, and attitudes toward smoking among Hispanic youth who may be at high risk of smoking, we also assessed the relationship of cultural belonging to these variables. We believe that exploring the impact of cultural belonging within ethnic groups on health behaviors can help inform multilevel, community-driven, and culturally situated health promotion programs and interventions. We hypothesized that among the youth (n=34) in our study, higher levels of belonging to Mexican culture would be associated with higher levels of perceived peer smoking prevalence (social norms), having more best friends who smoke, and higher susceptibility to smoking. Participants from a local community youth center completed measures assessing demographics and smoking-related outcomes.53% were female; all self-identified as Hispanic, Latino, or Mexican/Mexican-American. Participants were 12-18 years old (M= 15.47). A single item asked respondents to rate from 1 (not at all true) to 7 (very true) "I feel like I am a part of Mexican culture". Feeling like a part of Mexican culture was significantly associated with having best friends who smoke (r=.49, p<.01), perceived peer smoking prevalence (r=.34, p<.05), and smoking susceptibility (r=.40, p<.01). This association has many possible explanations which can be explored in future research, and suggests the need for health promotion programs that address smoking (and other health behavior) norms at family, community, organizational, and policy levels. Hispanic heterogeneity is often overlooked at the community level, but deserves to be explored in depth.

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## A-182

### PREVALENCE AND CORRELATES OF SMOKING STATUS AMONG PATIENTS WITH DEPRESSION IN VA PRIMARY CARE

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Smoking is the leading preventable cause of morbidity and mortality in the United States. Emerging evidence suggests that mental health problems may complicate smoking cessation efforts. US military Veterans represent a unique group in primary care, as they present with smoking prevalence and mental health concerns at higher rates than the adult civilian population. Using baseline data from a study of depression Collaborative Care Management, the present study investigated smoking prevalence and correlates of smoking status among patients with depression in VA primary care (N=761). Preliminary analyses revealed a current smoking prevalence of 48.9%, with 81.6% of participants reporting a history of smoking (100+ lifetime cigarettes). Relative to non-smokers, current smokers were more depressed (PHQ-9) [F(1,759)= 5.15, p=.023] and more likely to screen positive for comorbid PTSD (PC-PTSD) [F(1,759)=23.44, p<.001]. Smokers reported higher alcohol consumption (AUDIT-C) [F(1,753)=36.80, p<.001], worse overall mental health status (SF-36) [F(1,759)=33.76, p<.001], and more medical comorbidities (SIC) [F (1,759)=13.23, p<.001]. Smokers were less amenable to depression treatment [F(1,753)=24.11, p<.001] and reported more frequent visits to a mental health specialist [X2(1, N=761)=8.71, p<.01] and less social support [F(1,742)= 29.97, p<.001]. Presence of suicidal ideation did not vary with smoking status [X2(1, N=761)=0.79, ns]. These findings have implications for design of smoking cessation treatments for Veterans with depression in primary care.

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## A-183

### CUE-REACTIVITY IN LIGHT AND INTERMITTENT SMOKERS: SMOKING CUES IN SMOKING AND ANTISMOKING STIMULI

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While overall smoking rates are decreasing, light and intermittent smoking rates are increasing. Traditional models of addiction have failed to explain this increase in low level smoking. Cue-reactivity models posit that environmental stimuli (i.e., cues) related to smoking may be associated with the elicitation of cravings leading to continued smoking. Nevertheless, some antismoking media campaigns use such cues to motivate people to consider smoking cessation. The purposes of this study were to assess traditional cue reactivity in light and intermittent smokers (LITS) and the extent to which smoking cues in antismoking images elicit cravings.

Participants were 155 college student LITS (53% female; 86% Hispanic) living along the U.S./Mexico border. Measures assessed sociodemographic information, tobacco use and history, and smoking cravings via the Questionnaire of Smoking Urges-Brief (QSU-Brief). Participants were randomly assigned to one of three conditions: smoking, antismoking, or neutral pictures. All participants rated baseline craving levels with the QSU. Afterward, participants were exposed to four pictures on a computer for six seconds, with 45 seconds in between each picture for participants to rate cravings on the QSU. ANOVA results indicated that smoking pictures elicited significantly higher cravings relative to antismoking pictures (p=.007) and neutral stimuli (p=.019), while cravings resulting from antismoking and neutral stimuli did not significantly differ from each other (p=.793).

Results suggest that smoking pictures elicit cravings even in LITS and that antismoking pictures did not elicit similar levels of cravings or more cravings relative to neutral pictures. Thus, continued and heightened regulation of smoking advertisements and extending research on the impact of smoking cues in antismoking advertisements in other ethnic and smoking groups seem warranted.

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## A-184

### ACCURACY AND CONCORDANCE IN REPORTING FOR SECOND-HAND SMOKE EXPOSURE AMONG PARENTS AND THEIR TEENS UNDERGOING CANCER TREATMENT

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Second-hand smoke exposure (SHSe) is linked to numerous adverse health effects and is of particular concern among children with cancer, a medically compromised population at increased risk due to treatment-related toxicities (Tyc et al., 2001). Teens have increased agency in health behavior decisions, such as making choices to avoid SHSe. To appropriately provide programming to help teens avoid exposure, their ability to report exposure must first be assessed. The current study sought to determine the extent to which parents and adolescents agree on SHSe and test the validity of their reporting against a biomarker for exposure, urine cotinine.

Data were drawn from 44 adolescents (M=15.02 years) as part of a larger longitudinal study. Teens were eligible if non-smokers, living with a smoking parent, and at least 30 days post-diagnosis. Parents and adolescents reported on a variety of exposure variables: number of days exposed during the past week in the home/car, number of smokers in the home, and smoking rules in the home. Urine cotinine assays were collected from the adolescents.

Parents and adolescents demonstrated good to substantial agreement for the number of smokers living in house (r=.48; p<.001), smoking ban status (κ=.88, p<.001), and the number of days in the past week of SHSe in the home (r=.42; p=.006), but did not agree on SHSe in the car (NS). Validation of parent reported SHSe in the car (r=.87; p<.001) and teen reports of SHSe in the home was provided with urine cotinine, but urine cotinine did not validate parent-reports in the home and teen-reports in the car (NS).

This is the first study to investigate concordance in reporting for SHSe between parents and their teens, with the inclusion of urine cotinine, among adolescents in treatment for cancer. Findings will be discussed in terms of issues related to adolescent monitoring of SHSe, and provide suggestions for methodological improvements that could increase reliability of reporting for adolescents (e.g., daily diary reports).

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## A-185

### AFFECT, SOCIAL SUPPORT, AND COPING AMONG AFRICAN AMERICAN SMOKERS

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African American smokers have greater difficulty quitting compared to white smokers. Although the disparity in cessation rates has been attributed to sociodemographic factors, a greater understanding of the factors related to smoking cessation is needed. Utilizing adaptive coping skills is a component of behavioral tobacco interventions. Irrespective of the quitting method, the ability to cope with abstinence is essential. No previous studies have focused on coping strategies among African American smokers.

The current study examined affect (positive and negative) and social support (from family, friends, and significant other) in relation to coping strategies (adaptive and maladaptive). Participants included African American adult smokers (N=181) enrolled in an RCT for smoking cessation. At baseline, smokers completed the Positive and Negative Affect Schedule, the Multidimensional Scale of Perceived Social Support, and the Brief COPE, which assesses adaptive and maladaptive coping strategies.

Participants were mostly single (65%), women (62%), who were at least high school educated (78%), and low-income (59% household income less than $10,000). They were middle aged (M=46, SD=9), smoked 22 (SD=13) cigarettes/day for 24 (SD=11) years, and were moderately nicotine dependent. Bivariate associations indicated that adaptive coping was positively correlated with positive affect and social support (from family, friends, and a significant other). Maladaptive coping was positively correlated with negative affect, and inversely related to positive affect, and social support. Multivariate analyses revealed that positive affect and social support were independently associated with adaptive coping strategies. In contrast, maladaptive coping was independently associated with negative affect, but not social support. Additionally, several aspects of coping were related to affect and social support.

We conclude that that harnessing existing positive resources, such as social support and positive mood may facilitate coping. Also, addressing negative affect among African American smokers may be important to reduce maladaptive coping strategies.

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## A-186

### PLACEBO TAILORED SMOKING CESSATION INTERVENTIONS AND THE MODERATING ROLE OF HEURISTIC COGNITIVE PROCESSING

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Computer-tailored smoking cessation materials have been found to be more effective compared to standard (generic) materials. Our previous research examined underlying mechanisms of tailoring using a "placebo tailoring" design. We found superior content evaluations, readiness to quit, smoking-related knowledge, and behavior change among those who received messages that they believed were individually-tailored.

The current RCT tested the efficacy of placebo tailoring for actual smoking cessation. We also examined cognitive processing as a moderator by applying the heuristic-systematic model of information processing. Heuristic processing leads to persuasion with superficial assessment of surface features of communications; whereas systematic processing emphasizes detailed examination of the content. We hypothesized that placebo tailoring would result in greater odds of 7-day point prevalence abstinence (ppa) and 28-day prolonged abstinence (pa) compared to standard messages. Moreover, heuristic processing would moderate these relationships. Adult smokers (Final N =334) were randomly assigned to receive 4 placebo tailored or standard self-help guides over 3 months.

Results demonstrated a placebo effect for smoking cessation, such that at the 3-month follow-up, 7-day ppa was significantly greater in the Placebo Tailored condition compared to the Standard condition. No differences were found at 6-months, or for 28-day cessation. As hypothesized, cognitive processing style moderated the relationship between condition and cessation. Specifically, heuristic processing was associated with greater odds of 7-day ppa at 3 months among those in the Placebo Tailoring condition; the opposite association was found in the Standard condition.

This is the first study to show that standard self-help materials designed to appear as tailored can facilitate short-term smoking cessation, and that cognitive processing style predicts outcome. Theoretical and applied implications for tailoring will be discussed.

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## A-187

### HOUSEHOLD SMOKERS, LIFE STRESS, AND SOCIAL SUPPORT PREDICT MATERNAL DEPRESSIVE SYMPTOMS IN LOW-INCOME, AFRICAN AMERICAN SMOKERS IN A SECONDHAND SMOKE EXPOSURE REDUCTION PROGRAM

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Background: Depression impedes both maternal smoking cessation and reducing child secondhand smoke exposure (SHSe). However, tobacco intervention studies rarely examine factors that exacerbate depression symptoms. Understanding factors that may contribute to depression symptoms among low-income African American maternal smokers can help reduce the overwhelming health burden on their children by improving existing SHSe-reduction programs.
Purpose: To test whether mothers enrolled in a SHSe-reduction trial would be more likely to report significant depression symptoms at end of treatment (EOT) if they lived with other smokers, reported greater life stress and less social support, and had children that required utilization of pediatric primary care services for SHSe-related illness.
Methods: N=226 maternal smokers were randomized to a behavioral counseling group or standard of care control group and followed for 16 weeks. Depression symptoms were measured by the CES-D and dichotomized as1= depressed vs. 0=not depressed at the clinical cutoff. Controlling for treatment assignment, smoking status and other variables associated with depression, multivariate logistic regression was used to test our hypothesis. All measures were obtained via structured interview by blinded research staff.
Results: Household smokers (OR 1.641, CI 1.05, 2.57) and greater perceived life stress (OR 1.045, CI 1.02, 1.07) increase the risk of depression at EOT while greater social support decreases the risk of depressive symptoms (OR=0.871, CI .817, .929). Child health system utilization was not associated with depression.
Conclusions: Addressing maternal depression should facilitate improved smoking treatment outcomes. Future smoking and SHSe reduction programs could benefit from (a) incorporating the entire household unit in the smoking intervention process, (b) enhancing social support networks, and (c) including stress and mood management components to tobacco interventions.

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## A-188

### EFFECTS OF MOTIVATIONAL INTERVIEWING COUNSELING ON UTILIZATION OF A QUITLINE AMONG SMOKERS IN PRIMARY CARE

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Despite evidence supporting smoking cessation quitlines, they currently reach <5% of smokers. Largely, they target smokers motivated to quit, whereas most smokers are not. The primary aim of this study was to determine the effects of Motivational Interviewing (MI) counseling versus Usual Care on the enrollment of smokers in the Minnesota quitline. Eligible primary care patients who smoke were identified from an electronic database of health system, completed a baseline survey, and then randomized to either the MI intervention (n=118) or the Usual Care arm (n=117). Usual Care consisted of written materials about the Helpline at weeks 1, 2, and 3 follow-up. MI consisted of similar written materials plus three 15 minute-MI phone sessions. All participants completed mailed surveys assessing use of the quitline and smoking status at weeks 4 and 26. Primary outcome was enrollment in the MN quitline. Participants were predominantly female (65%), white (88%), high school graduates (75%), 45.1 years of age, and smoked an average of 17.1 cigarettes per day. 46% were not ready to quit smoking in the next 30 days and 53% were a priori aware of the Helpline. At week 4 follow-up, more participants in the MI arm (22%) enrolled in the Helpline compared to those in Usual Care (14%; p=0.098). At week 26, enrollment rates were similar for MI and Usual Care (25% for each). Of those who enrolled in the quitline, MI participants reported completing more quitline sessions than those in Usual care (4.9 vs. 3.2; p= 0.087). There was no significant interaction between readiness to quit and enrollment.. Study findings demonstrated positive short-term effects of MI for increasing enrollment of smokers in the MN quitline but not long-term effects.
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## Meritorious Poster

## A-189

### CIGARETTE SMOKING AMONG YOUNG MEN WHO HAVE SEX WITH MEN: EXPLORING THE ROLES OF ENVIRONMENTAL AND INDIVIDUAL FACTORS

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Young men who have sex with men (YMSM) smoke more heavily than their heterosexual counterparts, yet few studies have examined both environmental and individual factors associated with cigarette smoking in this population. The present study sought to understand how different types of gay community connection (e.g., gay community identification and involvement; gay bar/club attendance) were associated with cigarette smoking among YMSM recruited through venue-based sampling in Los Angeles, California (n=526). Structural equation modeling (SEM) was used to isolate direct effects of gay community connection on smoking and indirect effects of gay community connection on smoking through cognitive and psychological mediators (e.g. internalized homophobia, health values, psychological distress). Results showed a positive relationship between gay bar/club attendance and a composite measure of cigarette smoking (b=.13, t=2.90, p<.01). Gay community identification and involvement was indirectly associated with cigarette smoking through internalized homophobia (b=.03, t=2.07, p<.05). Higher levels of internalized homophobia predicted lower levels of cigarette smoking (b=-.10, t=-2.15, p<.05); more psychological distress predicted higher levels of cigarette smoking (b=.26, t=4.28, p<.001). Based on these findings, interventions to address cigarette smoking among YMSM may benefit from a two-pronged approach targeting both environmental and individual level variables as potential mechanisms for behavior change. Attention to the different ways YMSM identify with and are involved in the gay community can provide interventionists with a platform for more tailored smoking prevention and cessation programs.

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## A-190

### REDUCTION IN SMOKING CUE REACTIVITY ACROSS EXPOSURE TRIALS ON QUIT DAY 3 PREDICTS EX-SMOKERS' ABSTINENCE AT 3 MONTHS IN A RELAPSE PREVENTION TRIAL

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Cue Exposure Therapy (CET) is an empirically-validated, theoretically-grounded behavior therapy for anxiety disorders that has been applied to reduce relapse among individuals with substance dependence disorders (smokers). Procedures involve repeatedly exposing smokers to conditioned stimuli (cues) that trigger urges to smoke, while preventing them from smoking and facilitating compensatory skills to manage their urges. Much needs to be learned about the number and spacing of exposure trials to maximize therapeutic impact. In this study, 32 smokers completed 8 weeks of behavioral smoking cessation counseling, 2 sessions of massed cue exposure trials (12 total) 3 days after quitting, and a 3-month post end-of-treatment follow-up. Smoking cues included tactile, visual, and olfactory cues with a lit cigarette, including handling the lit cigarette. Galvanic skin response (GSR), heart rate variability, and self-reported urge for quitters vs. remitters were compared across trails. A series of receiver operator curve (ROC) analyses determined the exposure trial at which there was the greatest sensitivity and specificity in differentiating individuals who were still abstinent vs. relapsed at 3-month follow-up. Results showed significant differences in reductions of GSR between 3-month sustained quitters and relapsers at Trials 9 and 12 (both AUC=.80, p=.04) suggesting that these trials are the optimal points at which to predict short-term (3-month) post-treatment success. In this study, relapsers demonstrated increased GSR reactivity from Trial 1 to Trials 9 and 12, compared to abstainers who demonstrated a decrease in GSR. Self-reported urge reactivity showed a similar pattern, but group differences were not significant (p=.08). These findings suggest that cue reactivity across repeated exposure trials shortly after a quit attempt could predict those at greater risk of relapse–offering a strategy by which to identify those at risk to provide them with greater intervention intensity.

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## A-192

### EFFECTS OF SECULARITY ON PHYSICAL, MENTAL, AND SOCIAL HEALTH

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Purpose: Research examining the relationship between religiosity/spirituality and health is subject to criticism. Much of the research is conducted using secondary data, resulting in subpar measures of the constructs of interest. Also, most measures of religiosity fail to distinguish between affirmatively secular and nominally religious individuals. This study addresses both of these limitations by using validated health and secularity measures to determine the relationship between secularity and various aspects of health.
Methods: Data were gathered online using a convenience sample (N=312; 160 females). Linear regression and path modeling were used to determine which health and demographic factors related to the three aspects of the Duke Health Profile: physical, mental, and social. Model 1 correlated health facets and included demographics and significant health factors. In Model 2, directional influences of mental on physical health and both mental and physical on social health were added. Model 3 added a direct path from secularity to social health.
Results: Regression revealed secularity to be significantly inversely associated with mental, but not physical or social health. Model 2 explained a reasonable portion of variation in social (35%), physical (42%) and mental (33%) health with excellent model fit, $\chi$2 (12, N=314) =15.13, p=.23. The addition of a direct path from secularity to social health significantly improved model fit, $\Delta\chi$2 (1, N=314)=8.85, p<.01. The total negative effect of secularity on social health ($\beta$=-.198) was substantially smaller than the positive direct effects of mental health ($\beta$=.319) or being White ($\beta$=.316). The direct effect of secularity on mental health ($\beta$=.174) was substantially lower than the effect of adequate sleep ($\beta$=.229) or emotional support ($\beta$=.266). Secularity did not directly influence physical health and its indirect effect was negligible ($\beta$=.049).
Conclusions: Results suggest that more secular individuals have slightly lower social and mental health than do more religious individuals. Secularity has no influence on physical health.

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## A-193

### WORSHIP EXPERIENCES AND FORGIVENESS: THE ROLE OF BENEFITS, COSTS, AND EMOTIONS

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Understanding key spiritual experiences, such as worship and forgiveness, may help illuminate the relationship between church attendance and health. Seventy-four participants were selected from African American, Caucasian, Korean, and Latino Pentecostal and Presbyterian churches and interviewed about 3 worship experiences (e.g., spiritual struggle, closeness to God, and transformation). Hypotheses examined differences between struggle and closeness to God experiences on cost, benefits, and gratitude. Associations between forgiveness word counts and both costs and benefits were examined as participants described a transformational experience that included forgiveness. To test the hypotheses that struggle experiences would be associated with more costs and that closeness to God experiences would be associated with more benefits and more gratitude, ANOVAs were conducted comparing struggle and closeness to God word counts based on participant's responses. Struggle was associated with more cost word counts, F(1, 135)=4.20, p=.04. Closeness to God was associated with more benefits, F(1,135)=6.62, p=.01, and more gratitude word counts, F(1, 135)=5.64, p=.02. In describing transformational worship experiences, forgiveness word counts were significantly associated with more benefits, r=.30, p<.05. Contrary to our hypothesis, forgiveness word counts were associated with more costs, r=.44, p<.01. In addition, forgiveness word counts were associated with negative emotion, r=.25, p<.05. So when forgiveness played a role in transformational worship experiences and it was mentioned in a general description of this transformational experience, forgiveness was associated with benefits, but it was also associated with costs and negative emotion. Dimensions of spiritual experience that may be associated with positive and negative health-related outcomes were identified.

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## A-195

### CUMULATIVE NEIGHBORHOOD RISK AND ALLOSTATIC LOAD IN ADOLESCENTS

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Background: Although research supports that life stress is associated with negative health outcomes, the mechanism through which this occurs is not well defined. Accumulating evidence suggests an important role of biologically-mediated pathways such as allostatic load (AL). Differential exposure to adverse environments may influence AL, and the cumulative impact of these conditions may be more important than a singular exposure.
Objective: To examine the impact of cumulative neighborhood risk on AL among adolescents as a mechanism through which life stress, including neighborhood conditions, may impact health and health inequities.
Methods: Multilevel analyses were conducted, weighted for sampling and propensity score matched, among 12-20 year-old adolescents in the NHANES, 1999-2006 (first level, n=11,886) nested within family/household (second level, n=6,696) and census tracts (third level, n=2,191) to examine the contextual effect of cumulative neighborhood risk environment on AL.
Results: Approximately 35% of adolescents had 2 or more biomarkers of AL. A significant amount of variance in AL was explained at the neighborhood level. Even after taking into account household and other individual factors, the likelihood of having a high AL was approximately 10% higher for those living in medium cumulative risk (adjusted OR=1.09, 95% CI=1.08, 1.09), 30% higher those living in high (adjusted OR=1.28, 95% CI=1.27, 1.30), and 69% higher for those living in very high risk neighborhoods (adjusted OR=1.69, 95% CI=1.68, 1.70) compared to those in low risk areas.
Conclusion: Differences in AL among adolescents may be partially explained by cumulative neighborhood risk. These findings offer support for the hypothesis that neighborhood risks may culminate in a range of biologically-mediated negative health outcomes detectable in adolescents that in turn may affect health outcomes.

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## A-196

### THE DESIGN AND EVALUATION OF A MEDIA-BASED COPING INTERVENTION

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Positive emotions can minimize the deleterious effects of stress by sustaining coping efforts, providing a breather, enhancing psychosocial resources, and dampening physiological stress responses. Given this evidence, interventions designed to cultivate positive emotions may offer valuable health benefits. Yet, research on the facility of positive emotions to combat stress and promote health has primarily focused on emotion aggregates or blends rather than discrete emotions. Decades of literature has established that not all negative emotions are created equal, and as current work begins to suggest the same is true of positive emotions, the call to examine the differential contributions of discrete positive emotions to health outcomes is amplified. Also, while entertainment media can be both a refuge for those under stress and a vehicle for health promotion, it is largely absent from stress relief or coping program design. Its potency as a source of emotionally evocative content positions media as a convenient, accessible, and inexpensive platform with the potential to shape emotions and deliver health benefits to target audiences.
To address these issues, this study tested a media-based intervention to elicit three unique positive emotions (hope, amusement, calm) that were expected to differentially reduce stress, improve health, and motivate coping behavior. After completing baseline measures, 252 young adults were randomly assigned to either a no-treatment control condition or to one of three media treatments wherein they viewed a set of YouTube clips that evoked a target emotion. At post-test, treatment groups reported decreased stress and illness symptoms compared both to baseline and the control group. Those in the hope group were more likely to engage in approach coping and less likely to endorse avoidant coping strategies. This study supports the feasibility of media as a means to cultivate discrete positive emotions that influence health and well-being. This work also has implications for stress relief programs: mediated interventions may be an effective complement to or substitute for traditional services.

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## A-197

### OBESITY IN AFRICAN AMERICAN WOMEN: USING STRUCTURAL EQUATION MODELING TO EXAMINE THE CONTRIBUTION OF MULTIDIMENSIONALLY-DEFINED STRESS, SUPERWOMAN SCHEMA-EMOTIONAL SUPPRESSION, AND THE USE OF FOOD TO COPE

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BACKGROUND: Approximately 77% of African American women are overweight or obese with increased risk for obesity-related illnesses. One strategy for understanding obesity prevalence includes examining the relationship between obesity and psychological stress and stress-related coping strategies.

PURPOSE: This study investigated a multivariate model of psychosocial mechanisms influencing obesity severity in African American women.

METHODS: Using a socioeconomically diverse sample of 189 African American women, we tested a model of obesity severity as influenced by (a) stress, operationalized as a multidimensional construct consisting of race-related, gender-related, and generic stress; (b) emotional distress symptoms; (c) use of food to cope with stress; and (d) perceived obligation to hide personal difficulties in order to present an image of strength for family, friends, and the community (Superwoman Schema-Emotional Suppression).

RESULTS: Psychological stress significantly predicted the use of food to cope with stress, which significantly predicted obesity severity. Superwoman Schema-Emotional Suppression significantly predicted multidimensionally-defined stress, and there was a significant indirect effect of Superwoman Schema-Emotional Suppression on the use of food to cope with stress.

CONCLUSIONS: These results suggest that stress related to race and gender, stress-related eating behavior, and Superwoman Schema-Emotional Suppression are important foci in tackling the public health issue of obesity in African American women and obesity-related health disparities. Understanding experiences and perceptions of stress, perceived community obligations, and coping are pivotal to prevent and reduce obesity in African American women. African American women may be especially vulnerable to obesity in part because of their food-related attempts to alleviate the distress they experience as women of color in American society.

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## A-199

### ANXIETY SYMPTOMS IN CHILDREN AND ADOLESCENTS WITH INFLAMMATORY BOWEL DISEASE (IBD): DIFFERENCES BY GENDER, IBD TYPE AND AGE

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Inflammatory Bowel Disease (IBD) is a chronic illness with pediatric onset, which includes two types Crohn's disease (CD) and ulcerative colitis (UC). Although youth with IBD seem to be at greater risk for anxiety disorders, these symptoms are rarely assessed and demographic and IBD type differences have been virtually ignored. This study examines anxiety symptoms among youth with IBD, with particular foci on differences between IBD type, gender, and age. A total of 161 patients with IBD, ages 8-17 (M=14.01; SD=2.19), completed a validated self-report measure, the Screen for Child Anxiety and Related Emotional Disorders (SCARED), during their medical visit. The SCARED contains five subscales: somatic/pain, general anxiety, separation anxiety, social phobia, and school phobia. A 2 (gender: male/female) X 2 (IBD type: CD/UC) X 2 (Age: 8-12 pre-adolescent/13-17 adolescent) factorial multivariate analysis of variance was performed to examine group differences in reports of anxiety symptoms. Main effects were found for IBD type and age. More specifically, patients with CD endorsed more symptoms of general anxiety ($p<.05$), separation anxiety ($p<.01$), and social phobia ($p<.05$) than patients with UC, as well as, pre-adolescents reported more separation anxiety than adolescents ($p<.05$). Results also revealed three interactions a) IBD type by gender, b) IBD type by age, and c) gender by age. Specifically, females diagnosed with CD reported more separation anxiety than females with UC ($p<.05$), and pre-adolescents with CD report higher GAD symptoms than those with UC ($p=.05$). Lastly, in pre-adolescents, males endorsed more somatic ($p<.05$) and general anxiety ($p<.05$) symptoms than females, while in adolescents, females reported more somatic ($p<.05$) and general anxiety ($p<.05$) symptoms than males. Study findings support that youth with IBD may experience anxiety symptoms differently depending on their IBD type and demographics, which should be taken into consideration when measuring associations between psychological function and disease outcomes.

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## A-200

### PROOF OF CONCEPT OF SMARTPHONE BREATHING MEDITATION APPLICATION: LINKAGE BETWEEN REAL-TIME ADHERENCE DATA AND BLOOD PRESSURE REDUCTIONS

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The Purpose of this proof of concept study was to demonstrate the acceptability and efficacy of adherence tracking of Tension Tamer (TT); an Android based smartphone application that is based on breathing awareness meditation (BAM). BAM has been previously shown to lower systolic blood pressure (SBP). The TT application integrates BAM written/audio instructions with an embedded previously validated photoplethysmography (PPG) component, enabling real time capture of heart rates. Users receive BAM audio instructions and place their index finger over the camera photo detector lens, which is activated during BAM sessions. Pulsatile blood flow changes are detected and processed. At the end of the 10-minute TT session, users receive a feedback graph depicting heart rate changes over the session. Continuous heart rate data are sent to remote data servers for time stamped adherence monitoring.

Three middle school teachers classified as pre-hypertensive (SBP 120-139 mmHg), had resting SBP (mean=127.3 mmHg) and 24-hour SBP (mean= 134.4 mmHg) measured at preintervention and again 1, 2, and 3 months later. Teachers received a smartphone with the TT application after initial SBP assessments and were instructed to practice twice daily for 10 minutes per session.

The small number of participants precluded valid statistical tests. Average adherence rates by month were: 75.0%, 76.9% and 85.5%. Efficacy signals indicated average SBP reductions at 3 months were -8.8 mmHg for resting SBP, -4.3 mmHg for 24 hour SBP, and -4.1 mmHg for nighttime SBP. Data will be presented showing how individuals' adherence rates across 3 months align with the magnitude of BP reduction. The TT application is acceptable and useful in objectively tracking practice adherence. An efficacy clinical trial is needed to determine impact upon BP control.

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## A-201

### PERCEIVED STRESS IS INVERSELY RELATED TO FITNESS IN OVERWEIGHT ADOLESCENTS

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The adult literature indicates that psychosocial stress may be detrimental to cardiovascular health, but that physical activity is important both as part of a healthy lifestyle and as a way to manage stress. This study examined whether perceived stress, as indexed by the Perceived Stress Scale (PSS), is associated with fitness, measured by maximal oxygen uptake ($VO_2$max) during a treadmill test, and if perceived stress differs by fitness level in adolescents at risk for cardiovascular disease. Boys ($n$=103) and girls ($n$= 41) with elevated blood pressure (BP; systolic BP and/or diastolic BP$\geq 90^{th}$ percentile, adjusted for age, gender, and height) aged 15-17 completed psychosocial measures and treadmill testing as part of a larger study. Parent-reported education was used to index socioeconomic status (SES). Mean body mass index (29.6 kg/m$^2$) was in the overweight/obese range.

A multiple linear regression analysis was conducted to determine whether PSS score is associated with $VO_2$max, controlling for gender and SES. This model significantly accounted for 32.1% of the variance in $VO_2$max ($F(3, 129)= 20.33, p<.01$). As expected, gender accounted for the preponderance of variance in fitness (semi-partial $r^2=.22$, b=-.48, $p<.01$). SES (semi-partial $r^2=.03$, b=.17, $p<.05$) and PSS total score (semi-partial $r^2=.02$, b=-.15, $p=.05$) also made significant contributions beyond gender.

A one-way ANOVA tested for PSS differences among 3 fitness groups: low (<28.0 mL/kg/min), moderate (28.0-35.4 mL/kg/min), and high (>35.4 mL/kg/min). The PSS differed significantly across fitness groups ($F(2,134)=3.06$, $p=.05$). Post-hoc comparisons showed that the low fitness group had higher PSS scores ($M=18.0$) than the high fitness group ($M=15.0$), indicating greater distress ($p<.05$).

These findings may suggest that aerobic fitness is protective against stress. Alternatively, youth experiencing high stress may be less likely to exercise and become fit. Overweight youth with high perceived stress may benefit from physical activity interventions, which could be an important adjunct to stress management efforts in youth.

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## A-203

### RELIABILITY OF A BEHAVIORAL DEMONSTRATION TEST TO MEASURE SKIN AND NEEDLE CLEANING SKILLS AMONG INJECTION DRUG USERS

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Injection drug users (IDUs) are at risk for a host of medical complications, including blood-borne viral disease (e.g., HIV, Hepatitis C) and bacterial infections (e.g., skin infections, endocarditis), due to engaging in high-risk injection practices. To reduce risk of infection, a number of risk reduction practices (e.g., not sharing needles, skin cleaning) are often emphasized. Past studies have examined engagement in risk reduction through self-report measures or behavioral intention to engage in various practices, but many researchers do not measure actual behavioral skills. A new assessment measure called the "Behavioral Skill Demonstration for Skin and Needle Cleaning" was designed to improve measurement of an IDU's ability to engage in skin and needle cleaning. We tested the initial reliability of the new measure with active IDUs participating in a randomized controlled trial in Denver. Participants were videotaped as they demonstrated needle and skin cleaning using structured protocols. Observer ratings were used to evaluate each participant's skill level. Data for a subset of 39 participants (mean age=43 years, 69% male) was compared across two raters for two different time-points (total of 78 observations). We used the percentage of correct steps used (total score/possible points) as scores on each task. Interrater reliability of the skin and needle cleaning demonstrations suggested that the tests are highly reliable (ICC=.950 and .955, respectively). Although further information on validity will aid in the support of this new measure, initial analyses suggest that it may be a useful way to measure specific risk reduction skills.

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## A-204

### PSYCHOLOGICAL AND HEALTH-RELATED CORRELATES OF METHAMPHETAMINE USE: A PILOT STUDY

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Methamphetamine (meth) users are at high-risk for a number of health-related and psychological problems, including depression, anxiety, aggression, psychosis, tooth and gum decay, and weight loss, among others. Research has demonstrated that meth users, particularly women, experience significant depressive symptoms that contribute to increased use of meth, binge meth use, and low self-esteem. The primary objective of this pilot study was to expand our knowledge regarding medical and psychological outcomes associated with meth use. Secondly, we aimed to explore whether women and binge users reported more significant problems. Participants included 28 meth users (82% female; 57% Caucasian, 39% Latino) who were currently enrolled in treatment. Eleven participants (39%) self-identified as binge users, with typical binges lasting 3 to 7 days (M=5.2 days). Participants reported mild levels of depression, with a mean score of 18.07 (SD=11.9) on the Beck Depression Inventory-II (BDI-II). Women reported greater depression than men, with BDI-II scores in the moderate range (p=.09, d=1.04). As measured by a new scale developed for use in this study ($\alpha$=.80), the most commonly endorsed health and behavioral concerns amongst participants included weight loss, uncontrollable mood swings, and loss of control. Binge users reported greater health and behavioral outcomes (p=.02; d=.97), depression (ns, d=.21), and impulsivity (as measured by the Barrett Impulsivity Scale; ns, d=.41) compared to non-bingers. Although further work is needed with more participants, it is possible that binge users may be more likely to exhibit psychological distress and health problems. Consistent with past research, female meth users appear to be at high risk for depression. Further research testing these initial findings could have substantial implications for treatment services developed for this population

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## A-205

### FEASIBILITY OF AUDIT METHODS IN THE STUDY OF DISPARITIES IN SUBSTANCE USE TREATMENT ACCESS: A MIXED-METHODS APPROACH

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An emerging method for examining disparities in access to treatment are audit designs, which are deception studies where research confederates attempt to procure a service with one or more characteristics manipulated. These methods allow for the manipulation of variables that are normally fixed traits and the inferring of causality.

Objective: This study examined the feasibility of these audit methods in the study of access to substance use treatment across insurance status using qualitative and quantitative approaches.

Methods: Masked telephone calls were made to 10 substance use treatment providers in the vicinity of a mid-sized Northeastern U.S. city seeking treatment for heroin use. Each provider was called multiple times, with calls assigned to one of three conditions: state-funded insurance, private insurance, and none. False names and contact information were generated for each "patient," and caller ID was blocked.

Results: An open question related to the use of audit studies in this area is whether an appointment could be set without providing identifying "patient" information (e.g., S.S. number, insurance policy number). Approximately 27% of calls were not completed due to issues associated with identifying information. Interestingly, name and date of birth were particularly relevant for "patients" in the state-funded condition because provider staff needed to match provided data with state electronic records. Of completed calls, only 50% resulted in an appointment. An additional 25% resulted in provider staff not attempting to schedule an appointment, but rather suggesting the "patient" try a different provider. There were no differences in access across insurance status.

Conclusion: Results indicated that audit methodology represents a potentially useful tool for examining issues of access to care. Additional discussion will detail the affective qualities of the calls, as well as the "work-arounds" developed for audit implementation.

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## A-206

### EXPERIENCES OF SEXUAL ASSAULT AND ALCOHOL AND DRUG USE IN UNIVERSITY STUDENTS

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The purpose of our study was to investigate the relationships between sexual assault and alcohol and drug use and depressive symptoms among undergraduate and graduate students at a midsize northeastern urban university. The hypothesis that the greater number of sexual assault experiences in the past 12 months would predict greater alcohol and drug use was supported however, sexual assault experiences did not predict depressive symptoms. In total, 1,614 students completed the one-time online anonymous survey at the beginning of the Fall 2011 semester including the Sexual Experiences Questionnaire (SEQ, Fitzgerald, Gelfand, & Drasgow, 1995), the Center for Epidemiological Depression Scale (CES-D, Radcliff, 1977), the Alcohol Use Disorders Identification Test (AUDIT, Saunders, Aasland, Babor, de la Fuente, J. R. and Grant,1993), and drug use in the last month. Pearson correlations found positive associations between depressive symptoms and drug use (p<.001), and number of sexual assaults experiences with drug use (p<.01) and alcohol use (p<.001). Also, alcohol use was positively related to drug use (p<.001). Multiple regression analyses indicated that sexual assault experiences (p<.001), and depressive symptoms (p<.05) positively predicted alcohol use. In addition, a significant interaction between sex and sexual assault experiences (p<.001) predicted greater alcohol use whereby women who had more sexual assault experiences had greater alcohol use than men. Sexual assault experiences (p<.001) and depressive symptoms (p<.001) predicted greater drug use. An interaction between sex and sexual assault experiences (p<.05) predicted greater drug use meaning women who had greater sexual assault experiences had greater drug use than men. Recommendations for prevention and education around sexual assault and alcohol/drug use on college campuses will be discussed.

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## A-207

### PREVALENCE OF POST TRAUMATIC STRESS DISORDER SYMPTOMS, SYMPTOMS OF DEPRESSION, AND PERCEIVED STRESS AND THEIR RELATIONSHIP TO ALCOHOL-RELATED OUTCOMES AMONG FIREFIGHTERS

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Inherent duties and job-related stressors make firefighting a hazardous occupation. When faced with traumatic events, firefighters cope primarily by seeking support of friends and family, but many also cope by drinking alcohol. For example, one study of firefighters found that 29% of them to report being problem drinkers. A similar study found 47% of firefighters to have a diagnosis of alcohol abuse or dependence.

The purpose of this study was to examine the prevalence of PTSD and depression symptoms as well as perceived stress and their relationship to alcohol-related outcomes among municipal firefighters. Participants, 740 firefighters, took part in a health assessment prior to an alcohol risk reduction training. Measures of alcohol-related outcomes included "at-risk" drinking assessed by the AUDIT and alcohol-related problems assessed by RAPI. The PTSD Checklist, Zung Self-Rating Depression Scale, and the Perceived Stress Scale were also included in the health assessment. 37% reported a score of 8 or higher on the AUDIT which is suggestive of "at-risk" drinking and 47% reported experiencing one or more alcohol-related problem in the last three months. As expected, AUDIT (mean=6.25) and RAPI (mean =2.85) correlated positively (r=.597***) and both correlated negatively with age (AUDIT r=-.190***; RAPI r=-.181***). Using the survey instruments as screening tools, 45% of the firefighters reported PTSD symptoms and 4% met the cutoff for a potential depression or adjustment disorder. Correlations revealed that PTSD symptoms, depression symptoms, and perceived stress were all significantly inter-correlated with r's ranging from .538*** to .632*** as well as each positively correlating with the alcohol-related outcomes. These results suggest that there is a strong positive relationship between problematic drinking and symptoms of PTSD, depression, and perceived stress among municipal firefighters.

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## A-209

### LIVER SMART: THE FEASIBILITY OF A GROUP STRESS MANAGEMENT INTERVENTION FOR PATIENTS WITH END STAGE LIVER DISEASE

Dwain C. Fehon, PsyD,[1,2] Christine Holmberg, MA,[2] Amy Cunningham, PsyD,[3] Kelly Foran-Tuller, PsyD,[4] Mary Driscoll, PhD,[4] William Sledge, MD[2] and Sukru Emre, MD[1,5]

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Structured, empirically supported psychological interventions are lacking for patients who require organ transplantation. This Stage IA psychotherapy development project aims to systematically develop and test the feasibility of a novel mindfulness-based stress management and relaxation training (Liver SMART) group for patients with End Stage Liver Disease (ESLD) who are awaiting liver transplantation. This investigation was organized around three specific phases of work: 1) Needs assessment, 2) Psychotherapy development, and 3) Feasibility, acceptability and preliminary efficacy testing of the proposed intervention. All English-speaking UNOS registered ESLD patients from a single transplant center were invited to participate in this study. Patients who consented for the Needs assessment (N=117) completed a structured diagnostic interview (SCID) and a packet of self-report assessments measuring current emotional and psychosocial functioning. Needs assessment results revealed high rates of psychiatric disorder in this sample and highlighted numerous significiant correlations between stress, psychological functioning and wellness. Feasibility testing patients (N=29) then received 8 weekly group sessions of the intervention and completed self-report assessments pre- and post-intervention. Manual development was an iterative process that incorporated data collected through the Needs assessment as well as participant feedback/data referable to the model's feasibility, efficacy, and therapist experience. Overall, the findings suggest that the need for psychological intervention is evident in this sample and that the Liver SMART intervention is acceptable and feasible to ESLD patients within a transplant clinic setting. Future (Stage II) randomized clinical trials are needed to study the intervention's effectiveness in this vulnerable patient population.

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## A-210

### THE DEVELOPMENT OF A LIVER TRANSPLANT PSYCHOSOCIAL RISK SCALE

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This ongoing study aims to develop a brief, evidence-based, clinician-administered rating scale to determine psychosocial risk in liver transplant (LT) candidates. Based on literature review, a 5-item rating scale (Liver Transplant Risk Scale; LTRS) was developed to quantify risk severity using five factors most associated with candidate selection and outcome (e.g., Psychiatric History, Drug/Alcohol History, Personality Disorder, Social Support, and Motivation). Each domain scored on a 3-point scale comprises the 15-point scale. Scale development was based on independent chart reviews to retrospectively score the LTRS using psychosocial and psychiatric evaluations of 100 consecutively evaluated LT candidates from a single transplant center. Demography, medical diagnoses, and final candidate selection decisions (i.e., accepted for waitlisting, declined, and in-evaluation) were recorded as primary outcome variables.

Data analysis included Mann Whitney U Test and bivariate Pearson correlations to examine the relationship between primary variables. ROC curves were used to determine the LTRS's sensitivity and specificity.

The 100 charts reviewed were predominantly of Caucasian males (68%) diagnosed with either Alcoholic cirrhosis (41%) or Hepatitis C (38%). Of these, 46 were accepted for waitlisting, 24 were declined, and 30 were in-evaluation. Of the 70 patients either accepted or declined, significant group differences were observed across each risk domain and total score. LTRS scores were significantly correlated with sellection outcome, and total scores of 2.75 or greater yielded a sensitivity of 75% and specificity of 39% in identifying transplant candidates declined for UNOS waitlisting.

These findings provide preliminary evidence that the LTRS holds promise as a screening tool to classify candidates into high risk and low risk groups. Further research is needed to evaluate the tool's concurrent validity and positive predictive power.

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## A-211

### THE EFFECTS OF DEPRESSION AND ANXIETY ON QUALITY OF LIFE FOLLOWING LIVER TRANSPLANT

Anne Eshelman, PhD,[1] Kim Brown, MD,[1] Lisa Miller, MA,[1,2] Meghan Gallaway, BS,[1,3] Dilip Moonka, MD,[1] Amy Williams, MA[1,2] and Marwan Abouljoud, MD[1]

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Depression and anxiety are common among those awaiting liver transplantation. However, little research has been conducted about how depression and anxiety prior to transplant affect the quality of life (QOL) after transplant. The purpose of this study was to investigate the effects of pre-transplant depression and anxiety on post-transplant QOL.

Eighty-two liver transplant recipients participating in the Liver Transplant QOL study at our liver transplant program were included. Depression and anxiety (HADS) and quality of life (SF-36) were measured prior to and 6 months after transplant.

Prior to transplant, 33.8% and 42.5% of participants had a likely diagnosis of depression or anxiety, respectively. At follow-up, participants with a diagnosis of depression or anxiety were significantly reduced to 14.6% and 25.9%, respectively. Those with depression prior to transplant were more likely to have deficits on the Physical Functioning (t=2.41, p<.05), Role Limitations due to Physical Problems (t=4.28, p<.01) and Emotional Problems (t=3.04, p<.01), General Health (t=2.48, p<.05), Vitality (t=3.65, p<.01), Social Functioning, (t=2.86, p<.01) and Mental Health (t=2.77, p<.01) scales at the 6 month follow-up, compared to those without a diagnosis of depression at baseline. Those with anxiety prior to transplant were more likely to have deficits on the Role Limitations due to Physical Problems (t=2.24, p<.05) and Emotional Problems (t=3.70, p<.01), Body Pain (t=2.02, p<.01), and Mental Health (t=3.39, p<.01) scales at the 6 month follow-up. If depression and anxiety resolved at the follow-up, patients had similar QOL outcomes as those without either diagnosis.

Depression and anxiety prior to transplant are related to diminished QOL after transplant. Our findings suggest it is important to screen patients awaiting transplant for depression and anxiety, to facilitate treatment prior to transplant and to identify patients at risk for anxiety, depression and poor QOL after transplant.

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# Thursday
# April 12, 2012
# 8:45 AM–10:15 AM

## Symposium 01 8:45 AM–10:15 AM 2000

### A TALE OF THREE SYSTEMATIC REVIEWS: WHAT HAVE WE LEARNED ABOUT REDUCING PAIN, DEPRESSION, AND FATIGUE AMONG CANCER SURVIVORS?

Sherri Sheinfeld Gorin, PhD,[1] Bonnie Spring, PhD, ABPP,[2] David Mohr, PhD,[3] Heather S. Jim, PhD,[4] Annette Stanton, PhD,[5] Karen Mustian, PhD, MPH[6] and Suzanne Miller-Halegoua, PhD[7]

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Pain, depression, and fatigue are among the most common and disabling symptoms experienced by cancer survivors, with estimated prevalences of 53%, 16%,and as high as 100%, respectively. To systematically examine the impact of psychosocial interventions on these three symptoms among those diagnosed with cancer, the SBM, Cancer SIG, and EBBM Committee commissioned three meta-analyses, a first for SBM. Three teams of researchers (6-10 raters per team), supported and advised by the SBM EBBM Committee, a core set of biostatisticians, and the American Cancer Society website, applied a standardized search strategy, coding scheme, and on-line coding program to each study. Both meta-analytic processes and preliminary findings were shared among the groups at regular meetings of the EBBM Committee. The symposium aims are: to examine these three meta-analyses among adult cancer survivors for their findings, their processes, and the potential impact of their results. Together, the three papers systematically assessed 89 studies, with 10,577 participants. In the introduction, Bonnie Spring, Sherri Sheinfeld Gorin, and David Mohr will describe the SBM context for the effort, and common study metrics. Heather Jim will present the lessons learned from 37 RCT's of psychosocial interventions to reduce pain published between 1966-2010. Annette Stanton will describe findings from RCTs testing the efficacy of psychotherapeutic and pharmacologic interventions for depressive symptoms among those meeting an entry threshold for depression. Karen Mustian will report the results of exercise, psychologic, pharmacologic, or combined exercise and psychologic interventions on fatigue. Suzanne Miller-Halegoua will compare and contrast the findings across the reviews, with guides for clinical practice, training healthcare professionals, and translating evidence into policy.

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## Symposium 01A 2001

### META-ANALYSIS OF THE EFFICACY OF INTERVENTIONS FOR DEPRESSIVE SYMPTOMS IN ADULTS DIAGNOSED WITH CANCER

Annette Stanton, PhD[1] and The Author Group, Depression Meta-analysis[2]

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Cancer patients are at increased risk for depression compared to population norms, yet evidence for efficacy of therapeutic interventions is mixed. Few interventions target depressed cancer patients. Efficacy of psychotherapeutic and pharmacologic interventions for depression in cancer patients who met an entry threshold for depressive symptoms was examined using meta-analysis. Five electronic databases were systematically reviewed to identify randomized, controlled trials (RCTs) meeting selection criteria. Individual effect sizes were calculated and pooled to compare pre- and post-randomization outcomes. Subgroup analyses were performed to examine moderators of effects. Ten RCTs (6 psychotherapeutic, 4 pharmacologic) met selection criteria, and 1,362 participants of mixed cancer types and stages were randomized. One trial was identified as an outlier and removed from analyses. The random effects model produced an overall effect size at post-intervention of Hedges' $g=0.43$ (95% CI, 0.30 to 0.56, $p<0.001$). The three trials that included longer-term follow-up also produced a significant effect at follow-up, $g=0.42$ (95% CI, 0.20 to 0.64, $p<0.001$). An advantage emerged for cognitive-behavioral therapy (CBT) over probleM–solving therapy ($p=0.012$), as well as a narrow advantage over pharmacologic intervention ($p=0.073$); all approaches were superior to control conditions in improving depressive symptoms. Findings suggest that psychological and pharmacologic approaches can be targeted productively toward cancer patients in need of intervention by virtue of elevated depressive symptoms. Research should focus on maximizing the effectiveness, accessibility, and integration into clinical care of interventions for depressed cancer patients.

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## Symposium 01B 2002

### A META-ANALYSIS OF PSYCHOSOCIAL INTERVENTIONS TO REDUCE CANCER PAIN: LESSONS LEARNED

Sheri Sheinfeld Gorin, PhD,[1] Paul Krebs, PhD,[2] Hoda Badr, PhD,[3] Elizabeth Amy Janke, PhD,[4] Heather Jim, PhD,[5] Bonnie Spring, PhD, ABPP,[6] David Mohr, PhD[7] and Paul Jacobsen, PhD[5]

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Pain is among the most common, burdensome, and feared symptoms experienced by cancer patients. To systematically study the effects of psychosocial interventions on cancer pain, we conducted a meta-analysis of randomized controlled studies among adult cancer patients published between 1966-2010. Findings from this study will be used as grounds for discussion of the meta-analytic process as it relates to psychosocial interventions. A total of 1,681 abstracts were reviewed, yielding 37 papers with sufficient data for meta-analysis. Studies comprised a sample of 4,199 participants (66% female, 72% Caucasian). The weighted averaged effect size across studies for pain severity ($k=38$) was $(g)=0.34$ (95% CI=0.23 - 0.46) and for pain interference ($k=4$) was $(g)=0.40$ (CI=0.21 - 0.60). Moderators examined included study design (e.g., monitoring of intervention fidelity, pain as a primary versus secondary outcome) and sample composition (e.g., gender, percentage of minority participants). Studies monitoring fidelity of interventions to the protocol showed larger effect sizes than those that did not ($g=.52$ vs. .29, $p=.04$). No other moderators were statistically significant ($ps>.26$). The current presentation will focus on some of the challenges encountered by the meta-analysis group and how they were resolved. These include logistical challenges, such as coordination of data extraction among multiple rater pairs, as well as design issues such as the selection of study inclusion criteria and moderator variables. The ways in which these lessons can be applied to future meta-analyses will also be discussed.

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## Symposium 01C 2003

### A META-ANALYTIC COMPARISON OF EXERCISE, PSYCHOLOGICAL, EXERCISE COMBINED WITH PSYCHOLOGICAL AND PHARMACEUTICAL INTERVENTIONS FOR CANCER-RELATED FATIGUE

Karen Mustian, PhD, MPH,[1] C. Alfano, PhD,[3] B. Piper, PhD,[7] T. Smith, PhD,[4] L. Sprod, PhD,[1] J. Scarpato, MS,[2] C. Leach, PhD,[4] L. Peppone, PhD,[1] O. Palesh, PhD,[6] L. Jing, MS,[5] D. Mohr, PhD,[5] B. Spring, PhD,[5] M. Berendsen, MS,[5] C. Heckler, PhD[1] and S. Miller, PhD[2]

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Cancer-related fatigue (CRF) remains one of the most troublesome side effects experienced by cancer patients and survivors. Yet the efficacies of the four major CRF intervention types (exercise, psychological, the combination of exercise and psychological, and pharmaceutical) are not clearly validated. Purpose: The aim of this meta-analysis was to estimate and compare the efficacies of the different intervention types and identify variables that moderate intervention efficacy. Methods: 139 studies published between1966 and 2009 were independently abstracted by ten reviewers in groups of 2-3. For the 42 randomized controlled trials that met inclusion criteria (N=5,016), mean weighted effect sizes (WES) for the four intervention types were computed and compared and moderators of efficacy were evaluated. Results: Exercise and psychological interventions produced significant reductions in CRF (exercise WES=0.35; CI=0.23-0.48; psychological: WES=0.29; CI =0.18-0.41; both $p<0.05$; difference nonsignificant, $p>0.05$), but exercise plus psychological and pharmaceutical interventions did not (exercise plus psychological WES =0.25; CI=0.16 to 0.34; pharmaceutical WES=0.19; CI=-0.05-.44; both $p>0.05$). This pattern was consistently replicated with patients both during and after primary cancer treatment and in studies that employed specific component controls (time, attention, education), as well as those that did not (standard/usual care, waitlist, placebo). Cancer stage was a potential moderator of intervention efficacy ((WES=0.30; CI=0.22-0.38; $p< 0.05$). Conclusions: When exercise and psychological interventions are used singly, they are effective in reducing CRF during and after primary cancer treatments, and above and beyond time, attention, or education controls.

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## Symposium 02 8:45 AM–10:15 AM 2004

### ENERGY BALANCE INTERVENTIONS FOR ENHANCING BREAST CANCER PREVENTION AND SURVIVORSHIP

Christie Befort, PhD,[1] Wendy Demark-Wahnefried, PhD, RD,[2] Jennifer Klemp, PhD,[1] Melinda Stolley, PhD,[3] Kathleen Wolin, ScD[4] and Kathryn Schmitz, PhD[5]

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Breast cancer survivors who are obese have increased risk of recurrence and death compared to their normal weight counterparts. In addition, weight gain and physical inactivity after diagnosis are common and are further associated with increased risk of recurrence. This symposium highlights recently completed and on-going weight control and physical activity interventions targeted for breast cancer survivors. Outcomes include body composition, serum biomarkers, and quality of life. Dr. Wendy Demark-Wahnefried will discuss findings from The Daughters And MothErS (DAMES) Against Breast Cancer Trial, which assessed the feasibility of tailored print interventions for producing weight loss among women with breast cancer and their adult daughters as a means of both primary and tertiary prevention. Dr. Jennifer Klemp will present quality of life outcomes from a 6-month weight control intervention that produced significant changes in weight, body fat, and physical activity levels. Dr. Christie Befort will discuss the Rural Women Connecting for Better Health trial that is targeting weight loss maintenance among rural breast cancer survivors. Dr. Melinda Stolley will discuss Moving Forward, a weight loss intervention that was developed in partnership with the Chicago Park District for African-American breast cancer survivors. Dr. Kathleen Wolin will present data on the association between weight loss, physical activity and bone health among breast cancer survivors enrolled in the multi-site ENERGY trial. Dr. Kathryn Schmitz, the discussant, will comment on strengths of the current state of the literature, barriers to disseminating energy balance interventions in cancer survivors, and future directions.

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## Symposium 02A 2005

### FEASIBILITY AND IMPACT OF TAILORED MAILED PRINT INTERVENTIONS TO PROMOTE WEIGHT LOSS IN OBESE MOTHERS WITH BREAST CANCER AND THEIR DAUGHTERS: RESULTS OF THE DAMES STUDY

Wendy Demark-Wahnefried, PhD,[1,3] Lee W. Jones, PhD,[2] Gretchen Kimmick, MD,[2] Richard Sloane, MPH,[3] Denise C. Snyder, MS[3] and Isaac M. Lipkus, PhD[3]

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A cancer diagnosis can motivate behavior change among cancer patients and their family members. The need for weight control interventions is of growing interest since obesity has been linked with the primary risk of many cancers and also with poorer prognosis after diagnosis.

We undertook a pilot study among obese breast cancer survivors and their adult daughters to assess if it was feasible to capitalize on both the teachable moment of cancer and the mother-daughter bond to promote weight loss using tailored print, diet and exercise interventions. Two mailed print interventions [team(T) vs. individually(I) tailored] were assessed against an attention control (C) of standardized materials. Sixty-eight mother-daughter dyads were ascertained after soliciting 2244 breast cancer cases (and 141 identified daughters). Dyads were randomized to C=18; T=25; and I=25. All received a workbook and 4 quarterly newsletters over 1 year. Wilcoxon tests on baseline to 1-year change scores suggest that both tailored interventions resulted in significantly greater declines in BMI (mothers only: T=-0.85;I=-1.6;C=-0.38 kg/m2) and waist circumference (mothers T=-3.83;I=-6.81;C=-1.30, daughters T=-3.32; I=-5.48;C=-1.02 and dyad average T=-3.62;I=-6.15;C=-1.00 cm) than controls (p-values<.05). No significant differences were noted in minutes of physical activity or energy intake, and no differences were observed between the two tailored intervention arms. Over the 1-year study period there were no serious, attributable adverse events and attrition was 11.7%.

These data suggest that both tailored interventions resulted in significant reductions in adiposity. While promising, few women with breast cancer had adult daughters who were eligible, thus interventions that extend beyond the mother-daughter relationship should be considered, i.e., the survivor and a partner of their choosing.

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## Symposium 02B 2006

### OUTCOMES OF A DIET, EXERCISE, AND BEHAVIORAL WEIGHT LOSS INTERVENTION FOR POST-MENOPAUSAL BREAST CANCER SURVIVORS

Jennifer R. Klemp, PhD, MPH,[1] Christie C. Befort, PhD,[2] Susan Krigel, PhD,[1] Sonya Aversman, RD, MPH,[1] Qamar J. Khan, MD,[1] Priyanka Sharma, MD,[1] Hung-Wen Yeh, PhD[3] and Carol J. Fabian, MD[1]

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Introduction: Weight at diagnosis and weight gain after diagnosis are associated with increased risk of breast cancer (BrCa) recurrence and mortality. This study was conducted to determine the impact of a diet/exercise/behavioral weight loss intervention for overweight BrCa survivors on measures of body composition and quality of life (QoL).

Methods: 52 BrCa survivors with a BMI 25-45 kg/m2, ≥3 months from chemotherapy agreed to participate and 45 completed the study. The 6-month intervention included: 225 minutes/week of moderate intensity exercise, 1200-1500 calorie/day diet, and weekly group behavioral meetings. Pre and post intervention assessments included: anthropometrics, body composition (DEXA), serum biomarkers, fitness test, and questionnaires assessing food intake. Health-related QoL measures included the Brief Fatigue Inventory (BFI), Breast Cancer Prevention Trials Symptoms Check List (BCPT), and Patient Health Questionnaire (PHQ-9) for depression.

Results: Participants had a median age=51 y/o and were 4.25 yrs from diagnosis. Statistically significant (p=values <0.01) changes were documented in weight loss (-10.6=/-6 kgs) and total % of body fat (DEXA) (-5.6+/-4.5). Health-related QoL measures indicated significant improvements in fatigue (p=.000), depression (p=.000), and in the number of hot flashes/day(p=.003). There was a positive correlation between weight loss and improvement in depression (r=.350, n=41, p=.025).

Conclusions: Evidence suggests a 6-month diet/exercise/behavioral weight loss intervention in overweight post-menopausal BrCa survivors results in physical and psychological improvements. Significant improvements were documented body composition and quality of life. These promising findings support the value of a larger randomized controlled trial in the future.

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## Symposium 02C 2007

### MOVING FORWARD: A WEIGHT LOSS PROGRAM FOR AFRICAN-AMERICAN BREAST CANCER SURVIVORS

Melinda Stolley, PhD, Lisa K. Sharp, PhD, Claudia Arroyo, MPH and Linda Schiffer, MPH

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Breast cancer (BC) survival rates are significantly lower for African-American (AA) women than for white women even after controlling for age, SES, tumor stage at diagnosis, hormone receptor status, histology, and menopausal status. Not only are AA women with BC more likely than white women to die from their cancer, they are also more likely to die from comorbid conditions including diabetes and hypertension. Poor diet, lack of physical acitivity, and obesity contribute to breast cancer progression and the development and exacerbation of many comorbid conditions. Although successful weight loss and lifestyle behavior interventions for breast cancer survivors are documented, few have considered the needs of African-American breast cancer survivors. “Moving Forward” is a six-month weight loss intervention that was developed in collaboration with AA BC survivors. Qualitative data, which informed the development of the intervention will be presented, as well as results from the pre-post design pilot study with 23 AA BC survivors. Significant differences were noted for weight, BMI, dietary fat intake, vegetable consumption, vigorous physical activity and social support. To extend this work, we are currently conducting a community-based randomized intervention study to examine the effects of Moving forward, compared to a general health program, on BMI and behavioral, biological, and psychosocial outcomes in 240 AA BC survivors. In the hopes of promoting program sustainability, we partnered with the Chicago Park District (CPD) to implement the study within six predominatly AA communities in Chicago. Methodologies related to the CPD partnership, recruitment, study design and outcome measures will be discussed.

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## Symposium 02D 2008

### SAFETY ENDPOINTS IN WEIGHT LOSS TRIALS AMONG CANCER SURVIVORS: A BONE EXAMPLE

Kathleen Y. Wolin, ScD

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The ENERGY trial (Exercise and Nutrition to Enhance Recovery and Good health for You) is a vanguard weight loss trial of n=800 overweight and obese women age 21 and older with stage IC-IIIA breast cancer across four sites in the US. The primary endpoint is weight loss at 24 months, with secondary quality of life and disease free survival endpoints. While weight loss may reduce the risk of recurrence and death in breast cancer survivors, it may also induce adverse health effects, few of which have been well studied. Weight loss is known to have adverse consequences for bone health, particularly in postmenopausal women. Some research has indicated that physical activity, particularly weight-bearing activity, may offset bone loss. Breast cancer survivors may be at particular risk for adverse bone health given the bone loss associated with several treatment regimens. However, there is limited research on the effects of weight loss and exercise on bone health in cancer survivors. Given that energy restriction is a key component to most successful weight loss regimens, understanding the role it has on bone health in postmenopausal breast cancer survivors, who are at increased risk for bone loss, is an important safety consideration. This session will review the challenges faced when studying safety endpoints as secondary considerations in larger trials using an ancillary study to ENERGY as an example. Postmenopausal women (70% of those eligible to date) participating in the ENERGY trial at one site have been recruited to a study evaluating bone changes over the first year of the weight loss intervention. Ancillary study endpoints include bone density and serum markers of bone turnover.

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## Symposium 03 8:45 AM–10:15 AM 2009

### ACCELERATING THE PATH FROM EXPLORATORY RESEARCH TO EVIDENCE-BASED GUIDELINES FOR CHILDHOOD OBESITY PREVENTION

C. Tracy Orleans, PhD and Terry T-K Huang, PhD

Robert Wood Johnson Foundation, Princeton, NJ.

This symposium presents a new model for accelerating the pipeline from early exploratory studies to evidence-based guidelines to halt or reverse the rise in childhood obesity. Growing alarm over the lifelong health consequences of today's childhood obesity epidemic has intensified efforts to discover and apply feasible and effective interventions for increasing physical activity and improving healthy eating among children and teens – both at the population level and within the lower income and racial/ethnic groups and communities at highest risk. Researchers, practitioners and funders have joined forces in new ways to monitor and evaluate potentially high-impact interventions and enhance the connections between research and practice.

Presenters describe a novel continuum for developing the evidence for policy and environmental approaches to preventing childhood obesity prevention that range from: (1) systematic screening and assessment (SSA) of promising policies and practices; to (2) accelerated reviews of published research and evaluation studies; to (3) systematic reviews of the accumulated evidence by the Community Preventive Services Task Force (CPSTF). The first paper describes the SSA methodology for identifying childhood obesity prevention policies and practices ripe for further evaluation. The second paper presents a model for ongoing yearly reviews of the accumulating scientific literature in order to track the development of a new evidence base, its strengths, gaps and readiness for CPSTF review and recommendations. The third paper describes existing CPSTF recommendations relevant to childhood obesity prevention and the systematic review methods on which they are based, highlighting common research limitations and gaps related to internal and external validity. The discussant outlines ways in which SBM members and the National Childhood Obesity Research Collaborative (CDC, NIH, RWJF, USDA) can use results at each step of the pipeline to accelerate progress in the discovery, development and delivery of effective interventions.

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## Symposium 03A 2010

### BEGINNING THE PIPELINE OF EVIDENCE: USING THE SYSTEMATIC SCREENING AND ASSESSMENT METHOD

Laura Kettel Khan, PhD

DNPAO, CDC, Atlanta, GA.

There is significant demand for evidence-based policies and practices in public health; the strongest evidence comes from research or evaluation studies that meet high standards of rigor. Similarly, stewardship of public funds, and accountability require funders and practitioners to evaluate programs in ways that are appropriate to the developmental phase of the policy or program, methodologically sound, and feasible in terms of data availability and cost. To identify and promote evidence-based practices, we must identify those most promising for public health impact. Reliance on interventions identified through efficacy studies is limiting. In addition, evidence-based interventions are sometimes expensive to implement and overly complex for replication (with fidelity) by community-based practitioners facing many practical constraints. Other more inductive methods are needed to gather practice-based evidence.

The Systematic Screening and Assessment methodology (SSA) attempts to fill the gap between promising and evidence-based practices. The process involves (1) determining a topic(s) of interest; (2) a solicitation and nomination process; (3) screening and selection of the nominations for those that are most promising by an expert panel; (4) conducting Evaluability Assessments (EA); (5) expert panel review of the results of the EA; and (6) identifying those interventions that are promising and ready for a rigorous evaluation. Although EA was originally introduced by Joseph Wholey in the late 1970s , the approach has experienced a resurgence of interest among the evaluation community during the past decade, and more recently within the context of SSA. SSA can be used to guide investments in evaluation and research, determining whether a rigorous evaluation study is feasible and merited for a particular program. SSA helps avoid premature investment in evaluation studies of interventions that have not been adequately implemented and allow evaluation resources to be targeted to studies that are mostly likely to fill important gaps in the evidence base.

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## Symposium 03B 2011

### TRACKING THE EVIDENCE BASE: AN ANNUAL REVIEW SYSTEM FOR EFFECTIVE, PROMISING, AND EMERGING INTERVENTIONS

Laura K. Brennan, PhD,[1] Ross Brownson, PhD,[2] Andrea Pipito, MS[1] and Carl Filler, MSW[1]

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Investigators developed an annual review system to examine the evidence base for policy and environmental strategies to prevent childhood obesity. Accelerated reviews assess available peer-reviewed evidence, including associational and intervention evaluation studies, with two primary aims: to accelerate the discovery and application of replicable, evidence-based policies and practices; and to assess a full continuum of evidence for these strategies, using a wide range of quality indicators. Expert feedback from over 40 international, national, state, and local advisors shaped the system, bringing together diverse expertise and perspectives of researchers, evaluators, practitioners, and policy-makers. The process includes: (1) establishing parameters and criteria for the review; (2) identifying studies meeting criteria; (3) abstracting evidence indicators from studies (e.g., study design, effects, reach, impact, feasibility, sustainability); (4) developing tables to synthesize evidence for all studies related to an intervention; (5) creating impact and effectiveness tables to provide evidence ratings on quality indicators across interventions for a strategy; (6) organizing data into complementary strategy maps to illustrate associations and effects across interventions for a strategy; (7) categorizing intervention strategies (i.e., first-tier effective, second-tier effective, promising, and emerging) through input from experts; and (8) eliciting gaps and new directions for the field. Gaps and challenges include documenting independent and interdependent effects, determining applicability to different populations and settings, assessing implementation fidelity and feasibility, identifying cumulative benefits and costs, ascertaining impacts on health equity, and tracking sustainability. The system indicates a set of interventions ready for Community Preventive Services Task Force review and recommendations.

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## Symposium 03C 2012

### STRENGTHENING THE EVIDENCE-BASE FOR CHILDHOOD OBESITY PREVENTION: LESSONS FROM THE COMMUNITY GUIDE

Shawna L. Mercer, MSc, PhD

Community Guide, CDC, Atlanta, GA.

The Community Preventive Services Task Force (CPSTF) has identified obesity prevention and control, and the related topics of promoting physical activity and good nutrition, as among its very highest priority areas for developing new, and updating existing evidence-based recommendations. CPSTF recommendations are based on rigorous systematic reviews of the available evidence on the effectiveness and economic efficiency of four types of community preventive services: a) informational and educational; b) behavioral and social; c) environmental and policy; and d) health systems interventions. The systematic reviews and related CPSTF findings and recommendations together make up the Guide to Community Preventive Services (Community Guide). This presentation will outline childhood obesity prevention interventions recommended by the CPSTF on the basis of strong or sufficient evidence of their effectiveness. It will next identify remaining evidence gaps of three types: 1) gaps where there is insufficient evidence to determine whether or not specific childhood obesity prevention interventions are effective; 2) gaps where there is insufficient evidence to know whether interventions found to be effective in some populations, setting, and contexts would be effective in others; and 3) gaps related to information that is needed to adequately support practitioners, policy makers, and other decision makers in selecting and implementing effective interventions that meet their needs, preferences, and available resources. The presentation will conclude by suggesting how behavioral medicine researchers, evaluators, and practitioners can individually and collectively help to fill the evidence gaps, thus moving worthy research-tested and practice-based candidate interventions along the path from evaluability assessment to emerging, promising, second tier, and finally first tier effective interventions recommended by the CPSTF.

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## Symposium 04 8:45 AM–10:15 AM 2013

### COMMUNICATION IN PREVENTATIVE CARE AND RESEARCH

Martin Cheatle, PhD,[1] David Buller, PhD,[2] Kathryn Greene, PhD,[4] Michael Hecht, PhD[3] and Betsy Bach, PhD[5]

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The field of behavioral medicine has made significant contributions to the area of preventative care through translational and implementation science. Less often discussed is the role of communication in prevention and healthcare delivery. Concepts central to the study of communication include the dissemination and interpretation of messages as well as the context(s) in which these messages are sent and interpreted. Communication research in healthcare delivery ranges from the study of successful patient/provider interactions, to the investigation of interpersonal messages that impact minority (and all) healthcare and health disparities, to the use of media campaigns and social media to persuade the general public to adopt a particular health regimen.

This symposium will review the core concepts from communication studies of message dissemination (particularly the diffusion of innovation), interpretation (particularly social cognition, media literacy, and communication competence), and context (the workplace) and the application of these concepts to novel preventative care programs in substance abuse and occupational sun protection.

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## Symposium 04A 2014

### ADAPTING HEALTH MESSAGES IN COMMUNITY-BASED PREVENTION RESEARCH

Michael L. Hecht, PhD,
Communication Arts and Sciences, Penn State, University Pari, PA.

The Drug Resistance Strategies (DRS) Project, funded by NIDA since the late 1980's, involves both basic research describing the social processes of adolescent substance use and prevention research developing and evaluating new methods for prevention interventions. This talk focuses on the development and evaluation of the multicultural keepin' it REAL (kiR) middle school substance use prevention curriculum. kiR, believed to be the most widely disseminated middle school drug prevention program in the world, was developed based on the principle of cultural grounding using a theoretical framework integrating communication competence, social cognitive, and narrative theories. The talk provides an overview of this development process, summarizing previous evaluation studies and discussing a new approach to adaptation processes in implementation research.

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## Symposium 04B 2015

### ACTIVE INVOLVEMENT: A BRIEF MEDIA LITERACY APPROACH TO SUBSTANCE USE PREVENTION

Kathryn Greene, PhD

Rutgers University, New Brunswick, NJ.

Youth Message Development (YMD) is a NIDA funded project using media literacy to target adolescent alcohol use. This talk reviews the development and evaluation of the YMD curriculum. Adolescents are exposed to a barrage of messages endorsing substance use both explicitly (i.e., advertisements, friends) and implicitly (e.g., substance use in entertainment messages, peer use). Media literacy argues that deterioration of younger adolescents' negative attitudes, norms and intentions about alcohol, tobacco and other drugs (ATOD) can be combated by activating critical thinking processes that bolster skills in refuting arguments targeting anti-ATOD beliefs. This approach is a dual strategy: 1) a motivational component forewarns adolescents against future attacks on their beliefs from media (and peers); and 2) a cognitive component engages adolescents in refuting pro-drug message arguments. This media literacy approach has demonstrated shorter term success but generally with long interventions (8, 10 or 12 lesson curricula), but a targeted brief intervention has potential for both impact and adoption. The intervention encourages the development of higher order critical thinking skills valued in curricula under current teaching standards in many states which should foster dissemination.

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## Symposium 04C 2016

### APPLYING COMMUNICATION PRINCIPLES FROM THE DIFFUSION OF INNOVATIONS THEORY FOR PROMOTING OCCUPATIONAL SUN PROTECTION

David B. Buller, PhD

Klein Buendel, Inc., Golden, CO.

The Go Sun Smart Project, funded by NCI for the past decade, contained research focused on developing and disseminating effective workplace strategies for elevating sun protection of workers in a North American outdoor recreation industry. This talk will review the principles from diffusion of innovation theory that guided communication strategies in a successful workplace sun protection education program and that were used to convince managers to implement the program with higher fidelity when distributed by the industry professional association. These strategies involved a mix of worksite messages stressing the advantage, compatibility, and ease of sun protection and skills for implementing sun safety on the job, personal contacts to achieve employee and manager commitment, and opinion leadership to support the education program, instill a norm for sun safety, and remove barriers to occupational sun protection. Findings from formative research using surveys and focus groups with employees (n=3567 employees), a randomized effectiveness trial (n=26 resorts and 4,007 employees) evaluating immediate and long-term impact on employee sunburn prevalence and sun protection behavior, and a randomized dissemination trial (n=68 resort 469 managers and 2228 employees) evaluating industry-based methods of disseminating the education program will be summarized. The talk with conclude by describing the application of these communication strategies in two new projects. In the first project, a campaign to achieve adoption of occupational sun protection policy by public-sector employers (i.e., cities, counties, and special districts) is being evaluated, while in the second, transportation theory is being incorporated to translate the success of the employee program into a program promoting sun safety by adults vacationing in outdoor recreation environments.

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## Symposium 05 8:45 AM–10:15 AM 2017

### IDIOGRAPHIC METHODS

Wayne Velicer, PhD and Colleen Redding, PhD

Cancer Prevention Research Center, University of Rhode Island, Kingston, RI.

Idiographic methods focus on the time-dependent variation within a single individual (intra-subject variability) in contrast to methods which focus on group-level relationships (inter-subject variability). The method is an alternative to the dominant scientific approach, the nomothetic approach, which focuses on group level analysis. An inter-individual analysis may yield different results than an intra-individual analysis. Equivalent results will occur only if the two conditions specified by the Ergodic Theorems are met: (1) Each individual trajectory has to obey the same dynamic laws, and (2) Each individual trajectory must have equal mean levels and serial dependencies. These theorems appear unlikely to be met in practice but we have seldom had data adequate to test them. In addition, idiographic methods have several advantages. First, idiographic methods can address different research questions. Second, idiographic methods can be used in applied settings, such as businesses, schools, clinics, and hospitals. Third, idiographic methods have important advantages for investigating patterns of change across time. Fourth, idiographic methods can be used to determine the generating function for the behavior of interest. Fifth, idiographic methods can address the relationship between variables over time. However, the generalizability of research findings from idiographic studies involves conceptually different models. In this symposium, different aspects of idiographic methods will be described. The first presentation (Babbin) will describe using time series analysis and dynamic clustering to study adherence to a Positive Airway Pressure (PAP) treatment for obstructive sleep apnea. The second paper (Goodwin) will demonstrate the application of idiographic methods to address important issues for intervening in the area of autism, including assessing reactivity to environmental stressors and the automated detection of repetitive motor movements. The third presentation (Molenaar) presents an example of a multivariate idiographic analysis for Type 1 diabetes patients that produced both general patterns of change and patient specific patterns.

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## Symposium 05A 2018

### IDENTIFYING LONGITUDINAL PATTERNS OF ADHERENCE TO TREATMENT FOR SLEEP APNEA

Steven F. Babbin, BS,[1] Wayne Velicer, PhD,[1] Mark Aloia, PhD[2] and Clete Kushida, MD, PhD[3]

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Increasing adherence to medical recommendations is crucial for improving health outcomes and reducing costs of health care. To improve adherence, we have to better understand behavior change over time. The focus of this study was adherence to treatment for obstructive sleep apnea (OSA). Adherence to Positive Airway Pressure (PAP), the most common treatment for OSA, is poor. This study involved an international sample of 161 participants, each with approximately 180 nights of data, and had three phases. First, a separate time series analysis was performed for each individual. Time series parameters included the mean (average hours of use per night), level (the intercept), slope (the rate of change over time), variance (variability in use) and autocorrelation (a measure of dependency). Second, a dynamic cluster analysis was performed to find homogenous subgroups of individuals with similar adherence patterns. A four-cluster solution was found, and the subgroups were labeled: Great Users (17.2%; high mean and level, no slope), Good Users (32.8%; moderate mean and level, no slope), Poor Users (22.7%; low mean and level, negative slope), and Slow Decliners (moderate mean and level, negative slope, high variance). Third, participants in the identified subgroups were compared on a number of demographic, sleep apnea related, and psychosocial variables that were not involved in the clustering to establish external validity. Some notable findings at later time points include: Great Users reported the most self-efficacy (confidence to use PAP); Poor Users reported the most sleepiness; and Great Users reported the highest quality of sleep. Combining time series analysis and dynamic cluster analysis is a useful way to evaluate adherence patterns at both the individual level and subgroup level. Psychological variables relevant to adherence patterns, such as self-efficacy, could be the focus of interventions to increase PAP usage.

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## Symposium 05B 2019

### RESEARCHING AUTISM SPECTRUM DISORDERS: A CASE STUDY IN THE NECESSITY OF CONDUCTING IDIOGRAPHIC ANALYSES

Matthew S. Goodwin, PhD,[1] Heather McGhee, MA[2] and Richard Palumbo, MA[2]

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Autism Spectrum Disorders (ASD) affect 1 in 100 children by age 8 in the United States, and have no know cause or cure. While a triad of qualitative impairments in socialization, communication, and restricted and repetitive behavior characterize the disorder, there is tremendous heterogeneity in clinical presentation, necessitating data collection and analyses at the individual level. This talk will review findings from three complimentary lines of research that employ a variety of innovative technologies capable of producing intensive longitudinal data well suited for idiographic analyses. The first area of study involves telemetric assessment of Autonomic Nervous System (ANS) activity to environmental stressors in individuals with ASD, and suggests that group-level analyses obscure important individual differences in physiological reactivity. The second area of study involves automated detection of repetitive motor movements in children with ASD using wireless, 3-axis accelerometers and computerized pattern recognition algorithms, and suggests that person-dependent training is needed to reliably and accurately detect movements of interest. The third area of study combines telemetric ANS assessment with wireless accelerometry to explore ANS-repetitive motor movement relations and quantification of temporal regularity in repetitive motor movement epochs, both of which require individual-level analyses to uncover important individual differences.

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## Symposium 05C 2020

### BUILDING AN ARTIFICIAL PANCREAS: AN ILLUSTRATION OF PATIENT-SPECIFIC INTERVENTION UNDER NORMAL LIVING CONDITIONS IN REAL TIME

Peter C.M. Molenaar, PhD

Developmental Systems Group, The Pennsylvania State University, University Park, PA.

In a replicated time series design 5 patients were assessed each 5 minutes during 3 consecutive days under natural living conditions. Assessments included 1) momentary blood glucose level, 2) insulin dose, 3) carb intake. To the 3-variate time series thus obtained for each patient, a patient-specific state-space model with arbitrarily time-varying parameters (TV-SSM) was fitted. The time-varying parameters describing the effects of insulin dose and carb intake on blood glucose can accommodate patient-specific time-varying lags in their actions. The TV-SSM was fitted to the data of each individual patient in a recursive way, i.e., in a way which is potentially realizable in real time. It was found that predictions of each individual patient's blood glucose level based on this TV-SSM 30 minutes ahead correlate more than .90 with the actual blood glucose levels. The TV-SSMs for different patients appear to be patient-specific in different respects. It was found that the predicted effect of this adaptively optimized insulin delivery system is substantial, yielding substantial reductions of the deviations of each patient's blood glucose level from the normal range of values.

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## Symposium 06 8:45 AM–10:15 AM 2021

### OPTIMIZING BEHAVIORAL INTERVENTIONS

Kari C. Kugler, PhD, MPH[1] and Bonnie Spring, PhD, ABPP[2]

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Behavioral interventions aim to reduce morbidity and mortality by decreasing negative, and increasing positive, health behaviors. Optimizing behavioral interventions has become increasingly important as budgets are being cut and researchers are being asked to do more with less. Central to the talks in this symposium is the idea of making the best use of available resources to build more efficacious, effective, and efficient interventions, thereby improving the overall public health impact.

The first talk describes the multi-phase optimization strategy (MOST). Inspired by methods widely used in engineering, MOST provides a principled framework for determining which components of an intervention yield the most efficient intervention, given the constraints of time, money, and resources. The second talk presents a novel experimental design called sequential multiple assignment randomized trial, or SMART. This approach is well-suited for time-varying adaptive health interventions; it systematically identifies the best decision rules to specify whether, how, for whom, and when to alter the intensity, type, or delivery of treatments during the management of various chronic disorders. The third talk describes another engineering-inspired approach based on modeling dynamic systems and applying control theory. Control theory can be used to identify optimal decision rules in time-varying adaptive interventions.

Collectively, the talks provide alternatives to traditional randomized controlled trials (RCTs); RCTs efficiently evaluate an intervention's effect, but they do not provide the information needed to optimize an intervention. In particular, the talks in this symposium provide demonstrations of how to conduct component-selection experiments, adapt interventions to meet differing needs of patients, and model an intervention as a dynamic system to find ways to optimize the intervention. The discussant for this symposium has extensive expertise in behavioral interventions related to health promotion and risk behaviors such as smoking, poor eating habits, and physical inactivity.

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## Symposium 06A 2022

### IMPROVING BEHAVIORAL INTERVENTIONS VIA THE MULTI-PHASE OPTIMIZATION STRATEGY

Kari C. Kugler, PhD, MPH and Linda M. Collins, PhD

Pennsylvania State University, State College, PA.

The goal of behavioral interventions is to change behaviors and their associated mediators to improve the overall public health impact. Because most behaviors are complex, behavioral interventions typically target many levels of influence (e.g., individual, peer, family, and community) and include many components (e.g., increasing knowledge, improving skills and self-efficacy, and removing barriers). Most often, these components are packaged together and evaluated using a randomized controlled trial (RCT); however, a RCT does not provide the information needed to optimize an intervention. The multi-phase optimization strategy (MOST), inspired by methods widely used in engineering, provides a principled framework for optimizing behavioral interventions. Using the resource management and continuous optimization principles, and gathering information via highly efficient experimental designs, this approach helps the investigator identify which components of an intervention are worth retaining, given the constraints of time, money, and other resources. Once the components worth retaining have been identified, they are combined to create an intervention that can be evaluated (using an RCT) to determine whether the new, optimized intervention is better than the standard of care. As availability of resources diminishes, an optimization approach to intervention design has the potential to create powerful, efficient interventions that can be delivered within given constraints.

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## Symposium 06B 2023

### GETTING SMART ABOUT DEVELOPING INDIVIDUALIZED SEQUENCES OF HEALTH INTERVENTIONS

Daniel Almirall, PhD and Susan Murphy, PhD

Institute for Social Research, University of Michigan, Ann Arbor, MI.

The effective management of a wide variety of chronic health disorders often requires individualized, sequential decision making, whereby treatment is dynamically adapted over time based on a patient's changing course. Adaptive health interventions operationalize individualized, sequential, decision making via a sequence of decision rules that specify whether, how, for whom, and when to alter the intensity, type, or delivery of psychosocial, behavioral, and/or pharmacological treatments at critical decision points in the management of chronic disorders. In this talk, we present a novel, experimental design–sequential multiple assignment randomized trials, or SMART–intended specifically for the purpose of developing and optimizing adaptive health interventions. We will discuss why adaptive health interventions are important; introduce SMART designs; contrast SMARTs with other experimental approaches; discuss SMART design principles, including common choices for primary and secondary aims; and discuss sample size considerations in the design of SMART.

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## Symposium 06C 2024

### USING CONTROL SYSTEMS ENGINEERING TO ENABLE OPTIMIZED BEHAVIORAL INTERVENTIONS

Daniel E. Rivera, PhD

School for Engineering of Matter, Transport, and Energy, Arizona State University, Tempe, AZ.

The last decade has witnessed an increasing interest in the application of systems science approaches for examining problems in behavioral health, and using these to inform the design, analysis, and implementation of more efficacious behavioral interventions. Among these approaches lies control systems engineering, which is the field that considers how to adjust system variables over time to improve important process outcomes. How can the technology that is responsible for cruise control in automobiles, the home thermostat, and the insulin pump be useful in behavioral intervention settings? This presentation examines this question by focusing on the problem of adaptive, time-varying interventions. In an adaptive intervention, dosages of intervention components are assigned based on the values of tailoring variables that reflect some measure of outcome or adherence. We describe how control systems engineering concepts originating from the chemical process industries can be contextualized to serve as optimal decision policies for adaptive interventions in behavioral health. Control engineering is shown to possess a number of advantages, which include the ability to assign dosages in multi-component interventions despite participant variability, to recognize delays and lagged effects between intervention components and outcomes, and to enforce constraints that reflect clinical guidelines, for example, keeping limits on intervention dosages and their rates of change during the course of the intervention. The usefulness of the approach is illustrated using examples drawn from interventions for weight loss/increased physical activity, smoking cessation, and managing chronic pain.

We consider some of the opportunities and challenges presented by the field, such as how behavioral theories can inform the development of dynamical models useful for control design. We conclude with a discussion of what adopting control engineering principles for achieving optimized interventions represents for behavioral scientists, methodologists, and engineers.

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## Symposium 07 8:45 AM–10:15 AM 2025

### ENGAGING INTERDISCIPLINARY PERSPECTIVES AND COMMUNITY COLLABORATIONS IN UNDERSTANDING HIV STIGMA

Aaron M. Kipp, PhD,[4] Laura M. Bogart, PhD,[3] Stephenie R. Chaudoir, PhD,[2] Valerie Earnshaw, PhD[1] and Laramie R. Smith, MA[5]

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HIV stigma remains strong 30 years into the epidemic. It continues to thwart efforts aimed at optimizing health outcomes of people living with HIV/AIDS (PLWHA) and reducing HIV incidence, two goals of the National HIV/AIDS Strategy. Given that efforts at reducing HIV stigma have had limited success, it is critical to adopt new approaches to understanding and intervening in HIV stigma that engage both interdisciplinary perspectives and community collaborators. Therefore, this symposium brings together perspectives from epidemiology, medicine, psychology, and public health to contribute to more in depth understandings HIV stigma. The first three talks will address issues of HIV stigma and health outcomes among PLWHA. They will include a review of the literature on HIV stigma and health behaviors that will highlight gaps in HIV stigma research and measurement; research linking experiences of discrimination among a diverse sample of PLWHA and physical health outcomes; and research identifying spirituality as a protective factor buffering PLWHA from adverse mental health outcomes associated with HIV stigma. The final talk will address HIV stigma and HIV incidence with research examining the relationship between endorsing HIV stigma and participating in HIV risk behaviors among people at heightened risk of contracting HIV. Additionally, the symposium will highlight the importance of engaging community collaborators to achieve high-quality HIV stigma research, and ensure the dissemination and application of research findings on HIV stigma. By engaging interdisciplinary perspectives and community collaborations to better understand HIV stigma, researchers may be able reduce HIV stigma and ultimately contribute to the achievement of the goals of the National HIV/AIDS Strategy.

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## Symposium 07A 2026

### GAPS IN MEASURING AND UNDERSTANDING THE EFFECT OF HIV STIGMA ON HEALTH OUTCOMES: INSIGHT FROM A SYSTEMATIC REVIEW OF HIV STIGMA AND ART ADHERENCE

Aaron M. Kipp, PhD,[1,2] Connie Haley, MD,[2] Abraham Mukolo, PhD[2] and Mary Lou Lindegren, MD[2]

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HIV stigma continues to pose a barrier to HIV testing, treatment, and care. Recent studies have used various HIV stigma measures to quantify its effect on antiretroviral treatment (ART) adherence. We performed a systematic literature review of studies quantifying the association between HIV stigma and ART adherence. Peer-reviewed studies indexed in six databases were searched using a combination of stigma and adherence related terms. All abstracts were reviewed by two of the co-authors and data were extracted for studies meeting the following inclusion criteria: HIV infected, adult population (>=18 years), currently receiving ART, measurement of both HIV stigma and ART adherence, and a quantitative analysis to determine their association. Abstracts from 577 studies were reviewed of which19 met the inclusion criteria. Three were excluded because they were duplicate studies using the same data as another study. Among the 16 studies included in the review, 15 different measures of stigma were used including single-item measures of discrimination and previously validated, multi-factor stigma scales. No measure of stigma was used in more than two of the studies. There was also great heterogeneity in adherence measurement and how the analyses were performed. However, of the 16 studies, 7 found a statistically significant association between stigma and adherence: 4 found an association for experienced stigma (e.g. discrimination), 2 found an association for perceived stigma, and one found an association for total stigma, which had a majority of items assessing experienced stigma. The conclusions that can and cannot be made based on the current evidence will be discussed along with the specific role that stigma measurement plays in the ability to draw conclusions. Current gaps, possible solutions, and future directions in stigma measurement in the context of health behavior and health outcomes will also be discussed.

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## Symposium 07B 2027

### PERCEIVED DISCRIMINATION AND PHYSICAL HEALTH OUTCOMES AMONG HIV-POSITIVE BLACK AND LATINO MEN WHO HAVE SEX WITH MEN

Laura M. Bogart, PhD,[1] Frank H. Galvan, PhD,[2] Glenn J. Wagner, PhD,[3] Hope Landrine, PhD[4] and David J. Klein, MS[1]

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HIV-positive Black and Latino men who have sex with men (MSM) experience discrimination due to multiple stigmatized characteristics, including HIV-serostatus, race/ethnicity, and sexual orientation. We partnered with AIDS service organizations in Los Angeles to examine how such stigmas act in concert to affect physical health. We developed the Multiple Discrimination Scale (MDS) to assess a range of interpersonal, institutional, and violent forms of discrimination from HIV-serostatus, race/ethnicity, and sexual orientation. A total of 348 MSM with HIV (181 Black, 167 Latino) completed audio computer-assisted self-interviews that included the MDS and measures of AIDS symptoms, antiretroviral medication side effects, and emergency department (ED) use; HIV viral load was collected from medical records. In multivariate models, the three perceived discrimination main effects as a set significantly predicted greater side effects [Black MSM: $F(3,175)=2.7, p<.05$; Latino MSM: $F(3,162)=4.6, p<.01$] and AIDS symptoms [Black MSM: $F(3,176)=4.8, p<.01$; Latino MSM: $F(3,163)=3.4, p<.01$] in separate analyses for Black and Latino MSM. None of the MDS subscale main effects alone were significantly associated with these physical symptom measures. In multivariate models for Black MSM, only racial discrimination was significantly associated with detectable HIV viral load [Odds Ratio (OR)=0.7,95% Confidence Interval (CI)=0.6,0.9,$p<.05$] and greater ED use, controlling for HIV-serostatus and sexual orientation discrimination [OR=1.3,95%CI=1.0,1.7,$p<.05$]; the parallel relationships for Latino MSM were nonsignificant. Findings suggest a need to consider multiple types of stigmas when examining the relationship between discrimination and health, and that people from different ethnic groups may experience distinct consequences from discrimination.

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## Symposium 07C 2028

### COPING WITH HIV STIGMA: DO PROACTIVE COPING AND SPIRITUAL PEACE BUFFER THE EFFECT OF STIGMA ON DEPRESSION?

Stephenie Chaudoir, PhD,[1] Wynne E. Norton, PhD,[2] Valerie A. Earnshaw, PhD,[3] Linda Moneyham, PhD,[2] Michael Mugavero, MD[2] and Kathie Hiers, MA[4]

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Although HIV stigma is a significant predictor of depression, little is known about which factors might most effectively buffer, or attenuate, this effect. We examined whether two coping-related factors—proactive coping and spiritual peace—modified the effect of HIV stigma on likelihood of depression among a sample of 465 people living with HIV/AIDS (PLWHA) in Alabama. In a cross-sectional analysis, we conducted hierarchical logistic regression analysis to examine the effect of HIV stigma, proactive coping, spiritual peace, and their interactions on likelihood of significant depressive symptoms. After controlling for the effect of education and work status, HIV stigma was related to greater odds of demonstrating significant depressive symptoms (OR=3.74), whereas proactive coping and spiritual peace were each related to lower odds of significant depressive symptoms (ORs=0.54 and 0.66, respectively). However, spiritual peace moderated the effect of HIV stigma on depression at high—but not low—levels of HIV stigma (OR=0.53, $\chi 2\ (2)=5.33$, $p=.05$). No such effect was observed for proactive coping. Findings suggest that spiritual peace may help counteract the negative effect of HIV stigma on depression. Intervention components that enhance spiritual peace, therefore, may potentially be effective strategies for helping PLWHA cope with HIV stigma.

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## Symposium 07D 2029

### HIV STIGMA AND RISK AMONG INJECTION DRUG USERS

Valerie Earnshaw, PhD,[1] Laramie R. Smith, MA,[2] Stephenie R. Chaudoir, PhD[3] and Michael M. Copenhaver, PhD[2]

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Reducing HIV incidence is a critical goal of the National HIV/AIDS Strategy. Although it has been hypothesized that HIV stigma blocks efforts to reduce HIV incidence, the relationship between HIV stigma and HIV incidence remains understudied. To enhance understandings of this relationship, we examined the extent to which HIV stigma mechanisms relate to HIV risk factors among an important risk group: people with a history of injection drug use/opioid dependence. We focused on three stigma mechanisms, including prejudice (i.e., negative emotions and feelings towards PLWHA), stereotypes (i.e., group-based beliefs about PLWHA applied toward individual PLWHA), and discrimination (i.e., behavioral expressions of prejudice towards PLWHA). Data were collected from 96 patients receiving methadone maintenance therapy in an inner-city community clinic who were enrolled in an HIV risk reduction randomized controlled trial. Participants of the current study completed measures assessing their endorsement of HIV prejudice, stereotypes, and discrimination as well as HIV prevention behavioral skills and time since last injection drug use. Controlling for the treatment condition and relevant demographic variables, results demonstrated that participants who endorsed greater HIV discrimination reported weaker HIV prevention behavioral skills [$F(10,86)=2.13$, $p=.04$] and more recent injection drug use [$F(10,86)=2.48$, $p=.02$]. However, HIV prejudice and stereotypes were unrelated. These findings suggest that HIV stigma is related to important risk factors among recent injection drug users. Future work should evaluate ways to identify and reduce HIV stigma, especially endorsement of discrimination, among people with a history of injection drug use accessing methadone maintenance therapy in community clinics. Housing such HIV stigma reduction programs in community settings may ultimately reach high-risk group members and contribute to reductions in HIV incidence.

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## Symposium 08 8:45 AM–10:15 AM 2030

### INCREASING PHYSICAL ACTIVITY AMONG OLDER ADULTS THROUGH DISSEMINATION RESEARCH

Barbara Resnick, PhD CRNP, Kathleen Michael, PhD, Elizabeth Galik, PhD, Eun Shim Nahm, PhD and Marianne Shaughnessy, PhD

University of Maryland School of Nursing, Baltimore, MD.

It is well known that the majority of older adults do not engage in recommended levels of physical activity and spend the majority of their time in sedentary behavior. Numerous barriers and reasons for sedentary behavior have been noted including acute events (e.g., cerebrovascular events), age, sociodemographic characteristics, co-morbidities that affect function, cognitive decline, delirium, depressed mood, poor perceived health status, lack of motivation, cultural expectations, pain, fear of falling, body mass index, and polypharmacotherapy. Settings of care such as assisted living, nursing homes, congregant living (e.g, senior housing) or access to large numbers of older adults via the internet provide excellent opportunities to disseminate behavior change information and increase physical activity. There are, however, unique challenges to disseminating information and engaging individuals in physical activity via these different approaches. To overcome challenges to dissemination and behavior change at the level of the older adult and the community in which he or she lives a theoretical approach is needed. Across all of these studies we used a social ecological model (SEM) with social cognitive theory (SCT) guiding the interpersonal aspects of the intervention and we incorporated Diffusion of Innovation (DOI) theory to optimally disseminate and implement the physical activity initiatives. The purpose of this symposium is to describe the implementation and outcomes of three dissemination projects focused on increasing physical activity among older adults. The PRAISEDD study was done in a senior housing facility and disseminated stroke prevention behaviors, particularly exercise. The Function Focused Care (FFC) Intervention study disseminated a FFC philosophy in assisted living facilities focused on increasing time in physical activity among residents. Lastly the Bone Health Study disseminated information about prevention of osteoporosis via regular physical activity.

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## Symposium 08A 2031

### DISSEMINATION AND IMPLEMENTATION OF FUNCTION FOCUSED CARE IN ASSISTED LIVING

Barbara Resnick, PhD CRNP and Elizabeth Galik, PhD

University of Maryland School of Nursing, Baltimore, MD.

Residents living in Assisted Living Communities (ALs) are medically, functionally, and/or cognitively impaired and engage in very little physical activity. Traditionally the philosophy of care in AL is on meeting residents' needs through task completion. Unfortunately, such attentive care decreases the older individuals' opportunity to perform even routine activities and thereby engage in some level of physical activity (e.g, soap the sponge, manipulate one's arm into a sleeve). Function Focused Care (FFC) is an intervention that was developed to change the philosophy of care in AL to one in which direct care workers (DCWs) work with residents to optimize function and time spent in physical activities. Briefly, FFC for Assisted Living (FFC-AL) identified a FFC Champion in the AL community who worked with our research supported FFC Nurse (FFCN) to implement the following four components: (I) Environment and Policy/Procedure Assessments; (II) Education; (III) Developing Function Focused Goals; and (IV) Mentoring and Motivating. The Reach, Efficacy/Effectiveness, Adoption, Implementation, and Maintenance (RE-AIM) model was used to evaluate dissemination and implementation of FFC in four AL communities. A total of 171 residents out of 371 eligible residents (46%) and 96 out of an available 115 DCWs participated in the study (83%). The DCWs demonstrated an increase in the percentage of time they spent providing FFC, residents in treatment sites declined less functionally than in education only sites and we increased the number of residents who ambulated a functional distance. Non-consented residents and DCWs engaged in FFC and there was evidence that study related activities persisted after the end of the study. Enduring changes included such things as developing clear walking paths and changes in the marketing materials to reflect a FFC philosophy. Findings from this study can be used to guide others in dissemination and implementation of similar interventions in AL communities.

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## Symposium 08B 2032

### PRAISEDD: FACILITATING LONG-TERM COMMUNITY ADOPTION OF PHYSICAL ACTIVITY

Kathleen Michael, PhD and Barbara Resnick, PhD CRNP

University of Maryland School of Nursing, Baltimore, MD.

African American and low-income older adults living in subsidized senior housing often have hypertension, obesity, or diabetes, placing them at great risk for cardiovascular disease (CVD). They are less likely to be knowledgeable about CVD and associated risk factors, or to engage in CVD prevention behaviors such as physical activity in their daily lives. They also may lack opportunities and resources to participate in structured exercise programs. The PRAISEDD project aimed to disseminate a successful adaptive physical activity exercise program in a community of underserved and vulnerable older adults. Following our initial 12-week pilot study that produced significant decreases in systolic (P=0.02) and diastolic blood pressure (P=0.01) and a t trend toward improvement in cholesterol intake (P=0.09), we focused on maintenance and dissemination of the program, with the hypothesis that in order to reduce CVD risk, long term behavioral adoption of physical activity is necessary. We identified and trained a leader from within the community to take over the weekly classes, and we returned for monthly inoculation visits for CVD risk monitoring, exercise progression, and health education. To disseminate the program to a wider segment of the population, we enlisted the community leader to personally invite residents to participate, and we also provided posters, flyers, and verbal information about the classes. Participants periodically received small incentive gifts that clearly identified them with the PRAISEDD project. Three years have passed, and the program is still running. By bringing this specific exercise program into these older adults' living environments and building in a structure of peer support, we show effectiveness of a low-cost self-run activity program, and also its behavioral effects and its independent sustainability within the community.

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## Symposium 08C 2033

### THE IMPACT OF AN ONLINE THEORY-BASED BONE HEALTH PROGRAM ON SETTING HEALTH GOALS

Eun Shim Nahm, PhD,[1] Barbara Resnick, PhD CRNP,[1] Jay Magaziner, PhD,[2] Michelle Bellantoni, MD,[3] Patricia Brennan, PhD,[4] Paul Estabrooks, PhD,[5] Mei Jeong An, MSN,[1] Jennifer Brown, BSN[1] and Matthew Rietschel, MS[1]

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Currently, an estimated 10 million Americans age 50 and older are living with osteoporosis, and many of them experience fractures. Although evidence shows effective preventive measures, they are not well followed. In an ongoing 3-arm online randomized controlled trial (N=866, age>50), we are testing the long-term (18-month) impact of the following bone health programs using the modified RE-AIM framework (Reach, Effectiveness, Adoption, Implementation, and Maintenance): (1) an 8-week Social Cognitive Theory-based Online Bone Health (TO-BoneHealth) program; and (2) a 12-month Plus program including the TO-BoneHealth program followed by bi-weekly ehealth newsletters. This session will discuss the participants' health goals (exercise and other goals) at baseline and follow up. The quality of the goal content was assessed by 3 coders using the same rating guidelines. Among 604 intervention group participants, 418 (69.3%) submitted the revised goals. In the revisions, 196 (46.9%) participants set more specific goals for calcium intake, 117 (30%) for vitamin D intake, and 184 (44%) for exercise. A total of 41 participants set a goal to discuss their bone health with their healthcare providers, and 45 set a goal to discuss the BMD test. The findings showed that the participants' received the information provided and that there were positive effects on the early phase of behavioral change trajectory (i.e., setting specific goals).

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## Symposium 09 8:45 AM–10:15 AM 2034

### MECHANISMS OF CHANGE IN PSYCHOSOCIAL TREATMENTS FOR PAIN-RELATED CHRONIC HEALTH CONDITIONS

Beverly Thorn, PhD,[1] John Burns, PhD,[2] Mary Davis, PhD[3] and Frank Keefe, PhD[4]

[1]Psychology, The University of Alabama, Tuscaloosa, AL; [2]Behavioral Sciences, Rush University Medical School, Chicago, IL; [3]Psychology, Arizona State University, Tempe, AZ and [4]Psychology & Neurosciences, Duke University, Durham, NC.

This symposium focuses on the processes and mechanisms of change in psychosocial treatments for chronic pain-related health conditions. The study of how psychosocial treatments work or by what mechanisms has fallen far behind the study of efficacy. The study of therapeutic mechanisms is absolutely essential if the field is to advance. This effort requires theoretical attention to putative mechanisms implicitly or explicitly specified by different treatment approaches. This effort also requires new methodological features, including frequent assessments of putative theory-specific and non-specific mechanisms and outcomes, analysis of lagged effects, and the examination of temporal patterns of change. Identifying and distinguishing the mechanisms - specific and nonspecific - that are the true active ingredients of ostensibly different treatments will guide future work to combine these ingredients and to discard the inert ones. Such research programs could lead to streamlined and efficient interventions that maximize efficacy. The three presenters will report on topics regarding the uncovering and examination of therapeutic mechanisms, using empirical findings to illustrate their points.

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## Symposium 09A 2035

### COMMON AND TREATMENT-SPECIFIC MECHANISMS OF CHANGE IN PSYCHOSOCIAL TREATMENTS FOR CHRONIC PAIN

Beverly Thorn, PhD

Psychology, The University of Alabama, Tuscaloosa, AL.

The study of why psychosocial treatments work or by what mechanisms is as important, if not moreso, than the study of their efficacy. Although there are many efficacy studies available, fewer studies have attempted to explore the mechanism of change. There is a need to measure processes and outcomes consistent with the theory of change in psychosocial treatments (i.e., treatment-specific mechanisms). For example, cognitive-behavioral treatment for chronic pain is thought to be efficacious due to reduction in maladaptive cognitions. In CBT-based interventions, maladaptive appraisals have been shown to decrease from pre- to post-treatment, and these cognitive changes have been shown to correlate with pre- to post-treatment changes in pain-related outcomes (e.g., pain intensity, perceived disability, mood) in expected directions. However, studies rarely assess theory-specific mechanisms as a potential agent of change in other active treatments that may have a different theoretical basis (e.g., information acquisition in education, physical conditioning in physical therapy). Using a secondary data analysis of a previously conducted RCT, the presenter will illustrate the importance of exploring theoretically-specific (and non-specific) mechanisms of change in active treatments. Further, the presenter will discuss the need to measure common mechanisms (e.g., therapeutic alliance) in psychosocial mechanism studies in the area of behavioral medicine.

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## Symposium 09B 2036

### THE STUDY OF THERAPEUTIC MECHANISMS IN PSYCHOSOCIAL TREATMENT OF CHRONIC PAIN: METHODOLOGICAL AND STATISTICAL CONSIDERATIONS

John W. Burns, PhD

Rush University, Chicago, IL.

Examining and documenting whether our psychosocial treatments for chronic pain work because of reasons specified by theory (eg cognitive; acceptance) is essential. Hypothesizing putative mechanisms based on a given theory is a vital first step, but this step must then be followed by designing studies that incorporate method features that allow sound examination of mechanism effects, and which use appropriate statistical analyses. If a factor is to be considered a mechanism of therapeutic change for a particular approach, then at least 4 conditions must hold: a) change in the mechanism must be correlated with change in outcome factors; b) change in the mechanism must precede change in outcome factors; c) change in the mechanism must be specific to the treatment approach; d) relationships between mechanism and outcome changes cannot be substantially accounted for by mechanisms that may be common to psychosocial interventions - non-specific mechanisms (eg the quality of the therapeutic relationship). Secondary analyses from 2 longitudinal studies of interdisciplinary pain treatment and from an RCT of CBT for chronic pain will be used to illustrate some of the methodological features and statistical analyses needed to better document these 4 conditions needed to support mechanism effects. Methodologically, assessment of specific and non-specific mechanisms and outcome factors should occur DURING treatment in addition to pre-post assessments to allow examination of temporal ordering of changes (ie a mechanism should show substantial change before an outcome factor). Statistically, lagged and cross-lagged analyses will allow examination of whether early-treatment mechanism change predicts late-treatment outcome changes but not vice versa. Such analyses will also permit testing whether apparent effects of specific mechanisms are actually proxies for effects of non-specific mechanisms. Results from the 3 studies will illustrate the complexity, pitfalls and promises of testing mechanisms, and underscore the reasons why we need to actually test our assumptions about how our treatments work.

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## Symposium 09C 2037

### INTERVENTIONS FOR CHRONIC PAIN: COMPARING MECHANISMS OF CHANGE THROUGH USE OF DIARY REPORTS

Mary C. Davis, PhD

Psychology, Arizona State University, Tempe, AZ.

Behavioral interventions for chronic pain often seek to decrease symptoms and improve patients' overall quality of life by targeting particular skills for coping with pain and other stressors. Such treatment models propose that contemporaneous responses to these aversive stimuli in everyday life 1) improve from pre- to post-treatment, and 2) account for improvements in outcomes. Yet changes in response patterns to daily pain and stress are rarely examined as potential mediators of treatment outcomes. This presentation will explore the utility of diary reports in elaborating common and unique mechanisms of change in randomized clinical trials (RCT) by drawing on pre- and post-treatment diary data from an RCT comparing two distinct pain treatments: a mindfulness-based treatment targeting emotion regulation skills and a cognitive-behavioral treatment targeting pain coping skills.

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## Symposium 09D 2038

### DISCUSSION OF MECHANISMS OF CHANGE IN PSYCHOSOCIAL TREATMENTS FOR CHRONIC PAIN

Francis Keefe, PhD

Psychology & Neurosciences, Duke University, Durham, NC.

The discussant will underscore the points made in the three presentations and illustrate concepts of treatment-specific and common factors as process mechanisms that need to be assessed in treatment outcome studies. Novel approaches to repeated assessments will be highlighted and commented upon.

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# Thursday
# April 12, 2012
# 11:45 AM–12:45 PM

## Panel Discussion 01 11:45 AM–12:45 PM 2039

### ADAPTATION OF EVIDENCE-BASED INTERVENTIONS FOR LATINO MEDICAL POPULATIONS: STRATEGIES, LESSONS LEARNED AND FUTURE DIRECTIONS

C. Andres Bedoya, PhD,[1,2] John S. Wiebe,[3] Felipe G. Castro[3] and Vivian M. Rodriguez[4]

[1]Psychiatry, Massachusetts General Hospital, Boston, MA; [2]Harvard Medical School, Boston, MA; [3]Psychology, University of Texas at El Paso, El Paso, TX and [4]Psychology, Virginia Commonwealth University, Richmond, VA.

Latinos are the largest racial/ethnic minority group in the United States yet this group experiences significant disparities in mental health care - they are less likely than non-Latino whites to receive psychiatric care and, when they do, are less likely to receive evidence-based care. Additionally, although available evidence suggests that culturally-adapted evidence-based interventions (EBIs) positively impact intervention outcomes, there is a dearth of research addressing this topic among Latino medical populations. Research is needed to identify best methods for the cultural adaptation of EBIs. Such research would benefit from methodologies for describing the process of tailoring an EBI for specific subcultural groups. This panel will present strategies used in adapting evidence-based prevention and treatment interventions, as applied among three diverse Latino samples: cognitive-behavioral therapy for depression and adherence among HIV-positive Latino adults; family cancer assessment and communication intervention among Latina women and families; and a psychiatric consultation model to improve assessment and treatment of depression among adult Latino primary care patients. Cultural adaptation involves a number of issues such as conceptualizing culture and context, selecting a framework and level of adaptation, identifying core intervention components, involving the target population and identifying factors that influence cultural relevance and adaptation mismatch. These issues will be addressed as relevant to Latinos, with an emphasis on strategies for resolving the competing imperatives of maintaining fidelity to the original intervention and adapting the intervention to meet the needs of the a subcultural group.

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## Panel Discussion 02 11:45 AM–12:45 PM 2040

### CLAIMING HEALTH: NUTRITIONAL CONTENT OF CHILDREN'S FOODS CONTAINING FRONT-OF-PACKAGE LABELS

Sana Chehimi, Juliet Sims, Leslie Mikkelsen, Phebe Gibson and Emily Warming

Prevention Institute, Oakland, CA.

Major food and beverage companies are the primary drivers deciding what food is available in food retail establishments and how it is promoted to families and children. Since the 1995 introduction of the American Heart Association's heart-healthy symbol, front-of-package labels - food labeling symbols that denote healthier products - have become increasingly common and are now a widely used food marketing tool. Some food and beverage manufacturers have promoted front-of-package labels as an innovative approach to healthier choices, but serious concerns exist over the potential for these symbols to confuse or mislead consumers, and encourage the purchase of unhealthful items.

To investigate these concerns, Prevention Institute examined the nutritional content of fifty-eight "better-for-you" children's foods that are marketed directly to children and contain front-of-package labels. Using criteria derived from the U.S. Dietary Guidelines and the National Academies of Science, products were assessed for total sugar, fat, saturated fat, sodium, and fiber. The presence of food groups to encourage, including fruits, vegetables, whole grains, dairy, and nuts and seeds, was also evaluated. Results indicate that 84% of the study products failed to meet one or more nutrient criteria; and fewer than half (47%) of products contained any fruits or vegetables. While the FDA is currently working to develop criteria for front-of-package labels, manufacturers continue to pursue self-regulation. Our research findings underscore the necessity for strong, evidenced-based uniform standards. The development of such federal criteria will help support informed, healthier choices without undermining consumption of health-promoting whole and minimally processed foods, such as fruits, vegetables, and whole grains.

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## Panel Discussion 03 11:45 AM–12:45 PM 2041

### DIVERSIFYING THE HEALTH DISPARITIES RESEARCH AND PRACTICE COMMUNITY: STUDENT AND MENTOR PERSPECTIVES ON THE IMPORTANCE OF INTERDISCIPLINARY TRAINING, MENTORING, AND PARTNERSHIPS

Kristen Hernandez,[1,2] Sujehy Arredondo,[1,2] Sandra Bejarano,[1,2] Holly Mata, PhD[1,2] and Joe Tomaka[2]

[1]Hispanic Health Disparities Research Center, The University of Texas at El Paso, El Paso, TX and [2]Department of Public Health Sciences, The University of Texas at El Paso, El Paso, TX.

A growing body of literature in the health disparities field addresses both the need for and the benefits of diversifying the public health research and practice communities. Such diversification enhances the research agenda which in turn may improve practice and policy. Providing opportunities for students that offer insight and experience into careers in health disparities research and practice, and motivate them to attain a higher level of education in careers in which ethnic minorities are underrepresented, is a feasible way to respond to health disparities. In this presentation, we (3 MPH students, a recent PhD, and a tenured professor) highlight 1)how our training, mentoring, and research experience has facilitated our career development as researchers, and 2)the mechanisms through which our perceived competence as health educators has increased as a result of our participation as students and mentors in research and practice internship experiences. Identifying the mechanisms through which mentoring programs are successful can inform the development of future programs and provide valuable insight for existing programs. Having participated in several mentoring programs, each of which included community/academic collaboration as a key component, we have seen the impact of successful partnerships and collaborations on community health. We believe that increasing the diversity of health disparities researchers will increase our ability to address health disparities at multiple contextual levels. Our experiences mentoring and being mentored are valuable, replicable, and an integral part of our professional development. We look forward to sharing our insights and experiences with students and mentors who are committed to diversifying the health disparities research and practice community, and to highlighting the literature related to successful mentoring.

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## Panel Discussion 04 11:45 AM–12:45 PM 2042

### SCREENING FOR DISTRESS IN PSYCHOSOCIAL ONCOLOGY

Louis Joseph,[2] Julie Noblick,[2] Lorenzo Norris,[2] Amanda Crosier,[2] Anton Trinidad[2] and Jennifer Bretsch[1]

[1]GW Cancer Institute, George Washington University, Washington, DC and [2]Department of Psychiatry and Behavioral Sciences, George Washington University, Washington, DC.

In psychosocial oncology, the term “distress” has gained acceptance by both patients and physicians as a barometer of psychological, social, and spiritual well-being. Several screening tools have been developed to measure distress and aid physicians in determining when it is necessary to refer patients to psychosocial services. Despite the availability of these tools, non-psychiatric clinicians are uncomfortable addressing distress. This panel will discuss the benefits of screening for distress, the advantages and drawbacks of various screening tools, and the behavioral impact of distress screening on the patient and clinician. Panelists will also examine reasons for physician reluctance towards distress screening and review potential solutions.

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## Panel Discussion 05 11:45 AM–12:45 PM 2043

### NAVIGATING MID TO LATER STAGE BEHAVIORAL MEDICINE CAREERS: CHALLENGES AND SOLUTIONS

Barbara Stetson, PhD,[1] Judith Ockene,[2] Tracy Orleans,[3] Michael Perri[4] and Ken Wallston[5]

[1]University of Louisville, Louisville, KY; [2]University of Massachusetts, Worcester, MA; [3]Robert Wood Johnson Foundation, Princeton, NJ; [4]University of Florida, Gainesville, FL and [5]Vanderbilt, Nashville, TN.

Much of career training addresses getting a job and progressing to tenure, with fewer resources addressing needs, interests and challenges and related changes in mid to later career phases. Career development may be viewed as a continuum, reflecting choices made along the way. Mid-career decisions can help make important later career decisions. As careers progress, individuals may navigate varied challenges, including the promotion process, transition to other jobs and pursuit of professional and personal growth. Many mid to later phase careerists find themselves juggling multiple roles such as bridging younger- older faculty generations, taking on leadership and mentoring. Many senior careerists move to roles that utilize their knowledge, experience and understanding of the system. Longevity in one’s field may pose challenges such as rapidly expanding knowledge in one’s specialty along with explosive growth in technology. Institutions may change expectations over time, requiring retooling of previous practices or goals. Pressures related to generation of revenue and teaching or service obligations may vary at different points for faculty and institutions. Such challenges and ongoing demands may push towards a tipping point. The purpose of this panel is to provide perspectives on navigating through the professional development process, addressing mid-later career challenges and solutions, emphasizing planning and renewal, networks, institutional policies and supports that can make a difference. Panelists include senior scientists and SBM Fellows who will draw on their experiences and from resources including best practices from leading institutions on successful mentoring programs and survey findings. This panel does not overlap with and is complementary to the special panel addressing Career Development-related Insights Regarding benefits and challenges of participating in inter-disciplinary research.

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# Thursday
# April 12, 2012
# 2:00 PM–3:30 PM

## Symposium 10 2:00 PM–3:30 PM 2044

### CANCER PATIENT AND SURVIVOR RESEARCH FROM THE CANCER INFORMATION SERVICE RESEARCH CONSORTIUM: INITIAL RESULTS FROM THREE RANDOMIZED TRIALS

Michael A. Diefenbach, PhD,[1] Al Marcus, PhD,[3] Annette L. Stanton, PhD,[2] Peter Raich, MD,[3] Susan M. Miller, PhD,[4] Zung Tran, PhD[3] and Bradford Hesse, PhD[5]

[1]Urology, Mt Sinai School of Medicine, NYC, NY; [2]Psychology, UCLA, LA, CA; [3]U of CO Ca Ctr, Aurora, CO; [4]Fox Chase Ca Ctr, Phil, PA and [5]NCI, Bethesda, MD.

As part of the on-going Cancer Information Service Research Consortium (CISRC) funded by the NCI, three randomized trials are testing a web-based multimedia program (Virtual CIS; V-CIS) to help newly diagnosed prostate (Project 1) and breast cancer patients (Project 2) make informed treatment decisions, and breast cancer patients prepare for life after treatment (Project 3). Project 3 is also testing a telephone callback intervention delivered by a cancer information specialist. Eligible participants were recruited from callers to: the NCI’s Cancer Information Service (1-800-4-CANCER), and to the CISRC telephone recruitment center.

Projects 1 and 2 share the same research design: Group 1 received standard NCI print material specific to either project; Group 2 received the print materials plus the project-specific multimedia program. Project 3 includes the same two randomized groups as Projects 1 and 2, plus adds a third randomized group consisting of Group 2 materials plus a telephone callback. Samples sizes are: Project 1=440; Project 2=618 and Project 3=1135.

In this symposium, each of the three RCTs will be described, along with preliminary results obtained from baseline and two-month follow-up interviews (response rates>75%). Results indicate that a higher percentage of participants read the print materials than used the multimedia programs. However, among those who reported using the multimedia program a significant number of patients across projects reported use of at least one hour. More than 90% of those assigned to the callback completed this intervention. For both the multimedia programs and the callback, satisfaction, perceived utility and benefit were high. Using multivariate analyses, support for intervention efficacy was found for improving treatment decision making, reducing distress, and promoting adjustment. Brad Hesse, Ph.D, Chief, Health Communication and Informatics Research Branch, NCI will be the discussant.

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## Symposium 10A 2045

### IMPLEMENTATION AND PROCESS EVALUATION AT TWO-MONTHS FOLLOW-UP

Suzanne M. Miller on behalf of the CISRC authorship group, PhD

Fox Chase Cancer Center, Philadelphia, PA.

Results from the two-month follow-up interviews are reported in this presentation. (Project 1=384, Project 2=514, Project 3=1023), the majority of whom were recruited from the Cancer Information Service (1-800-4-CANCER) telephone information program. Self-reported use of the multimedia program was 49%, 50% and 66% for Projects 1-3, respectively. Self-reported use of the print materials (read all, most or some) was 90%, 85% and 83% for Projects 1-3, respectively. Among those who received the multimedia program, self-reported use of the print materials (read all, most, or some) was 81%, 77%, and 80% for Projects 1-3, respectively. Five lessons learned are presented that may help inform future cancer communications research using new media approaches, specifically: 1. When cancer patients use well-designed and authoritative multimedia programs specifically developed for them, they can report high levels of use and perceived benefit; 2. Utilization of web-based multimedia programs may be less than optimal within randomized trials, even when access to a computer is an eligibility criterion; 3. Interpersonal interventions, even those that involve only a single contact, can have high levels of perceived utility and benefit within a web-based multimedia environment; 4. Interpersonal reminders to use new, web-based communication technology can be effective; and 5. Print materials can remain relevant even within a web-based multimedia environment.

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## Symposium 10B 2046

### CANCER PATIENT AND SURVIVOR RESEARCH FROM THE CANCER INFORMATION SERVICE RESEARCH CONSORTIUM: INITIAL RESULTS FROM THREE RANDOMIZED TRIALS

Michael A. Diefenbach, PhD,[1] Peter Raich, MD[2] and Zung V. Tran, PhD[2]

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Data were analyzed using multivariate and logistic regression approaches. In addition to main-effects, we performed moderator analyses with age, race, and education variables (and baseline IES-Intrusion for that outcome). For Projects 1 (prostate cancer patients) and 2 (breast cancer patients), we hypothesized that the V-CIS intervention would decrease decisional conflict. Although the intervention did not produce a main-effect for total decisional conflict, several interactions with the decisional conflict subscale and moderator variables emerged. For Project 1, decisional support through the V-CIS program was significantly enhanced for minorities ($p=0.018$) and approached significance for those with lower educational status ($p=0.064$). Among breast cancer patients (Project 2) the V-CIS intervention reduced overall decisional conflict for those with increased comorbidities ($p=0.026$) and increased decisional support for older patients ($p=0.05$). ). The intervention did not produce a change in intrusive thoughts in Project 1. In Project 2, Group interacted with age ($p<.007$), such that the V-CIS buffered intrusive thoughts for younger women (< 50 years).

For Project 3, the main effect for the intervention was not significant on IES-Intrusion. However, the group by baseline IES-Intrusion interaction ($p=0.038$) and the group by age interaction ($p=0.030$) were significant. The V-CIS+callback intervention decreased cancer-specific intrusive thoughts at two months, specifically for women with initially high intrusive thoughts, relative to the other two groups. Both the V-CIS and the V-CIS+callback interventions reduced intrusive thoughts for older women (> 50 years), relative to the control. A main effect of the intervention emerged on the BCPT Symptom Scale score ($p=0.021$), such that women in the V-CIS+callback intervention were significantly less bothered by side effects of cancer treatments than the other two groups at two months.

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## Symposium 10C 2047

### OVERVIEW OF THE CURRENT CANCER INFORMATION SERVICE RESEARCH CONSORTIUM

Al Marcus for the CISRC authorship group, PhD

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Beginning in 1993, the Cancer Information Service Research Consortium (CISRC) has been funded by the NCI to conduct cancer prevention and control research in collaboration with the NCI's Cancer Information Service (CIS). In the current CISRC (2006-2012), three large randomized trials are testing a state-of-the-science web-based multimedia program (specific to each project) to help newly diagnosed prostate (Project 1) and breast cancer patients (Project 2) make informed treatment choices, and breast cancer patients prepare for life post-treatment (Project 3). In addition, Project 3 is also testing a telephone callback intervention by a trained cancer information specialist that occurs about 10-14 days post-enrollment. The majority (71%) of research participants were recruited from the CIS 1-800-4-CANCER telephone information program, supplemented with additional efforts that included promotion of a CISRC call center for recruitment. In this presentation, an overview of the research designs and intervention methodology of the three randomized trials will be presented, including eligibility criteria, the sociodemographic characteristics of the three samples enrolled at baseline (Project 1=440; Project 2=618; Project 3=1135), and the two-month follow-up telephone interviews that provide both the process evaluation and (short-term) outcomes data.

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## Symposium 11 2:00 PM–3:30 PM 2048

### YOGA AS AN EMERGING INTERVENTION FOR CANCER PATIENTS AND POST-TREATMENT SURVIVORS

Suzanne C. Danhauer, PhD,[1] Crystal L. Park, PhD,[2] Nicole Culos-Reed, PhD,[3] Sarah M. Rausch, PhD,[4] Alyson B. Moadel, PhD[5] and Karen M. Mustian, PhD[6]

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This symposium, organized by the first two authors, presents cutting-edge research on Yoga as a supportive intervention for people with cancer. Cancer diagnosis and treatment are stressful for many, with high levels of emotional and physical sequelae. Post-treatment survivorship often brings a variety of difficulty and unanticipated experiences such has substantial fear of recurrence and sense of uncertainty as well has high distress, lingering physical effects, and late effects of cancer treatment. In recent years, Yoga has emerged as a potentially beneficial treatment for cancer patients and post-treatment survivors, and data are accumulating regarding its salutary effects on emotional and physical health. However, this research area is in its infancy. This symposium will address several issues and gaps that remain. The first presenter will describe characteristics of young adult cancer survivors who self-select to participate in yoga and relationships between Yoga practice and well-being. The second presenter will share results of a study examining the clinical significance of patient-reported outcomes from Yoga interventions conducted with cancer survivors, an important area to consider when examining the impact of these interventions. The third presenter will describe data on physical and emotional symptoms and quality of life from both inpatient and outpatient Yoga for Cancer programs at a Comprehensive Cancer Center. The final presenter will report data demonstrating that Yoga is well-received and has positive impact on health-related quality of life for underserved, ethnic minority breast cancer survivors, both on and off cancer treatment. Our discussant will describe the major themes of these presentations and offer recommendations for clinical applications and future research.

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## Symposium 11A 2049

### THE CLINICAL SIGNIFICANCE OF PATIENT-REPORTED OUTCOMES: YOGA FOR CANCER SURVIVORS

Nicole Culos-Reed, PhD,[1,2] Suzanne Danhauer, PhD,[3] Michael Mackenzie, MSc[1] and Stephanie Sohl, PhD[3]

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The purpose of this symposium presentation is to provide an overview of the clinical significance of patient reported outcomes (PROs) from Yoga interventions with cancer survivors. In this emerging literature, assessment of clinical significance of PROs is an important consideration when examining the impact of a Yoga intervention. Many of the studies are published with small sample sizes, examining a variety of cancer types, yoga interventions (type and duration), and employing a variety of assessment tools. This variability across the research makes summarizing results challenging. However, assessment of clinical significance on PROs provides a meaningful index of the impact of Yoga interventions.

Overall, 25 published Yoga intervention studies for cancer survivors from 2004-2011 reported PROs, including health-related quality of life, psychosocial measures, or symptom measures. Of these 25 studies, 13 met the necessary criteria to assess clinical significance. Clinical significance for each of the PROs was examined based on the 0.5 standard deviation (SD) and 1 standard error of the measurement (SEM) and relative comparative individual effect sizes. This review suggests that psychosocial PROs (mood, perceived stress) showed the most improvement within the Yoga and cancer intervention research, followed by measures of health-related quality of life, and then symptom outcomes (sleep, fatigue). These clinically significant changes in the PROs suggest that Yoga interventions hold promise for the well-being of cancer survivors. This research overview provides new directions for examining how minimally important differences can provide a unique context for describing changes in PROs from Yoga interventions. The symposium presentation will discuss these results in the context of developing sustainable community Yoga programming for the cancer survivor population.

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## Symposium 11B 2050

### OUTCOMES FROM A CLINICAL PRACTICE OF INPATIENT AND OUTPATIENT YOGA FOR CANCER

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BACKGROUND: Integrative therapies are increasingly being used by cancer patients as supportive therapy to enhance comfort and help manage symptoms and side effects of cancer and its treatment. Benefits of Yoga for medical populations include improvements in pain, mood, anxiety, distress, fatigue, muscle strength, flexibility, range of motion, QOL, sleep quality, stress reduction, energy, relaxation, and sense of well-being. Evaluations of Yoga interventions for cancer patients and survivors have reported improvements in both physical and mental health, with consistent improvements in QOL and symptom burden (e.g., pain, sleep, fatigue, depression, negative affect, and anxiety). Therefore, we sought to measure outcomes associated with inpatient and outpatient Yoga for Cancer.

METHODS: At Moffitt Cancer Center, over 1,500 cancer patients have participated in inpatient or outpatient “Yoga for Cancer” since January 1, 2010. All of these patients have reported symptom severity scores before and after each yoga session, using 0-10 rating scales of pain, fatigue, nausea, anxiety, emotional distress, physical distress, and overall QOL.

RESULTS: Symptom scores were reduced on all measures by approximately 40%. Cancer patients who participated in Inpatient Yoga (n=159) reported improvements in pain by approximately 38%, nausea by 31%, fatigue by 42%, anxiety by 47%, physical distress by 41%, emotional distress by 44%, and QOL by 34%. For outpatient yoga classes (n=1367), patient reported improvements in pain by 38%, nausea 12%, fatigue 40%, anxiety 46%, physical distress 38%, emotional distress 44%, and QOL 32%.

CONCLUSIONS: These data indicate that both inpatient and outpatient Yoga for Cancer are extremely helpful to cancer patients in reducing significant clinical symptoms associated with cancer and its treatment. Cancer centers may consider yoga as an adjunctive clinical service to help manage these symptoms.

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## Symposium 11C 2051

### YOGA USE IN A SAMPLE OF YOUNG ADULT CANCER SURVIVORS

Crystal Park, PhD,[1] Dalnim Cho, MA,[1] Jennifer H. Wortmann, MA[1] and Thomas O. Blank, PhD[2]

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Introduction: Research on yoga-based intervention trials for cancer survivors is proliferating, and yoga appears to have salutary effects on a range of physical and psychological well-being indices. However, little is known about cancer survivors’ self-selection to participate in yoga. The present study examined demographic and physical and psychological adjustment correlates of yoga participation and reasons that those who did yoga gave for their participation.

Methods: A cross-sectional survey was provided on the Internet and advertised across the US.

Results: Of 286 respondents, 93 (33%) reported doing yoga for health reasons since their cancer diagnosis; of these, 21% did yoga specifically conducted for cancer patients/survivors. More women than men reported using yoga, but use did not differ based on race or age, life satisfaction, post-traumatic growth, or positive states of mind. However, survivors who reported doing yoga since their diagnosis had higher self-rated health and better health-related quality of life, but reported more role interference and pain as well. Within the group that did yoga, the yoga dose (length of time x frequency) was related to better mental and physical health-related quality of life. The primary reasons participants reported doing yoga were for flexibility (96%), relaxation (94%), peace (84%), and depression/anxiety (60%).

Conclusions: As in the general population, more women than men did yoga; however, other demographic variables were unrelated. Survivors who do yoga generally report higher levels of mental and physical well-being, but not on all indices; the relationship may be bidirectional.

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## Symposium 11D 2052

### YOGA FOR UNDERSERVED BREAST CANCER PATIENTS: CHALLENGES, SUCCESSES & PSYCHOSOCIAL OUTCOMES

Alyson Moadel, PhD,[1,2] Chirag Shah, MD,[3] Evelyn Kolidas, MA[1] and Joseph Sparano, MD[2,1]

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A growing body of research suggests that yoga offers benefits to various areas of quality of life (QoL) among cancer patients, however, little is known about its applicability and efficacy among underserved and ethnic minority patients. This randomized controlled trial examines the feasibility, challenges and psychosocial outcomes of a Hatha yoga intervention among breast cancer patients from a disadvantaged, multiethnic urban population.

A sample of 280 breast cancer patients (40% African American and 33% Hispanic) were recruited from a major NYC cancer center and randomized (using a 2:1 ratio) to a 12-week yoga intervention (n=183) or waitlist control group (n=97). Using an intent-to-treat analysis among the 202 (73%) patients who completed the baseline and 12-week assessments, ANOVA’s were conducted to examine changes in QoL (e.g., FACT) by treatment subgroups: i.e., patients on and not on chemotherapy (n=101 respectively).

Regarding feasibility, participants reported high satisfaction with the intervention, however notable challenges with recruitment, adherence and retention existed. One third of consented patients did not attend a single yoga class, and among those that did, competing medical/social demands, transportation costs, and weather presented barriers. Patients not on treatment reported greater psychological benefits while those on treatment reported greater physical/functional benefits. Both groups reported greater use of complementary medicine.

This study suggests that yoga is a well-received intervention with potential positive psychosocial impact for underserved breast cancer patients, yet to optimize on such benefits, challenges to participation need to be addressed. This symposium will address these challenges and suggestions for culturally tailoring mind-body interventions like yoga to diverse cancer patient populations.

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## Symposium 12 2:00 PM–3:30 PM 2053

ENGAGING INNOVATIVE PARTNERS IN PREVENTION RESEARCH

Mary Ann Pentz, PhD,[1] Nathaniel R. Riggs, PhD,[1] Monika Arora, PhD,[2] María Elena Medina-Mora, PhD,[3] H. Shelton Brown, PhD,[4] Genevieve F. Dunton, PhD[1] and Huang Terry, PhD[5]

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This symposium addresses the overall theme of engaging new partners and perspectives in research with four presentations that address obesity and substance use prevention. The first describes a healthy cities coalition and a real estate development and urban planning company (Lewis Operating Corp.) as partners in an obesity prevention trial involving smart growth communities, Healthy Places (Pentz). The second addresses engagement of a health dissemination and student action network in India, HRIDAY-SHAN, as a partner in translating a child obesity prevention program, Pathways, to Indian youth. (Riggs, Arora). The third is a partnership involving NIDA, the Mexico Institute of Psychiatry and museums to mount interactive prevention programs for children and families in Mexico, using smart growth principles and mhealth technologies. (Medina-Mora). Finally, the fourth engages WalMart as a partner in tracking consumer shifts in food and beverage purchases as a function of marketing, introduction of new food labels, and the national focus on obesity prevention (Brown). The discussants (Dunton, Huang) will focus on the use of real-time mhealth methods to enhance research-community partnerships, and considering partnerships as part of a systems approach to prevention.

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## Symposium 12A 2054

COALITIONS AND URBAN PLANNERS AS PARTNERS IN OBESITY PREVENTION: HEALTHY PLACES

Mary Ann Pentz, PhD,[1] Casey Durand, PhD,[1] Michael Jerrett, PhD[2] and Jennifer Wolch, PhD[2]

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Healthy Places is an obesity prevention trial that is evaluating the effect of residence in a smart growth community on physical activity, eating behavior, and obesity in 600 parent-child pairs in 9 Southern California communities. USC and UC Berkeley researchers have partnered with the Chino Healthy Cities Coalition and planner/developer Randall Lewis of Lewis Operating Corp. to interpret data that are collected in research; monitor community trends, including community-initiated food and physical activity policies, activities, and built environment infrastructure; guide the evaluation of new "researchable" trends as they emerge, e.g., rapid response surveys of fast food outlet build outs; advise on human subjects conduct; and use data for future community planning. This presentation will describe the design, methods, and early impact of smart growth on resident family physical activity and obesity risk compared to families in control communities; the effect of a community having a healthy cities coalition on the adoption of multiple obesity prevention policies; and the use of data to promote the development of a new healthy cities coalition in another community, specifically the use of data on emerging obesity policies. A logic model of Healthy Places partnership and communication will also be discussed.

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## Symposium 12B 2055

PARTNERING WITH A NATIONAL RETAILER TO EXAMINE FAMILY PURCHASING BEHAVIOR: IDENTIFYING OBESITY RISK AND OPPORTUNITIES FOR PREVENTION

H. Shelton Brown, PhD,[1] Matt Turner, PhD,[1] Joydeep Ghosh, PhD[2] and Bill Sage, PhD[2]

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Little is known about how soda consumption varies by more precise measures of body weight within families. The present study draws retail data from a sample of 77 Walmart stores, from 2009-2011 in Texas. Walmart our partner, provides a large sample of supermarket "baskets" from which to examine differences in soda consumption patterns by body weight size. We use clothing size of purchased items to proxy for body weight size, assuming that body weights among family and household members are highly correlated. We approximate the body weight size of a family by assigning the largest clothing item purchased to that family or household. Because retail baskets are linked over time by scrambled credit card numbers, soda purchases are not conditional on buying clothes on every trip. Families buying small sized clothes are much less likely to purchase SSB, but families buying larger sized clothes are more likely to purchase diet soda. Implications of the findings for increasing awareness and preferences for healthy food purchases in large retail stores are discussed, as well as procedures and terms of research collaboration.

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## Symposium 12C 2056

THE MEXICO AMBAR MUSEUM INITIATIVE

María Elena Medina-Mora, PhD,[1] Nancy Amador Buenabad, PhD,[1] Mary Ann Pentz, PhD,[2] Celina A. Sevilla, PhD,[3] Ruben Baler, PhD[4] and Jacqueline Lloyd, PhD[4]

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The Ambar Interactive Museum uses new educational technologies (ICTs, multimedia, printed and virtual material) to deliver substance use prevention and health programs to 10,000 youth in grades 4-9, their parents, and teachers, using skills training techniques that complement a school program. Ambar and grounds were designed to follow smart growth planning principles to facilitate visitor interaction and physical activity. Visitors go through a sequence of 4 halls where they experience a group activity, skills training through interactive media, and electronic Q and A with feedback. Individuals requesting additional assistance are referred to an onsite prevention services office coordinated by the Minister of Health. Materials were drawn from two evidence-based prevention programs and extensively tested in focus groups for interest, complementarity with the school program, and comprehension. Schools will be randomly assigned to the museum program or a wait list control (N=10,000 students). A survey will be conducted before and after the museum program, and 6 months later. The process of partner collaboration on prevention materials, study design, and delivery formats will be discussed, using focus groups, cognitive laboratories and a CQA learning paradigm.

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## Symposium 12D 2057

### TRANSLATING PATHWAYS TO INDIA

Monika Arora, PhD,[1] Urvashi Kaushik, PhD[1] and Melissa H. Stigler, PhD[2]

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As a first step in designing a child obesity prevention program for India, USC and UT-Austin has partnered with a student action network, HRIDAY-SHAN, to conduct a series of focus groups that will yield information about whether the content, risk factors, training, implementation capacity, and dissemination from a U.S. evidence-based program, Pathways, can be translated to Indian school children and their parents. HRIDAY-SHAN conducted focus groups with students (n=225), parents (n=20), and teachers (n=20) in 4 middle schools in Delhi, India. Content, measures, and design were jointly developed by all 3 partners. Teachers were also queried about capacity and readiness to implement school-based obesity prevention programs. Focus group data will be analyzed using ATLAS qualitative statistical software. The partnership logic model will be described, as well as decision rules, focus group results, and future plans for a trial and program dissemination through the student action network.

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## Symposium 13 2:00 PM–3:30 PM 2058

### IMPROVING PHYSICAL ACTIVITY IN SCHOOLS: THE LINKAGE AMONG YOUTH BEHAVIOR, POLICIES, PRACTICES AND ENVIRONMENTAL CHANGE

Dianne C. Barker, MHS,[1] Jamie Chriqui, PhD,[3] Sandy Slater, PhD,[3] Natalie Colabianchi, PhD,[4] C. Tracy Orleans, PhD,[2] Patrick O'Malley, PhD,[4] LLoyd Johnston, PhD[4] and Frank Chaloupka, PhD[3]

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School and community stakeholders are critical partners in changing the obesity landscape in the U.S. These decision-makers create, implement, enforce and often advocate for specific policies, practices and environmental changes that influence whether or not a youth may choose to be physically active.

The Bridging the Gap: Research Informing Practice and Policy for Healthy Youth Behavior project, begun in 1997, studies the inter-relationship among policies, practices, and other environmental factors at various levels (school, community, state, federal) on youth physical activity and diet. Using the socio-ecological model as its framework, its approach is both multi-level and cross-disciplinary, with research partnerships among teams located at the University of Illinois at Chicago Institute for Health Research and Policy, the University of Michigan Institute for Social Research, the Public Health Institute, MayaTech,and others.

This session will show the importance of integrated analysis in examining how school and government policies at multi-levels affect practices and the environment, which in turn affect the amount of physical activity among youth. Data collected from various components of the BTG project will be presented, including nationally representative student-level data from middle and high schools across the country, corresponding school administrator surveys as well as similar elementary school surveys, school district wellness policies, state laws, and GIS measures. Participants from three institutions, representing teams from behavioral health, economics, health policy, psychology, public health, sociology and urban planning, will frame findings in the context of regional, urban/rural, SES, and race/ethnic differences. The discussant will then critique the current national dialogue to improve physical activity in schools, given these variations in policies and practices.

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## Symposium 13A 2059

### MACRO-LEVEL POLICIES AS PRECURSORS TO BEHAVIOR CHANGE: U.S. SCHOOL DISTRICT PHYSICAL ACTIVITY-RELATED POLICIES (2006-07 TO 2009-10)

Jamie F. Chriqui, PhD, MHS,[1] Sandy S. Slater, PhD[1,2] and Frank J. Chaloupka, PhD[1,3]

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BACKGROUND: Policies are key broader social system elements that may influence behavior change. This presentation examines trends in and influences on adoption of school district physical activity (PA)-related policies. Such policies have been identified as an effective strategy for helping children achieve recommended daily PA levels.

METHODS: Congressionally-mandated school district wellness and related policies were obtained from annual cross-sectional nationally representative samples of elementary and secondary school districts for 2006-07 to 2009-10 (~ 650 districts/year). Policy coding evaluated the strength and comprehensiveness of 16 PE items and 8 PA (outside of PE) items. Relevant laws also were obtained for each of the 50 states and were coded similarly. Bivariate and multivariate regression analyses were conducted using STATA with clustering at the district and state levels and controlled for a variety of demographic/socioeconomic measures.

RESULTS: Across grade levels, significant increases over time ($p<.05$ or lower) were observed for the following district policies: require PE curriculum for all grades; teach about physically active lifestyle in PE; assessing PE knowledge, skills, and abilities; require PE to be taught by a physical educator; address PA opportunities outside of PE; address PA breaks; prohibit using/withholding PA as punishment. District policies were significantly and positively associated with state laws including such provisions and rural areas; policies were negatively associated with smaller and southern districts. No differences were found by district student SES or race/ethnicity.

CONCLUSIONS: Public policies increasingly address PA-related issues. To understand policy impact on PA relative to other social system factors, it is important to continue policy measurement and linkages individual behaviors and outcomes.

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## Symposium 13B 2060

### THE IMPACT OF THE BUILT ENVIRONMENT AND SAFE ROUTES TO SCHOOL-RELATED POLICIES ON YOUTH ACTIVE TRAVEL IN A NATIONAL SAMPLE OF PUBLIC ELEMENTARY SCHOOLS

Sandy Slater, PhD, Lisa Nicholson, PhD, Jamie Chriqui, PhD, Haytham Zayd, MS, Lindsey Turner, PhD and Frank Chaloupka, PhD

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Policymakers at all levels of government have increasingly been examining and considering various policies to address the growing obesity epidemic. One area of interest has focused on policies that would increase youth active travel to and from school (ATS); a form of physical activity that has been steadily declining over the past 40 years. This study sought to examine the effect of school siting, land development patterns, and state-level Safe Routes to Schools policies on student ATS behavior.

Using data collected during the 2006-07 through 2008-09 school years from a nationally representative sample of elementary schools, this study is a cross-sectional analysis of 1,020 public elementary schools, nested within 47 states. Logistic regression models were used to examine measures of walking/biking to school. GIS measures of population density, street connectivity, traffic calming, and speed limits within 0.25, 0.50, 0.75 and 1 mile buffers around each school were the primary measures of interest. Additionally, we examined barriers to walking/biking reported by school administrators including: distance to school, traffic safety, crime, sidewalks, and presence of crossing guards and controlled for region, urbanicity, racial composition, free-reduced lunch, and total number of students.

We found different measures of the built environment were associated with schools allowing students to walk vs. bike to school. Results also show that policies impact the built environment, which in turn affects school active travel policies, and the prevalence of youth active travel behavior.

Our analysis shows that policies can have an effect on the built environment directly surrounding school which can increase ATS elementary students.

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## Symposium 13C 2061

### US SECONDARY SCHOOL PHYSICAL ACTIVITY PRACTICES AND STUDENT BEHAVIORS: NATIONAL RESULTS FROM 2007-2010

Natalie Colabianchi, PhD, Yvonne M. Terry-McElrath, MSA, Lloyd D. Johnston, PhD and Patrick M. O'Malley, PhD

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Schools have the opportunity to be important partners with students in facilitating physical activity (PA). This presentation examines trends in US secondary school PA practices and student PA behaviors from 2007-2010.

School-level PA practices were obtained from yearly school administrator surveys using representative samples of US secondary schools (about 600 schools/year). Individual student PA data were obtained from surveys of representative samples of US secondary students in 8th, 10th, and 12th grades (total N=17655-63484, depending on grade/outcome). Trends from 2007-2010 were examined using SAS 9.2.

The percentage of students attending schools requiring PE for their grade level did not change from 2007-2010, nor did administrator-reported student participation rates for varsity and intramural sports, and walking or biking to school. The percentage of students attending schools where the administrator reported having significant activities currently underway at the school or district level to promote increased physical activity declined significantly ($p<.05$). The percentage of students in schools measuring BMI and implementing physical fitness tests increased significantly ($p<.01$). Student self-reported vigorous activity, participation in school sports and overall PA did not change from 2007-2010. In general, middle school students reported higher rates of participation than high school students in a number of different physical activities. Important differences were seen across student race/ethnicity and school socioeconomic status.

Despite calls for schools to become more involved in promoting student PA, most practices to promote physical activity saw no improvement from 2007-2010. Given that no improvement was seen in the physical activity levels of secondary school students, it appears that significant work remains to increase the success of school/student PA efforts.

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## Symposium 14 2:00 PM–3:30 PM 2062

### THE ROLE OF THE BRAIN IN APPETITE AND OBESITY: NEW INSIGHTS FROM NEUROIMAGING STUDIES

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As obesity rates continue to rise, neuroimaging studies are shedding valuable insights into the biological mechanisms underlying food motivation and response in humans. This symposium will present findings from four innovative studies utilizing functional magnetic resonance imaging (fMRI) to better understand neural mechanisms underlying food motivation in adults and children. The first study examines neurological responses to energy-dense food cues in obese and lean women, finding that obese women show exaggerated responses in key higher-order brain regions associated with reward, taste, memory, object-processing and attention when compared to lean women. The second study examines food marketing and brain responses in healthy weight children and reveals that food logos are associated with increased activation in regions associated with food motivation and cognitive control compared to non-food logos. The third study examines baseline brain reactivity to food cues in bariatric surgery patients in relation to post-surgery mood - a vital predictor of long-term outcomes - and finds that increased reactivity in a region associated with social evaluation predicted more depression 3 and 6 months following surgery, while increased reactivity in a region associated with memory and olfaction predicted less depression. The final study examines neural reactivity to food cues in the context of an obesity intervention and finds that differential activation in brain regions associated with food motivation and self control in unsuccessful dieters compared to successful dieters and healthy weight individuals. The discussant will synthesize the scientific and practical implications of these findings, including the role of reward responsivity, food motivation, and cognitive control in intake and weight regulation in adults and children, and the potential value of fMRI as a prognostic tool.

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## Symposium 14A 2063

### NEUROLOGICAL AND BEHAVIORAL RESPONSES TO HIGH ENERGY-DENSITY FOOD CUES IN OBESE WOMEN

Susan Carnell, PhD,[1,2] Leora Benson, MS,[1] Spiro Pantazatos, MS,[2] Moe Sharafi, PhD,[2] Talya Ladell, MD,[2] Joy Hirsch, PhD[2] and Allan Geliebter, PhD[1,2]

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The modern environment promotes obesity, yet only some people become obese. These individuals may show heightened neurological responses to food cues, which contribute to the desire to eat. We presented 10 obese and 10 lean women with blocks of visual (picture) and auditory (spoken word) stimuli representing high energy-density [ED] (e.g. chocolate brownie) and low ED foods (e.g. celery), during fMRI scanning. Following each block, participants verbally rated their desire to eat on a scale from 0 to 10 (0=these images did not make me want to eat; 10=these images really make me want to eat). At the end of the scan, participants viewed color photos of each stimulus and completed questionnaire ratings of liking using a scale of -100 to 100 (-100=extremely dislike; 100= extremely like). Whole brain analysis of areas displaying conjoint activation across each modality (i.e. regions forming part of a crossmodal neural system for food responses, independent of primary sensory areas) revealed heightened responses in obese vs lean women in areas associated with reward (putamen), taste (insula), memory (hippocampus), object-processing (middle and superior temporal gyrus), attention (cingulate gyrus), language (supramarginal gyrus), executive function (inferior frontal gyrus), motor planning (cerebellum, precentral gyrus), and homeostatic regulation of intake (brainstem), to the high ED vs low ED cues. Desire to eat and liking ratings were greater for high ED ($5.7\pm2.6$ and $43.3\pm20.4$ respectively) than low ED ($3.5\pm1.7$ and $16.4\pm29.9$ respectively) stimuli, with no differences by obesity status. Our results show that obese women have heightened responses to high ED food cues in a widely distributed sensory-independent brain network, which may help explain excessive intake. Neuroimaging may provide an objective way to assess hedonic responses to food which is less vulnerable to social desirability than standard self-reports.

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## Symposium 14B 2064

### FOOD MARKETING AND BRAIN RESPONSES IN CHILDREN

Amanda S. Bruce, PhD,[1,2] William R. Black, MA,[1] Jared M. Bruce, PhD,[1] Janice M. Henry, BA,[1] Rebecca Lepping, MA,[2] Ann M. Davis, PhD, MPH, ABPP[2] and Cary R. Savage, PhD[2]\

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Introduction: Product branding has a powerful effect on both food familiarity and preference. Our recent research in children determined that brain regions associated with reward and motivation are activated in response to visual food cues. No neuroimaging studies have examined how children respond to branded food logos, however. The purpose of the present study was to examine how healthy children's brains activate in response to common food and other logos.

Methods: As part of a validation study, 32 participants aged 9-16 (13 males; mean age 11.5 years) were asked to rate 239 common brand logos on familiarity, valence, and arousal. The 120 most familiar food and nonfood logos were selected and matched on the aforementioned attributes. Examples included Nike®, Playstation® (nonfood), McDonalds,® and Cheetos® (food). Fourteen healthy weight children (8 males) with a mean age of 12.1 years (range 10-14) were then scanned using functional magnetic resonance imaging (fMRI). The paradigm was a block design using the selected food and nonfood logos, and a blurred baseline condition. fMRI data were analyzed using Brain Voyager QX.

Results: Food logos were associated with increased cortical activation in the left middle frontal gyrus (10 contiguous voxels, $p<.05$) and the right orbitofrontal cortex (201 cont. voxels, $p<.05$) when compared to non-food logos. These regions, associated with food motivation and cognitive control, are implicated in overweight and obesity. In contrast, no brain regions were more active in response to nonfood logos compared to food logos.

Discussion: Branding has a significant impact on food preferences but little is known about how children evaluate branded food items. Results from this study show that branded food items activate brain regions known to be associated with food motivation and reward. With more than one third of children in the United States overweight or obese, future work should examine potential cortical differences between healthy and obese children in response to food branding.

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## Symposium 14C 2065

### CORTICAL RESPONSE TO FOOD CUES PREDICTS MOOD AFTER GASTRIC BANDING

Jared Bruce, PhD,[1] Laura Hancock, MA,[1] Amanda Bruce, PhD,[1,3] Rebecca Lepping, MA,[3] Stephen Malley, MD,[2] Brandon Roberg, MA[1] and Cary Savage, PhD[3]

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Introduction: Laparoscopic adjustable gastric banding (LAGB) leads to sustained weight loss. Our recent work suggests that LAGB is associated with changes in how the brain responds to visual food cues. Following surgery, participants demonstrate reduced activation in regions associated with food motivation (e.g., insula, inferior frontal and parahippocampal gyri) and increased activations in regions associated with cognitive control (e.g., middle and superior frontal gyri). Little is known about how mood interacts with these cortical changes. In the present study we examined the association between brain and mood changes pre to post LAGB.

Methods: Ten obese participants underwent LAGB. We scanned participants using an established food motivation paradigm prior to and 3 months after surgery. Weight, food motivation, and mood were assessed pre-surgery, 3 and 6 months post-surgery. Functional magnetic resonance imaging (fMRI) data were analyzed using BrainVoyager QX statistical package.

Results: A paired sample t-test revealed a trend indicating improved mood 6 months following LAGB (t(9)=2.10,p=.06). Post-meal, increased brain activity to food cues in the right inferior frontal gyrus at baseline was associated with more depression 3 (r=.79,p<.01) and 6 (r=.68,p<.05) months following surgery. In contrast, increased reactivity to food cues in the left parahippocampal region was associated with less depression 3 (r=-.73,p<.05) and 6 (r=-.71,p<.05) months post-surgery. Moreover, left parahippocampal reactivity at baseline was associated with reduced depression from baseline to 6 months post-surgery (r=-.87,p<.01).

Discussion: Highlighting the complex interplay between eating behaviors and mood, pre-surgery fMRI measures of brain reactivity to food pictures predicted self-reported mood 3 and 6 months following bariatric surgery. These preliminary findings suggest a possible future role for fMRI in evaluating emotional outcomes following bariatric surgery.

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## Symposium 14D 2066

### BRAIN RESPONSES ASSOCIATED WITH DIET INTERVENTION

Laura E. Martin, PhD, Christie Befort, PhD, Trisha Patrician, MA, Florence Breslin, MS, Joseph Donnelly, EDd and Cary Savage, PhD

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Neuroimaging studies characterizing normal appetitive function show activations in motivation and self-control control regions of the brain. Few studies have examined the relationship between diet intervention and brain responses. The purpose of this study was to determine whether differential brain responses measured prior to intervention varied across obese individuals who lost at least 7% of their starting weight (Successful), those who lost less than 7% of their starting weight (Unsuccessful) and healthy weight (HW) individuals. The study examined 53 successful, 17 unsuccesful, and 22 healthy HW participants. Participants were scanned using fMRI while viewing food and nonfood images before and after eating a 500 kcal meal. fMRI data examined the Group x Stimulus interaction separately for the pre- and post-meal timepoints. Participants also completed questionnaires assessing self-control and eating behaviors. The neuroimaging results showed a significant Group x Stimulus interaction in the dorsolateral prefrontal cortex (dlPFC), superior frontal gyrus and middle frontal gyrus prior to consuming a meal. No significant interactions were found in prefrontal regions following meal consumption. These results indicate unsuccessful dieters show larger differences in brain responses associated with food motivation and self-control when viewing food compared to nonfood images, whereas successful dieters and HW participants show similar brain responses to food and nonfood images. Behavioral results showed significant correlations between measures of self-control and dietary restraint with percent weight change indicating that participants who lose the most weight also have the greatest increase in self-control pre- to post-diet intervention. Overall, these results suggest that even before embarking on a weightloss intervention there may be differences in brain responses that may make it more difficult for some individuals to lose weight compared to others, and interventions that focus on increasing self-control may be the most successful.

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## Symposium 15 2:00 PM–3:30 PM 2067

### INNOVATIVE INTERVENTIONS FOR HEALTH BEHAVIOR CHANGE DURING PREGNANCY AND POSTPARTUM

Beth Lewis, PhD,[1] Suzanne Phelan, PhD,[2] Michael Ussher, PhD[3] and Bess Marcus, PhD[4]

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It is important for pregnant and postpartum women to make behavior changes to improve their health and the health of their baby. Three common health concerns during pregnancy that can be modified through behavior change include smoking, postpartum depression, and excessive weight gain. First, smoking during pregnancy is the main preventable cause of poor birth outcomes and 12-25% of pregnant women smoke. Exercise has shown some success as a smoking cessation aid in the general population and, given the reluctance of many women to use nicotine replacement during pregnancy, exercise may be an important alternative cessation aid during pregnancy and postpartum. Second, 12-15% of women experience postpartum depression. Many pregnant and postpartum women are reluctant to take antidepressant medications and non-pharmacological interventions are needed. Exercise improves depression in adults and may play a role in preventing postpartum depression. Finally, excessive weight gain occurs in 40-60% of pregnant women and is a major determinant of high postpartum weight retention and long-term obesity in women and their offspring; innovative interventions are needed to address this problem. The purpose of this presentation is to summarize cutting edge behavioral interventions for addressing modifiable issues during pregnancy and postpartum. Specifically, Dr. Ussher will present data from two completed studies and two ongoing trials examining the efficacy of exercise for smoking cessation among pregnant women. Dr. Lewis will present results from a randomized trial examining an exercise intervention for the prevention of postpartum depression. Dr. Phelan will present data from a large randomized controlled trial examining the efficacy of a lifestyle intervention to prevent excessive gestational weight gain. The discussant, Dr. Bess Marcus, will summarize, provide her perspective, and discuss ideas for future studies in health behavior change during pregnancy and postpartum.

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## Symposium 15A 2068

### EXERCISE INTERVENTIONS FOR SMOKING CESSATION DURING PREGNANCY AND POST-PARTUM

Michael Ussher, PhD

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Smoking during pregnancy is a major public health issue. Behavioural support alone has a modest effect on smoking cessation rates among pregnant women and effective adjuncts to this support are needed. A number of studies have investigated the role of exercise as an aid to smoking cessation in the general population. There is some evidence to suggest that regular supervised exercise can aid quitting and it is well established that exercise has the acute effect of reducing tobacco cravings and withdrawal symptoms. More recently there has been interest in testing exercise interventions for helping pregnant smokers to quit. Moderate intensity exercise is recommended during pregnancy and may offer an attractive aid to quitting, particularly among those women who fear post-cessation weight gain, who are concerned about weight and tone issues during post-partum, and who prefer non-pharmaceutical interventions. This presentation will discuss published and unpublished data and ongoing work relating to exercise for smoking cessation during pregnancy and post-partum. First, data will be discussed from a published survey addressing psychosocial constructs related to exercise among pregnant smokers (i.e. self-efficacy, beliefs, perceived barriers, perceived social support, intentions and stage of change). Secondly, the findings of a published pilot study will be presented in which 32 pregnant smokers received an exercise intervention as an adjunct to standard behavioural support. Thirdly, unpublished baseline data (e.g. participant characteristics, recruitment rates, exercise adherence) will be presented for an ongoing large randomised controlled trial (LEAP trial) of an exercise intervention for smoking cessation during pregnancy. Finally, we will present the protocol (unpublished) of an ongoing experimental study assessing the acute effects of exercise on tobacco cravings and withdrawal symptoms among pregnant smokers.

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## Symposium 15B 2069

### THE EFFICACY OF AN EXERCISE INTERVENTION FOR THE PREVENTION OF POSTPARTUM DEPRESSION

Beth Lewis, PhD,[1] Dwenda Gjerdingen, MD,[1] Melissa Avery, PhD, CNM,[1] John Sirard, PhD,[2] Hongfei Guo, PhD[1] and Bess Marcus, PhD[3]

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Research indicates that exercise is efficacious for improving depression among adults; however, little is known regarding the effect of exercise on preventing postpartum depression. The purpose of this presentation is to provide results from the Healthy Mom trial, which examined the efficacy of a six-month telephone-based exercise intervention for the prevention of postpartum depression. Women who were less than 8 weeks postpartum (n=130) and were not currently depressed but had a history depression or a maternal family history of depression were randomly assigned to an exercise intervention or a wellness/support contact control condition. Both conditions lasted six months and were delivered over the telephone. The exercise intervention was based on Social Cognitive Theory and The Transtheoretical Model. Preliminary results at six months indicated no differences on the Structured Clinical Interview for DSM–IV Axis I Disorders (SCID-I) between the exercise and wellness/support arms (12% of the exercise participants were depressed and 13% of the wellness/support arm; 104 participants have completed the trial, 6 have dropped out, and 20 will complete the six-month assessment within the next month). However, participants in the exercise group reported fewer depressive symptoms as measured by the Edinburgh Postnatal Depression Scale (EPDS), f(1,102)=6.78, p<.05, and the PHQ-9, f(1,102)=5.68, p<.05 at six months. The rate of depression for both groups was lower than expected for this population of at risk postpartum women. Even though exercise does not appear to be superior to a wellness/support intervention for preventing diagnosed postpartum depression, our findings suggest that exercise may play a role in reducing depressive symptoms. Additional research is needed to better understand the role of exercise on preventing postpartum depression.

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## Symposium 15C 2070

### PREVENTING EXCESSIVE WEIGHT GAIN DURING PREGNANCY THROUGH BEHAVIORAL INTERVENTION: A RANDOMIZED CONTROLLED TRIAL

Suzanne Phelan, PhD,[1,2] Francince Darroch, MS,[2] Barbara Abrams, PhD,[3] Andrew Schaffner, PhD[1] and Rena Wing, PhD[2]

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Despite the Institute of Medicine (IOM) recommendations for healthy gestational weight gain, many women exceed the recommendations putting them at increased risk for high postpartum weight retention and obesity. This randomized trial tested whether a behavioral intervention during pregnancy could decrease the proportion of women who exceeded the IOM recommendations and increase the proportion who returned to pregravid weight by 6 months postpartum. Pregravid weight and "excessive" gestational weight gain were based on the 1990 IOM guidelines, as data were collected before the 2009 revisions. We randomly assigned 401 women (28.8 years, 13.5 weeks gestation, 66% non-Hispanic White) by BMI category (N=201 normal weight [NW]/ N=200 overweight or obese [OW/OB]) into the intervention or control group. The intervention was low-intensity (for dissemination purposes) and included one face-to-face visit and weekly mailed materials promoting appropriate weight gain, healthy eating, and exercise; individual graphs of weight gain and telephone-based feedback were also provided. Intent-to-treat analyses showed the intervention decreased the percentage of NW women who exceeded IOM recommendations (40.2% vs. 52.1%; p=0.003) and increased the percentage of NW and OW/OB women who returned to pregravid weight or below by 6 months postpartum (30.7% vs. 18.7%, p=0.005). A low-intensity behavioral intervention during pregnancy reduced excessive gestational weight gain in NW women and prevented postpartum weight retention in both NW and OW/OB women.

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## Symposium 16 2:00 PM–3:30 PM 2071

### IMPLEMENTATION DIFFERENCES AND UNDERLYING COMMONALITIES OF PEER SUPPORT: IMPLICATIONS FOR STANDARDIZATION AND ADVOCACY

Brian F. Oldenburg, PhD,[1] Michaela Riddell, PhD,[1] Xuefeng Zhong, DrPH,[2] Andrea L. Cherrington, MD, MPH[3] and Edwin B. Fisher, PhD[4,5]

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Peer support is widely utilized in health promotion around the world. Yet, it is implemented very differently in different settings - in clinical sites, community settings, groups, over the internet, etc. This contributes to difficulty in defining peer support and advocating for its inclusion as a routine component of health care or community services. Here we describe three peer support programs for diabetes management that are implemented in very different ways but that also share underlying commonalities. They are part of Peers for Progress, a program of the American Academy of Family Physicians Foundation to promote peer support in prevention and health care. In Victoria, Australia, community based programs are centered on monthly group meetings, supplemented by individual contact by peer leaders. In Anhui Province, China, community health centers and peer supporters interact reciprocally. Health center staff co-lead monthly meetings while peer supporters help health centers attune their services to community needs. Among African Americans in rural Alabama, volunteer community health advisors provide individualized peer support via telephone. Although very different in details of how they are implemented, commonalities include addressing clinical, community and social influences, as well as integrating scheduled vs casual and group vs individual contact. Additionally, each addresses four key functions of peer support: 1) assistance in daily management, 2) social and emotional support, 3) linkage to clinical care, and 4) ongoing support. These functions and commonalities provide a base for defining or standardizing peer support and, thereby, advocating for it across diverse implementation settings and health systems.

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## Symposium 16A 2072

### THE AUSTRALASIAN PEERS FOR PROGRESS DIABETES PROJECT: FEATURES OF A COMMUNITY BASED PROGRAM

Michaela Riddell, PhD[1,2] and Brian F. Oldenburg, PhD[1,2]

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The Australasian Peers for Progress Diabetes Program is implementing and evaluating peer-led community based group support for people with type 2 diabetes. We recruited 285 participants, including peer leaders, by postcode locations, and all received a 1-day diabetes self-management education program prior to randomisation. Locations were randomized to intervention arm - 12 groups, each of 8-12 people led by lay peer leader(s), or to control arm. Peer led groups meet monthly, during which time participants review their diabetes clinical care and needs, their successes as well as their challenges in self-management. Support is reinforced through individual contact and interaction with the leaders and other group members between sessions.

Mean age of participants at baseline was 60.8 yr (±8.9 SD) with average duration of diabetes, 8.3 yr (±5.3SD). The average waist circumference and BMI was 109.2 cm (±14.63 SD) and 31.1 (±5.8 SD), respectively for men and 105.5 cm (± 16.6 SD) and 32.9 (± 6.9 SD), respectively for women. Average HbA1c at baseline was 7.2 % (± 1.2 SD) and was not associated with having a diabetes management plan prescribed by the primary care physician..

Process evaluation will address the four key aims of peer support; 1) assistance in daily management, 2) social and emotional support, 3) linkage to clinical care, and 4) ongoing support Program outcomes at 6 months will be discussed in relation to both commonalities with other peer support programs and the unique aspects of the context, program and community setting, including: 1) the partnership with Diabetes Australia-Vic, the leading charity representing people with diabetes; 2) the role of and support provided by volunteer lay peer leaders to each group, and 3) the methods used to provide resources, supports and training to the leaders including a weekly group teleconference, as well as e-newsletters and website access.

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## Symposium 16B 2073

### RECIPROCAL COOPERATION BETWEEN PEER SUPPORTERS AND COMMUNITY HEALTH CENTERS IN CHINA

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Chinese government policy directs that services of Community Health Centers (CHCs) are organized around neighborhoods and housing complexes. Accordingly, CHC professional teams serve specific sites to provide basic clinical and preventive services including chronic disease management. This link of primary care with neighborhoods provides an attractive structure through which to organize peer support. In collaboration with the Center for Disease Control & Prevention (CDC) in Anhui Province, peer supporters were trained by CHC and CDC teams, co-led monthly peer support meetings with CHC professionals, and organized activities (e.g., morning walking, Tai Chi, food shopping) as well as providing individual support to neighbors. Peer supporters report the cooperation with the CHCs as a key strength of their program, including its reducing anxiety about making a mistake. At the same time, peer supporters represent their neighborhoods to the CHCs, e.g., increasing numbers attending regular glucose testing and then persuading the CHCs to increase from 2 to 4 the days per month glucose testing is available. Despite the close relationship with the CHCs, peer supporters and their neighbors see their activities as very much of their neighborhoods. In contrast to western images of Chinese culture discouraging sharing of emotions, peer support provided opportunities for emotional exchange. This is because cultural norms against burdening one's family with negative feelings are lessened with non-family peers with diabetes. Preliminary findings indicate benefits in terms of metabolic control and other indicators.

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## Symposium 16C 2074

### THE ENCOURAGE PROGRAM: IMPLEMENTATION OF A COMMUNITY-BASED DIABETES PEER SUPPORT PROGRAM FOR AFRICAN AMERICANS IN RURAL ALABAMA

Andrea Cherrington, MD MPH, Michelle Martin, PhD and Monika Safford, MD

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Southern Alabama is a rural area heavily burdened by diabetes and high rates of poverty among mostly African American communities. With limited access to primary health care providers and diabetes education, the setting is very amenable to a peer-based intervention. Given large distances and high gas prices, a telephone-based, volunteer community health advisor (CHA)-delivered peer support intervention was developed. CHAs were recruited by word of mouth through local community social networks. After participating in a 2-day training that covered topics specific to diabetes, basic communication skills and principles of motivational interviewing, CHAs were paired with 3-6 clients. An initial in-person meeting was followed by weekly telephone contacts for 8-12 weeks, and monthly contacts for the remainder of the intervention period. Calls focused on individualized goal setting and problem solving around daily self-management, provision of emotional support, and access to clinical services. Call frequency was designed to vary based on participants' needs. Additional calls were made before and after scheduled clinic visits to encourage adherence to visits and assist with preparation of questions for the provider.

Four hundred and twenty-four participants enrolled, exceeding target enrollment by 6%. In response to community needs identified during program development, all participants (intervention and control) received group based diabetes education as a part of the study. While data collection is ongoing, qualitative feedback suggests the program has been well-received by CHAs and participants alike. The peer-based infrastructure developed for this program has provided a foundation for a second program focusing on support for individuals with diabetes and chronic pain.

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## Symposium 17 2:00 PM–3:30 PM 2075

### DEVICE-ENABLED MEASUREMENT OF HEALTH BEHAVIORS IN REAL-TIME

Theodore Walls, PhD,[1] David Chelidze, PhD,[4,1] Helen Huang, PhD[3,1] and Santosh Kumar, PhD[2]

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This symposium covers the emergence of four new configurations of biomedical devices and related algorithms designed for the monitoring of health behaviors in real time through devices and related algorithms. Whereas many health behaviors have been measured using traditional self-report approaches such as paper surveys, electronic diaries and interactive voice systems, the information generated can be seriously biased by poor recall. In addition, research participants often need to disengage from the behavior being studied in order to provide the report. Reactivity to measurement may also change object behaviors or induce participants to over- or underreport. However, in many cases, health behaviors can be monitored with new sensor-based systems that recognize the movements of health behaviors automatically. Although these approaches may also suffer from the same threats to validity, they are much less obtrusive to daily experience, can be trained through algorithms to track a range of behaviors and their components, and have the capacity to store make on the on-the-fly calculations, and store and retrieve this information.

Three talks will cover recently emerging approaches to monitoring health behavior in vivo. Each talk will cover the motivation for the approach, the device configuration, the algorithmic highlights of the approach, accuracy of movement classification, and preliminary results in laboratory and-/or field applications. The three areas of application are stumbling detection in patients with prosthetics, conversation via respiration, and smoking via its movements. A fourth talk will survey inferential and kinematic modeling approaches and the benefits of this kind of modeling for biomedical and psychosocial prevention and intervention.

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## Symposium 17A 2076

### DESIGN OF A STUMBLE DETECTOR FOR ARTIFICIAL LEGS

He Huang, PhD and Fan Zhang, MS

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Perturbations during human gait such as a trip or a slip can result in a fall, especially for the lower limb amputees. In order to allow the leg amputees to actively recover from the stumbles, it is essential to design of a stumble detection system which can accurately and responsively detect the stumbles. In this study, the potential data sources measured from prostheses for the design of stumble detector were investigated and selected. Two different stumble detectors: a foot-acceleration-based stumble detector and a hierarchical detector based on the acceleration and multi-channel electromyographic (EMG) signals recorded from residual thigh muscles, were developed to identify stumbles and classify stumble types. The designed detectors were evaluated on the data collected from seven transfemoral (TF) amputees when they walked on a controllable treadmill or an obstacle course. The normal gait of subjects was purposely perturbed by sudden accelerations or decelerations of a treadmill. The results showed that the detector based on foot acceleration alone can identify the stumbles 140-240 ms before the defined critical timing for falling and classify the stumble types, however with a high false alarm rate; the detector fused the acceleration data and EMG signals reduced the false alarm rate but at the expense of introducing longer response time. The results of this study may aid the future design of a stumble detection system which can be integrated into self-contained, powered artificial legs, and eventually enhance the safety of the prosthesis operations. However, additional engineering efforts are still needed, including: (1) further improvement of the stumble detection performance, (2) investigation of the stumble recovery strategies for prosthesis control, and (3) integration of the stumble detector with prosthetic legs.

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## Symposium 17B 2077

### DYNAMICAL SYSTEMS APPROACH TO MOTION ANALYSIS AND TO TRACKING THE ASSOCIATED PHYSIOLOGIC PROCESSES

David Chelidze, PhD

Mechanical, Industrial and Systems Engineering, University of Rhode Island, Kingston, RI.

Many human behaviors have a characteristic motion pattern. Current development of wearable sensors allows the use of measured motion kinematics time series in detection of the occurrence of a particular human behavior. Dynamical systems based time series analysis can track small changes in human coordination and relate them with underlying slow physiological process such as muscle fatigue. Similar methodology can be used to develop dynamical characteristics of behavior that can be used to detect it and any associated small changes in behavior. In particular, it has a potential of distinguishing between behaviors that have similar kinematic signatures, but need to be separately identified.

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## Symposium 17C 2078

### AUTOMATED ASSESSMENT OF NATURALLY OCCURRING CONVERSATIONS

Santosh Kumar, PhD,[1] Mustafa al'Absi, PhD[2] and Emre Ertin, PhD[3]

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Measurement of psychosocial stress and addictive behaviors in the field require accurate measurement of social cues in the field. One important social cue is interactions with others, specifically, conversations. We have developed mConverse, a mobile-phone based system to automatically identify conversation events, within the ongoing AutoSense project.

Converse is desgined to automatically infer on a mobile phone whether a subject is engaged in a naturally occurring conversation. The system applies machine learning models on respiration measurements collected from a respiratory inductive plethysmograph (RIP) band. The RIP band is integrated into an unobtrusive sensor suite worn around the rib cage underneath the clothing. We present here analysis of respiration data collected on 22 subjects (11 women), who wore AutoSense for 11-14 hours per day for 2 days in their natural environment. From this data, we obtain patterns of naturally occurring conversations.

Our results show that, for our specific subject pool of college students, conversations are short and frequent, with an average frequency of 3 conversations per hour. The average duration of a conversation is 3.82 minutes. Time between successive conversations is, on average, 13.86 minutes. Overall, we find that our subjects spent 25% of their day in conversations. Since stress, activity, and alcohol, and physiology are also collected automatically by the AutoSense system, subjects can be prompted to provide self-report, if significant change is detected in any of these automated measures.

mConverse is the first system to reliably infer conversation using a mobile phone in real-time from respiratory patterns. Use of mConverse does not involve privacy concerns that are associated with audio recording based method of detecting conversions. Our work sets the stage for developing, evaluating, and delivering novel interventions to manage stress and addictive behavior using a mobile phone technology and our Autosense sensors.

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## Symposium 17D 2079

### HUMAN MOTION RECOGNITION USING A WIRELESS SENSOR-BASED WEARABLE SYSTEM FOR SMOKING BEHAVIOR

Theodore Walls, PhD

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Ubiquitous computing provides valuable ways to collect data on health behaviors such as smoking or drinking. In many applications such as rehabilitation, sports medicine, geriatric care, and health/fitness monitoring, the importance of combined recognition of activity (such as smoking) and movements (such as a puff-related movement) can drive health care outcomes. A novel algorithm has been developed that can be tuned to recognize on-the-fly range of activities and fine movements within a specific activity.

In this talk an approach to detecting smoking behavior with accelerometers and the new algorithm is described. Performance of the algorithm and a case study on obtaining optimal features from sensor and parameter values for the algorithm to detect fine motor movements are presented. Considerations around validation of the performance of the approach in discriminating out movements and in comparison to other approaches to measuring smoking are described.

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## Symposium 18 2:00 PM–3:30 PM 2080

### FOSTERING COMMUNITY ENGAGEMENT THROUGH SOCIAL MEDIA: EXAMPLES FROM HEALTH PROMOTION PROGRAMS

Wen-ying Sylvia Chou, PhD, MPH, Russell Glasgow, PhD and Bradford Hesse, PhD

National Cancer Institute, Bethesda, MD.

With the growth of Web 2.0 technologies, social networks represent an increasingly important mechanism for community engagement and health promotion. Not only are individuals' social networks found to shape their health-related attitude and behavior, recent innovations in technology-mediated health communication have demonstrated success in utilizing social media to improve behavior and health outcomes. Moreover, the transparency and openness of social media venues present new analytic opportunities for behavioral scientists seeking more accurate assessment metrics, including the reach and effectiveness of health promotion efforts.

Our proposed symposium seeks to bring together leading experts and practitioners in social media-based health communication intervention programs with a focus on evaluating the impact on the interactions and structure of community networks and the level and quality of engagement. Panelists represent diverse perspectives and disease areas, including weight management, smoking cessation, and sexual education and HIV prevention. The symposium's specific goals are to: 1) illustrate cutting-edge, exemplary health promotion projects utilizing social media; 2) identify characteristics of the interventions in promoting and sustaining community networks and engagement; 3) discuss research priorities and measurement challenges and opportunities in the era of participative media. After individual presentations highlighting different approaches and a variety of health outcomes, ample time will be allotted for a discussion and debate on current science of social media in promoting and engaging online communities, particularly in the ways members provide social and informational support to one another.

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## Symposium 18A 2081

### ONLINE SOCIAL NETWORKS FOR SMOKING CESSATION - FROM OBSERVATION TO INTERVENTION

Nathan Cobb, MD

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The use of online communities, or social networks, as part of behavioral health interventions has historical antecedents into the 1980s. Systems that integrate social networks have the theoretical benefit of providing enhanced social support, providing for exposure to different norms and model behaviors while also providing for a mechanism for diffusion of health information. Despite this, it is only recently that the application of formal social network analytic techniques has been possible and actively applied.

The presentation will discuss the application of social network techniques to online communities, using smoking cessation as an exemplar. Recent observational work in describing the characteristics of existing networks, their structure and communication patters will be reviewed. This overview will included results from a large randomized control trial of the QuitNet web-based smoking cessation system and an associated large-scale social network analysis, demonstrating the importance of behavioral heterogeneity and persistence of long-term superusers. Current research applying these findings to new "social media" approaches will also be reviewed. Intervention design, diffusion strategies and the use of deliberate network "rewiring" on other networks will be discussed, including the application of engineering principles to maximize diffusion and dissemination through Facebook and mechanisms for augmenting social network tie formation in web-based systems. Finally, the utility of social network analysis in measuring participation and engagement within a variety of health-related online communities will be discussed.

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## Symposium 18B 2082

### JUST/US: SOCIAL MEDIA FOR HIV PREVENTION WITH NETWORKS OF YOUTH

Sheana Bull, PhD,[1] Deb Levine, MA,[3] John Santelli, MD,[2] Sandra Black, DVM[1] and Sarah Schmiege, PhD[1]

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Background: The aim of this study was to explore the efficacy of using Facebook, a popular social media site, to recruit and engage youth at elevated risk for HIV and other STI to engage in discussions, blogs, and receive tailored information on healthy sexuality. There is evidence that the Internet can be used effectively to reduce risk for HIV and other STI, but no research yet published on using social media sites online prosectively for HIV prevention, despite the fact that youth in the U.S. use social media almost universally.

Method: We established a page on Facebook called Just/Us and recruited networks of 1588 youth using a modified respondent driven sampling approach to be randomly assigned to engage with the page or a control page covering popular media content. Youth were exposed to intervention or control for 8 weeks and we assessed their sexual risk behaviors at enrollment, two and six months post enrollment.

Results: A total of 74% of the participants returned for at least one follow-up; no differential in follow-up was observed between intervention and control. We have evidence at the individual level for significant increases in condom use at last sex among intervention participants and in proportion of sex acts protected by condoms. We will explore the relationship between network membership and HIV risk; between exposure of networks to Just/Us content and subsequent reductions in HIV risk behaviors compared to controls.

Discussion: This is the first study exploring the efficacy of using a popular social media site for HIV prevention. Furthermore, the study explores how we might utilize social networks to facilitate healthy sexual behaviors. Lessons can extend to future work in tapping into networks to facilitate other healthy behaviors including adherence to medication

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## Symposium 18C 2083

### SOCIAL NETWORKS FOR WEIGHT LOSS: SOCIAL SUPPORT THROUGH ONLINE PEER-TO-PEER COMMUNICATION

Kevin O. Hwang, MD, MPH

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Successful weight loss and maintenance requires daily decisions and actions apart from traditional contact with health care providers. Weight control is one of the most popular search topics for Internet users. Online social networks are emerging as an important resource for individuals seeking peer support for their weight control efforts.

This presentation will review current evidence on the quality of peer-to-peer online weight loss advice and examples of social support shared among members of a large online weight loss community. Empirical data from mixed method studies will be reported, with particular attention to describing the relationship between use of online social media features, perceived social support, and weight loss. Methodological discussion will focus on comparing the benefits and challenges associated with conducting research with an existing online weight loss community to those associated with building a new community from scratch. Opportunities to extend weight control-related social support from the desktop to the mobile phone will be introduced. Finally, the investigator will identify lessons learned from the team’s extensive experience working with social networks on measuring efficacy, engagement, as well as the utility of peer-to-peer communication for health promotion.

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# Thursday
# April 12, 2012
# 3:45 PM–5:15 PM

## Paper Session 01 3:45 PM–4:03 PM 2084

### PAIN IN LONG-TERM BREAST CANCER SURVIVORS: THE EFFECT OF BODY MASS INDEX

Laura Forsythe, PhD, MPH,[1] Catherine M. Alfano, PhD,[1] Stephanie M. George, PhD,[1] Anne McTiernan, MD, PhD,[2] Kathy B. Baumgartner, PhD,[3] Leslie Bernstein, PhD[4] and Rachel Ballard-Barbash, MD, MPH[1]

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Purpose: Pain is common among post-treatment cancer survivors, yet the course of pain over time and factors affecting pain in specific cancer populations are not well understood. This study described pain in a cohort of breast cancer survivors (BCS) 10 years (y) after diagnosis, identified longitudinal patterns in pain, and examined associations between body mass index (BMI) and pain.
Methods: BCS enrolled in the Health, Eating, Activity, and Lifestyle (HEAL) Study were surveyed at approximately 3, 5 and 10 y post-diagnosis ($n=559$). Pain was assessed with the SF-36 bodily pain scale (BP; lower scores indicate more pain) transformed based on national norms (T-scores: mean=50, SD=10). Multiple linear regression was used to assess associations between self-reported BMI and pain, and between changes in pain (3-10 y) and changes in BMI (% change, 5-10 y). Demographic and clinical variables, including comorbidities, were evaluated as confounders.
Results: At 10 y post-diagnosis, 24.9% of BCS reported BP scores <40 (>1 SD below the population mean). After adjustment, BCS who were obese (BMI>=30.0 kg/m2) at 10 y reported greater pain than normal weight (BMI<25 kg/m2) survivors ($\beta=-2.94$, $p=0.04$). From 5 to 10 y, BMI increased by >5% for 18.5% and decreased >5% for 27.0% of BCS. Change in BMI was not associated with pain at 10 y ($\beta=-0.04$, $p>0.05$). Over the 7 y period, 52.9% of the sample maintained low pain (BP>40), 12.5% maintained high pain (BP<40), 13.0% reported improved pain (BP increased>1 SD), and 21.7% reported worsened pain (BP decreased>1 SD). These pain change categories also were not associated with change in BMI ($p>0.05$).
Conclusion: Pain remains a significant complaint among BCS 10 y post-diagnosis. Excess body mass contributes acutely to pain and pain related functioning in long-term BCS, independent of comorbidities and previous BMI trajectory.

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## Paper Session 01 4:03 PM–4:21 PM 2085

### HOW MUCH EXERCISE IS REQUIRED TO ACHIEVE PSYCHOSOCIAL BENEFITS AMONG BREAST CANCER PATIENTS?

Bernardine M. Pinto, PhD,[1,2] Shira I. Dunsiger, PhD[1,2] and Michael G. Goldstein, MD[2]

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Exercise adoption has been found to reduce fatigue, and improve quality of life (QOL) and perceived physical functioning among breast cancer patients, though there are questions about the exercise "dose" needed for psychosocial benefits. In Moving Forward with Life, a RCT, oncologists and surgeons provided brief exercise advice to 192 sedentary breast cancer patients (mean age=55.9 years, SD=9.8, 13% Cancer Stage 0, 38% Stage 1, 41% Stage 2, 8% Stage 3-4, mean years since diagnosis=2.9 years, SD=2.2, 66% employed, 96% White) attending follow-up visits. The patients were then randomized to a 12-week telephone counseling intervention promoting exercise or a contact control. Assessments of patients' exercise (7 Day PAR), QOL (FACT-B), perceived physical functioning (SF-36 PF subscale) and fatigue (FACT-F) were completed at baseline, 3, 6, and 12 months. In this paper, our goal was to examine the association between exercise "dose," conceptualized both as the increase in exercise from baseline and total exercise in minutes, and psychosocial outcomes at treatment end. Using regression analyses, controlling for age, BMI, chemotherapy (yes/no), and baseline values of outcomes, we found no significant association between an increase in weekly exercise by ≥30 mins., ≥45 mins. or ≥60 mins. and the psychosocial outcomes. However, women who exercised ≥150 mins./week at 3 months reported significantly higher QOL ($\beta=3.6$, $SE=1.9$, $p=.05$) and physical functioning ($\beta=5.9$, $SE=2.9$, $p=.04$) than those who did not meet this threshold. No significant associations were found for fatigue at 3 months. Data at 6 and 12 months will also be reported. Results suggest that exercising≥150 mins./week (consistent with ACSM 2010 exercise guidelines for cancer survivors) is associated with improved QOL and physical functioning. However, specific increases in exercise "dose" from baseline levels are not associated with these benefits.

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## Paper Session 01 4:21 PM–4:39 PM 2086

### PSYCHOLOGICAL STRESS AND IMMUNITY PREDICT FATIGUE IN BREAST CANCER SURVIVORS 5 YEARS POST-DIAGNOSIS

Kristen M. Carpenter, PhD, Eleshia Morrison, Master of Arts, Neha Godiwala, BS, Barbara L. Andersen, PhD and William E. Carson, MD

Psychology, The Ohio State University, Columbus, OH.

Many cancer survivors report significant fatigue for years following treatment. Associations between fatigue and immunity have been observed, but the relationship has seldom been examined prospectively, limiting the understanding of fatigue in this context and rendering identification of at-risk patients difficult. The present study aimed to identify predictors of fatigue in the first 5 years following cancer diagnosis, using the Biobehavioral Model of Cancer Stress & Disease Course (Andersen et al., 1994) as a theoretical framework. Data were drawn from disease-free participants ($N=162$) in the Stress & Immunity Breast Cancer Project (Andersen et al., 2007). Assessments took place approximately every 6 months following surgery. Perceived stress (PSS-10), depressive symptoms (CES-D), and immunity [white blood cells (WBC), CD3 (total T), CD4 (helper T), CD8 (cytotoxic/suppressor T), CD56 (NK), and granulocyte counts] during active treatment (months 0-12) and recovery (18 months) were tested as predictors of fatigue during years 2-5. Fatigue was assessed using the POMS Fatigue and Vigor subscales and the MOS SF-36 Vitality subscale. Higher PSS-10 and CES-D scores during treatment and recovery predicted higher fatigue and lower vigor/vitality in years 2-5. While immunity during treatment was not consistently associated with subsequent fatigue, higher WBC, CD3, CD4, NK, and granulocyte counts during recovery predicted more fatigue and less vigor/vitality in years 2-5. Thus, patients reporting higher stress and depressive symptoms and evidencing higher cell counts during treatment and/or recovery seem to be at-risk for fatigue in the 5 years following diagnosis, suggesting that these behavioral and immunologic phenomena early in the cancer trajectory pose a physical burden that patients experience subjectively as fatigue for several years following treatment. Understanding these behavioral and immune precursors might allow clinicians to identify patients who may be at-risk for developing long-term fatigue, but also the mechanisms through which clinically significant fatigue arises.

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## Paper Session 01 4:39 PM–4:57 PM 2087

### COGNITIVE BEHAVIORAL STRESS MANAGEMENT AND INTRUSIVE THOUGHTS IN WOMEN WITH BREAST CANCER: EXPLORING MODERATORS

Emily Lattie, BS,[1] J. Stagl, MS,[1] S. Vargas, MS,[1] C. S. Carver, PhD,[1] S. Lechner, PhD[2] and M. A. Antoni, PhD[1]

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Cognitive-behavioral stress management (CBSM) has been effective in reducing intrusive thoughts about cancer, possibly by helping women use relaxation skills and cognitive restructuring to address concerns about treatment-related sequelae and fears of recurrence. The present study examines trait anxiety sensitivity (BIS scale), negative generalization (NG), and expectation of cancer recurrence as moderators in the relationship between CBSM and intrusive thoughts after treatment. The sample consisted of 240 women (mean age=50.34, SD=9.03), randomly assigned to a 10 week CBSM intervention or to a one day psycho-educational session. Participants completed measures of personality at baseline and reported on cancer-related intrusive thoughts at baseline, 6 and 12 months. Regression analyses examined the effects of baseline personality variables as intervention moderators, controlling for intrusive thoughts at baseline. High BIS participants assigned to CBSM had decreased intrusive thoughts at 6 months (p<.01), vs. those low in BIS, whose intrusions were low at both times. CBSM participants with initially high expectations of cancer recurrence experienced significantly greater reductions in intrusive thoughts at 6 months than did other participants (p<.01). CBSM participants high in baseline NG had significantly greater reductions in intrusive thoughts at 12 months than did low NG participants assigned to CBSM (p<.01). These findings suggest that individuals with high trait anxiety sensitivity, dispositional generalization and expectations of cancer recurrence achieve greater reductions in intrusive thoughts upon completion of a CBSM program than do women who do not show these traits. Identifying individuals with these characteristics in the weeks after surgery for breast cancer may be used to refer these patients into stress management intervention to optimize post-treatment outcomes.

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## Paper Session 01 4:57 PM–5:15 PM 2088

### TRAJECTORIES OF ILLNESS INTRUSIVENESS DOMAINS FOLLOWING A DIAGNOSIS OF BREAST CANCER

Stephanie J. Sohl, PhD, Beverly Levine, PhD, L. Douglas Case, PhD and Nancy E. Avis, PhD

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Although mean levels of psychological distress decline over time following a breast cancer diagnosis, research has shown that individual women follow several distinct trajectories. Illness intrusiveness, or how much an illness disrupts important life domains, is highly related to distress among breast cancer survivors and is a theoretically more proximal predictor of distress than disease or treatment factors. However, change over time in illness intrusiveness following a diagnosis of breast cancer has not been investigated. The current study sought to identify different trajectories in the course of illness intrusivenes using a finite mixture modeling procedure (TRAJ, in SAS). Women with stage I, II, or III breast cancer who were at least 25 years of age were recruited within 8 months of diagnosis. The mean age of women in this sample (n=539) was 55.7 (SD=12.4) years, and a majority were White (92%), married/living with a partner (73%), and had graduated from college (64%). The Illness Intrusiveness Rating Scale (IIRS) measured illness intrusiveness at four time points (baseline and 6, 12, 18 months post baseline) and was divided into three life domains: relationships and personal development, intimacy, and instrumental. Three distinct trajectories emerged to optimally categorize the patterns that women followed within each domain. A majority (59%) of women followed the same trajectory for each domain: 45% were always in Trajectory 1 (consistently low levels of intrusiveness), 10% in Trajectory 2 (improved over time) and 4% in Trajectory 3 (consistently high levels). However, 41% did not follow the same trajectory across domains. Additional analyses will characterize women in each domain trajectory by demographic, treatment and psychosocial factors. Preliminary analyses showed some characteristics (e.g., age, stage, pain) that varied consistently by trajectory across all domains (all p's<.001), whereas others differed by domain. These results inform the personalization of interventions to reduce illness intrusiveness following a diagnosis of breast cancer.

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## Citation Paper

## Paper Session 02 3:45 PM–4:03 PM 2089

### AN AUTHORITARIAN PARENTING STYLE PREDICTS CHILD EMOTIONAL OVEREATING ABOVE AND BEYOND CHILD BMI AND RESTRICTIVE FEEDING

Shelby Langer, PhD,[1] Nancy Sherwood, PhD,[2] Rona Levy, PhD,[1] Meghan Senso, MS,[2] Marcia Hayes, MPH,[2] Julie Anderson, MPH,[2] Sara Veblen-Mortenson, MPH,[3] Melissa DuPen, BS,[1] Sheri Ballard, BA,[1] Kim Swanson, PhD,[1] Mary O'Leary, PhD,[1] Catharine Jensen, BA,[2] Claire Fleming, BA,[2] Alison Roeder, BA[2] and Bob Jeffery, PhD[3]

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A restrictive or controlling parental feeding style has been associated with an increased risk of pediatric obesity. We sought to examine the predictive power of both food-specific and general parenting styles (authoritarian and authoritative) in explaining child emotional overeating (CEO). Children with a BMI percentile ranging from 70-95 and their parents were recruited from an HMO (165 dyads). Sample characteristics were: parents M (SD) age=37.3 (6.0), 90% female, 86% Caucasian, and 5% Hispanic; children M (SD) age=6.2 (1.4), M (SD) BMI percentile=85.2 (6.8), and 50% female. Parents completed measures to assess their child's eating behavior (Children's Eating Behavior Questionnaire), restriction of their child's intake of unhealthy foods (Child Feeding Questionnaire), and general parenting style (Parenting Styles and Dimensions Questionnaire). Hierarchical linear regression was used to examine predictors of CEO. In block 1, child BMI predicted CEO (B=.19, p=.000); child gender did not (B=-.12, p=.214). Restrictive feeding resulted in additional explained variance in CEO in block 2 (B=.23, p=.001, R-squared=.20, p for F change=.001), as did authoritarian parenting in block 3 (B=.53, p=.001, R-squared=.26, p for F change=.001). A second analysis used the same predictors with the exception of authoritative parenting in block 3. Authoritative parenting was inversely associated with CEO (B=-.36, p=.001, R-squared=.25, p for F change=.001). These findings indicate that general parenting style explains CEO above and beyond child BMI and restrictive feeding practices, and that an authoritative parenting style is more adaptive (associated with less CEO). Future research is needed to better understand the psychological, behavioral and physiological consequences of these distinct parenting styles.

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## Citation Paper

## Paper Session 02 4:03 PM–4:21 PM 2090

### MAOA PROMOTER UVNTR POLYMORPHISM, NEGATIVE FAMILIAL STRESSORS AND THE RISK OF OVERWEIGHT IN CHINESE ADOLESCENTS

Bin Xie, PhD,[1] Dalin Li, PhD,[2] Palmer H. Paula, PhD,[1] Anderson Johnson, PhD,[1] Rosa Ahn, BS,[3] Melanie Sabado, MPH[1] and David V. Conti, PhD[4]

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Monoamine oxidase A (MAOA) modulates the metabolism of serotonin and dopamine, both of which are neurotransmitters involved in the regulation of appetite and food intake. The gene coding for monoamine oxidase A (MAOA) contains a 30-bp tandem repeat (uVNTR) polymorphism in its promoter region that has been previously identified to be associated with overweight risk and body mass index (BMI) with mixed findings in the literature. Our goals were to replicate the population effects of this functional polymorphism on BMI and the risk for being overweight or obese with data collected from 1,101 Chinese adolescents 11-15 years old living in Wuhan, China. In addition, we further explored gender differences and interaction effects with negative familial stressors, such as death or illness of family members, hit or scolded by parents and increased quarreling with parents. Girls with high activity allele had significantly decreased risk for being overweight or obese (OR=0.20; 95% CI: 0.05-0.84, p=0.015) as well as significantly lower BMI (beta=-0.117, p=0.02). Experience of negative familial stressors significantly weakened this protective genetic effect on the risk for being overweight or obese (p for interaction=0.008) and on BMI (p for interaction=0.018). No similar effect was observed among boys. Our findings confirm the genetic effects of MAOA uVNTR polymorphism on the risk for being overweight and BMI in a Chinese adolescent population and convey the potential to derive new insights about interactions with negative familial stressors.

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## Citation Paper

## Paper Session 02 4:21 PM–4:39 PM 2091

### CHANGES IN CHILDREN'S EATING BEHAVIORS FOLLOWING INCREASES AND DECREASES IN SLEEP DURATION

Chantelle Hart, PhD,[1,2] Jessica Lawton, BA,[2] Joseph Fava, PhD,[1] Mary Carskadon, PhD,[1] Judith Owens, MD MPH,[3] Hollie Raynor, PhD, RD,[4] Elissa Jelalian, PhD[1,2] and Rena Wing, PhD[1,2]

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Introduction: Shortened sleep is associated with obesity risk in children and adults. Adult experimental studies show that it may lead to changes in weight status through eating pathways. Epidemiologic studies show a stronger association of sleep and obesity in children in the absence of published experimental studies. This study examined whether experimental changes in children's sleep are associated with changes in eating with the hypothesis that children would report eating fewer calories(kcal) and percent kcal from fat with an increased (INC) time in bed (TIB) compared to a decreased (DEC) TIB.
Methods: Using a within-subject, crossover design, 30 children 8-11 years (mean =9.6(1.1); 17 boys) who reported sleeping on average 9.5 hrs/night were enrolled in a 3-week (wk) study. Most (77%) were non-Hispanic White; mean BMI percentile=53.7(27.4). All children first slept their typical amount for 1 wk; they were then randomized to either INC or DEC TIB by 1.5 hrs/night for 1 wk (& completed the alternate schedule the last wk). All wks children wore actigraphs & completed sleep diaries & 3-day, 24-hour dietary recalls.
Results: This study is ongoing (recruitment end: Nov 2011); final data will be analyzed for the meeting. Thus far children achieved a mean 146 minute difference in actigraph-measured sleep period time during the INC and DEC wks, $F(1,29)=123.6$, $p<.001$. Compared to DEC, during INC children consumed 109 fewer kcal/day, $F(1,28)=2.33$, $p=.14$, $d=.42$; and 1.8% fewer kcal from fat/day, $F(1,28)=3.72$, $p=.06$, $d=.51$. Specifically, males consumed 219 fewer kcal/day, $F(1,28)=4.24$, $p=.057$, $d=.78$; & 2.3% fewer kcal from fat/day, $F(1,15)=3.08$, $p=.10$, $d=.62$, during the INC versus DEC condition; no significant differences for females.
Conclusion: Preliminary findings suggest an association between reduced sleep duration and changes in food intake, particularly for boys, which could promote weight gain over time.

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## Paper Session 02 4:39 PM–4:57 PM 2092

### CHILD WEIGHT AND PARENT REPORT OF CHILD'S HEALTH RELATED QUALITY OF LIFE FOLLOWING A PRIMARY CARE BASED WEIGHT MANAGEMENT PROGRAM TARGETING PARENTS

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Primary care (PC) settings are well positioned to address child overweight, especially in rural areas, but providers report numerous barriers to treatment implementation. Parent Led Activity and Nutrition (PLAN) for Healthy Living was a cluster-randomized controlled trial to evaluate a parent-mediated approach using provider-implemented brief motivational interviewing (MI) and group sessions to treat child overweight and obesity in PC settings in Southern Appalachia. Sixty-seven overweight children (ages 5-11) and their parents were recruited from 4 PC clinics, 2 of which were randomized to receive the intervention. Parents in intervention groups received 2 brief MI visits and 4 group sessions utilizing the NIH We Can! curricula as well as 4 phone visits with research staff. The objective of the current study was to evaluate standardized body mass index (zBMI) and health-related quality of life (HRQoL) in overweight and obese children post- intervention. Child height and weight were collected to determine zBMI scores at baseline and 3, 6, and 12 months following the 10-12-week intervention. Additionally, parents completed the Pediatric Quality of Life Inventory and demographic questions at all 4 time points. Data were analyzed via a multilevel growth model. Treatment caused a reduction of zBMI in the intervention group compared to the control group, $B=-0.019$, $p=.038$. All other comparisons of interest were non-significant. A similar model was used to test for treatment effects on pediatric HRQoL. The model differed by the addition of one covariate - the child's zBMI at baseline. No statistically significant treatment effects were observed for the HRQoL total score or subscale scores, but high means and a ceiling effect were noted. The use of provider-led brief MI and group sessions may be an effective method for intervening with child overweight and obesity in PC settings.

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## Paper Session 02 4:57 PM–5:15 PM 2093

### A SYSTEMATIC REVIEW OF PARENT AND PEER INVOLVEMENT IN PHYSICAL ACTIVITY AND DIET INTERVENTIONS IN ADOLESCENTS

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Approximately 34% of US adolescents are classified as overweight or obese. Because parents and peers have been identified as primary socializing agents for adolescents, these systems may be particularly influential in promoting long-term lifestyle changes. However, the variability with which parent and peer components (e.g., parenting styles, parental monitoring, social support, peer norms) have been integrated into obesity interventions makes their effectiveness difficult to evaluate. This review assessed the impact of interventions which included parent components, peer components, or a combination of both on adolescent activity (i.e., physical activity (PA), sedentary behavior (SB)) and diet behaviors (i.e, fruit and vegetable (F&V), fast food, family meal, sweetened beverage, and total energy consumption). Studies were retrieved using the electronic databases MEDLINE, PsycINFO, and Google Scholar and were coded as having minimal, medium or high parent and/or peer involvement based on theoretical and behavioral integration of parents or peers. Thirty-nine interventions reported across 76 published articles were identified. Nine interventions involved parent-only components, 12 involved peer-only components, and 18 involved a combination thereof. Interventions which included only parents or peers had the greatest impact on outcomes when relevant constructs were included in the theoretical framework and when parents or peers played active roles in the behavior change process. Of the 18 studies involving both parents and peers, 15 were coded as having medium parent involvement with either medium or high peer involvement. These studies were moderately successful in creating changes in adolescent PA, SB, and F&V intake; however, no significant results were reported for sweetened beverage and fast food consumption. Overall, addressing multiple systems may help to overcome barriers to changing obesity-related health behaviors in adolescents. Greater overlap between parent and peer systems may enhance future activity and diet interventions.

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## Paper Session 03 3:45 PM–4:03 PM 2094

### MINDFULNESS-BASED EATING AWARENESS TRAINING (MB-EAT): CONCEPTUAL FOUNDATIONS AND RESEARCH EVIDENCE

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Mindfulness approaches to treating binge eating, obesity, and diabetes offer substantial promise. The Mindfulness-Based Eating Awareness Treatment (MB-EAT) program is based on well-recognized principles of food intake regulation, self-regulation theory, and mindfulness-based therapeutic approaches. Substantial research suggests that many individuals fail to adequately attend to physical signals related to hunger and satiety, and are excessively sensitive to other types of triggers for eating, including emotional distress, social cues, and marketing. Yet evidence also shows that training in awareness can lead to improved self-regulation, a greater sense of self-control, and decreased reactivity to such cues. The MB-EAT program (10 sessions plus follow-up) is a non-dieting approach that helps individuals 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 food quantity). Evidence from two NIH-funded randomized clinical trials with obese individuals, including both binge eaters and non-binge eaters, have shown significant improvement in eating regulation, decreases in emotional eating and in depression. These effects, including weight loss, increased with the amount of mindfulness practice. In the second study assessing the impact of the program on obese individuals (avg. age=50; avg. BMI=40), results showed approximately 7 lbs. weight loss, sustained during 6 month followup, with highly comparable effects between those with and without binge eating patterns. Improvement on various aspects of mindfulness also related to improvement in eating regulation. These results will be presented in the context of the conceptual framework of the program specifically, and in the context of mindfulness effects more generally.

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## Paper Session 03 4:03 PM–4:21 PM 2095

### A MINDFULNESS-BASED APPROACH TO THE TREATMENT OF OBESITY AND DIABETES

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Mindfulness-Based Eating Awareness Training (MB-EAT) has been shown to improve eating regulation in individuals with obesity and binge eating disorder. The rising prevalence of type 2 diabetes parallels the rise in obesity in the U.S. The extension of this approach to the prevention of weight gain and promotion of weight loss among people with type 2 diabetes would support broader application. Obesity and diabetes encompass several body-mind relationships in bidirectional interactions in that hyperglycemia may adversely affect mood, and depressed mood may contribute to poor eating habits, physical inactivity, and weight gain. Further, earlier data from related research among those at risk for diabetes showed improvement on metabolic regulation independent of weight change. This paper addresses adaptation of the MB-EAT program to a diabetic population, clinical issues relevant to this population, and results of initial research among individuals randomized to either the mindfulness-based intervention or to a standard diabetes education intervention. The standard diabetes intervention focused on achieving specific dietary targets for change (e.g., consume<30% of kcal from fat). Both treatments included 10 weeks of intervention with 1- and 3-month follow-up. Adults (n=70) aged 35-65 years with type 2 diabetes for≥1 year were recruited. There were no significant differences between treatment groups in demographics or time since diabetes diagnosis at baseline (all p>0.05). The impact of the two interventions on weight, BMI, HbA1c, fasting plasma glucose, insulin, depression, anxiety, and eating self-efficacy significantly improved and were sustained across time. MB -EAT, adapted for diabetes, showed comparable effects to standard care; there were no significant differences between treatment groups immediately following the intervention or at 3-month follow-up. Relationships among variables will also be presented, as prior studies found different patterns of responsivity to the treatment interventions.

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## Paper Session 03 4:21 PM–4:39 PM 2096

### ENHANCING MINDFULNESS FOR THE PREVENTION OF WEIGHT REGAIN: IMPACT OF THE EMPOWER PROGRAM

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There is a dearth of prospective efficacy data for Weight Loss Maintenance (WLM) programs. What data are available demonstrate steady weight regain following weight loss interventions, with regain trajectories increasing 6 months post intervention. To address this challenge, a tightly-controlled 2 site efficacy trial compared two 12-week WLM interventions, both followed by telephonic support. 95 participants who had lost at least 9% of their weight in the previous 3 years were randomized to a standard behavioral (SB) or mindfulness-based (EMPOWER) WLM intervention. Both groups received identical information about nutrition, physical activity, the importance of stress management, values and goal setting. The EMPOWER group, however, was presented the information in the context of learning mindfulness skills to facilitate change. Longitudinal mixed effects modeling on percentage weight change over 16 months demonstrated differential trajectories such that weight in the EMPOWER group decreased more than in the SB group (p<.04). Group by time effects were also observed for intuitive eating, perceived stress and mindfulness. In order to better understand how those in the EMPOWER group may have integrated mindfulness skills into their daily routines, 14 participants were interviewed for a qualitative analysis. Using standard procedures for thematic analysis, coding was developed by consensus among five professionals, and facilitated through the use of NVivo7. Participants reported positive shifts in relationship to eating, exercise, and multiple aspects of self, including greater awareness of bodily sensations, distinctions between behavior and emotions, and shifts in attention, thinking processes and decision making. Participants incorporated the mindfulness practices into their daily lives to varying degrees with a wide range of intentions. These data support the use of the EMPOWER program as a novel and effective approach for supporting individuals in the maintenance of weight loss.

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## Paper Session 03 4:39 PM–4:57 PM 2097

### MINDFULNESS, RUMINATION, AND DEPRESSION ARE RELATED TO ERP BRAIN MEASURES OF COGNITIVE CONTROL

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Recent research has described an innovative new task for assessing individual differences in cognitive control of memory, prompting calls for more clinical investigation using this method (Anderson & Green, 2001). Later research used picture stimuli with negative valence in the task to investigate cognitive control of emotion (Depue, Banich, & Curran, 2006). The current study used event-related potential (ERP) data recorded during this task to investigate brain activity representing early cognitive control of emotion (the N2 component) in relation to cognitive task performance on tests of attention and working memory span and self-report scores on measures of mindfulness, rumination, intrusive thoughts, and depression.

Brain activity representing cognitive control processes at frontal and parietal sites was recorded from 35 nondepressed undergraduates during completion of the think/no-think task. Cue stimuli were 80 photos of neutral male and female faces paired with 40 negative or 40 neutral target images. Greater dispositional mindfulness (r=-.38, p=.025), mindful awareness (r=-.40, p=.034), and working memory span performance (r=-.46, p=.006), and lower levels of failure to manage intrusive thoughts (r=.34, p=.048) or attention conflicts (r=.39, p=.022) were related to greater brain activity during the N2 component at frontal sites. Brain activity at N2 representing emotional control was related to mindful description of one's experiences (r=.48, p=.004) and depressive symptomology (r=.53, p=.001).

These results indicate that cognitive traits related to mindfulness, depression, and thought control strategies emerge prior to conscious processing. Implications for clinical diagnoses (e.g., depression), interventions (e.g., mindfulness training), and assessment will be discussed.

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## Paper Session 03 4:57 PM–5:15 PM 2098

### TESTING THE EFFECTIVENESS OF A BRIEF MINDFULNESS MEDITATION INTERVENTION

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Mindfulness meditation (MM), a state of active awareness of one's present thoughts and emotions without judgment, has recently become of interest for its effects on stress reduction. Research shows that MM increases positive states of mind and decreases emotional distress and deleterious physiological activity; however, little examines its effects on beneficial physiological activity such as high heart rate variability (HRV- fluctuations in intervals between consecutive heartbeats). In addition, research has focused on a multi-component MM program, with little examining the effects of singular MM techniques.

The purpose of this study was to examine the effects of the sitting MM technique on psychological and physiological functioning. The sample included 106 college students; the majority were female (64%), Caucasian (69%), and freshmen (76%), with an average age of 19 years. Participants were randomly assigned to one of two 20-minute conditions: experimental (instructional CD led sitting MM), or control (sitting quietly). Participants completed questionnaires (perceived stress, high arousal positive and negative emotions, physical and mental relaxation) and blood pressure and HRV were assessed pre- and post-condition.

Analysis of covariance found that after controlling for pre-condition levels the MM group had significantly: higher positive emotion (F=14.03, p<.001); higher mental relaxation (F=6.66, p=.011); higher low frequency norm HRV (F=4.71, p=.03) reflecting greater sympathetic nervous system activity; and lower high frequency norm HRV (F=6.4, p=.01) reflecting lower parasympathetic activity post-condition than the control group.

Sitting MM demonstrated beneficial psychological effects and greater physiological arousal. The high arousal positive emotions experienced by the MM group may account for their greater physiological arousal. These findings are consistent with previous research highlighting the complexity of MM, and how it can enhance active awareness while concurrently facilitating mental relaxation.

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## Paper Session 04 3:45 PM–4:03 PM 2099

### SYSTEMCHANGE: RESULTS OF A LIFESTYLE EXERCISE INTERVENTION TRIAL

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Maintaining long-term exercise is challenging. The purpose of this 3-group, randomized controlled trial was to test two theoretically-different behavior change interventions against a usual care (UC) group to improve lifestyle exercise after a cardiac event. In a new intervention, SystemCHANGE (SC), based on process improvement and choice architecture theories, subjects use a series of small self-designed experiments to change their daily routines to incorporate more exercise. The second intervention, CHANGE+(C+), uses contemporary cognitive behavioral approaches to change exercise behavior. Subjects (n =379; mean age=67; 27% female; 86% Caucasian) were recruited following cardiac rehabilitation and randomly assigned to one of three study arms. Subjects were followed for 12 months; objective measures of exercise were obtained from wristwatch heart rate monitors. Exercise sessions (frequency) and hours of exercise (amount) over one year were calculated. Using ANCOVA, group differences in exercise frequency and amount were determined.

Over a year, the SC group had greater exercise frequency and amount than either the C+or UC groups (frequency: SC=133, C+= 115, UC=103); (amount: SC= 126, C+= 106, UC=102). After controlling for important covariates, significant differences in exercise frequency were found among the three groups [F(2, 318)= 3.26; p=.04]. Pairwise comparisons with Bonferroni adjustment for multiple comparisons showed SC had a significantly greater number of exercise sessions than the UC group (p=.04); no difference in exercise frequency was found between the C+and UC groups. No statistical differences in exercise amount among the study groups [F(2,312)=1.39, p=.25] was found. Although the SC group had more exercise amount in all months than the C+intervention group, these differences were not statistically significant.

In summary, the positive effects of the SystemCHANGE intervention on exercise frequency in the year following a cardiac event is promising and supports the need to design and test behavior change interventions that are based on new theoretical approaches.

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## Paper Session 04 4:03 PM–4:21 PM 2100

### IMPACT OF PERSONALIZED PHYSICAL ACTIVITY (PA) FEEDBACK ON OBJECTIVELY MEASURED PA (THE FAB STUDY): A RANDOMIZED CONTROLLED TRIAL

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Interventions designed to promote PA among adults have had limited success. This may be partially due to individuals being unaware that their current PA level is inadequate, and therefore not perceiving a need to change their behavior. Personalized PA feedback may help increase awareness and motivate behavior change. 466 adults aged 32-54 years were recruited from the ongoing population-based Fenland Study (Cambridgeshire, UK), and underwent clinical, body composition, fitness, and psychosocial measurements. PA was measured continuously for 6 days and nights using combined heart rate and movement sensing (Actiheart). Participants were randomized to receive no feedback (control group, n=120), or one of three different types of feedback: *simple*, *visual*, or *contextualized* (intervention groups, n=346). PA (measured as PA energy expenditure in kJ/kg/day), intentions to increase PA (measured on a 5-point scale), and PA awareness (measured dichotomously as the agreement between self-rated PA and objectively measured PA) were remeasured 8 weeks after randomization, and regression analysis was used to estimate intervention effects at follow-up, adjusted for baseline. 407 participants completed the trial (87% retention). No intervention effect was observed on PA (β=-0.92, 95% CI=-3.50-1.66, *p*=0.48) or intentions (β=-0.05, 95% CI=-0.22-0.11, *p*=0.53). However, those who received personalized PA feedback significantly increased their awareness compared to controls (OR=1.74, 95% CI=1.05-2.89, *p*=0.03), with no difference between intervention groups (all *p*>0.05). These results suggest that although personalized PA feedback might not facilitate short-term behavior change, it does moderately increase awareness, which, according to several health behavior theories, may be an important antecedent of behavior change. Whether or not this will result in future changes in behavior remains uncertain.

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Meritorious Paper

## Paper Session 04 4:21 PM–4:39 PM 2101

### INTERNET-DELIVERED BEHAVIORAL INTERVENTION TO INCREASE PHYSICAL ACTIVITY IN PERSONS WITH MULTIPLE SCLEROSIS: SUSTAINABILITY AND SECONDARY OUTCOMES

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Background: Physical activity is associated with many benefits but persons with multiple sclerosis (MS) are less physically active than the general population. There is a critical need for research on methods of increasing and sustaining the physical activity of this population.

Purpose: This randomized controlled trial examined the efficacy of an Internet-delivered and theory-based behavioral intervention that was supplemented with video coaching for increasing and sustaining physical activity over time in persons with MS.

Methods: Physically inactive, ambulatory persons with MS (*N*=45) were randomly assigned to intervention (*n*=22) or control (*n*=23) conditions and completed a battery of questionnaires before, after, and 3-months after a 12-week intervention period.

Results: Data analyses were conducted in PASW 18.0. Partial eta squared ($\eta_P^2$) effect size indicated that there was a large, statistically significant condition by time interaction on physical activity ($\eta_P^2$=.17). Cohen's *d* effect sizes indicated that the intervention group had a large increase in physical activity after the 12-week trial (*d*=.98) and this was sustained over a 3-month follow-up (*d*=.79).

Conclusions: The current study supports the efficacy of a behavioral intervention for increasing and maintaining physical activity in a sample of persons with MS.

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## Paper Session 04 4:39 PM–4:57 PM 2102

### ADVANCED LOWER EXTREMITY FUNCTION IN OLDER ADULTS: INTERVENTION EFFECTS

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In older adults, functional limitations are associated with further disability and increased risk of institutionalization and death. Aging is associated with increased functional limitations and associated disability. Developing strategies for improving physical function is an important public health concern to maintain independence, physical health, and quality of life in this population. Sedentary, healthy older adults (n=145) participated in a 12 month RCT which consisted of two groups: 1) aerobic walking and 2) non-aerobic flexibility, toning, and balance (FTB). Functional limitations were measured at baseline, m6 and m12 using the Late-Life Function and Disability Instrument which has three subdomains: advanced lower extremity function (ALEF), basic lower extremity function (BLEF), and upper extremity function (UEF). A mixed model repeated measures multivariate ANOVA was used to examine function trajectory by exercise group. Between subjects analysis indicated no difference between group for function over time. There was a significant time by group interaction [F(6,568)=1.912, p=.07, partial η2=.077]. Decomposition of this multivariate effect indicated ALEF was driving the interaction [F(1.89,270.7)=17.397, p=.013]. BLEF and UEF remained constant across the intervention for both groups whereas ALEF demonstrated a significant quadratic trend (p<.01) in the FTB group with improvement from m0 to m6 followed by maintenance from m6 to m12. The FTB group showed improved advanced lower extremity function (such as standing up from a chair or balancing on one foot) compared to the aerobic walking group. These data suggest that a walking physical activity program is insufficient to improve complex lower body functionality in generally healthy and well-functioning older adults but physical activity targeting specific lower body functional movements is needed.

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## Paper Session 04 4:57 PM–5:15 PM 2103

### GROUP-MEDIATED ACTIVITY COUNSELING AND SELF-REPORTED PHYSICAL ACTIVITY IN OLDER, KNEE OSTEOARTHRITIS PATIENTS: EVIDENCE FROM THE IMPACT-P TRIAL

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Although exercise interventions consistently result in meaningful improvements in clinical and quality of life outcomes in knee osteoarthritis (KOA) patients, challenges in successfully promoting the adoption and maintenance of regular physical activity undermine the efficacy of efforts to integrate exercise in the management of KOA. The purpose of the Improving Maintenance of Physical Activity - Pilot (IMPACT-P) trial was to evaluate the efficacy of an exercise intervention utilizing group-mediated cognitive behavioral counseling (GMCB) that targets the development and practice of activity-related self-regulatory skills relative to a traditional exercise therapy intervention alone (TRAD) among older, KOA patients. IMPACT-P was a single-blind, randomized controlled pilot trial involving 80 KOA patients (Mage=64 yrs) who were randomly assigned to the GMCB (n=40) or TRAD (n=40) interventions. In the current study, we evaluated change in self-reported participation in moderate to vigorous physical activity (MVPA) following the 3-month intensive phase of the interventions. Self-reported MVPA was assessed at baseline and 3-month follow-up using the CHAMPS questionnaire. Mixed model ANCOVA analysis controlling for age revealed a significant Intervention x Time interaction (p<0.05). Post hoc analyses revealed that self-reported MVPA increased significantly from baseline following the GMCB intervention (d=.41) while no change (d=-.04) was observed following the TRAD intervention. The present findings suggest that the GMCB intervention elicits superior improvements in self-reported MVPA relative to a traditional exercise intervention among KOA patients. These results demonstrate the value of systematically integrating training and practice in activity-related self-regulatory skills in future physical activity promotion interventions targeting older, KOA patients.

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## Paper Session 05 3:45 PM–4:03 PM 2104

### ADHERENCE TO HIV MEDICATIONS AND EMOTIONAL/PHYSIOLOGICAL COPING WITH STRESS ARE INDEPENDENTLY ASSOCIATED WITH SPECIFIC 5-YEAR CLINICAL OUTCOME INDICATORS

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In the first longitudunal study to examine biopsychosocial links to key cytokine (IL-6) and beta-chemokine mediators of HIV progression, we have previously reported baseline, 24, and 36-month findings in 200 African-American HIV-positive individuals attending an inner-city primary care clinic. Consistent results across timepoints showed that the adjacent constructs of Type C and alexithymia (dysregulated emotional coping with stress) and dysregulated physiological responses (exaggerated reactivity/ decreased recovery) were independently and differentially associated with production of HIV-inhibiting chemokines or HIV-activating IL-6. We now report on the relationship of emotional and physiological dysregulation to 5 year clinical outcomes (viral load, CD4 count, clinical status, and HIV-related death) in the context of adherence to antiretroviral treatment (ART), factors which, to our knowledge, have never been considered together in the same study. Multivariate regressions were performed including the 166 participants for whom we could obtain clinical outcome indicators. Considering the 5-year outcome measure of CD4 count, the best (negative) predictors were baseline and stable (i.e., consistent over time) dysregulated emotional (Type C) coping with stress, which was mediated by increased IL-6 (hypothetically by increasing immune activation). This significant relationship was not diminished when controlled by adherence or medication factors. HIV-1 RNA (viral load), indicative of treatment success or failure, was best predicted by consistent optimal adherence to ART, with heart rate reactivity/recovery making a smaller but still significant and independent contribution. There was a significant interaction of adherence with alexithymia, which appeared to be mediated by HIV-inhibiting beta-chemokines. Results suggest that there may be distinct biobehavioral pathways and immunological mediators by which behavioral and psychosocial/stress factors may contribute to HIV progression.

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## Paper Session 05 4:03 PM–4:21 PM 2105

### FATALISM, ADHERENCE, AND TREATMENT SELF-EFFICACY IN LATINOS LIVING WITH HIV/AIDS ON THE U.S.-MEXICO BORDER

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Fatalism as a stable individual difference variable has been shown to predict adherence to medical regimens in chronic illness. Anecdotal reports have suggested that fatalism and its impact on health may be greater among Latinos, but data remain equivocal on the topic. Additionally, self-efficacy figures prominently in most theoretical models of health behavior and tends to predict treatment adherence well, regardless of culture or acculturation. We hypothesized that treatment self-efficacy would mediate the association between fatalism and HIV medication adherence. We also tested the moderating effect of acculturation on the association between fatalism and adherence. We conducted questionnaire and interview assessment with 270 HIV-positive Latinos attending a clinic in El Paso, TX (52% Spanish speaking, 48% English speaking). Participants completed the Multidimensional Fatalism Scale (MFS), the HIV Treatment Adherence Self-Efficacy Scale (HTASES), and a Visual Analog Scale (VAS) of medication adherence. Fatalism significantly predicted adherence (r=-.21, p<.01), as well as self-efficacy (r=-.32, p<.01), and there was a significant correlation between self-efficacy and adherence (r=.43 p<.01). The effect of fatalism on adherence was partially mediated by self-efficacy (Sobel test=-.443, p<.01), but the original path remained significant (r=-.07, p<.05). Language preference, as a proxy for acculturation, did not significantly moderate the association between fatalism and adherence. Indeed, English-speaking Latinos demonstrated a lightly larger association between fatalism and adherence (r=-.26, p<.01) compared to Spanish-speaking Latinos (r=-.14, p=.18), though the difference in correlations was not significant. These results suggest that the effect of fatalism on nonadherence may be accounted for largely by lower self-efficacy, and that fatalism's effect is clearly not larger among less acculturated Latinos than among more acculturated Latinos.

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## Paper Session 05 4:21 PM–4:39 PM 2106

### MULTI-METHOD ASSESSMENT OF DISTRESS TOLERANCE IN RELATION TO TWO OBJECTIVE MEASURES OF MEDICATION ADHERENCE AMONG HIV+INDIVIDUALS

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Preliminary evidence suggests that greater distress tolerance (DT) is associated with better self-reported antiretroviral medication adherence among HIV+individuals (O'Cleirigh et al., 2007). Though this evidence provides an important "first step" in the literature, there has yet to be an examination of the relation between DT and medication adherence using objective measures of adherence. Further, recent evidence suggests that a multi-method approach is needed when evaluating DT (e.g., Marshall-Berenz et al., 2010), rather than the utilization of a single measure (e.g., self-report). The present study aimed to replicate and extend the findings of O'Cleirigh and colleagues (2007), utilizing 2 objective measures of antiretroviral adherence (i.e., pill count and viral load), and 2 measures of DT (i.e., Distress Tolerance Scale [DTS; Simons & Gaher, 2005] and Mirror Tracing Task [MT; Quinn et al., 1996]) among a sample of 124 HIV+individuals (81% male, $M_{age}$= 49 years). Participants' average overall medication adherence was 82%. Two regressions were computed, with each measure of adherence serving as a separate outcome, negative affectivity (NA) serving as a covariate at step 1, and both measures of DT serving as simultaneous predictors at step 2. After controlling for NA, the DTS was associated with pill count adherence ($\beta=.23$, $p=.03$), while the MT was not ($\beta=-.05$, $p=.60$). Conversely, after controlling for NA, the MT was a significant predictor of viral load ($\beta=.98$, $p=.04$), with greater task persistence associated with a greater likelihood of an undetectable viral load, whereas the DTS was not ($\beta=.85$, $p=.67$). Findings suggest that greater DT is related to improved HIV medication adherence, with different measures/aspects of DT predicting different measures of adherence. Findings suggest that improving tolerance of distress may be critical for disease management among those with HIV.

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## Paper Session 05 4:39 PM–4:57 PM 2107

### SOCIAL-COGNITIVE CORRELATES OF ANTIRETROVIRAL THERAPY ADHERENCE AMONG HIV+INDIVIDUALS

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High levels of antiretroviral therapy (ART) adherence are required to achieve optimal viral suppression and prevent the development of drug-resistant HIV strains. To better understand mechanisms associated with ART adherence, this study characterized demographic and social-cognitive correlates of ART adherence among HIV+clinic patients (n=116; 42% female; 43% African-American). Participants completed an ACASI survey assessing demographics, social-cognitive constructs, and ART adherence; participants' most recent viral load was obtained from their medical charts. Suboptimal ART adherence (i.e., taking less than 95% of prescribed medications during the past month) was reported by 39% of participants and was associated with being female ($\chi2$=7.27; p=.01), being a minority ($\chi2$=7.05; p=.01), and having a detectable viral load ($\chi2$=7.89; p=.006). In a hierarchical logistic regression analysis, greater than 95% ART adherence was associated with higher levels of adherence self-efficacy (AOR= 1.12; p=.02), higher perceived normative beliefs about the importance of ART adherence (AOR=1.32; p=.008), and intentions to miss fewer ART doses (AOR=.67; p=.002). Adherence did not differ based on ART outcome expectancies, ART attitudes, or the perceived necessity of ART. In fact, most participants endorsed positive attitudes and expectancies regarding the need for and effectiveness of ART. Taken together, results indicate that sub-optimal adherence remains high in among HIV+minority women, a sub-population that experiences particularly high rates of chronic stress due to both illness specific stressors and broader environmental stressors. Consistent with Social-Cognitive Theory, adherence problems in our sample were linked with deficits in self-efficacy as well as perceived norms and behavioral intentions that do not support a goal of 100% adherence. We suggest that interventions to improve adherence should a) target patients who are at risk for adherence problems, b) provide a supportive environment that promotes high-rates of adherence, and c) addresses inaccurate beliefs regarding optimal adherence levels.

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## Paper Session 05 4:57 PM–5:15 PM 2108

### TRAUMA HISTORY AND DEPRESSION PREDICT REPORTED INCOMPLETE ADHERENCE TO ANTIRETROVIRAL THERAPIES IN A LOW INCOME SETTING

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Background: Globally, an estimated 33.4 million people are living with HIV infection, with over two-thirds living in sub-Saharan Africa. Recently, international funding has made HIV/AIDS treatment a reality in many less wealthy nations. Treatment success depends on strict adherence to medication regimens. Past studies in low income countries have found that factors such as distance to care, cost and depression predict medication adherence, while in the US, past traumatic events have also been found to predict medication adherence.

Methodology: The Coping with HIV/AIDS in Tanzania (CHAT) study is an observational cohort study of 1,197 randomly selected participants from the two local hospitals, multiple voluntary counselling and testing (VCT) sites, and adults from the surrounding community (Kilimanjaro Region), whose HIV status was unknown. Bivariate and multivariate regression analyses were used to predict reported HIV/AIDS medication adherence.

Results: Bivariate analyses of adherence with age, gender, education, marital status, religion, ethnicity, household assets, medication expenditures, sacrificing health care for other necessities, distance to medical clinic, distrust, stigma, social support, depression and traumatic events found that the experience of childhood and lifetime traumatic events, depression, and having to sacrifice health care for other necessities were significantly associated with adherence (p-values<0.05). Because depression and trauma and depression and sacrificing care were correlated, interaction terms were included (trauma*depression and depression*sacrificing care) in the multivariate model. The independent associations held in the multivariate model (p-values <0.05).

Conclusion: The experience of childhood and lifetime traumatic events and depression are important predictors of adherence to HIV/AIDS related medications. Mental health services will be important to helping persons with HIV/AIDS adhere to medication regimens as will providing additional services for those most impoverished. Additional funding may be needed for these services.

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## Paper Session 06 3:45 PM–4:03 PM 2109

### CLINIC-INTEGRATED BEHAVIORAL INTERVENTION FOR FAMILIES OF YOUTH WITH TYPE 1 DIABETES: EFFECTS ON GLYCEMIC AND FAMILY MANAGEMENT OUTCOMES

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The complex family and regimen issues surrounding care of pediatric type 1 diabetes suggest the need to integrate family management strategies into routine clinical care. Families of children age 9 to 15 with type 1 diabetes (n=390, 49.2% female, age 12.4±1.7, A1c 8.4±1.2, 33.8% pump) at four pediatric endocrinology clinics in diverse U.S. geographic locations participated in a 24-month randomized clinical trial of a clinic-integrated behavioral intervention designed to improve family diabetes management practices. Outcomes included HbA1c (analyzed centrally at a reference laboratory), blood glucose meter data, semi-structured interview of adherence, and survey measures of diabetes-related family conflict, parent involvement in diabetes management, and youth self-efficacy for diabetes management. Analyses included two-sample t-tests at pre-defined time intervals and mixed-effect linear-quadratic models to assess for difference in change in outcomes across the study duration. A significant overall intervention effect on change in glycemic control from baseline was observed at the 24-month interval (p=.03). The mixed-effect model showed a significant intervention by age interaction (p<0.001). Among participants ages 12 to 14 a significant effect on glycemic control was observed (p=0.009 for change from baseline to 24-month interval; p=.035 for mixed effect model across study duration), but there was no effect among those ages 9 to 11. There was no intervention effect on adherence, frequency of blood glucose monitoring, diabetes-related family conflict, parent involvement in diabetes management, or youth self-efficacy for diabetes management. This clinic-integrated behavioral intervention was effective in improving glycemic control among adolescents with type 1 diabetes; however, the absence of an effect on hypothesized mediators suggests the importance of exploring varying theoretically-grounded mechanisms by which behavioral interventions could impact health outcomes in this population.

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## Paper Session 06 4:03 PM–4:21 PM 2110

### THE ROLE OF SELF-EFFICACY AND KNOWLEDGE ON PATIENT RESPONSIBILITY IN YOUNGER VERSUS OLDER YOUTH WITH TYPE 1 DIABETES (T1D)

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The shift of diabetes care from parent to child is a tenuous one, often resulting in poor diabetes outcomes by adolescence. Self-efficacy and diabetes knowledge are two constructs that may be useful in identifying patients who are better suited to increased responsibility. This study explored the roles of self-efficacy and knowledge with patient responsibility and diabetes outcomes in older and younger T1D patients. Ninety participants ages 10-18 were seen at Seattle Children's Hospital for a research visit (mean age=13.9±2.3; diabetes duration=5.3±3.4 yrs; 54% female; 92% NHW; mean A1c=8.4±1.5). Youth and parents completed a survey battery of demographic, psychosocial, and family variables. Chart review was completed for clinical variables. Older patients (ages 14-18, n=39) reported more responsibility than younger patients (ages 10-13, n=51; p<.001), but also had worse A1c (8.8±1.7 v. 8.1±1.2, p<.05) and self-care (54.8±10.3 v. 64.9±11.1, p<.001). Self-efficacy and knowledge were associated with patient responsibility in the younger group (r=.50, p<.001, r=.32, p<.05 respectively) but not the older group. When examining the association of these variables with A1c and self-care, self-efficacy was associated with both outcomes (r=-.35, .37 respectively, p's<.05) in the older group. These results elucidate the importance of self-efficacy and knowledge in the shift of diabetes care from parent to patient. Patient responsibility in the younger group was strongly associated with self-efficacy and knowledge, suggesting that parents give more responsibility to their younger child when their efficacy and knowledge are high. This was not true in the older group, which may suggest that parents expect an older child to be ready for self-management based on age alone. However, given the poor outcomes in this group, self-efficacy may be a particularly important factor to assess as older patients with higher self-efficacy had better outcomes.

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## Citation Paper

## Paper Session 06 4:21 PM–4:39 PM 2111

### CLUSTER ANALYSIS VERSUS LINEAR REGRESSION IN LONGITUDINAL EVALUATION OF INDEPENDENCE, FAMILY CONFLICT, ILLNESS INTRUSIVENESS, AND SELF-MANAGEMENT OUTCOMES FOR PEDIATRIC DIABETES

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Independence in self-management, parent-child conflict regarding self-management, and perceived illness-intrusiveness were measured longitudinally for 174 11-18 year-old individuals with type1 diabetes, and compared to self-management behavior (SCI) and glycemic control (HbA1c). Using hierarchical multiple regression to investigate the linear relationship between variables revealed that Time1 perceived illness-intrusiveness was the only psychosocial variable to predict SCI at time2 (Partial R=-.27, p<.004), beyond Time1 SCI scores (partial R=.5, p<.001); and Time2 HbA1c was predicted by only Time1 conflict (partial R=.29, p<.002), beyond Time1 HbA1c (Partial R=.39, p<.001). However, when subjected to nonlinear assessment, using cluster analysis, four groups emerged (successfully independent patients [SI], stressed independent patients [USI], stressed moderately dependent patients [MOD], and dependent patients [DEP]). Repeated Measures ANOVAs assessing Cluster Groups' (CG) differences on SCI and HbA1c found no Time1-Time2 differences or Time X CG interactions for SCI or HbA1c, but did find overall CG differences in SCI (F(3)=5.6, p<.001) and HbA1c (F(3)=2.8, p =.044). Cluster analyses run at Time2 indicated similar overall CGs, and indicated that a) 58.3% of patients remained in the same CG, b) 22.1% of the sample changed from USI, MOD, or DEP to SI cluster membership; c) 4.8% changed from less independent to more independent CGs (but not to SI), and d) that 15.1% changed from more independent to less independent CGs. These four categories of CG Change (a-d, above) differed significantly (F(3)=2.7, p=.05) in difference from Time1 HbA1c to Time2 HbA1c, and those who changed from other CGs (a, c, or d above) to SI (b above) showed significantly more improvement in SCI from Time1 to Time2 (F(1)=4.6, p<.032). Implications for children's transition from parent-management to self-management in type1 diabetes, and for family interventions will be overviewed.

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## Paper Session 06 4:39 PM–4:57 PM 2112

### LONGITUDINAL PREDICTORS OF PARENTAL INVOLVEMENT AND TYPE 1 DIABETES MANAGEMENT ACROSS ADOLESCENCE

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Parental involvement in type 1 diabetes management declines rapidly across adolescence and such declines are associated with poor diabetes management, especially when they do not match adolescents' diabetes management skills. Cross sectional studies suggest many developmental processes cue transfer of responsibility from parent to child, but these have not been examined longitudinally. We examined whether: 1) longitudinal decline in parental involvement occurs as a function of developmental growth in age, pubertal status, autonomy, or self-efficacy; and 2) these developmental processes predict declines in adherence across adolescence. Adolescents with type 1 diabetes (N=252; 54% female; aged 10-14 years at Time 1), and their mothers and fathers (N=188) individually completed measures of adolescent autonomy, self-efficacy for diabetes, parental involvement, and adherence every six months for 2.5 years (6 waves). In a series of growth models, declines in parental involvement occurred as a function of growth in adolescent efficacy for both teen and mother reports (unstandardized coefficients =-.087 and -.160, ps<.05), but not father report (p>.10), and as a function of growth in pubertal status for teen report (-.293, p<.05) but not mother or father reports (p>.10). Growth in autonomy did not predict declines in involvement for any reporter. When growth in efficacy and pubertal status were entered as simultaneous predictors, each was uniquely associated with declines in parental involvement for teen and mother reports (p<.05), but not father reports (p>.05). Finally, these developmental processes were associated with longitudinal change in adherence; more rapid pubertal growth was associated with more rapid declines in adherence (-.521 and -.980, ps<.05 for mother and father reports), while efficacy moderated parental involvement associations with adherence.

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## Paper Session 06 4:57 PM–5:15 PM 2113

### FALLING REACTIVITY AND ADHERENCE IN ADOLESCENTS WITH TYPE 1 DIABETES

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Chronic prolonged reactivity to perceived stress is consistently related to physical health. Individual differences in falling reactivity, i.e. speed of return to baseline, may influence health behavior through cognitive and social processes. This pathway has yet to be explored in adolescents with type 1 diabetes (T1D). Increased reactivity reduces cognitive analysis (CA) flexibility (i.e. awareness of/capacity to access alternative solutions; Alexander et al., 2005), and is related to poorer family communication (FC) during adolescence (Eisenberg et al., 2008). Thus, in arousing contexts, adolescents with prolonged falling reactivity likely engage in less flexible problem solving related to health behavior and experience poorer FC around diabetes management. Also, prolonged falling reactivity, decreased CA, and poorer FC are each related to decreased self-efficacy (Bandura, 1977; Torres & Solberg, 2001), a predictor of adherence. We hypothesized that adolescents' perceived falling reactivity would predict adherence and that CA, FC, and self-efficacy for diabetes management (SEDM) would mediate that relation. Also, we expected that the relations of CA and FC with adherence would be partially mediated by SEDM. Adolescents with T1D (n=147, M Age=13.50, 47% male) completed the Falling Reactivity (Derryberry & Rothbart, 1988), Self-Care Inventory (SCI; La Greca et al., 1990), FACES IV Family Communication (Olsen, Gorall, & Tiesel, 2006), Cognitive Analysis (Moos, 1993), and Self-Efficacy for Diabetes Management (Ianotti, 2006) scales. Structural equation modeling analyses supported our hypotheses ($X^2(2)$=2.96, p=.23; RMSEA=.057; CFI=.991; $R^2$ SCI=.40). There were significant indirect effects of falling reactivity on SCI through CA, FC, and SEDM (all p's<.02). The analysis supported partial mediation of CA and FC on SCI through SEDM. These findings suggest that falling reactivity is related to adherence through cognitive and family processes. These variables may represent key components of intervention for adolescents with T1D, as intervention gains frequently do not generalize to arousing contexts during adolescence.

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## Paper Session 07 3:45 PM–4:03 PM 2114

### THE RELATIONSHIPS AMONG STRESS, MULTIPLE RISK BEHAVIORS AND HEALTH-RELATED QUALITY OF LIFE IN LUNG CANCER PATIENT-FAMILY MEMBER DYADS

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Although a growing number of studies identified that health behaviors among cancer survivors and the general population have been associated with improved health-related quality of life (HR-QOL), the underlying mechanisms influencing these relationships are poorly understood. One potential mechanism is that stress may affect HR-QOL by influencing health behaviors (diet, alcohol, physical activity, and smoking). The purposes of this study were to examine the relationships among stress and health behaviors and to examine the relationships among stress, multiple risk behaviors and HR-QOL in lung cancer patient-family member dyads. Cross-sectional data were collected once from 37 lung cancer patient-family dyads. Standardized questionnaires were used to collect demographic and behavioral data. Descriptive statistics, Wilcoxon sum rank tests and linear regression were used for analyses. Fifty-seven percent of family members in the sample were spouses or unmarried partners and 43% were adult children. Results indicated that patients who had higher stress were more likely to eat a healthy diet as compared to those with less stress (p=.04). No relationships were noted between stress and any of the individual health behaviors among family members. In the univariate analysis, increased stress was associated with lower emotional HR-QOL among patients (p<.0001) and a decreased number of risk behaviors were marginally associated with increased stress (p .07) among patients. In the multivariate analysis, lower emotional HR-QOL was associated with increased stress (p=.0002). Among family members, only lower emotional HR-QOL was associated with increased stress in univariate analysis (p<.0001). These findings suggest that heightened stress may influence positive behavioral change in diet among patients with lung cancer and addressing stress levels may be an important target to enhance emotional HR-QOL among both patients and their family members.

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## Paper Session 07 4:03 PM–4:21 PM 2115

### PERCEPTIONS OF HEALTH STATUS AND SURVIVAL IN PATIENTS WITH METASTATIC LUNG CANCER

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Background: Among patients with metastatic lung cancer, clinician-rated performance status and self-reported physical and functional wellbeing are strong predictors of survival. Yet, little is known about how perceptions of health status vary over time in this population. We examined whether perceptions of health status, measured across four time points, were associated with survival in a sample of patients with metastatic non-small cell lung cancer (NSCLC).
Methods: In this secondary analysis of an early palliative care trial of patients with newly-diagnosed metastatic NSCLC, we assessed perceptions of health status at enrollment and at 12, 18, and 24 weeks. Patients reported whether they were a) relatively healthy; b) seriously but not terminally ill; or c) seriously and terminally ill. Also, patients completed measures of quality of life (FACT-TOI) and mood (HADS) at each time point. We gathered data from the electronic medical record on prognostic factors, such as age, sex, performance status, initial chemotherapy, smoking status, and presence of brain metastasis.
Results: 151 patients with metastatic NSCLC enrolled in the clinical trial (51.7% female; 97.4% White; age M=64.92, SD=9.54). At baseline, 48.6% reported that they were relatively healthy whereas the remainder noted that they were either seriously but not terminally ill (37.7%) or seriously and terminally ill (12.3%). Controlling for study group assignment, demographic variables, and prognostic factors including time-varying FACT-TOI scores, patients' perceptions of health status across the four assessment periods remained a significant predictor of survival (Cox-Proportional HR=1.70, 95% CI=1.20-2.40, p=.003).
Conclusion: Soon after diagnosis, only a minority of patients with metastatic NSCLC, an incurable illness, believed they were terminal. Those who initially or eventually reported that they were seriously and terminally ill had shorter survival compared to those who considered themselves not terminal, even after adjusting for decline in physical and functional wellbeing, among other known prognostic factors.

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## Paper Session 07 4:21 PM–4:39 PM 2116

### PERSONAL BLAME AND REGRETFULNESS IN LUNG CANCER DIFFER BY SMOKING STATUS

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Introduction: Stigma and personal blame have recently been quantified in studies of lung cancer, and smoking has been identified as a stigmatized behavior in lung cancer. However, there is little research on differences in these constructs between current, former, and never smokers in the lung cancer literature.
Method: Lung cancer survivors were recruited from two southern California medical centers (City of Hope Medical Center and Loma Linda University Medical Center). Participants in the cross-sectional study were recruited via telephone and sent questionnaires via mail. A factor-analyzed scale contained three factors: Personal Blame (PB), Regretfulness (R), and Medical Blame (MB).
Results: Significant univariate correlates of PB, R, and MB were entered into hierarchical models to determine significant independent correlates of the factor scores for the study sample (N=220). Smoking status was significantly associated with PB (ΔR2=.24) and R (ΔR2=.07) scores (p's=.001) such that current and former smokers scored significantly higher than never smokers on both factors (p's<.009). Time since diagnosis (β=.22, p=.003) and trauma (β=.21, p=.02) were positively related to R scores. Lower satisfaction with healthcare was inversely associated with higher MB, β=-.42, p<.001. A sex X smoking status interaction on PB was found (ΔR2=.04, p=.002), such that females scored significantly higher on the PB factor compared to males (t(136)=3.27, p=.001) within the former smoker group, and no other significant differences between sexes within current and never smoking groups were found on PB scores.
Discussion: Lung cancer survivors who are current and former smokers experience more PB and R and similar levels of MB when compared to never smokers. There is evidence that female former smokers experience more PB than males who formerly smoked. Future studies should investigate the effects of PB, R, and MB on survival and psychosocial variables across smoking groups in lung cancer.

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## Paper Session 07 4:39 PM–4:57 PM 2117

### PREPARE: INITIAL RESULTS FROM A RANDOMIZED INTERVENTION TRIAL

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Objective: and Patients Head and neck cancer patients receiving large-field radiation must do swallowing exercises to retain swallowing function post-treatment. Due to challenging radiation side effects, adherence to these exercises is low. To address adherence, we developed a self-regulation program called PREPARE. Preliminary results are presented regarding adherence and self-reported swallowing function at 3 and 6 months.
Methods: PREPARE is a weekly coaching program developed by former patients and a multidisciplinary team of behavioral scientists, GI specialists, speech pathologists and radiation oncologists. Recipes, motivational quotes, practical strategies, stress management, and communication skills are provided during radiation to facilitate coping and increase adherence to swallowing exercises. Patients are randomized to either PREPARE or usual care at the beginning of radiation and assessed for up to 1 year afterward.
Results: Recruitment success is 91%, with 164 participants randomized thus far. PREPARE patients reported higher adherence on the General Adherence Scale to swallowing exercises (M=64) compared with controls (M= 51;p=.03). As for swallowing function, effects trended toward significance for reduced tube-feeding dependence at 3 months (p=.07; n=60) and for normal diet with no restrictions at 6 months (p=.09; n=35). Of the 32 participants who completed PREPARE, 86% rated the counselor as helpful or very helpful in improving adherence and 70% rated the program as very important compared to their other sources of medical care.
Conclusion: Preliminary response is enthusiastic. Collaborating with patients/consumers and treatment providers in the design of the intervention seems to have resulted in a practical program that does not present itself as mental health counseling. If its efficacy is demonstrated, PREPARE holds the promise of being readily disseminated into community cancer settings.

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## Paper Session 07 4:57 PM–5:15 PM 2118

### THE ASSOCIATION OF FEAR OF RECURRENCE WITH LIFESTYLE BEHAVIORS AND QUALITY OF LIFE IN HEAD AND NECK CANCER SURVIVORS

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As cancer patients transition into cancer survivors, they face new challenges. Fear of recurrence (FOR) may be particularly salient for survivors of highly recurrent cancers, such as head and neck cancer (HNC).
This study assessed the relationships between perceived FOR and various lifestyle behaviors and health related quality of life (HRQOL) among HNC survivors.
As part of a prospective study of HNC outcomes, a subset of patients (N= 141, mean age=64.32 years, 58% male) completed the Fear of Cancer Recurrence Inventory (FCRI) "Severity" subscale to measure their FOR. HNC-specific.HRQOL was measured using the Head and Neck Cancer Inventory (HNCI), and lifestyle behaviors were measured using the Personal Lifestyle Questionnaire (PLQ).
60.1% of participants reported clinically significant levels of FOR, with no significant difference by gender (χ2(1, n=138)=.097, p=.755). Across each domain captured by the HNCI, FOR had a significant negative association with HRQOL: eating (r=-.282, p=.001), speech (r=-.222, p=.009), aesthetics (r=-.293, p=<.001), and social disruption (r=-.356, p=<.001). Furthermore, FOR was negatively associated with overall lifestyle behaviors (r=-.170, p=.046) and, more specifically, with relaxation behaviors (r=-.243, p=.004). Thus, higher levels of FOR were associated with lower HRQOL and poorer lifestyle behaviors. Tobacco use, however, decreased as level of FOR increased (r=-.301, p=<.001). All correlations remained significant after accounting for age, gender, and time since diagnosis.
These results suggest that FOR is associated with a range of lifestyle, tobacco use, and HRQOL factors and should be considered in the assessment of HNC survivors. Since tobacco use is known to be associated with higher HNC recurrence rates, patients experiencing FOR may be particularly motivated to avoid tobacco use following treatment.

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## Citation Paper

## Paper Session 08 3:45 PM–4:03 PM 2119

### KNOWLEDGE DEFICIT OR DEFENSIVE PROCESSING? EXAMINING EXPLANATIONS FOR REPORTING “I DON’T KNOW” TO RISK PERCEPTION QUESTIONS

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Purpose: Perceived risk is a central theoretical construct in health behavior research. Participants who respond “don’t know” (DK) to perceived risk items are usually excluded from analyses. Yet this group may be characterized by unique cancer information needs. We tested whether responding DK to colon cancer perceived risk items reflected true lack of knowledge about risk or defensive processing. Method: Data from the 2005 iteration of the US population-based representative Health Information National Trends Survey (HINTS; $N=1782$) and a hospital-based primary care clinic survey of minority, low SES residents of Queens, NY (Queens; $N=769$) were analyzed. Multivariate logistic regressions were conducted to identify unique predictors of DK responding (adjusting for demographic characteristics and family history of colon cancer). Results: In HINTS, DK prevalence was 7.5% (absolute risk) and 8.7% (comparative risk). In Queens, which offered an explicit DK option, prevalence was higher: 49.1% (absolute risk) 69.3% (likely/unlikely). None of the 6 tests of the defensive processing hypothesis was supportive. Worry about cancer, avoiding screening due to fear, and low perceived control were not associated with increased odds of responding DK ($ps>.05$). Of 12 tests of the knowledge deficit hypothesis, 7 were supportive ($p\leq.05$) and 3 were supportive at the trend level ($p<.10$). Greater knowledge of colon cancer screening, reading the health section of the newspaper, having looked for health information on the internet, having sought cancer information, self-efficacy for seeking cancer information, and numeracy were associated with lower odds of responding DK. Discussion: People who report that they don’t know their colon cancer risk may have low health knowledge and/or low health literacy. Health behavior research and theory could benefit from including DK responders, who may require unique interventions to address deficits in cancer risk knowledge.

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## Paper Session 08 4:03 PM–4:21 PM 2120

### NEUROCOGNITIVE FACTORS IN RISK BEHAVIOR: REWARD SENSITIVITY VERSUS LOSS AVERSION

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Neuropsychological research has demonstrated associations between decision-making deficits (e.g. reward sensitivity, myopia to future consequences) and substance use, while behavioral research has linked similar deficits to HIV risk behavior. This study was designed to investigate neurocognitive factors in HIV risk behavior among sexually active, substance-using MSM between the ages of 25 and 50 ($n=175$). Participants were stratified by HIV status (verified through rapid testing) and sexual risk behavior in the past 60 days (high risk=≥ 2 unprotected anal sex acts; low risk= 100% condom use). Participants completed the Iowa Gambling Task (IGT) and a variant of the IGT, which are neuropsychological assessments designed to identify hypersensitivity to reward and hypersensitivity to punishment, respectively. General linear modeling (adjusting for demographics and HIV-status) revealed a significant association between reward sensitivity and sexual risk-taking; higher scores on the IGT were associated with a higher percentage of unprotected anal sex acts ($p<.01$) and a higher percentage of high risk sex acts under the influence ($p<.01$). Analyses also revealed a significant interaction among neuropsychological measures, such that IGT variant scores (i.e. loss aversion) predicted sexual risk-taking only among those with high reward sensitivity. Individuals who scored high on reward sensitivity but low on loss aversion reported an average of 24.3 high-risk sex acts in the past 60 days. In contrast, those who scored high on reward sensitivity and high on loss aversion reported NO high-risk sex acts ($p<.01$). These data provide support for the importance of neurocognitive measures of both reward sensitivity and loss aversion in understanding risk perception and sexual risk-taking. These findings have important implications for HIV/STD prevention and other efforts to promote sexual health.

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## Paper Session 08 4:21 PM–4:39 PM 2121

### EFFECTS OF A DECISION AID AND ADDITIONAL DECISIONAL COUNSELING ON CARDIAC RISK REDUCTION BEHAVIOR AND HEALTH OUTCOMES

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Purpose: To evaluate the effects of a Decision Aid (DA) designed to assist cardiac patients in lifestyle changes, with and without additional individual decisional counseling (DC) on health outcomes and health-related quality of life (HRQoL), mediated by adherence to cardiac risk reduction behavior.

Methods: In this prospective, 3-group RCT with 4 repeated measures over 6 months 363 patients examined for coronary artery disease were randomized into group I who received, for take home, the DA; group II who received DC in addition to the DA; and a usual care control group. Outcomes were: BMI, cholesterol, blood pressure, tobacco use, and HRQoL (primary outcomes), adherence to cardiac risk reduction behavior (intermediate outcome), and knowledge, benefits and barriers of cardiac risk reduction behavior, and health beliefs (mediators).

Results: There were no significant group differences between patients in group I who received the DA only and the control group. However, patients who received DC in addition to the DA, had a significant decrease in BMI ($p=.016$), and significantly improved HRQoL on several dimensions: physical role functioning ($p=.021$), general health ($p=.049$), vitality ($p=.025$), role function limitation ($p=.022$) and disease perception ($p=.006$) compared to the control group six months after the intervention. Furthermore group II had a significant decrease in perceived barriers to cardiac risk reduction behavior ($p=.020$) two months post intervention. There were no significant differences in adherence to cardiac risk reduction behavior between any of the groups.

Conclusion: The DA alone did not improve health behaviors or outcomes. However, combining the DA with additional counseling supported patients to individually tailor their behavior to their health beliefs and preferences, resulting in better health outcomes and health-related quality of life.

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## Citation Paper

## Paper Session 08 4:39 PM–4:57 PM 2122

### RANDOMIZED TRIAL TO EVALUATE AN INTERVENTION TO INCREASE INFORMED DECISION-MAKING REGARDING PROSTATE CANCER SCREENING AMONG LATINOS

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OBJECTIVE: Conduct a randomized trial to assess the effectiveness of an intervention to increase informed decision-making (IDM) about prostate cancer screening (PSA testing) among Latino men.

METHODS: Low income Latino men aged 50-70 ($N=1044$) were recruited from community sites in Los Angeles. The trial design included in-person baseline interviews, followed by randomization into the two study groups, intervention delivery, and a 6-month telephone follow-up to assess IDM and other outcomes. Intervention participants attended a small group discussion, led by a lay health educator, on the pros and cons of screening and the importance of making an informed screening decision. Controls received a pamphlet about PSA testing. A composite measure of IDM was developed for the study comprised of three components: knowledge of prostate cancer and screening, communication with a physician or family/friends about screening, and deliberation about the screening decision.

RESULTS: Intent-to-treat analyses revealed a significant effect of the intervention ($p=.001$) on the IDM composite score and two of the three components: knowledge and communication. Intervention participants were more likely to have received a PSA test than controls (36% vs. 29%, $p=.03$). Groups did not differ significantly in decisional satisfaction or conflict.

DISCUSSION: This study is among the first to demonstrate the effectiveness of an intervention to enhance PSA IDM among low income Latinos. Results suggest that IDM interventions in underserved groups may increase PSA testing, in contrast to research that has documented reductions in testing associated with IDM. Community settings may be particularly appropriate for IDM interventions with underserved Latinos given their limited health care access and lack of opportunity for shared decision making with their physicians.

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## Paper Session 08 4:57 PM–5:15 PM 2123

### MEN'S PROSTATE CANCER AWARENESS CHURCH TRAINING (M–PACT) PROJECT: INTERVENTION DEVELOPMENT AND FORMATIVE RESEARCHCT

Cheryl L. Holt, PhD,[1] Darlene R. Saunders, PhD,[1] Tony Whitehead, PhD,[1] Jimmie Slade, MA,[2] Bettye Muwwakkil, PhD,[3] Min Qi Wang, PhD,[1] Ralph Williams, BS,[3] Emily Schulz, PhD[4] and Michael Naslund, MD[5]

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The objective of the Men's Prostate Awareness Church Training (M–PACT) Project is to develop and evaluate a spiritually-based educational intervention to increase informed decision making (IDM) for prostate cancer screening, to be delivered to African American men in church settings. The intervention will be delivered in peer group men's health educational sessions, by trained and certified Community Health Advisors. An advisory panel of community leaders and stakeholders was convened, informing all aspects of the project (e.g., name, logo, content). To inform and pilot the intervention content, the team conducted several rounds of focus groups as well as individual interviews with African American men age-eligible for screening. The first series of focus groups revealed that local access to health services was a significant challenge, and that men have competing concerns (e.g., unemployment, mental health, shelter, providing for family) that hinder regular checkups. In addition, the feasibility of a health information technology addition (e.g., text messaging) to the intervention was explored as a potential value added component. The intervention was pilot tested in additional focus groups and individual interviews, and made ready for piloting with the first church educational group. The finalized intervention will be evaluated in a randomized trial among 20 African American churches, to determine its impact on IDM. The feasibility of the health information technology component will be evaluated in terms of whether the men received, read, and liked the messages, as well as if they resulted in increased efficacy of the overall intervention.

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## Paper Session 09 3:45 PM–4:03 PM 2124

### RESPONSE OF FAST FOOD RESTAURANTS TO THE FIRST U.S. TOY ORDINANCE: YEAR ONE RESULTS

Jennifer Otten, PhD, RD,[1] Eric Hekler, PhD,[2,1] Matthew P. Buman, PhD,[2,1] Brian E. Saelens, PhD,[3] Rebecca A. Krukowski, PhD[4] and Abby C. King, PhD[1]

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On August 9, 2010, Santa Clara County, CA became the first US jurisdiction to implement an ordinance that prohibits restaurants from distributing toys/incentives in conjunction with foods or beverages not meeting nutritional criteria. Restaurants could comply in multiple ways, such as having more healthful menu options or changing marketing or toy distribution practices. From June 2010 to July 2011, we assessed children's menu items, child-directed marketing, and toy distribution practices at fast food restaurants before and after ordinance implementation (June, Sept., Nov. 2010; March, June 2011) at ordinance-affected restaurants (n=4) with matched unaffected same-chain restaurants (n=4) using the Children's Menu Assessment (CMA) tool. We also evaluated for chain-wide policy changes that would affect the CMA score by conducting internet searches, interviewing corporate officials, and verifying these via direct observation. In the first 6 months, improvements in CMA scores were recorded at ordinance-affected restaurants due to changes in on-site nutritional guidance; promotion of healthy meals, beverages, and side items; and toy marketing and distribution activities; minimal changes were recorded at unaffected restaurants. We observed no chain-wide policy changes during months 1-6. During months 6-12, chain-wide policies were implemented and improvements were seen at both affected and unaffected restaurants; chains made changes to children's entrees (e.g., sodium reduction), side item offerings, promotion of healthy menu items, and toy marketing and distribution practices. For example, one chain discontinued the sales of toys and introduced apples as a children's side item at franchises nationwide. The ordinance appears to have positively influenced children's menus, marketing, and distribution practices directly at ordinance-affected restaurants in months 1-6 and, possibly to some extent, at the chain-level in months 6-12.

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Meritorious Paper

## Paper Session 09 4:03 PM–4:21 PM 2125

### NEIGHBORHOOD FOOD ENVIRONMENT AND ADOLESCENT DIETARY AND BMI OUTCOMES OVER A 1-YEAR INTERVENTION

Rachel A. Millstein, MHS,[1] Jacqueline Kerr, PhD,[2] Marc A. Adams, PhD,[2,3] James F. Sallis, PhD,[2,3] Karen J. Calfas, PhD,[2] Kevin Patrick, MD, MS,[2] Matthew Allison, MD[2] and Gregory J. Norman, PhD[2]

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Adolescents' food environments can affect their dietary habits and weight, though not all studies have found associations. This study sought to examine whether adolescents' neighborhood food environments moderate the relationship of a 1-year physical activity/nutrition intervention on dietary and weight outcomes.
Adolescents (n=871, ages 11-15) in San Diego, CA were enrolled in a 1-year PACE+physical activity/nutrition or control intervention. The PACE+intervention aimed to promote improved eating and physical activity through a computer-supported intervention in primary health care settings. Home addresses were geocoded and 1-mile street network buffers were created for each adolescent's neighborhood. The Retail Food Environment Index (RFEI) was calculated by counting food facilities in each buffer ((convenience stores+fast food)/(supermarkets+produce vendors)) and divided into quartiles. Linear regression models tested for group and RFEI quartile differences on dietary outcomes (% calories from fat and saturated fat, log daily fruit/vegetable intake, total calories) controlling for baseline values, gender, ethnicity, and education. Logistic regression models for 1-year BMI outcomes (≥85th and≥95th percentile) were conducted, adjusting for baseline values and covariates. Intervention group by RFEI quartile interactions were included in all regressions.
No significant group or interaction effects were found. RFEI quartile was significantly associated with the log of fruit/vegetable servings ($\beta$=-.02, p=.02), gender was significantly associated with total calories ($\beta$=-199.79, p <.001), and highest level of household education (OR=1.39, p=.04) was significantly associated with having a BMI≥95th percentile.
The retail food environment was associated with adolescents' fruit and vegetable intake. A direct association between intervention outcomes and food environments was not found. These results add to the inconclusive literature on food environment's association with youth dietary habits and body weight.

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Meritorious Paper

## Paper Session 09 4:21 PM–4:39 PM 2126

### COMMUNITY-BASED APPROACH TO ASSESSING THE NUTRITION ENVIRONMENT IN A HEALTH DISPARATE REGION

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Purpose: There is growing evidence that various features of the built environment are contributing to the obesity epidemic. However, very little of this research examines rural environments. According to Healthy People 2020, rural populations are more likely to experience disparities in a variety of health outcomes. The purpose of this study is to assess the food environment and quantify the availability of healthy foods in a rural health disparate region. Methods: Utilizing the Nutrition Environment Measures Survey (NEMS) all stores and restaurants were audited for availability, price, and quality of healthy options. A pair of auditors rated each food outlet and inter-rate reliability was assessed.
Results: A total of 184 audits were performed across 60 stores and 124 restaurants. Inter-rater reliability was high with a mean kappa coefficient of 0.87 and 0.87 in stores and restaurants, respectively. The total possible range of availability of healthy options in all stores and restaurants is 0-30. The range of availability by store types are as follows: 11 grocery stores (M =22.3), 38 convenience stores (M =4.4), 11 other stores (M=6.1). By restaurant category there are: 15 fast casual (M=9.1), 44 fast food (M =5.7), 61 sit down (M =4.2), 4 specialty (M =6.7). Middle- to high-income, predominantly white block groups had the greatest number of stores and restaurants (n=18 store, n=64 restaurants) with the highest availability of healthy foods (availability score=12.7) while middle-income, predominantly black block groups had the lowest number of stores and availability (n=2, availability score=3). Low-income mixed race block groups had the lowest distribution of restaurants and availability (n=2, menu availability=5).
Conclusions: In this health disparate region, there is low availability of healthy food options in stores and restaurants, especially in low-income areas with higher rates of minorities. Future analyses will consider a clustering and spatial analysis of stores and restaurants.

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## Paper Session 09 4:39 PM–4:57 PM 2127

### SOCIAL MARKETING OF ANTI-HUNGER INITIATIVES AND RESOURCES

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Despite expansion of federal food and nutrition programs, rates of food insecurity in the U.S. continue to rise. Existing federal food and nutrition programs are often under-utilized; in fact, one in three people who are eligible for the largest food assistance program in the U.S. do not receive the benefit. Thus, outreach campaigns to stakeholders, communities, and individuals are needed to raise awareness, expand access, and increase participation in federal food assistance programs. We describe social marketing as a promising approach for raising awareness, access and use of food and nutrition supplemental services. As background to this public health opportunity, we summarize trends in food insecurity and use of existing federal nutrition programs. We introduce social marketing as a promising approach to engage stakeholders in efforts to connect at-risk populations with existing resources and broadly describe the tenants and processes of social marketing and their application to anti-hunger initiatives. We then provide an example of application of the social marketing process at the local level to illustrate the ways in which the components and processes of social marketing can increase awareness, access, and uptake of a federally sponsored food program. Data from baseline consumer research collected for this project are summarized in a model depicting the results of a series of multivariate regression analyses to discern independent associations with food security, the food environment and consumption patterns. Independent associates of food security included socioeconomic factors (R2=.46), demographic factors (R2=.18), geographic factors (R2 =.38), and participation in food assistance (R2=.28). In turn, food security was significantly associated with availability of healthy food options in the home (R2=.21) and consumption of healthy food options (R2=.22). Opportunities for research and practice relevant to food insecurity guided by social marketing process are summarized to describe outline descriptive, intervention, and methodological research priorities.

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## Paper Session 09 4:57 PM–5:15 PM 2128

### FAMILY MEAL AND PHYSICAL ACTIVITY PRACTICES ASSOCIATED WITH DISORDERED WEIGHT CONTROL BEHAVIORS IN A MULTIETHNIC SAMPLE OF MIDDLE SCHOOL YOUTH

Monica L. Wang, MS,[1] Karen E. Peterson, ScD,[1,2] Tracy K. Richmond, MD,[3,4] Jennifer Spadano-Gasbarro, PhD,[1] Mary L. Greaney, PhD,[1,5] Solomon Mezgebu, MS,[6] Marie McCormick, MD[1] and S. Bryn Austin, ScD[1,3]

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Purpose: To assess the association of family sit-down meals and parental support of their children's physical activity (PA) with disordered weight control behaviors (DWCB) (vomiting and/or taking laxatives and/or taking diet pills in the past 30 days) in a multiethnic sample of middle school youth.

Methods: Self-report data are from 15,461 youth in 6-8th grade from 47 middle schools participating in the Massachusetts Healthy Choices study at baseline. We estimated odds of DWCB associated with frequency of family sit-down dinners, parental provision of rides to and from a PA event, and parental participation in PA with their children, adjusting for race/ethnicity, grade, BMI, and menarche (girls only) in gender-stratified models. Generalized estimating equations were used to account for clustering of individuals within schools. Results: 3.5% of girls and 3.1% of boys reported DWCB. Youth who had family sit-down dinners everyday had decreased odds of DWCB (Girls odds ratio [OR]=0.3; 95% confidence interval [CI]=0.2-0.5; Boys OR=0.6; 95% CI =0.4-0.9) than youth who never had family sit-down dinners. Similar effect sizes were found for youth who had family sit-down meals most days. Parental provision of rides to and from a PA event was protective against DWCB among girls (OR=0.7; 95% CI=0.5-0.9), whereas parental participation in PA with their children was associated with increased risk for DWCB (Girls OR=1.4; 95% CI=1.0-1.8; Boys OR=1.9; 95% CI= 1.4-2.4). These associations persisted across racial/ethnic groups.

Conclusions: Findings suggest that programs with a family component emphasizing the importance of family meals may be beneficial in preventing DWCB among a multiethnic adolescent population. Further research is needed on how various types of parental involvement in their children's PA are associated with DWCB.

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# Thursday
# April 12, 2012
# 7:00 PM–8:30 PM

## Poster Session B

## B-001

### COMMUNICATION ABOUT AND ACCURACY OF BREAST CANCER RECURRENCE RISK IN RURAL POPULATIONS

Kimberly M. Kelly, PhD,[1] Mayank Ajmera, MS,[1] Sandipan Bhattacharjee, MS,[1] Vohra Rini, BS,[1] Hobbs Gerry, PhD,[1] Chaudhary Lubna, MD,[1] Abraham Jame, MD[1] and Doreen Agnese, MD[2]

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Background: Given advances in extending breast cancer survival rates in recent years, there are a large number of recently-diagnosed breast cancer patients and longer-term breast cancer survivors. Fear of recurrence is a common concern. The goals of this study were to better understand (1) provider cancer recurrence risk communication, (2) perceived risk of breast cancer recurrence in cancer patients and survivors, and (3) accuracy of perceived risk.

Methods: A mixed-methods study was conducted of 141 women with a prior breast cancer diagnosis in a surgical oncology clinic. Medical record data was collected, along with a survey including demographics, worry, 7 measures of perceived risk, and open-ended items to explore thoughts and feelings about recurrence.

Results: Approximately 40% reported providers had not talked to them about their recurrence risk; although only 1 person reported not wanting a physician to talk to her about her risk. Suggestions were provided about who should do the risk communication and when. Women were largely inaccurate in their assessments of perceived risk: 5 pt COMPARATIVE and LIKELIHOOD were underestimated. BINARY, ONSET, and SURVIVAL were overestimated. A hierarchical regression model of accuracy [F(3,87)= 6.66, r2=.19, p<.001] indicated those who were more rural (p=.01), more worried (p=.008), and 2-5 years from treatment (p=.01) were more likely to overestimate their risk. Women tended to think about cancer recurrence in other parts of the body (49.0%) as often as breast (42%).

Conclusion: More research is needed to understand and compare different methods of assessing risk and concerns about local vs. distal recurrence. Consistent with findings from other studies, greater efforts are needed to improve the communication of cancer recurrence risk. In particular, attention should be paid to those from rural areas and to other types of cancer recurrence in women with a previous history of breast cancer.

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## B-002

### ADVANCING CANCER SURVIVORSHIP CARE THROUGH PARTNERSHIPS AND POLICY

Shelby S. Roberts, MPH,[1] Jennifer Leonard, JD, MPH,[2] Rebecca Kirsch, JD,[1] Elizabeth Clark, PhD, ACSW, MPH,[4] Nancy Davenport-Ennis, BA,[5] Andy Miller, MHSE, CHES,[3] Rachel Cannady, BS,[1] Rebecca Cowens-Alvarado, MPH,[1] Mandi Pratt Chapman, MA[2] and Katherine Sharpe, MTS[1]

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As the population of cancer survivors in the United States continues to rise, a fragmented system of care has developed to address this population's physical and psychosocial needs. Positive change has been visible as individual organizations have led the field introducing high quality models of survivorship care. This incremental change increased momentum at the national level spurring the National Cancer Survivorship Resource Center Policy/Advocacy Workgroup (PAW) to accelerate this collaborative action by convening a diverse group of survivorship experts to craft a consensus policy platform and action agenda that can help drive delivery of improved survivorship care in all care settings.

The PAW consists of 22 members representing 18 nonprofit, clinical, academic, professional and advocacy organizations. Through facilitated monthly calls and continuous requests for member feedback, PAW identified key health system gaps and barriers in cancer survivorship that can be addressed through policy change, synthesized those findings in a suite of four complementary white papers and developed strategic advocacy plans to use those findings and educate federal and state policy makers, employers, payors, professional societies, advocacy organizations and other thought leaders on the needs of cancer survivors and the role of policy in addressing key financial, clinical, research and operational/organizational barriers. The white paper topics include: landscape analysis of cancer survivorship, commonly requested survivorship services, reimbursement for survivorship services and funding for research.

Policy change will be essential to improve the quality of life of cancer survivors and their loved ones. The PAW's collaborative deliberations, resulting white papers and advocacy action plan will equip the survivorship community with the tools necessary to gain significant ground in presenting a clear policy agenda with prioritized areas for action.

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## B-003

### SUBJECTIVE SOCIAL STATUS PREDICTS PSYCHO-ONCOLOGY OUTCOMES IN BLACK BREAST CANCER SURVIVORS

Suzanne C. Lechner, PhD,[1,3] Sara Vargas, MS,[2] Nicole E. Whitehead, PhD,[3] Debra Annane, MA,[3] Belinda Robertson, BA[3] and Michael H. Antoni, PhD[2,3]

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Both objective and subjective socioeconomic status (SES) have been shown to be important predictors of physical health outcomes in persons with a variety of medical conditions. However studies have not examined the impact of SES on psycho-oncology outcomes in black women. We examined the unique contributions of objective and subjective SES to a set of psychological adaptation indicators in black women in the months after they completed treatment for breast cancer. Black breast cancer survivors (N=46, aged 27-67, stages 0-IV, completed breast cancer treatment within 6 months) completed assessments of subjective SES (MacArthur Scale of Subjective Social Status); psychosocial outcomes (Functional Assessment of Cancer Therapy-General, Center for Epidemiologic Studies-Depression, Profile of Mood States-Short Version, Impact of Event Scale-R-Intrusive Thoughts, Perceived Stress Scale-10, and a global stress rating 0-10); and potential explanatory/intermediary variables (living situation, neighborhood characteristics, poverty and associated life burdens; insurance and health care; acculturation; optimism; mastery; global health; social services use). Hierarchical multiple regressions revealed that income and education (objective SES) were not significant predictors of any of the outcomes (all ps>.05), whereas subjective SES predicted quality of life ($\beta$=.61, p<.001), depressive symptoms ($\beta$=-.48, p<.001), mood disturbance ($\beta$=-.54, p<.001), intrusive thoughts ($\beta$=-.32, p<.05) perceived stress ($\beta$=-.64, p<.001), and global stress rating ($\beta$=-.46, p<.01), when income and education were controlled. All relationships held when income and education were entered in Step 1, and each of the relevant explanatory/intermediary variables (entered singly in Step 2) that might account for the relationships between subjective SES and psychosocial outcomes were entered into the regression (all ps<.05). Findings suggest that subjective SES was a better predictor of psychosocial outcomes than objective SES among black breast cancer survivors.

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## B-004

### DEFAULT POLICIES AND PARENTS' CONSENT FOR SCHOOL-LOCATED HPV VACCINATION

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BACKGROUND: Although defaults may encourage some health behaviors, how defaults influence behaviors involved in controversy is not well understood. We examined the effect of two default policies on parents' consent to have their adolescent sons hypothetically receive HPV vaccine at school.

METHODS: A national sample of 404 parents of adolescent sons ages 11-17 years participated in an online 3x2 between-subjects factorial experiment during Fall 2010. One factor varied the default consent policy for sons receiving HPV vaccine at school (opt-in, opt-out, or neutral). The second factor varied the default number of vaccines sons would receive (HPV vaccine alone or HPV vaccine with two other recommended adolescent vaccines). The outcome was parents' consent to their sons hypothetically receiving HPV vaccine at school. Analyses used factorial logistic regression.

RESULTS: Consent for sons to receive HPV vaccine was higher in the opt-in condition than in the opt-out condition (75% vs. 52%; OR=2.72, 95% CI: 1.06-7.00), among parents who wanted their sons to get vaccinated in the next year. These parents were also more likely to provide consent if the request included other recommended adolescent vaccines than if it was for HPV vaccine alone (71% vs. 53%; OR=2.21, 95% CI: 1.03-4.74). Default policies had no effect on consent decisions among parents undecided about HPV vaccination for their sons in the next year.

CONCLUSIONS: Parents' consent for school-located HPV vaccination may be maximized when presented as an opt-in decision and when other recommended adolescent vaccines are included. Such low-cost and sustainable strategies may be particularly effective among parents wanting to vaccinate their adolescent sons.

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## B-005

### THE INTERACTION OF BREAST CANCER ANXIETY AND AVOIDANCE IN PREDICTING MAMMOGRAPHY

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Although mammography can aid in the early detection and prevention of breast cancer, many women do not receive annual mammograms. It remains unclear whether anxiety about breast cancer inhibits or promotes mammography rates. It is possible that it is not the presence of breast cancer anxiety which influences mammography uptake; rather it is the degree to which women avoid experiencing such anxiety. It was hypothesized that a woman's level of experiential avoidance (i.e., avoidance of internal experiences such as emotions, bodily sensations, and thoughts) would determine the impact breast cancer anxiety has on mammography rates. A community sample of women (N=84) completed a self-report questionnaire which assessed mammography rates over the past ten years, experiential avoidance, and breast cancer anxiety. The results suggest that, while controlling for breast cancer anxiety, experiential avoidance ($\beta$=.31, p<.01) significantly predicted mammography rates. When examining experiential avoidance as a moderator, a multiple regression analysis approached significance ($R2\Delta$=.04, p=.07), suggesting that a woman's level of experiential avoidance influences the relationship between anxiety and mammography. These findings will help enable health care practitioners to better identify women at risk of non-adherence to mammography recommendations.

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## B-006

### HEALTH BEHAVIORS AMONG WOMEN RECEIVING GENOMIC TESTING FOR BREAST CANCER RECURRENCE RISK

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PURPOSE. Post-treatment breast cancer survivors face a doubled risk of cancer compared to the general population. This risk may be reduced through modifiable health behaviors. We sought to assess early stage breast cancer patients' awareness of and adherence to health behavior recommendations.

METHODS. Data come from a cross-sectional multi-site survey of 187 early-stage breast cancer patients who received genomic testing for breast cancer recurrence risk as part of their clinical care (Oncotype Dx); the 10 year recurrence risk estimates assume antiestrogen treatment. Analyses examined clinical, demographic and psychosocial predictors of meeting health behavior recommendations (daily fruits and vegetables intake, regular physical activity and maintaining a healthy body mass index (BMI)).

RESULTS. About one-half of patients met recommendations for fruit and vegetable consumption (47%), physical activity (51%) and BMI (48%). Only 16% of patients met recommendations for all three behaviors. Adherence to these recommendations was higher for women who were White, college-educated, or had higher incomes (Ps<.05). Most patients were aware that these health behaviors could reduce their cancer risk (77%, 79% and 83% respectively). However, approximately one-quarter reported engaging in these behaviors to reduce their cancer risk (23%, 28% and 26% respectively). Patients' breast cancer recurrence risk, as provided by their genomic test results, was not associated with meeting health behavior recommendations.

CONCLUSION. Intervention efforts among breast cancer survivors that encourage health behaviors in reducing cancer risk should focus on promoting action rather than awareness. Efforts should focus on patients at higher risk for cancer recurrence risk, as they are no more likely to engage in three risk-reducing health behaviors.

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## B-007

### NIGHTMARES PRIOR TO BREAST CANCER SURGERY

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Background: Nightmares are the most common type of disturbed dreaming, affect 4%-10% of the population, and are associated with emotional distress and sleep disturbance. Nightmare prevalence is higher in stressed/traumatized populations. The present preliminary study's goals were to investigate the prevalence of nightmares in breast cancer surgical patients, as well as the relationships between presurgical nightmares and presurgical distress and sleep.

Methods: 416 breast cancer surgery patients participated [58% biopsy, 17% lumpectomy, 26% mastectomy; mean age=48.8 (SD=12.9); 77% White; 50% married; 77%≥college education]. Participants completed presurgical questionnaires assessing demographics, emotional distress [Profile of Mood States-Short Version (POMS-SV)], amount of sleep the night before surgery, and nightmares about breast cancer surgery.

Results: 31% of women reported nightmares about breast cancer surgery. Nightmare frequency was significantly related to POMS-SV total mood disturbance (F=25.85, p<.0001), as well as to the Tension (F=26.04, p<.001), Depression (F=20.80, p<.001), Hostility (F=9.71, p<.001), Fatigue (F=15.14, p<.001), and Confusion (F=20.04, p<.001) subscales. Nightmare frequency was related to amount of sleep (F=6.31, p<.001) such that more frequent nightmares related to less sleep.

Conclusions: Women scheduled for breast cancer surgery experience 3-8 times more nightmares than the general population. Approximately 1/3 of women experience presurgical dreams about upcoming breast cancer surgery. More frequent dreams are related to more distress and less sleep prior to surgery. Results are clinically relevant because presurgical distress and sleep have both been shown to predict negative postsurgical outcomes (e.g., pain). Future research should further explore nightmares in the broader cancer setting using gold standard nightmare assessment techniques and content analysis.

Implications: Behavioral techniques shown to reduce nightmares (e.g., IRT) should be tested in cancer settings to determine their applicability.

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## B-008

### BARRIERS TO ORAL CANCER SCREENING IN A RURAL AFRICAN-AMERICAN POPULATION

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Problem: Compared with White Americans, Black Americans are more likely to develop and die from cancers of the mouth and throat (SEER Statistics, 2009). One way to address this high mortality rate is to catch mouth and throat cancer (MTC) early through screening (NCI, 2011). However, many Black Americans in rural areas fail to get screened for MTC in a timely manner. We conducted a series of focus groups to identify the barriers to screening for MTC among African Americans in rural communities.

Method: We conducted 10 focus groups (76 African-Americans; 35 females) to identify the barriers to MTC screening among rural African-Americans age 40 and older. Sixteen independent judges read through transcripts of the focus groups and identified 51 unique barriers. The judges then categorized these barriers into seven broad categories. Next, 15 trained content-coders each coded the transcripts for the presence of the 51 barriers.

Results and Conclusions: Analysis revealed three primary barriers to screening: Lack of knowledge, lack of resources, and fear of the results. The most common barrier to emerge, lack of knowledge, was illustrated by statements such as, “I don’t ever hear about [MTC]” and “I don’t ever think about [MTC], because I don’t know the symptoms.” This barrier emerged, an average of 11.7 times per focus group and comprised 31.8% of all barriers mentioned. The second most common barrier, lack of resources, encompassed lack of time, transportation, money, and health insurance. Lack of resources emerged an average of 8.8 times per focus group and comprised 25.0% of all barriers mentioned. The third most common barrier, fear of the results, was illustrated by statements such as, “I am afraid of finding out I have cancer”, and “I couldn’t deal with the fact that I had [MTC]”. Fear of results emerged an average 8.1 times per focus group and comprised 22.9% of all barriers mentioned.

Our results offer the first investigation into barriers to MTC screening in rural African Americans. The findings suggest possible targets for interventions to increase screening and thereby reducing disparities in mouth and throat cancer mortality.

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## B-009

### SELF-DISCLOSURE PATTERNS OF CANCER HISTORY IN ADOLESCENT AND YOUNG ADULT CANCER SURVIVORS

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The majority of individuals diagnosed with cancer as an adolescent or young adult (AYA) will become long-term survivors, facing numerous psychosocial sequelae and late effects of treatment. Little is known about self-disclosure patterns of cancer history among these survivors, despite findings that self-disclosure can be beneficial on many levels (e.g. emotional well-being, self-concept). Twenty-six semi-structured individual interviews (61.5% female, 38.5% male) were conducted using open-ended questions and prompts concerning disclosure of their cancer diagnosis and treatment, as well as the reactions to the disclosure. All survivors were between ages 16-24 (M=19.6), diagnosed with cancer between ages 14-18 (M=15.6), and completed treatment at least six months prior to the interview (M=3.2 yrs). Grounded theory and rigorous qualitative analyses utilized thematic content analysis with an inductive, data-driven approach consisting of intensive reading and interpretation of the transcripts. An in-depth codebook consisting of 88 descriptive codes was created (Interrater reliability among four independent coders >80%). Preliminary data analysis indicate that the decision to disclose cancer experience among AYA survivors followed a “don’t ask don’t tell” model, and was influenced by trust and intimacy with the other person. Others’ perceived responses, in particular avoiding sympathy, being treated differently, or depressing others motivated withholding of disclosure. While verbal disclosure was often avoided, many participants reported feeling positively when writing about their experience (e.g. school essays). Future analyses will further identify and describe the patterns and themes of self-disclosure. Qualitative differences in the content will be explored, in particular gender differences. As this AYA survivor population increases, these findings will become increasing important to inform future research and interventions beneficial for patients and healthcare professionals alike.

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## B-010

### CORRELATES OF PHYSICAL INACTIVITY AMONG CANCER SURVIVORS AGED 45-64 IN THE UNITED STATES

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Background: Advances in cancer treatment have improved five year survival rates, but the negative sequelae of the cancer treatment is still a persistent problem among cancer survivor population. Evidence suggests that regular physical activity after cancer diagnosis is associated with improvement in health status and quality of life in several cancer survivor groups. We examined; 1) cancer survivors’ adherence to physical activity recommendations (150 minutes of physical activity per week), and 2) identified correlates for not meeting physical activity recommendations among cancer survivors.

Method: We used the 2009 Behavioral Risk Factor Surveillance System survey and SAS survey procedures to account for complex sampling design. We compared cancer survivors who indicated meeting physical activity recommendations (n=3395) and those who reported not meeting physical activity recommendation (n=5303). The study included adult cancer survivors aged 45-64, who were $\geq 1$ year post diagnosis of breast, prostate, colon, bladder, cervical or melanoma cancer. A multivariate analysis was conducted to examine associations between adherence to physical activity recommendation and socio-demographic and medical factors.

Result: An estimated 2015529 (61%) cancer survivors were not meeting physical activity recommendations. Compared to cancer survivors who meet physical activity recommendations, cancer survivors not meeting physical activity recommendations were more likely to report lack of social support (OR 1.402; 95% CI=1.146-1.717; p=.0011), were more likely to be obese (OR 1.94; 95% CI=1.57-2.38; p=0.0001) and reported having greater than 2 comorbid conditions (OR 1.37, 95% CI=1.06 -1.76; p=0.014).

Conclusion: Most of the cancer survivors are not meeting the evidence based recommendation for physical activity. We need to develop tailored physical activity interventions for these subgroups of cancer survivors who are obese and with multiple comorbidities to improve adherence to physical activity recommendations.

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## B-011

### GENDER-BASED DIFFERENCES IN BLADDER CANCER SURVIVORSHIP: AN EMERGING ISSUE IN WOMEN’S HEALTH

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In 2010, 18,000 women were diagnosed with bladder cancer; 75% had non-muscle-invasive disease (NMIBC). Women, particularly African Americans, are diagnosed at later stages and have greater morbidity and mortality. While there are 140,000 U.S. female bladder cancer survivors, the limited research available has focused on males. We report mixed-method results from companion studies, quantitative surveys and qualitative interviews, exploring NMIBC survivorship including health-related quality of life (HRQOL). Thematic findings from interviews aid in clarifying survey results.

109 surveys and 26 interviews were conducted with convenience samples of NMIBC survivors. Participants ranged from 29-87 years and were Caucasian (92%), married (75%), and female (23%). Surveys were analyzed using t-tests. Interviews were transcribed verbatim and evaluated using phenomenological analyses.

Female survivors (n=27) reported greater depression and anxiety on the BSI-18 (both $p<.05$) and worse emotional functioning on the EORTC QLQ-C30 ($p<.05$) than men. Interviews with females (n=4) expanded survey results, producing 2 themes: NMIBC as “accidental diagnosis” and the “new normal” post-treatment. Women reported hematuria on one or more occasions and urinary tract infection diagnoses (n=4) from physicians prior to NMIBC diagnoses. The two youngest women reported retiring due to post-surgical disabilities or disease recurrence; they also reported greater psychosocial (e.g., hiring housekeepers, withdrawal from hobbies) and/or financial (e.g., lower income, medical expenses) adaptations.

Our results provide evidence of delayed diagnosis and potential gender differences in emotional and physical functioning among NMIBC survivors, which negatively affects women’s health and HRQOL. Future research should focus on designing and implementing gender-specific education and symptom management interventions targeting the unique needs of this survivorship population.

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## B-012

### ASSESSING QUALITY OF LIFE AMONG VETERAN AND NON-VETERAN BLADDER CANCER SURVIVORS

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There are more than 500,000 U.S. bladder cancer survivors, including 30,000 Veterans who may be at higher risk for bladder cancer and comorbidities due to higher smoking rates and other risk factors. This study explores disease-specific symptoms and health-related quality of life (HRQOL) among Veterans and non-Veterans with nonmuscle-invasive disease (NMIBC).

NMIBC survivors (n=109) completed telephone surveys containing demographic, clinical, and HRQOL items. Data were analyzed using non-parametric tests. EORTC QLQ-C30 subscales measured HRQOL.

Consistent with epidemiology, survivors were white (94.5%) and male (75.2%). They ranged from 29-87 years, and were married (75.2%) with greater than high school education (86.3%) and Veteran status (26.6%). No differences were observed in Veterans' and non-Veterans' demographic and clinical characteristics. However, Veterans performed significantly worse on EORTC QLQ-C30 subscales including physical [M=77.0 (SD=14.8) vs. M=91.8 (SD=12.4)], role [M=80.5 (SD=20.9) vs. M=92.9 (SD=14.5)], cognitive [M=73.0 (SD=20.6) vs. M=84.8 (SD=15.5)], and social functioning [M=79.9 (SD=20.1) vs. M=91.5 (SD=15.7)] (all p<.01). They also reported lower overall global HRQOL [M=67.8 (SD=23.2) vs. M=82.6 (SD=15.4)]; greater financial problems [M=79.9 (SD=20.1) vs. M=91.5 (SD=15.7)]; and worse symptoms (e.g., fatigue, poor appetite, difficulty breathing; all p<.01).

Our results indicate that NMIBC Veterans have poorer disease-specific and overall HRQOL than their non-Veteran counterparts. Patients within the VA healthcare system have access to many health promotion programs, but VA programs designed and targeted to cancer survivors are relatively new and not widely disseminated. To enhance Veteran survivors' HRQOL, programming will need to provide symptom management directed at Veteran-specific psychosocial needs and impairments and focus cancer control efforts on their unique risk factors.

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## B-013

### PROJECT CONNECT ONLINE: MEDIATING EFFECT OF COPING SELF-EFFICACY ON DEPRESSIVE SYMPTOMS

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Project Connect Online is a randomized controlled trial designed to enhance social support and facilitate communication during the breast cancer experience through the creation of personal websites. Primary results indicate that six months after participation in a 3-hour workshop during which personal websites were created, women in the intervention arm (N=40) showed a significant reduction in depressive symptoms when compared to women in the waitinglist control (N=35). The goal of the current analysis was to examine whether change in women's confidence in the ability to cope effectively with breast cancer (coping self-efficacy) functions as a mechanism of change. Specifically, we tested whether an increase in coping self-efficacy mediated the effect of the intervention on depressive symptoms. Assignment to treatment condition was significantly related to both change in depressive symptoms from baseline to six months after the intervention (β=-.200, p=.049) and change in coping self-efficacy from baseline to six months after intervention (β=.169, p=.043). Change in coping self-efficacy was also significantly related to change in depressive symptoms from baseline to six months after the intervention (β=-.521, p<.001). Furthermore, the effect of treatment condition on change in depressive symptoms was reduced markedly and became statistically nonsignificant when controlled for the effects of change in coping self-efficacy (β=-.109, p=.251). Thus, coping self-efficacy fully mediates the relationship between the intervention and depressive symptoms. Maintaining personal websites during cancer treatment and survivorship appears to have a beneficial effect on depressive symptoms through the pathway of increased coping self-efficacy. These findings suggest that increasing a woman's confidence in her coping abilities may be an important mechanism to target in future interventions for women with breast cancer.

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## B-014

### PHYSICAL AND MENTAL HEALTH AND LIFE CHANGES AMONG FAMILY CAREGIVERS OF LUNG CANCER PATIENTS

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Lung cancer imposes many demands on family caregivers, which may increase their risk for negative health outcomes. This study examined physical health, mental health, and life changes due to caregiving among family caregivers of lung cancer patients. Caregivers (n=91, 78% female, 88% White, mean age=58 years) were recruited from medical centers and a tumor registry. The average time since the patient's lung cancer diagnosis was 1 year (SD=2). Caregivers completed measures of physical and mental health (Medical Outcomes Survey Short ForM–36) and life changes due to caregiving (Bakas Caregiving Outcomes Scale). Across all SF-36 subscales, with the exception of social functioning, caregivers had lower mean scores than United States population norms. For example, caregivers had lower scores for physical functioning (mean difference=-6.3, 95% CI: -11.4 to -1.3) and mental health (mean difference=-5.5, 95% CI: -9.7 to -1.2). Over 50% of caregivers reported negative emotional effects of caregiving, and over one third reported negative physical health effects of caregiving. About 40% of caregivers, however, reported positive changes in their relationships with the lung cancer patient and other family members as a result of caregiving. Findings suggest that research and clinical efforts are needed to identify and provide greater support to family caregivers who experience negative life changes and poor health outcomes. Such interventions could build upon the relational benefits of caregiving to further strengthen and expand caregivers' social support system.

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## B-015

### THE PHYSICAL AND EMOTIONAL CONCERNS OF BREAST CANCER SURVIVORS ON ADJUVANT ENDOCRINE THERAPY

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BACKGROUND: Breast cancer survivors often receive long-term adjuvant endocrine therapy (AET) upon completion of other cancer treatments (e.g. chemotherapy, radiation, surgery) to reduce the recurrence risk. Few studies have examined the concerns of AET users. The objective is to describe the emotional and physical symptoms among breast cancer survivors on AET.

METHODS: 4286 cancer survivors completed the online 2010 LIVESTRONG Survey for People Affected by Cancer. 1098 were breast cancer survivors who reported on 14 physical and 8 emotional concerns that had an onset after their diagnosis of cancer. Bivariate analyses examined the prevalence of each concern by AET status. Multivariate linear regression was used to model the relation between AET and number of physical or emotional concerns, adjusting for age, time since treatment ended, and other cancer treatments received.

RESULTS: Among breast cancer survivors, 42% (n=459) reported taking AET. Breast cancer survivors on AET, vs. those who were not, were significantly more likely to report concerns related to sexual dysfunction, fatigue, physical appearance (all p<0.01), emotional distress, and fears of recurrence (both p<0.05). Less than half of survivors on AET with these concerns reported receiving help for any concern. In regression analyses, AET status was significantly associated with the number of physical and emotional concerns reported, even after adjustment for age, time since treatment, and other cancer treatment received. Women on AET (vs. those who were not) reported significantly more physical (β=0.37, SE=0.15; p=0.01) and emotional concerns (β=0.33, SE=0.14; p=0.02).

CONCLUSIONS: Data from the LIVESTRONG survey shows that breast cancer survivors taking AET (vs. those who did not) reported significantly more physical and emotional concerns that may be under-treated. The nature of their concerns suggests significant disruption in quality of life. Survivorship care plans should include information about possible symptomatology related to AET as well as guidance for where survivors can seek care for relief.

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Meritorious Poster

## B-016

### CANCER BELIEFS, HEALTH LITERACY, AND CANCER-RELATED HEALTH BEHAVIORS IN HISPANIC AMERICANS

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Past research has demonstrated a relationship between beliefs about the causes of cancer and cancer-related behaviors. Health literacy has also been shown to be associated with health behaviors among various ethnic groups. This study investigated whether relationships exist between beliefs about the causes of cancer and cancer-related health behavior in Hispanic American (HA) adults, and whether health literacy moderates this relationship. Self-identified HA men and women (N=391) ages 21 and older answered three questions selected from the NCI HINTS questionnaire about whether they believe smoking, eating fruits/vegetables, and consuming alcohol influence the likelihood of having cancer. Health behaviors were measured by self-report questionnaires. Health literacy skills were assessed using two questions regarding confidence felt, and frequency of aid obtained, when completing medical forms. Hierarchical linear regression was used to examine whether cancer beliefs were significant predictors of related health behaviors, and whether health literacy moderated these relationships. Three separate models were analyzed: one each for tobacco, alcohol, and fruit and vegetable consumption. Significant main effects (p<.05) were found for cancer beliefs as a predictor of related health behaviors for both tobacco and alcohol, and for health literacy as a predictor of health behaviors for both tobacco and fruit/vegetable consumption. However, the interaction of cancer beliefs and health literacy did not emerge as a significant predictor in any of the three models tested. Although cross-sectional, these findings suggest that both cancer beliefs and health literacy may impact health behaviors among HAs. Their relationship to health behaviors, however, appears to be independent. Therefore, both of these constructs should be considered when developing interventions aimed at modifying health behaviors within the HA community.

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## B-017

### SELF-REGULATORY FATIGUE (SRF) AND HEMATOPOIETIC STEM CELL TRANSPLANTATION (HSCT); IMPACT ON COPING, QUALITY OF LIFE, AND HEALTH BEHAVIORS PRE- AND POST TRANSPLANT

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Recent research suggests that SRF may play an important role in adjustment to and coping with complex medical illnesses. In particular, it's been suggested that patients diagnosed with chronic pain conditions or preparing for aggressive cancer therapies such as HSCT may experience chronic SRF. This study sought to validate a recently published measure of SRF in patients preparing for HSCT, and subsequently examine the impact of SRF on choice of coping strategies, quality of life (QOL), and health behaviors pre- and post HSCT. Patients completed surveys while preparing(N=213) for HSCT, and then one year post (N=144) HSCT. Participants were primarily Caucasian (92%), male (56%), diagnosed with Multiple Myeloma (32%) or Lymphoma (29%), and underwent autologous stem cell transplant (79%). Nineteen of the initial participants passed away before follow up. Replicating recent research, the 23 item SRF measure showed good internal consistency and reliability ($\alpha$=89). Controlling for transplant type and traditional factors such as physical pain, fatigue, and depression, SRF was incrementally associated with use of avoidance coping strategies including denial, self-distraction, and behavioral disengagement (all p's<.001). SRF pre-HSCT was also associated with lower self-reported physical, social, emotional, functional, and overall QOL both pre- (all p's<.001) and one year post (all p's<.01) HSCT. Finally, SRF pre-HSCT was associated with lower self-reported physical activity pre- (p<.02) and post (p<.03) HSCT, and less healthy nutritional intake (p<.01) post HSCT. There was also a trend towards difficulties resisting tobacco use one year post transplant for former smokers. In addition to replicating recent findings and validating the new SRF measure, the study shows strong links between SRF, avoidance coping, QOL, and health behaviors for patients both pre- and one year post HSCT. Results emphasize the need for attention to the role of SRF in complex medical conditions, and calls for development of interventions seeking to target and improve self-regulatory capacity.

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## B-018

### EVALUATING THE QUALITY OF CONJOINT ANALYSIS STUDIES ON PUBLIC PREFERENCES FOR COLORECTAL CANCER SCREENING TESTS: A SYSTEMATIC REVIEW

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Objectives: Conjoint analysis (CA) is increasingly being used to investigate preferences for colorectal cancer (CRC) screening to inform policy makers on how to increase uptake and satisfaction. The extent to which CA studies can fulfil these ambitious aims depends on their quality and a checklist of guidelines has recently been written by Bridges et al. (2011) for good research practice in CA. We aimed to use this in order to systematically appraise the current quality of the relevant articles.

Methods: We searched 6 databases (including PubMed & Web of Knowledge) for English-language articles, published up to 18/11/10. We included studies that used conjoint analysis to measure public preferences for CRC screening tests. 2 authors independently assessed each article on the checklist criteria.

Results: Our initial search generated 229 results. 7 articles met the inclusion criteria, published 2001-2010. 4 criteria were satisfied by all papers e.g. opt-out response options and the number of conjoint tasks in data collection instruments were well described and justified by all studies. A further 9 items were satisfied by 6 studies. However, overall quality across the 7 studies was highly variable; the range of checklist items satisfied by each was 48-89% (mean 67%). Common weaknesses included elicitation formats, numbers of attributes and sample sizes not being justified and limited assessment of the representativeness of the study sample compared to the target population.

Conclusion: This review finds that studies are consistently good in some respects but there are a number of common weaknesses. Future studies should make greater use of guidelines in order that studies make a valid contribution to policy.

Reference:

Bridges, J.P.F., Hauber, B., Marshall, D., Lloyd, A., Prosser, L.A., Regier, D. A., et al. (in press). Conjoint analysis applications in health - a checklist: A report of the ISPOR Good Research Practices for Conjoint Analysis Task Force. Value in Health.

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## B-019

### EXAMINING COGNITIVE AND AFFECTIVE INFLUENCES ON PERCEIVED RISK OF OVARIAN CANCER

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Studies suggest that both affective and cognitive processes are involved in the development of a perception of vulnerability to cancer and that affect has an early influence in this assessment of risk. We constructed a path model based on a conceptual framework of heuristic reasoning (affect, representativeness and availability) coupled with cognitive processes involved in developing personal models of cancer causation. To test our model, we administered a questionnaire to 2,524 women at high, elevated and average risk of ovarian cancer randomly selected from an eligible cohort of 16,720 women from a managed care organization (response rate 76%). We hypothesized that the respondent's number of relatives with cancer, age, and cancer knowledge (cognitive characteristics) would directly influence perceived risk, while the constructs involving emotional closeness and perceived resemblance to a relative or friend with cancer would indirectly influence perceived risk through time spent processing the cancer experience and through cancer worry. Our model indicated a good fit (RMSEA=.026, CFI=.991). The model confirmed the associations between cognitive characteristics and perceived risk; showed that time spent processing the cancer experience was associated with cancer worry; and demonstrated that cancer worry strongly influenced perceived risk. Our results highlight the important role that the lived experience of cancer has on a women's sense of vulnerability to cancer. This understanding may inform the often-described discordance between medical or objective risk assessment and personal risk assessment.

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## B-020

### DISCRIMINATION AND CANCER SCREENING: RESULTS FROM THE BRFSS REACTIONS TO RACE MODULE, 2004-2010

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Discrimination detrimentally impacts health, but little research examines its influence on cancer screening. This study explores a) the association of perceived discrimination and cancer screening and b) emotional response to discrimination as a mediator. The sample (n=107,683, 52% female, 81% non-Hispanic white, 13% uninsured) responded to the BRFSS Reactions to Race module from 2004 to 2010. Perceived discrimination in health care and emotional response to discrimination were assessed. Outcomes were off-schedule mammography, Pap testing, PSA, FOBT, and colonoscopy. Multivariate logistic regression models tested the association between perceived discrimination and screening, controlling for potential confounders. Bias corrected and accelerated (BCa) bootstrapped confidence intervals of the sampling distribution of the indirect effect were calculated to assess mediation by emotional response to discrimination of the association between perceived discrimination and cancer screening status. Women who reported being treated worse than other races had increased odds of being off-schedule for mammography (aOR=1.50, 95% CI=1.14-1.96) and Pap testing (aOR=1.40, 95% CI=1.06-1.85) compared to women who reported being treated the same as other races. Individuals who reported better treatment than other races had decreased odds of off-schedule colonoscopy (aOR=.88, 95% CI=.80-.98) compared to those reporting the same treatment as other races. Small, statistically significant indirect effects were observed through emotional response for the association between perceived discrimination and PSA (BCa point estimate =.033, 95% CI=.009-.058), FOBT (BCa=.017, 95% CI=.001-.040), and Pap testing (BCa=.016, 95% CI=.002-.028). Findings suggest that perceived discrimination may be a significant barrier to cancer screening, particularly for women considering screening for cervical and breast cancer. Discrimination may also have an indirect effect on cancer screening through associated emotional distress.

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## B-021

### PREDICTORS OF PSYCHOLOGICAL DISTRESS IN CANCER PATIENTS

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OBJECTIVE: Identifying and managing psychological distress in cancer patients has come to the forefront of issues in cancer care. The American College of Surgeons and the National Comprehensive Cancer Network (NCCN) set standards for managing psychosocial issues in oncology treatment. The MHADRO (Boudreaux et al., 2011) is an assessment that aims to assist providers in identifying and managing these issues. The purpose of this study was to examine if gender, age, time since diagnosis, type of cancer, and race were predictors of psychological distress.
METHOD: Two hundred and forty one patients at a large academic cancer center in the U.S. completed the MHADRO assessment. Demographic and clinical information was also collected. The majority of patients were female, in their mid-fifties, and White/Non-Hispanic. Type of cancer was separated into breast (72%), colorectal (10%), lung (5%), prostrate (2%), lymphoma (2%), and other. Time since diagnosis was measured on a scale from 1 (diagnosed today) to 6 (diagnosed more than 6 months ago). Sixty percent of the patients were diagnosed at least 6 months ago. Each stage of cancer (0-4) was represented adequately.
RESULTS: Multivariable linear regression analysis was performed with psychological distress as the dependent variable. Combined, the predictor variables specified above accounted for 7% of the variability in distress (F(8, 232)=2.08, p<.04). Our initial analyses suggested that age, gender and having breast cancer were the main predictors. That is, younger patients and females were more distressed and patients with breast cancer, less distressed. Analyses also were done while controlling for disease severity (stage of cancer). Although the model remained significant, only stage of cancer and being female remained predictors of distress.
CONCLUSION: Some of the literature examining predictors of distress in cancer patients has not controlled for disease severity. Our results indicate that controlling for this is important in refining predictors of distress and that specific issues relating to women may be important to address in clinical practice.

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## B-022

### THE PIPER FATIGUE SCALE-SHORT FORM (PFS-SF): PSYCHOMETRIC FINDINGS AND ITEM REDUCTION IN A COHORT OF BREAST CANCER SURVIVORS

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Purpose: Fatigue is one of the most common symptoms experienced by cancer survivors. As the number of cancer survivors increases, we need brief, valid measures to capture the multidimensional impact of fatigue. The study's primary aims were to confirm the Piper Fatigue Scale (PFS) factor structure; test for item response bias between African American and Caucasian survivors; and create a shorter form (PFS-SF) by deleting poorly performing items.
Methods: Breast cancer survivors (n=803; stages I-IIIa; age 29-86 yrs) were recruited at 3 SEER sites (New Mexico, Western Washington, and Los Angeles, CA) as part of the Health, Eating, Activity, and Lifestyle (HEAL) study. Fatigue was measured at 2-5 years post-diagnosis by the 22-item PFS that has 4 subscales (Behavior, Affect, Sensory, and Cognition). Factor analysis (FA) was used to confirm the factor structure and differential item functioning (DIF) was used to evaluate response bias for African-American and Caucasian survivors. These findings and other psychometric considerations (e.g., reliability, content validity) informed the development of the PFS-SF.
Results: FA confirmed the original 4-factor structure and reliability of the PFS subscales ranged from .88-.91. After controlling for fatigue levels, DIF between African-American and Caucasian survivors was found for 4 items: lively-listless, positive-negative, agreeable-disagreeable, and ability to remember. Three additional items showed poor association and exhibited content validity concerns: awake-sleepy, relaxed-tense, and sexual activity. After removing these 7 items (1/3 of scale), the reliability of the PFS-SF subscales ranged from .84-91.
Conclusion: The newly developed PFS-SF can be used to assess fatigue in African-American and Caucasian breast cancer survivors and reduces response burden without compromising reliability and validity.

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## B-023

### SPORT PARTICIPATION IN COLORECTAL CANCER SURVIVORS: AN UNEXPLORED APPROACH TO PROMOTING PHYSICAL ACTIVITY

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Background: Physical activity improves health outcomes in colorectal cancer (CRC) survivors but participation rates are low. One understudied strategy for increasing physical activity in CRC survivors may be sport participation. Here, we report the sport participation rate, sport preferences, and correlates of sport participation among CRC survivors.
Methods: A provincial, population-based mailed survey of CRC survivors in Alberta, Canada, was performed and included measures of sport participation, sport preferences, sport benefits and barriers, and medical and demographic variables.
Results: Six-hundred CRC survivors completed the survey (34% response rate). Almost a quarter (23.0%) of CRC survivors reported participating in a sport in the past month with the most common sport being golf (58.7%). In multivariate regression analysis, 33.0% (p<.05) of the variance in sport participation was explained by being male ($\beta$=.12; p=.006), in better general health ($\beta$=.12; p=.006), and $\geq$5 years postdiagnosis ($\beta$=.09; p=.031). The most common barriers to sport participation were time, age/agility, and no interest/dislike sports. The most common anticipated benefits were improved fitness, meeting people, and improved health. Over half (57.2%) of CRC survivors were possibly interested in learning about sport opportunities.
Conclusions: Promotion of sport is a potentially fruitful strategy for increasing physical activity in CRC survivors.

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## B-024

### THE ASSOCIATION BETWEEN PROVIDER CHARACTERISTICS AND BELIEFS ABOUT PSYCHOSOCIAL CARE IN ONCOLOGY

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National guidelines for cancer management now advocate caring for the "whole patient," by identifying, assessing, and treating psychosocial distress because it affects quality of life, morbidity and mortality outcomes. Yet, most providers do not follow the guidelines, perhaps reflecting the oncology culture of busy clinics, provider burnout and varying provider beliefs about the importance of psychosocial aspects of patient care. We examined 108 clinical (e.g., physician, nurse) and non-clinical (e.g., scheduler, receptionist) providers in the Thoracic Center at MD Anderson Cancer Center to assess their beliefs about psychosocial care for patients, empathy towards patients, and job burnout and to examine provider characteristics that may be associated with their beliefs. Providers were mostly white (66%) and female (74%), and had worked in the Center 0-9 years (66%). Results indicated high rates of burnout with 52% experiencing moderate to high level of emotional exhaustion (EE), 26% experiencing moderate to high levels of depersonalization (DP), and only 41% reporting moderate to high levels of personal accomplishment (PA). Multivariate analysis predicting clinical provider beliefs (PB) about psychosocial care was conducted; independent variables included the three areas of burnout, empathy towards patients, years in cancer care, years in the Center, gender, age, and race. Only EE, PA, and race were associated with PB strongly enough for the final model ($R^2=0.23$; F=3.07, p=.01), with EE (p=.03) and race (p=.04) remaining significant. Lower EE and White race were associated with more positive PB. Results highlight the need for a multi-component program for changing the culture with regard to psychosocial care that goes beyond implementing national guidelines, to include examining cultural differences in perceptions regarding psychosocial care and implementing strategies to reduce provider burnout.

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## B-025

### SPOUSES' BELIEFS ABOUT CANCER DURATION MEDIATE ASSOCIATIONS BETWEEN SPOUSES' TREATMENT CONTROL BELIEFS AND PROSTATE CANCER PATIENTS' QUALITY OF LIFE

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Purpose: Although survival rates for localized prostate cancer (PC) patients are high, quality of life (QOL) may still be deleteriously affected by treatment. Among married PC patients, the spouse is often the primary provider of emotional support and personal care. Despite the important role spouses play in patient care, few studies have investigated spouses' illness beliefs and their impact on patients' QOL. This study examined illness beliefs likely to be salient in spouses of PC patients (i.e., cancer duration and treatment control) and explored whether spouse beliefs about cancer duration mediate relations between spouses' beliefs about treatment control and patients' QOL 6 months later.

Methods: Fifty-three patients, who underwent localized treatment for PC in the last 6 months, and their spouses, completed a measure of illness perceptions (revised IPQ). Patients completed a QOL measure (FACT-G) 6 months later. Mediation analyses using bootstrapping determined whether spouse beliefs about the timeline of the patient's illness mediated relations between spouse beliefs about treatment control and patient QOL 6 months later.

Results: Spouse timeline beliefs mediated the association between spouse treatment control beliefs and patient QOL 6 months later (total indirect effect point estimate -.71, 95% bias corrected and accelerated CI .02 to 2.03).

Conclusions: Stronger spousal beliefs about treatment control led to stronger spouse beliefs that their loved one's illness would be temporary (rather than long-lasting), which in turn was associated with greater patient QOL 6 months later. This study highlights the important influence of spouse illness beliefs on patient QOL, and the need for more research and development of interventions in dyadic coping and patient adjustment.

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## B-026

### RADIOTHERAPY TYPE AFFECTS SIDE EFFECTS AND QUALITY OF LIFE IN EARLY-STAGE BREAST CANCER PATIENTS

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Radiotherapy (RT) after breast-conserving surgery (BCS) is standard of care for early-stage breast cancer, but, according to two Cochrane reviews, short-term RT side effects and their impact on changes in quality of life (QOL) are largely unknown. We analyzed data from a cohort of in situ and node-negative early-stage invasive breast cancer patients with tumor size<3.0 cm (n=280; 33% in situ, 67% stage I/IIA; mean age=59.4 [SD=10.0]; 17% non-white; external beam radiation [EBRT], n=168, or brachytherapy [BT], n=112) who were interviewed 6 weeks (T1) and 6 months (T2) after final surgery. Using a 5-point scale (1 "not at all" to 5 "all of the time"), we measured RT side effects severity during treatment: "You have (or had) burns/dried skin/itchy skin from radiation" (skin irritation) and "You are (or were) very tired after radiation" (fatigue). We measured QOL with the FACT-B and SF-36 vitality subscale. At T1, 43% of patients reported RT; by T2, all 280 patients had begun or completed RT. We examined side effects differences by RT type at T2 with analysis of covariance (ANCOVA) and change in side effects and QOL from T1 to T2 with repeated measures ANCOVAs, all models adjusted for race, surgical side effects, social support, state anxiety, and age at T1. Correlations between RT side effects severity and QOL were tested using Pearson r. At T2, women who had EBRT reported more severe fatigue (p=.014) and skin irritation (p<.001) than women who had BT. Women who received EBRT reported greater worsening of fatigue and of skin irritation from T1 to T2 compared to women who had BT (each p<.001). Vitality correlated with fatigue (r=-.526) and skin irritation (r=-.193) severity at T1 (each p<.05) but only fatigue severity at T2 (r=-.373; p<.001). Total FACT-B correlated with fatigue (T1: r=-.281; T2: r=-.273) and skin irritation (T1: r=-.260; T2: r=-.168) severity at both times (each p<.01). By 6 months, EBRT was associated with greater worsening of fatigue and skin irritation than BT was, but neither QOL measure changed significantly over time by RT type. Further research evaluating short-term differences in QOL and RT side effects by RT type are needed.

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## B-027

### COMMUNICATING REASSURANCE DURING RECURRENT CANCER

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Reassurance is a primary function of physician communication, particularly in cancer care. Although reassurance has been studied as a response to patient anxiety, it may have multiple communication functions. At recurrence, patients face a new prognosis, but often benefit from the coping experience they have accumulated over time. Our aim is to explore the use of reassurance during oncologist-patient consults soon after a cancer recurrence diagnosis. Data were collected as part of a study focused on oncologist-patient communication at cancer recurrence. Participants include medical oncologists (n=9) and their consenting female patients diagnosed with a first, distant, gynecologic, breast, lung, or colorectal recurrence (n=16). Following a patient interview at enrollment, the next regularly scheduled oncology consultation was selected for observation, audio-recorded and transcribed verbatim. Directed and summative qualitative content analysis were used as interpretive approaches to coding data. Consults were coded directively using Stark et al.'s (2007) typology of reassurance messages (i.e., simple, educational, planning, spontaneous), then analyzed for potential themes and functions within those categories. Results show that reassurance was evidenced in all cases (m=6.6, sd=7.0). Simple reassurance is most prevalent in this sample and most typically addressed patients' expressed affect. This type of reassurance also often confirmed patients' efforts toward maintaining well being. Spontaneous reassurance was infrequent and functioned primarily as politeness when opening an encounter. Educational and planning reassurance types functioned mainly to reduce uncertainty, clarify future medical activity, and express oncologist preferences for treatment. Reassurance is an important message type used by oncologists in this sample to fulfill several important communication functions well established in communication theory, including uncertainty management and maintaining the oncologist patient relationship. Understanding more about how reassurance functions as a communicative tool can aid development of interventions that transition patients from curative medical treatment to end of life preparation

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## B-028

### SYMPTOM BURDEN IN NON-SMALL CELL LUNG CANCER SURVIVORS

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Objective: We evaluated the impact of symptom burden on performance ability in early-stage non-small cell lung cancer (NSCLC) survivors.

Methods: A sample of 184 NSCLC survivors completed a telephone interview (response rate=65%), which included the Brief Pain Inventory, Brief Fatigue Inventory, Baseline Dyspnea Index, Hospital Anxiety and Depression Scale and Karnofsky Self-Reported Performance Rating scale. Participants were 1-6 years post-treatment and were primarily female (64%), Caucasian (94%) and married (61%), with a mean age of 69 years.

Results: Symptom measure total scores were dichotomized (yes/no) based on empirical cutoffs for pain, fatigue, dyspnea, anxiety, and depression. The number of symptoms exceeding the cutoff was summed for each participant. Receiver-operating characteristic (ROC) curves were then used to determine the number of symptoms that resulted in impaired self-rated performance status, as measured by the KPS. Using a KPS cutoff score of 3 (normal activity with effort, some symptoms of disease or side effects of treatment), the ROC curve analysis demonstrated that the level of symptom burden effectively discriminated between the patients with normal performance status and those who reported some level of impairment (AUC=0.75), and suggested that having more than 1 symptom was the optimal indicator of some level of impairment in functioning (sensitivity=0.81, specificity=0.54).

Conclusions: This suggests that having multiple symptoms significantly impacts survivors' functional status, and stresses the importance of incorporating multi-focal symptom assessment into routine clinical practice. Symptom management remains an important target of intervention for improved post-treatment performance ability among lung cancer survivors. Future research should examine the interacting effects of multiple symptoms.

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## B-029

### IMPLEMENTATION OF THE CLINICAL PRACTICE GUIDELINES FOR PSYCHOSOCIAL CARE OF ADULTS AMONGST CANCER NURSES

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In 2003 the National Breast Cancer Centre and the National Cancer Control Initiative launched the Clinical practice guidelines for psychosocial care of adults with cancer (PGPC) to guide cancer care providers in the assessment of psychosocial issues and ensure appropriate follow-up interventions. A multifaceted dissemination strategy was undertaken to promote the PGPC among multidisciplinary health care teams across Australia. However, to date the extent to which these dissemination strategies have been successful in promoting uptake amongst cancer care providers has not been formally evaluated. The present study aimed to examine the implementation of the PGPC, the barriers to implementation, as well as the training and supervision needs of cancer nurses throughout Australia. A web-based survey was completed by cancer nurses (n=354). The majority of participants worked in the public sector (74%) and most worked in cancer nursing for over 11 years (70% of participants; 14% had worked less then 5 years).

Our results confirmed that dissemination does not necessarily equal implementation. Over half (52%) of participants were unaware of the PGPC. Whilst 42% of nurse participants felt that the provision of psychosocial support played a critical role in their clinical work, only 45% reported receiving training in psychosocial support and assessment. 72% indicated that they never receive supervision for the psychosocial support they provide. Lack of time and working within an organizational culture that did not prioritize psychological factors were reported to be primary barriers to provision of psychosocial support.

This study will discuss the systemic and individual barriers to implementation of clinical guidelines. This is timely, given the plan for revision and updating of the PGPC by Cancer Australia which has now amalgamated with the former National Breast Cancer Centre.

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## B-030

### EFFECT OF AGE ON REDUCTION IN DEPRESSION ASSOCIATED WITH INCREASED PHYSICAL ACTIVITY IN CANCER SURVIVORS: A PILOT STUDY

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Background: Lack of physical activity has been linked to many factors that affect quality of life, including anxiety and depression, fatigue, cognitive function and overall physical well-being. Cancer survivors are recovering from a disease that imposed limitations on physical activity. Therefore increased physical activity in this group may result in changes in quality of life. However, the relationship between the age of the survivor and the effects of increased physical activity has yet to be evaluated.

Objectives: To determine the relationships between the age of cancer survivors and changes in fatigue and depression that coincides with increased physical activity.

Research Design: Eleven female participants (mean age=53.4±11.8 yrs.) post-treatment from various types of cancer (45% breast, 18% colon, 9% ovarian, 9% follicular lymphoma, 9% breast and colon) were enrolled in a 10-week physical activity based rehabilitation program. Participants engaged in individual and group exercise sessions. Assessments included (baseline and final) quantification of participant's depression and fatigue.

Results: A significant differences from baseline to final assessment was observed for the Beck Depression Inventory-II and the Brief Fatigue Index ($p<0.05$). In addition multiple linear regression analysis revealed that age was a significant negative predictor ($t=-3.07$, $p=0.0027$) of the change in depression that coincided with engagement in the physical activity program and treatment. Similar analysis with the Brief Fatigue Inventory results did not reveal age to be a significant predictor ($t=-0.40$, $p=0.6887$). Conclusion: Based upon these results it appears that engagement in physical activity was associated with reduced depression and fatigue in post-treatment cancer survivors. However, the exercise intervention was associated with lesser decreases in depression in older participants.

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## B-031

### ASSOCIATIONS AMONG AGE, PAIN, ACTIVITIES OF DAILY LIVING (ADL), PHYSICAL FUNCTIONING AND PERCEIVED INTERFERENCE OF PAIN WITH DAILY ACTIVITY IN PATIENTS WITH CHEMOTHERAPY-INDUCED NEUROPATHIC PAIN (CINP)

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Between 30-40% of patients receiving certain chemotherapeutic agents develop CINP. This secondary analysis aimed to determine associations among age, pain severity, perceived interference of pain with activity, and trouble with physical functioning and activities of daily living (ADL) in patients with CINP. The University of Rochester Cancer Center Community Clinical Oncology Program Research Base recruited 461 cancer survivors with neuropathic pain. Our sample was mostly white (88%) and female (71%), with a mean age of 61 years (SD=10). Survivors had a variety of cancer diagnoses, with breast cancer being most common (40%). Logistic regression was performed to determine the variables that were independently associated with physical functioning and ADL subscores from the Vulnerable Elders Survey. Ordinal logistic regression was used to examine predictors of perceived pain interference with activity. Both regressions included pain levels, age, race, gender, education, and cancer diagnosis as independent predictors. Pain was significantly associated with trouble with physical functioning, OR [95% CI]=1.45 [1.24, 1.69], and ADL, OR=1.38 [1.17, 1.63], and perceived interference of pain with activity, OR=1.72 [1.52,1.95]. Age did not correlate with pain severity, but was inversely associated with perceived pain interference in activity, OR=0.97 [0.95, 0.99]. Age also did not correlate with general difficulty with physical activity or ADL. These data suggest that increased pain is associated with greater difficulties with physical functioning and ADLs, and that increased pain and younger age is associated with greater perceptions of pain interference with activity. Further work is needed to understand the relationship between perceived pain interference with activity and effects on quality of life in patients with CINP.

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## B-032

### FERTILITY CONSIDERATIONS AMONG AT-RISK ADOLESCENTS NEWLY DIAGNOSED WITH CANCER

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Infertility is a recognized late effect of cancer therapy and is commonly associated with psychological distress. Although males with adult onset cancers report interests in fertility preservation and future parenthood, no published studies have considered these issues among adolescent males newly diagnosed with cancer. As such, this study examined the priority that adolescents place on fertility at time of cancer diagnosis in comparison to other life goals salient in cancer survivorship. Data were collected from 28 males newly diagnosed with cancer (Mage=16.6 years, SD=2.3) at increased risk for infertility secondary to cancer treatment as part of a large, multisite, NIH-funded study investigating factors predictive of sperm banking outcomes in this population. Adolescents rank-ordered the importance of 8 theoretically-derived life goals, in which 1 was ranked as the most important life goal and 8 was ranked as least important. Goals included having: 1) academic or work success, 2) children, 3) close friends, 4) financial stability, 5) good health, 6) home ownership, 7) increased dedication to faith, and 8) a romantic relationship. A Friedman test of the overall ranking difference among the 8 life goals was significant (p<.001), and follow-up Wilcoxon Signed Rank test comparisons between specific goals were performed. Results demonstrated that adolescents ranked “having good health” as significantly more salient than any other goal (ps<.01); all other comparisons between goals were nonsignificant. Descriptive results demonstrated that 78.6% of adolescents reported “having good health” in their “top 3” goals, followed by 39.3% of adolescents indicating “having children” and “academic or work success” as prioritized goals. Findings suggest that at-risk adolescents newly diagnosed with cancer prioritize their overall physical health, fertility, and academic/work success as primary life goals. Implications of these findings will be discussed.

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## B-033

### PREDICTORS OF CORTISOL COLLECTION ADHERENCE IN ADVANCED PROSTATE CANCER PATIENTS

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Salivary cortisol collection is frequently used in biobehavioral research to provide an objective measure of participant stress. Researchers have utilized the morning rise in cortisol as a proxy for HPA axis dysregulation. Given the relatively narrow window in which morning cortisol levels peak, predictors of adherence to collection protocols are important to understand, particularly among older and chronically ill populations.

Aim: To examine predictors of adherence to a saliva collection protocol to assess salivary cortisol in advanced prostate cancer (APC) survivors.

Method: Men diagnosed with APC were enrolled in a study to evaluate the effects of a cognitive-behavioral stress management intervention on health-related quality of life outcomes. Self-reported times of salivary cortisol collection over 3 mornings were used to calculate adherence. For each morning, the difference between the first and second sampling times (wake response) was calculated. If the difference was <45 minutes, a patient’s morning sample collection was categorized as adherent.

Results: Overall, 84% of patients (N=79; 66% non-Hispanic white; avg. age=70yrs,SD=9; avg. months since diagnosis=38,SD=35; avg. months since treatment=11,SD=21) adhered to the protocol on all 3 mornings. Logistic regression analyses indicated that patients were more likely to report adherent saliva collection if they reported better general health (SF-36 general health; OR 1.08,CI 1.01-1.16). Patients were less likely to adhere if they identified as Caucasian (OR 0.08,CI 0.01-0.91) or reported taking sleep medication (OR .05,CI 0.0-0.67). Although other predictors in the model were not statistically significant (overall sleep quality, perceived stress, full-time employment, and age), the overall model was significant ($\chi 2(7)=21.61, p<.01$).

Discussion: Limited research has investigated factors that impact adherence to salivary cortisol sampling protocols. Our results suggest that despite living with advanced disease, APC patients are generally adherent to salivary cortisol collection and that greater adherence is associated with better perceived health and sleep efficiency.

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## B-035

### THE INFLUENCE OF SOCIOECONOMIC STATUS AND PSYCHOSOCIAL FACTORS ON QUALITY OF LIFE FOLLOWING MYOCARDIAL INFARCTION: TESTING THE RESERVE CAPACITY MODEL

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The Reserve Capacity Model (RCM) proposes that, over time, psychosocial (PS) factors mediate the link between socioeconomic status (SES) and health. It suggests that individuals of low SES experience more stressors than their counterparts, and that low SES depletes the inter/intra-personal resources available during times of need (i.e., “reserve capacity”). Stress and low reserves increase negative emotions, which, in turn, manifest in ways (e.g., unhealthy behaviors) that affect health. To empirically test the RCM on quality of life (QoL) 1 year following myocardial infarction (MI), we used PREMIER, a 19-hospital US registry of 2498 MI patients. General SES (G-SES; e.g., income, education) and health-related SES (HR-SES; e.g., insurance, ability to afford care) were collected at hospitalization. PS factors included perceived stress and reserve capacity (social support, optimism, and locus of control) at 1 month post-MI, and depressive symptoms at 6 months. We measured 4 types of QoL at 1 year: the general SF-12 Physical and Mental Components (SF-12 PCS, SF-12 MCS), and the disease-specific Seattle Angina Questionnaire Angina Frequency and Quality of Life (SAQ-AF, SAQ-QoL). The structural model, controlling for age, sex, race, and baseline QoL, fit the data well: $\chi 2$ (176)=535, ratio=3.0; CFI=.96; RMSEA=.03. G-SES was related to HR-SES (.43). G-SES and HR-SES were related to reserves (.44 and .10, respectively). In turn, reserves were related to stress (-.69) and depressive symptoms (-.32). Depressive symptoms were related to all QoL outcomes (range -.18 to -.32). G-SES was associated with physical aspects of QoL (SF-12 PCS total effect=.23, SAQ-AF total effect=.20), but PS factors were not mediators. In contrast, PS factors strongly mediated the link between HR-SES and mental aspects of QoL (SF-12 MCS total effect=.18, 50% explained by PS; SAQ-QoL total effect=.14, 49% explained by PS). Our findings support the RCM by showing that PS factors mediate the link between HR-SES and mental aspects of QoL, implying possible PS areas for intervention.

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## B-036

### ANTICIPATION OF DIFFERENT TYPES OF STRESSORS MODERATES THE EFFECT OF A FAMILY HISTORY OF HYPERTENSION ON BASELINE BLOOD PRESSURE

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The purpose of this study was to determine if baseline differences in heart rate and blood pressure between groups with and without a family history of hypertension are moderated by the type of stressor anticipated during baseline periods. We collected mean baseline values from 66 published studies examining family history differences in cardiovascular reactivity. From these studies means for 91 baseline conditions were identified for heart rate, 105 were identified for systolic blood pressure, and 94 were identified for diastolic blood pressure. Each baseline condition was coded according to whether it was followed by a cognitive (e.g., mental arithmetic), a physical (e.g., cold pressor test), or a social stressor (e.g., public speaking). A mixed-model ANOVA was conducted for each cardiovascular variable with Family History Status serving as a within-subjects independent variable and Anticipated Stressor entered as a between-subjects independent variable. Results indicated the presence of a main effect of Family History Status for all three cardiovascular variables, with groups with a positive family history of hypertension displayed significantly higher mean baseline values. A significant Family History Status by Anticipated Stressor interaction was observed for diastolic blood pressure (F (2, 91)=3.28, p=.042. Simple effects showed that family history differences in baseline means were significantly larger when participants anticipated an upcoming cognitive (Cohen’s d=.20) or social stressor (d=.34), compared to baselines followed by physical stressors (d=.10). The results indicate that groups with a family history of hypertension display higher baseline levels of diastolic blood pressure under conditions where participants anticipate an evaluation of performance by others.

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## B-037

### EXPERIENTIAL ACCEPTANCE IS RELATED TO PATIENT REPORTS OF COMMITMENT AND DESIRE TO IMPROVE HEALTH BEHAVIORS IN CARDIAC REHABILITATION

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Prior studies have documented positive associations between experiential acceptance and engaging in behavioral change, but few studies have focused on cardiac patients. The current study evaluated the relationship between pre-cardiac rehabilitation (CR) levels of acceptance (willingness to experience distress) and awareness (noticing internal/external events), and patient reports of perceived importance of, commitment to, and desire for improving heart-related values/behaviors. Sixteen patients (5 women; Mean age=63yrs) were recruited from an outpatient CR program and completed the following questionnaires prior to starting the CR program: Food Craving Acceptance and Action Questionnaire, Cardiac Acceptance and Action Questionnaire, Philadelphia Mindfulness Scale (acceptance and awareness subscales), and Health Related Values Questionnaire (HRVQ). For the HRVQ, patients rated heart-health-related values on a 5 point Likert scale (1=not at all, 7=extremely) indicating the importance of, degree of commitment to, and desire for improvement in, 7 specified areas of health behavior. Results indicated that food-specific acceptance was positively correlated with perceived importance of diet monitoring (r=.54; p=.03), and the desire to improve adherence to attending doctor appointments (r=.64, p=.02). Cardiac-specific acceptance was positively correlated with greater perceived importance of communicating with caregivers (r=.52, p=.04), and greater commitment to exercising regularly (r=.64 p=.02). Awareness was positively associated with perceived importance of medication adherence (r=.54, p=.03), greater commitment to becoming physically active (r=.60, p=.03), greater commitment to monitoring one's diet (r=.57, p=.04), greater commitment to taking medications as prescribed (r=.58, p=.04), and greater desired improvements in diet monitoring and regular exercise (r=.65, p=.02). Results suggest levels of acceptance and awareness may be relevant to CR adherence due to the relationship with perceived importance of, commitment to, and desire to improve health behaviors.

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## B-038

### PSYCHOLOGICAL IMPACT OF SURVEILLANCE IN PATIENTS WITH A FIDELIS DEFIBRILLATOR LEAD UNDER ADVISORY

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Implantable cardioverter defibrillators (ICD) are subject to technical failures and the impact of the resulting public advisories on patient welfare is unclear. The psychological status of patients who received an advisory for their Medtronic Fidelis ICD lead and followed either by self-surveillance for alarm or home-monitoring with CareLink (in those who could not hear the alarm) was evaluated prospectively and compared to patients with ICDs not under advisory. Lead fracture could result in inappropriate shocks or failure to deliver therapy. Method: 156 consecutive consenting patients (86 alarms, 24 Carelinks, 46 case-matched controls) were recruited within 1.5 yrs of advisory notification. All advisory patients were seen immediately before being advised that the automatic lead surveillance utilised since the advisory had been inadequate in warning of impending fracture, as well as 1 and 6 months after programming was optimized. Depression, anxiety, quality of life (QoL), and ICD-related concerns were assessed using validated questionnaires. Results: Mild to severe elevations in depression and state anxiety were experienced by 31% and 48% of patients, respectively. QoL was impaired on all subscales. No significant group differences in distress and ICD-related concerns emerged at baseline or at follow-up. At baseline, Alarm patients reported greater limitations because of body pain compared to Controls (p<.05). All patients showed a significant reduction in body-pain related QoL at the final vs. first two evaluations (p<.001). Carelink patients reported greater limitations in social activities because of physical or emotional problems at baseline (p<.05) but this difference was no longer significant at follow-up. Conclusion: There was limited evidence for worse psychosocial functioning in those at risk for ICD lead fracture, irrespective of surveillance method they were assigned to. Counselling for distressed patients may improve well-being.

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## B-039

### BODY MASS AND LIPID LEVELS AMONG WOMEN WITH PTSD, DEPRESSION, OR NO MENTAL ILLNESS

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A growing body of evidence indicates posttraumatic stress disorder (PTSD) is associated with elevated cardiovascular disease (CVD) risk. Relatively little research, particularly among women, has documented mechanisms by which PTSD might confer CVD risk early in life. The present study was conducted to examine whether body mass index (BMI) and lipids are altered among relatively young women with PTSD (n=15) compared to groups with depression (n=9) or no mental illness (n=18). Women with no history of chronic medical illness (M± SD age=29±8) were recruited from the community and mental health clinics/practices in the Ft. Lauderdale area. There were not significant group differences for age or family income. Ethnicity was comparable among the groups: PTSD (53% Caucasian, 20% Hispanic, 13% African American, 14% other); depression (33% Caucasian, 33% Hispanic, 11% African American, 23% other); no mental illness (60% Caucasian, 25% Hispanic, 5% African American, 10% other). The BMI levels in the PTSD group were significantly higher than those in the no mental illness group (p<.01), but were not significantly higher than the depression group. In the PTSD group, 67% were obese, compared with 33% of the depression group and 17% of the no mental illness group. The PTSD group had significantly higher triglyceride levels than the no mental illness group (p<.01); a statistical trend was observed for higher triglyceride levels in the PTSD group than the depression group (p=.06; effect size=.70). High density lipoprotein levels (good cholesterol) in the PTSD group were significantly lower than the no mental illness group (p<.01), but were not significantly lower than the depression group. No significant differences were observed between the depression and no mental illness groups for any comparisons, nor across any groups for total cholesterol or low density lipoprotein levels. The present findings provide partial support for the hypothesis that PTSD is associated with CVD risk factors for women early in life, in the absence of medical illness.

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## B-040

### HIGHER PERCEIVED SOCIAL SUPPORT PREDICTS BETTER HEALTH OUTCOMES IN HEART FAILURE PATIENTS

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Introduction: Heart failure (HF) progression, although associated with demographic and medical risk factors, is also linked to psychosocial variables including social support and depression. The BETRHEART study examined the relationship between functional social support, depression, and markers of HF severity.
Methods: HF patients (N=121, 72.4% male; age M=57.2+11.5 years) completed the Interpersonal Support Evaluation List (ISEL-12) to measure perceived social support, the Social Network Index (SNI) to measure high contact networks and number of people in the social network, and the Beck Depression Inventory-II (BDI-II); outcome measures included the Six Minute Walk Test (6MWT), self-reported symptoms from the Kansas City Cardiomyopathy Questionnaire (KCCQ), and left ventricular wall stretch from plasma levels of beta natriuretic peptide (BNP).
Results: Controlling for age, body mass index, gender, marital status, smoking status, systolic blood pressure, and depression, greater ISEL Appraisal support, defined as the perception that one has someone with whom to confide, significantly predicted further distance walked on the 6MWT (β=.24, *p*=.034; overall model $R^2$=.22, *p*=.008) and fewer reported symptoms on the KCCQ Overall Summary Score (β=.21, *p*=.010; overall model $R^2$=.52, *p*<.001); appraisal was unrelated to BNP and KCCQ Clinical Summary Score. SNI high contact social networks and number of people in social networks did not predict any outcome measure. Interestingly, controlling for the number of people in the social networks from the SNI, greater Appraisal predicted lower BNP (β=-.21, *p*=.058; overall model $R^2$=.25, *p*=.009).
Conclusions: These findings suggest that having someone with whom to confide, independent of the number or extent of social networks, may be an important function of social support that predicts subjective and behavioral mechanisms of HF severity, suggesting pathways for supplementing HF treatment.

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## B-041

### NEIGHBORHOOD FOOD ENVIRONMENTS AND INCIDENT MYOCARDIAL INFARCTION IN POST MENOPAUSAL WOMEN

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This paper examines the association between the neighborhood food environment and incident myocardial infarction in post menopausal women in San Diego County.
Food environment measures were created around participants' residential address in the half, one and three mile buffers. Four food outlet types were examined: Number of grocery stores, restaurants, convenience stores, and fast food restaurants. Survival analyses investigated the relationship between each of these food environments and incident myocardial infarction in 5,196 post menopausal women over 50 years of age.
The mean age was 64 years, and 76% were non-Hispanic White, 16% were Hispanic and 9% were other ethnicities. Over a follow-up of 7 - 10 years, 2.06% of women had a myocardial infarction. After adjustment for age, ethnicity, family history of MI, hypertension, high cholesterol, smoking, diabetes, BMI, enrollment status in the hormone therapy clinical trial, and family income, the number of grocery stores in the half mile buffer (HR: 1.174), the number of restaurants in the half mile buffer (HR: 1.182) and in the one mile buffer (HR: 1.155), were the only characteristics that were significantly associated with the risk of MI.
In general, although there were some significant associations, the results of the study were essentially null, and did not support the hypothesis that neighborhood food environments were associated with incident myocardial infarction.

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## B-042

### INHIBITION OF NEGATIVE AFFECT AND LIFESTYLE BEHAVIORS AS PREDICTORS OF CARDIOVASCULAR FUNCTIONING

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Inhibition of negative emotions (e.g., Type D personality and anger suppression) has been associated with disease risk across medical and non-medical populations, but it is unclear how these psychological characteristics affect cardiovascular functioning and what role lifestyle behaviors (i.e. smoking, physical activity, alcohol use, and obesity) may play. The present study examined how tendencies to inhibit negative emotions interact with lifestyle behaviors to predict cardiovascular functioning.
The sample consisted of 273 young adults (73% female; mean age 21.6, *SD*=5.3). Sixty percent of the sample self-identified as European American, 19% African American, 11% Latino(a), and 10% other ethnicity. Participants completed a battery of demographic, lifestyle and psychological measures, including the Type D Scale-14 (Denollet, 2005) and the State-Trait Anger Expression Inventory-2 (Spielberger, 1999). Heart rate variability (HRV) was used to assess cardiovascular functioning. Hierarchical multiple regression analyses revealed that male gender, non-African American ethnicity and greater suppression of anger were associated with greater use of alcohol ($R^2$=.08, $F$(7, 259)=3.02, $p$<.01), while non-African American ethnicity and non-Type D status were associated with greater exercise frequency ($R^2$=.07, $F$(7, 259)=2.59, $p$<.05). Lifestyle behaviors were then examined as moderators of the relationship between psychological characteristics and HRV. The interaction between Type D personality and exercise frequency ($t$=2.33, $p$<.05) indicated that Type Ds who exercised with greater frequency displayed the healthiest HRV (Y=93.59 nu), whereas non-Type Ds who reported low exercise frequency displayed the least healthy HRV (Y =31.66 nu).
These results suggest that lifestyle behaviors may serve to moderate the influence of inhibiting negative emotions on the cardiovascular system. Research using longitudinal and experimental designs may aid in clarifying how this effect comes about.

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## B-043

### EVALUATION OF A PEER-LED HYPERTENSION INTERVENTION FOR VETERANS: HEALTH EFFECTS ON PEER LEADERS

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Health-focused peer-led interventions demonstrate success in reducing risk-related behaviors among participants and peer leaders (PLs) with chronic illnesses (Convey et al., 2010; Latkin, 1998), yet few researchers have explored the effects of such interventions on the health of PLs in hypertensive populations. The current study explored PL self-care behaviors that contribute to blood pressure control in a hypertension intervention (the POWER program) for U.S. veterans.
Veterans service organizations (VSOs) were randomly assigned to the POWER program or an educational seminar condition. Within the POWER program, 56 PLs were trained to deliver health-related presentations to VSO peers. Three-quarters (78.6%) of the PLs were also study participants and completed health surveys at baseline, 6, 12 and 18 months. After completion of POWER, PLs participated in focus groups and discussed the impact POWER had on themselves and their posts. We first analyzed survey data to compare PL changes in blood pressure, weight, hypertension knowledge, and several lifestyle variables over time. Next, we compared health differences between PLs (N=44) and non-PL project participants (N=175) at 12 months to examine health changes specific to PLs. We then used qualitative content analysis to generate themes related to PL behavior change.
Both quantitative and qualitative findings indicate that PLs increased their knowledge about health behaviors, checked their blood pressure more often, reported more physical activity, and became healthier during the course of the intervention. PLs were more knowledgeable about hypertension and reported higher fruit and vegetable consumption than non-PL participants. Although we are limited in our ability to infer causality, PLs may have benefited more than their peers as a result of project involvement. Further research is needed to understand why this occurs and how to maximize the benefits of the intervention for all participants.

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## Meritorious Poster

## B-044

### ADVERSE CARDIOVASCULAR EFFECTS OF EXPOSURE TO NEIGHBORHOOD DISORDER AND VIOLENCE ARE INCREASED BY AGONISTIC STRIVING

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We tested the hypotheses that: (1) exposure to neighborhood disorder and violence (NDV) is linked to higher levels of depression, anger, hostility, and cardiovascular risk, as indexed by elevated ambulatory heart rate (HR) and blood pressure (BP); and (2) this effect is magnified in persons who exhibit agonistic striving (AS), defined as a persistent preoccupation with influencing or controlling others. Support for this model has been found in multiracial samples of low-income adolescents; we now test it in a similar sample of young, urban adults. Participants were 233 adults (72.3% women, 27.2% men; 63.9% black, 34.6% white, 1.5% other; mean age=32 years ±3.3; mean BMI=30.8 kg/m2 ±7) who had participated in the Baltimore Project Heart studies as high-school students in the early 1990s. Exposure to NDV, chronic stress, depressive symptoms, anger, and hostility was assessed by self-report, while AS was assessed using the Social Competence Interview (SCI). Prevailing levels of blood pressure (BP) and heart rate (HR) were assessed by ambulatory monitoring over two 24-hr intervals. Exposure to NDV predicted higher levels of ambulatory heart rate (HR: r=.199, p=.04) mean arterial pressure (MAP: r=.216, p=.03), diastolic blood pressure (DBP: r=.197, p=.04) and systolic blood pressure (SBP: r=.198, p=.04). Furthermore, NDV exposure was also positively associated with chronic stress (r=.301, p=.002) and hostility (r=.235, p=.008). Regression analysis controlling for age, sex, race, and BMI revealed that exposure to NDV interacted with AS to predict higher mean ambulatory HR (df=1, 141, F= 5.34, p=.02); in other words, the link between NDV and CV risk, as indexed by mean HR level, was amplified in persons who were more agonistically inclined. These findings lend support to the hypothesis that chronic exposure to environmental and psychosocial stress increases CV risk, and that this relationship may be magnified in persons who often struggle to influence, manage, or control other people in their social environment.

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## B-045

### DEPRESSIVE SYMPTOMS AND CORONARY ARTERY DISEASE IN A COLOMBIAN SAMPLE: POTENTIAL MECHANISMS OF ACTION

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INTERHEART study findings suggest that psychosocial stress, including depression, confers less risk for Coronary Artery Disease (CAD) in Latin American populations than it does on a global scale. In order to determine if depression is related to CAD in a Colombian sample, and to identify the mechanisms through which depression may be associated with CAD, 99 individuals with documented CAD who experienced an event were recruited from the Cardiovascular Clinic of Medellin. They were administered the Patient Health Questionnaire - 9 (PHQ-9) from the PRIME-MD. The PHQ-9 was also administered to 107 healthy controls from Medellin, Colombia. Colombian CAD patients had significantly higher PHQ-9 scores than controls (4.63 vs. 2.27, $t=3.99$, $p<0.001$). 18.2% of the CAD had moderate, moderate-to-severe, or severe depression, compared to only 0.9% of healthy controls. Compared to controls, CAD patients were also more likely to have hypertension, diabetes, dyslipidemia, and be a past smoker (all p's<0.001). PHQ-9 scores were positively correlated with age ($r=0.23$, $p<0.001$) and negatively correlated with years of education ($r=-0.30$, $p<0.001$). Those with hypertension had significantly higher PHQ-9 scores ($t=2.58$, $p<0.01$), and past smokers had significantly higher PHQ-9 scores ($t=2.74$, $p<0.01$). A logistic regression model predicting CAD showed that the risk for having CAD increased by 12% for each point on the PHQ-9 [Odds Ratio (OR)=1.12 (1,04-1,21)]. When age, years of education, hypertension, and past smoking were entered into the model as covariates, PHQ-9 scores were not associated with CAD [OR=1.09(0.99-1.20)]. CAD patients experiencing a coronary event presented more depressive symptoms than healthy controls. Major depression was also more common in the CAD group. Although depressive symptoms appeared to be risk factor for CAD in this sample, hypertension and past smoking mediated this relationship. Further study to examine the independent contributions of psychosocial (e.g., stress) and lifestyle (e.g., smoking) factors to CAD in Latin American populations is warranted.

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## B-046

### TRACKING THE POTENTIAL HEALTH IMPACT OF STEREOTYPE THREAT; A PILOT STUDY

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Health disparities exist such that minority groups often have elevated risk for mortality and morbidity. However the causes of such disparities are still largely unknown. Previous research suggests that stereotype threat may have negative effects on cognitive performance. Furthermore, previous studies present strong evidence that minority groups and women are most affected by this phenomenon in comparison to their majority-group counterparts. However, little research has been conducted to demonstrate the impact that stereotype threat may have on the physiological systems of the body (i.e. cardiovascular system). In the present study, continuous heart rate data was collected from 21 (9 female) undergraduate minority students while they completed a baseline period, a cognitive task, and a recovery period. Eleven of the 21 students were presented with an implicit stereotype threat manipulation at the beginning of the cognitive task. Preliminary results suggest that stereotype threat may cause heart rate variability (HRV), an index of cardiovascular health, to be lower through the recovery period when compared to those without the stereotype manipulation ($p<.05$). These results suggest that stereotype threat may produce deleterious physiological as well as cognitive effects. In addition, these results suggest that the effects of stereotype threat can be assessed by measures of the cardiovascular system (i.e. HRV) following a stereotype threat manipulation.

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## B-047

### SELF-EFFICACY, PERCEIVED BARRIERS, ATTITUDES, AND SOCIAL SUPPORT IN DIETARY CHANGE AMONG PARTICIPANTS WITH METABOLIC SYNDROME ENTERING A DIETARY INTERVENTION TRIAL

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A heart healthy diet is the first line of treatment for individuals with metabolic syndrome, although adherence is difficult for many patients. Perceived attitudes and self-efficacy regarding healthy eating may inhibit one's ability to initiate and maintain a heart healthy diet. Using the baseline data of 197 adults with metabolic syndrome who participated in a randomized dietary intervention trial, we examined the extent to which self-efficacy, perceived barriers, attitudes and social support for adherence to a heart healthy diet predicted consumption of fruits, vegetables, saturated fat, and total dietary fiber intake. Participants expressed a high self-efficacy regarding adherence to a heart healthy diet, with 88% confirming they could eat fruit and 85% felt they could consume two or more vegetables every day. However, few felt they had social support for dietary change available to them (mean=1.4, SD=0.7, out of possible maximum of 7). Higher attitude scores on the importance of following a heart healthy diet were associated with higher intake of fruit ($p<0.001$), and lower intake of saturated fat ($p=0.01$). Perceived barriers, self-efficacy, and social support were not associated with fruit, vegetable, saturated fat, and total fiber intake. Despite the high level of self-efficacy participants initially expressed in their ability to adhere to a heart healthy diet, self-efficacy was generally not associated with following a healthy diet at baseline.

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## B-048

### PATIENTS' PREFERENCES FOR INTEGRATING MENTAL HEALTH SERVICES IN A WOMEN'S HEART HEALTH CLINIC

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Background: Patients seeking outpatient care for coronary heart disease commonly present with co-morbid mental disorders and psychosocial problems. When provided with a mental health referral, however, most patients do not accept or follow through with this referral. Integrating mental health services into outpatient clinics may enhance the identification and treatment of psychosocial problems. No study to date, however, has investigated the types of mental health services women patients would be willing to receive within a cardiology clinic.
Objective: To understand patient preferences for integrated mental health services in a Women's Heart Health outpatient clinic.
Research Design: Patients were invited to complete a survey that assessed for depression, anxiety, insomnia, and alcohol use and asked patients to indicate their degree of interest in a variety of mental health services.
Results: One hundred seventeen women completed the survey between 3/11-6/11. Mental health problems were common, with over 60% of survey respondents screening positive for a mental health problem; nearly 40% reported symptoms at moderate to severe levels. Overall, 72% were interested in having a therapist on staff to provide therapy or a referral. Women were primarily interested in receiving help with maintaining heart healthy behaviors (e.g. diet, exercise), learning stress management methods, participating in research, becoming a member of a support group, and receiving treatment for insomnia, anxiety, and depression. Seventy-six percent of respondents were willing to pay for these services and attend therapy even if sessions would not coincide with cardiac-related appointments.
Conclusions: Female cardiology patients commonly present with mental health problems and are interested in receiving integrated mental health services.
Future Plans: The results of this study will inform the development of an integrated mental health program within a Women's Heart Health clinic and future program evaluation will evaluate the success of this program.

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## B-050

### THE COSTS OF PROMOTION, SCREENING, ASSESSMENT, AND ENROLLING IN A SECONDARY PREVENTION TRIAL

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Clinical trials assessing the efficacy of secondary prevention and involving participants with specific inclusion/exclusion criteria need to appropriately allocate resources for recruitment. The Resist-Diabetes project focuses on adults 50-69y, BMI of 25-39, physically inactive, fit prediabetes criteria, and not diagnosed with other diseases. Recruitment for the first two participant waves involved large (5.5” x 5.5”) ads strategically placed in one main daily newspaper (128,040 daily readers; 56% of adults in the area) and in one small weekly newspaper traditionally serving African Americans (6040 circulation) describing the study, basic criteria and responsibilities. Those interested advanced to a screening website. People who qualified received a medical clearance form that had to be signed by an MD. An on-site assessment clinic then determined final eligibility. During an 8-month period, 44 newspaper ads were placed at a cost of $14,358. 3034 people with unique email addresses accessed the information site and 594 proceeded to the screening site, with 315 disqualifying, 69 not completing the screening, and 210 qualifying. Of people qualifying, 164 (78%) had a signed medical clearance form, 148 (90%) attended an assessment clinic, and 85 (57%) qualified and enrolled. Based on the total ad costs, the cost for each person accessing the information site was $4.73; accessing the screening site, $24.17; for each medical clearance form returned, $87.54; not including staff time, for each person attending an assessment clinic, $97.01, and for each qualified and enrolled person, $168.91. These data suggest that clinical trials with sequential steps for informing, assessing and enrolling people with specific characteristics need to allocate considerable resources for this process.

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## Meritorious Poster

## B-051

### ASSESSING PEER ADVISOR INTERVENTION FIDELITY USING VIDEO SKITS IN A PEER SUPPORT IMPLEMENTATION TRIAL

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Peer support models have shown promise in eliminating health disparities in some populations, but can be difficult to evaluate because peer-client interactions occur in the community. Innovative approaches are needed to assess intervention fidelity in community-based peer support interventions. The ENCOURAGE study is a randomized controlled trial testing the effectiveness of a peer support model to improve diabetes outcomes in Alabama’s Black Belt region, a region marked by health disparities and low literacy. In the context of the larger study, the aim of the present study was to develop a video assessment tool to measure intervention fidelity amongst ENCOURAGE peer advisors. All ENCOURAGE peer advisors were trained and certified in Motivational Interviewing (MI) techniques, specifically self-motivating change talk and SMART (specific, measureable, attainable, realistic, timely) goal setting. Intervention clients attending their 6-month follow-up viewed a video of two paired skits depicting a peer advisor using non-MI vs. MI techniques, and setting a SMART goal vs. a more general goal. The video tool assessed participants’ perception and preference of the skits. For the paired videos that depicted MI and non-MI techniques, 44 (44%) participants assessed their peer advisor to be most similar to the MI peer and for the SMART/general goal paired segment, 42 (42%) participants’ interactions were most similar to the SMART goal skit. Twenty-four (23%) participants preferred the MI video and 70 (67%) had no preference between the MI or non-MI video. Ten (9%) preferred the SMART goal approach and 80 (75%) had no preference between SMART or general goal approaches. The findings of this study demonstrate that assessing intervention fidelity by client perception via a video tool may be an alternative measure used in low literacy communities. Future goals include further investigating the clients’ preference of the advising techniques and the correspondence to the overall health outcome changes of clients of the ENCOURAGE study.

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## B-052

### WHAT PATIENTS WANT: RELEVANT HEALTH INFORMATION TECHNOLOGY FOR DIABETES SELF-MANAGEMENT

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Background: Health information technology has potential to promote efficiency in patient care, patient-provider communication, and engagement of patients in their treatment. The purpose of this study is to understand what patients with type 2 diabetes want from electronic resources designed to support their diabetes self-management.

Methods: Data were collected via interviews and focus groups from managed care patients who had completed participation in either a web-based (MyPath) or in-person group-based (<\#193>Viva Bien!) longitudinal diabetes self-management study. Key variables were identified a priori and analyzed qualitatively to understand participant interest in electronic programs to support diabetes self-management goals, and preferred content and features.

Results: Eighteen<\#193>Viva Bien! participants completed telephone interviews and 30 MyPath participants attended 7 focus groups in 2010-2011. All participants expressed a preference for face-to-face contact; however, most participants were also interested in technology as a tool to support daily self-management decisions and to receive tailored information. Choice of technology, personalized instruction on how to use program features, and the ability to exchange information with their health-care team were desired by all participants. Participants were divided on whether virtual social support networks should be closed to friends and family, or include others with diabetes.

Conclusions: What patients want from technology is real-time assistance with daily behavioral decision-making, ability to share information with their health-care team, connections with others for support, and choice.

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## B-053

### SUPPORTING SUPPORTERS - EXCHANGE AMONG PEER SUPPORTERS TO ENHANCE AND SUSTAIN THEIR EFFORTS

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Sustaining volunteers’ engagement is a key challenge for many peer support programs. Peers for Progress, an international initiative of the American Academy of Family Physicians Foundation, promotes peer support in health, health care and prevention. The Australasian Peers for Progress Diabetes Project includes volunteer-led, group and individual peer support around diabetes management in conjunction with Diabetes-Vic, the leading charity organization addressing diabetes in the state of Victoria, Australia. In addition to an e-newsletter and web resources, the program encourages sustained engagement of volunteer peer leaders through weekly teleconferences between the research team and peer leaders. Volunteers have taken a very active role in these teleconferences. Qualitative evaluation of transcripts from the first 15 teleconferences identified key types of informational and emotional support exchanged among peer supporters:

Informational support emerged in two major forms: (1) peer to peer “coaching”, regarding strategies for communicating with group members and running meetings, “I don’t need to know people’s blood sugar levels, but what I do is put my own out there,.” and (2) knowledge of health issues, “remember that … when you are unwell, your blood sugars will go up.”

Emotional support took three forms: 1) Bonding, “great to have you back”; 2) Praise, “everybody has done a really great job”; and 3) Shared recognition that change is often slow and some participants are challenging, “we need to recognize that some of these folks are very difficult to deal with.” The latter type of emotional support may be especially important for those with previous vocational experience in which challenges yield more clear and immediate results than behavior change. Improved understanding of these different types of support may guide the further development and effective implementation of strategies for sustaining peer support for a variety of problems in prevention and chronic care.

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## B-054

### THE RELATIONSHIP BETWEEN ADOLESCENT AND MATERNAL DEPRESSIVE SYMPTOMS IN YOUTH WITH TYPE 1 DIABETES (T1D)

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Objective: Depressive symptoms in adolescent with T1D have been associated with poor health outcomes, but not much is known about influences on adolescent depression in this population. Studies in medically well samples have shown that maternal depression is an important predictor of adolescent depression. The objective of this study was to examine the relationship between adolescent and maternal depressive symptoms in youth with type 1 diabetes (T1D).
Methods: Secondary Analysis was performed on archival data collected as part of a longitudinal study on treatment adherence among adolescents with diabetes in the Children's Endocrinology Center at Children's Medical Center of Dallas (CMCD). Two hundred and thirty adolescents (age range: 11-18 years; 57% female, 43% male) with type 1 diabetes (T1D) and their mothers completed the Center for Epidemiological Studies Depression Scale (CES-D). Diabetes treatment adherence and HbA1c level were also assessed along with demographic information including age at diagnosis, time since diagnosis, and ethnicity. Multiple regression analysis was performed to identify significant associations with youth depressive symptoms.
Results: Maternal depressive symptoms were associated with adolescent depressive symptoms even after controlling for treatment adherence and demographic variables commonly affiliated with depressive symptoms and metabolic control. Time since diagnosis related to maternal depressive symptoms but not adolescent depressive symptoms.
Conclusion: Maternal depressive symptoms may be a significant risk factor for depressive symptoms in adolescents with T1D and the influence may be bidirectional. Given that adolescent depression and parental support are both related to disease management, it may be important to assess and treat both patients and their mother's depressive symptoms to optimize disease management.

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## B-055

### SELF-CARE AND QUALITY OF LIFE IN LOW-INCOME, MEDICALLY UNDERSERVED ADULTS WITH TYPE 2 DIABETES

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Complications from Diabetes Mellitus (DM) are the 7th leading cause of U. S. deaths. Morbidity and mortality burden is highest in ethnic minority and low-income populations. Optimal self-care can reduce risks and improve functional status and quality of life (QOL). Little is known about QOL in low-income, underserved adults with DM. No studies have examined the relationship between DM self-care and functional status and QOL in this population. As such, aim 1 is to characterize QOL in adults with type 2 DM recruited from low-income clinic and community care settings. Aim 2 is to examine associations between self-care behaviors, perceptions & barriers and QOL. Ss were 253 Black (44.8%) and White (55.2%) Americans [M age=57.93 (11.52); 39.5% male]. 19% lived in census tracts below the US poverty threshold; 18% had<HS education. Self-care (diet, exercise, glucose testing, medication) was assessed with the Personal Diabetes Questionnaire. Body Mass Index (BMI) represented physical functional status. M BMI= 34.26 (8.07); 88.8% overweight/obese. QOL was assessed with the SF-12v2; Physical component score M=37.59 (11.82),Mental M =45.54 (11.86). All SF-12 subscale scores indicated substantially poorer QOL relative to normative samples of adults with DM. Hierarchical linear regressions examined associations between self-care domains and QOL, controlling for age, gender and insulin use. The only self-care domain associated with BMI was exercise (Adj. R2Δ=.089, p=.003); all self-care domains were significantly associated with mental QOL and most with physical QOL (with the exception of Diet). The strongest association was between Diet and mental QOL for those on insulin (R2Δ=.280, p<.001) particularly for Mental Health (R2Δ=.178, p<.001) and Vitality (R2Δ=.182, p=.004) items. Exercise had the strongest association with physical QOL (R2Δ=.137, p<.001), specifically for Role Physical (R2Δ=.195, p<.001) and Bodily Pain (R2Δ=.134, p<.001) items. Results point to an overall experience of low QOL and physical functional status. Associations found between multiple self-care domains and indicators of QOL highlight a complex relationship between DM self-care and QOL.

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## B-056

### INTRINSIC MOTIVATION AND REGIMEN ADHERENCE IN MINORITY YOUTHS WITH TYPE 1 DIABETES

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Intrinsic motivation is an important construct for understanding regimen adherence (RA).The aim of this study was to develop a self-report measure of intrinsic motivation and evaluate its relationship to RA in minority youth with type 1 diabetes (T1D). Patients were recruited at their outpatient visit, between 12-16 years of age, and diagnosed for at least one year. The sample thus far consists of thirty youth (56.7% male, mean age of 13.5 years, 86.2% Hispanic and 13.8% Black). Youth completed the Intrinsic Motivation Inventory for Diabetes Management (IMI-DM), and the Diabetes Self Management Profile (DSMP), a measure of RA across several domains (exercise, hypoglycemia, eating, insulin administration, blood glucose monitoring). The IMI-DM consists of 13 items rated on a 7-point Likert scale; seven items comprise the confidence subscale and six items comprise the importance subscale. Internal consistency of the scale was very good (Confidence Scale $\alpha$=.90; Importance Scale $\alpha$=.80; Total $\alpha$=.91). Significant associations were observed between the IMI-DM Importance scale and the DSMP exercise (r=.50, p<.01) and DSMP eating scale (r=.57, p<.01). The IMI-DM Confidence scale was associated with HbA1c (r=-.43, p<.05), the DSMP exercise scale (r=.42, p<.05), and the DSMP eating scale (r=.56, p<.01). The IMI-DM Total was associated with the DSMP eating scale (r=.60, p<.01), DSMP exercise scale (r=.49, p<.01), and the DSMP total score (r=.60, p<.01). These findings support the reliability and validity of the IMI-DM in minority youth with T1D, indicate that greater intrinsic motivation for diabetes management is associated with better RA and HbA1c, and suggests that interventions to increase intrinsic motivation in minority youths with T1D may be helpful.

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## B-057

### DEFINING RISK FOR DEVELOPING METABOLIC SYNDROME AND TYPE 2 DIABETES USING METABOLIC PARAMETERS AND PERCEIVED RISK IN UNDERSERVED OVERWEIGHT ADOLESCENTS

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For prevention efforts to be successful, accurate and early identification of risk for developing metabolic syndrome and type 2 diabetes is critical, particularly in underserved (i.e., low-income, minority) youth who are at greater risk for developing type 2 diabetes. Underserved youth often have additional risks for developing chronic diseases beyond the biological factors considered in existing measures of metabolic risk. Therefore, the purpose of this study was to compare different indices of metabolic risk and their relations with parental perceptions of youth risk. The present study obtained objective measures of body mass index (BMI), metabolic data of youth and parental perceptions of youth risk for developing diabetes (e.g. personal control and worry) from 101 overweight underserved adolescents (mean age=15.1 years, 85% African American). The metabolic risk measures were: 1) an existing index comprised of z-scores of metabolic parameters including, mean arterial blood pressure, triglycerides, glucose, waist circumference and HDL cholesterol, and 2) the homeostasis model assessment (HOMA) index. Preliminary analyses indicated that both methods of defining risk but not parent's perceptions of risk were significantly correlated with child's BMI (r=.59 and .30, p<.05, respectively). Parent's perception of personal control over their child's diabetes risk, but not worry about their child's diabetes risk, was significantly and marginally related to both metabolic risk measures (r=.41 and .22, p<.01 and .10, respectively). Results of the current study show the two methods of defining metabolic risk may be useful in early identification of high-risk adolescents and indicate parent self-reported perceptions of personal control but not worry may be related to child's metabolic risk and useful targets for interventions.

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## B-058

### VALIDITY OF THE COMPLIANCE WITH ANNUAL DIABETIC EYE EXAMS SURVEY (CADEES)

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BACKGROUND: Diabetic retinopathy is the leading cause of blindness in adults aged 20-74. While early diagnosis and treatment can reduce vision loss by 90%, less than 50% of diabetic patients receive annual diabetic retinopathy screening exams. We developed the Compliance with Annual Diabetic Eye Examination Survey (CADEES) to identify the factors related to adherence with yearly eye exams.
PURPOSE: To determine the construct validity of the CADEES for the Health Belief Model, and predictive validity and factors related to adherence with yearly diabetic retinopathy screening exams.
METHODS: We interviewed 100 diabetic patients using the 45-item survey. Participants rated their agreement with each statement using a Likert scale. Their adherence for yearly diabetic retinopathy screening exams was measured using self-report. Principal component analysis and logistic regression models was used to determine construct and predictive validity, respectively.
RESULTS: Cronbach alphas showed poor to moderate agreement (range 0.03 to 0.64) for constructs of the Health Belief Model. Logistic regression showed 18 items to be associated with adherence ($p<0.05$). An additional 6 items were included based on clinical importance. A full model containing these 24 items classified cases with 83.5% accuracy. Among the strongest predictors were (a) satisfaction with eye care provider, (b) confidence in one's ability to make an appointment, and (c) barriers that make obtaining eye exams difficult.
CONCLUSIONS: The CADEES shows promise for predicting whether diabetic patients are likely to have yearly eye exams, but may not reflect the structure of the Health Belief Model. Future studies need confirm these results, and demonstrate the utility of the CADEES.

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## B-060

### WEB-BASED EDUCATION PROGRAM: CHALLENGES AND LESSONS LEARNED FROM THE CANCER GENOMICS EDUCATION AND TRAINING FOR TEXAS HEALTH EDUCATORS PROJECT

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Unlike traditional face-to-face workshops, paper-version materials, and training DVDs, Web-based education programs are a new trend for social and behavioral scientists. Nevertheless, they present a challenge in research and intervention methodology due to no standard guidelines for development, implementation, and evaluation. Thus, the aims of this study were to discuss the design and challenges of conducting a Web-based education program. Specifically, we developed the first Web-based cancer genomics education program for Texas health educators. The program consists of a Website with 4 cancer genomics education modules, which address different scopes of cancer genomics principles and practice skills. Pre-, post-and follow-up surveys were built to help assess participants' knowledge, attitudes, intention, and self-efficacy related to cancer genomics practice. This study highlighted a number of challenges in the development, implementation, and evaluation phases of the Web-based education program. We will also discuss potential strategies for overcoming these challenges and future recommendations.

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## B-061

### STATISTICAL LITERACY IN OBSTETRICS-GYNECOLOGY RESIDENTS

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Statistical literacy can be defined as understanding the statistical aspects of and terminology associated with the design, analysis, and conclusions of original research. Statistical literacy training is important as physicians continue to practice evidence-based medicine.
Questions about statistical literacy were included in a larger study that was administered to the residents in obstetrics and gynecology in 2011. Questions were asked about the statistical literacy training they had received during residency and whether their training was adequate. Two statistical knowledge questions were also asked. A total of 4,713 residents responded (a 95% response rate).
Fifteen percent said they had statistical literacy training as part of a course, 50.7% said they had training through journal club, 28.8% said they had informal training, and 11.2% said that they had no training. About two-thirds rated their statistical literacy training as adequate, 23.7% rated it as inadequate. Females were more likely to rate their statistical literacy training poorly, with 25.1% of the females indicating inadequate compared with 17.9% of the males ($p<.001$). When asked to identify the positive predictive value of a positive mammography screen, only 25.9% chose the correct multiple choice option. When asked whether the p-value is the probability that the null hypothesis is correct, 46.4% said true, 42.3% said false, and 11.3% did not answer.
The results of this study amplify the fact that statistical literacy should be improved.

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## B-062

### HOW TO FIND, SELECT, AND USE REPORTING GUIDELINES TO IMPROVE THE QUALITY OF YOUR MANUSCRIPT

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Background: Numerous reporting guidelines are available to help authors write higher quality manuscripts more efficiently. Over 90 are listed on the EQUATOR (Enhancing the Quality and Transparency of Health Research) website alone and they vary in scope and authority, making it difficult for authors to decide which one(s) to use.
Aim: To provide consistent in-formation about guidelines relevant to behavioral medicine and public health with a frame-work for selecting and using them.
Method: We reviewed all EQUATOR guidelines for relevance to our target audiences; we categorized selected guidelines by their focus (design, top-ic, or manuscript section) and pre-eminence in author instructions; and for each selected guideline we described the rationale, type of stakeholders who designed it, indications of empiric support, and inclusion of a checklist, an explanation for each item, and examples of recommended descriptions. Discrepancies were resolved by consensus.
Results: Selected guidelines and profiles are presented in tables arranged to facilitate sequential selection. For example, an author writing a manuscript on a cluster RCT of physical activity for cancer survivors would be guided to choose the specific CONSORT extension for cluster RCTs, guideline for behavioral medicine RCTs, and if applicable, guidelines for reporting adverse events, actigraphy, and/or quality of life. Because these guidelines focus on methods and results, the author might also choose the guidelines for writing discussions and research recommendations.
Conclusions: Many authors would benefit from consistent use of 1 or more reporting guidelines. We believe this framework will enable authors to make well-informed choices more easily, thus resulting in higher quality manuscripts.

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## B-064

### MINDFULNESS, PSYCHOLOGICAL FLEXIBILITY AND QUALITY OF LIFE AMONG YOUTH AFFECTED BY HIV

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Little is known about the coping responses of adolescents with HIV or the efficacy of these responses (Orban et al., 2010). Among young people, psychological flexibility, or the ability to be in contact with the present moment fully and to persist in behavior which serves valued goal attainment (Greco et al 2008a; Hayes et al., 1999), has been found to be associated with lower anxiety, somatic complaints, and problem behaviors, which is associated with higher quality of life (QL) (Greco et al., 2008b). Further, mindfulness based approaches are also showing promise among improving psychological outcomes among chronically ill youth (Lagor & Williams, 2010). This study investigated the relationships between QL, psychological flexibility, and mindfulness among youth affected by HIV. It is expected that a significant positive relationship exists between QL and psychological flexibility and between QL and mindfulness. Data were collected from 97 youth infected or affected (i.e. family member) by HIV; 57.7% were female, and ages ranged from 6 to 17 years (M=12.8). 41 participants disclosed their status (16 infected). Participants completed the Acceptance and Fusion Questionnaire for Youth, Child and Adolescent Mindfulness Measure and the Pediatric Quality of Life. There were no significant gender differences in any area of QL, mindfulness, or psychological flexibility. Infected youth had poorer QL in terms of school functioning (t(36)=-2.03, p=.05) and social functioning (t(36)=-2.71, p=.05). Consistent with our hypotheses, results indicated a significant positive relationship between overall QL and mindfulness (r=.519, p<.01) and significant negative relationship between overall QL and inflexibility (r=-.40, p<.01) for the overall sample. Interestingly, this relationship exists among infected but not affected youth. Specifically, among youth affected by HIV, we found a significant positive relationship between QL and mindfulness (r=.59, p<.01), however, psychological flexibility was not related to QL. These findings have implications for treatment targets and suggests that HIV status should be considered as well.

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## B-065

### HIV-RELATED STIGMA, FORGIVENESS AND RESILIENCE: A MEDIATION ANALYSIS

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Forgiveness as a method to reduce stress is an intervention receiving increased focus in the literature (Strelan & Wojtysiak, 2009) and may have important implications for people living with HIV/AIDS (PLH), a population that faces daily stressors as well as stressors specific to their diagnosis, such as stigma. However, the mechanisms influenced by forgiveness and the roles they play in the subjective experience of these stressors are not fully understood. The aim of this investigation was to determine psychological constructs that may facilitate the relationship between forgiveness and experiences of stigma; we hypothesized that resilience, a process that involves “bouncing back” from negative events (Dyer & McGuinness, 1996) mediates the negative relationship between forgiveness and stress.

For our analyses, we measured stigma with the HIV Stigma Scale (Berger, Ferrans, & Lashley, 2001). Forgiveness was measured using the Heartland Forgiveness Scale (HFS; Thompson, et al., 2005). Finally, we used scored from the Connor-Davidson Resilience Scale (CD-RISC; Connor & Davidson, 2003) to evaluate resilience levels in our sample.

Our gender-balanced sample consisted of 120 HIV-positive men and women, primarily of African descent (69%), with a mean age of 46 years (SD=8.87), and living in Dallas/Fort Worth. There was a significant initial relationship between forgiveness and stigma ($\beta$=-.17, p=.003) that was non-significant after controlling for resilience ($\beta$=-.05, p=.508) which indicates resilience mediates the relationship between forgiveness and stigma.

Results of these analyses suggest that forgiveness may mitigate personalized stigma in PLH. However, we found that, when controlling for resilience, forgiveness has no significant relationship with stigma. This suggests that forgiveness is important in so far as it enhances resilience, which may then provide PLH with resources to more adaptively manage stigmatizing events. Interventions aimed at PLH who experience stigma might benefit from a focus on coping; addressing either the utilization of forgiveness or a person’s resilience in the face of stigma may provide PLH with skills to more effectively manage the stress associated with stigma.

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## B-066

### THE IMPACT OF TRAUMA AND EMOTION DYSREGULATION ON SEXUAL RISK BEHAVIOR DIFFERS BY SEX AMONG ADULTS LIVING WITH HIV

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Individuals living with HIV are exposed to high rates of trauma. Trauma symptoms may lead to increased rates of HIV transmission risk behavior, specifically unprotected sexual encounters. The current study sought to delineate the impact of trauma on unprotected sexual encounters among HIV-positive adults of different sexes and sexualities and examine mechanisms leading from trauma to sexual risk.

Project RISE is a randomized trial of a group-based, trauma-focused HIV risk reduction intervention. Data for the current study were drawn from baseline assessments conducted before randomization to groups. Measures assessed rates of trauma, trauma symptoms, emotional dysregulation, and unprotected sexual encounters.

Data from 243 participants were analyzed, including 44 men who have sex with women (MSW), 151 men who have sex with men (MSM), and 48 women. The overall mean age was 45.49 and the sample was ethnically diverse, primarily unemployed and impoverished. Rates of trauma were high and not different between groups (overall mean=8.02), with more women experiencing sexual trauma than men of either sexuality (MSW=40.9%, MSM=46.4%, Women=64.6%; $\chi2$=6.24, p<.05). Trauma symptoms were likewise high and not different between groups (overall mean=34.82). Though MSM reported the highest likelihood of unprotected sexual encounters (MSW=11.4%, MSM=67.5%, Women=43.8%; $\chi2$=45.06, p<.001), trauma symptoms predicted unprotected sexual encounters for women (Odds Ratio=1.04, p<.05) but not for either male group (p>.05). Furthermore, emotional dysregulation mediated the relationship between trauma symptoms and unprotected sexual encounters for women but not for either male group.

Trauma has a differential impact on unprotected sexual encounters among men and women. Interventions that specifically target HIV-positive women and integrate mental health services with HIV prevention are urgently needed.

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## B-067

### PERCEIVED STRESS, ALCOHOL USE, AND HIV INFECTION AWARENESS IN SOUTH AFRICA

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Rates of both HIV and alcohol use in South Africa are among the highest in the world. Alcohol use has been implicated as a risk factor in the transmission of HIV and a worsening of the disease course. Rapid social and economic change as well as a raging HIV epidemic has caused considerable psychosocial stress. These stresses, as well as the stress associated with living with a chronic disease, likely increase alcohol use, and ultimately poor health outcomes. The purpose of this study is to examine the association between stress and alcohol use. We assessed alcohol use, HIV status, and stress levels among South African adults. Among the 1,964 participants who had ever been tested, 75% tested negative, 8% tested positive, and 18% didn’t know their test result. HIV+participants reported higher perceived stress compared with those whose HIV status was negative or unknown. Overall, perceived stress was associated with alcohol use (frequency of drinking days, frequency of intoxication, and frequency of drinking in establishments). Contrary to expectations, HIV+status did not moderate the association between perceived stress and any alcohol use measure. Instead, HIV-unknown status was a significant moderator of the association between perceived stress and alcohol use. That is, perceived stress was associated with greater frequency of drinking days ($\beta$=0.07, p=.004), perceived intoxication ($\beta$=0.12, p<.001), and shebeen/tavern patronage ($\beta$=0.08, p=.001) among South Africans who reported not knowing their HIV status compared with those who reported being HIV-positive or -negative. Explanations for these findings and implications for health promotion among South Africans with an HIV-unknown status will be discussed.

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## B-068

### CAM USE IS ASSOCIATED WITH LOWER RATES OF INTENTIONAL NONADHERENCE TO ART AMONG HIV+CLINIC PATIENTS

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The public health importance of complementary and alternative medicine (CAM) use among HIV+patients hinges on whether CAM use promotes or undermines illness management behaviors, such as antiretroviral treatment (ART) adherence. Accumulated studies of CAM use and ART adherence have yielded mixed findings. The relationship between CAM use and adherence may depend on the intentionality of nonadherence behavior. We hypothesized that CAM users would be more likely to report intentional nonadherence, perhaps due to inaccurate beliefs or concerns regarding antiretroviral medications. HIV+ clinic patients ($n=116$, 42% female) completed an ACASI survey assessing CAM use and ART adherence. Nearly half of participants used at least one type of CAM to treat or manage HIV-related health concerns in the past month and 78% had used CAM since being diagnosed with HIV. “Making small adjustments” was the most frequently endorsed type of intentional nonadherence (85%), followed by medication vacations (52%), stopping use of one or more medications without doctor approval (42%), and delay of treatment initiation despite physician recommendation (25%). Contrary to our hypothesis, CAM users were less likely to report that they took medication vacations ($AOR=.38$, $p<.01$) and less likely to have stopped taking HIV medications without their doctor’s approval ($AOR=.38$, $p<.01$) compared to non-users. Additionally, participants who used more CAM reported lower overall rates of intentional nonadherence in the past month ($R=.22$, $p<.05$). CAM users did not differ from non-users on indices of adherence difficulties attributed to forgetting, regimen misunderstandings, or unanticipated interference in daily routine. Taken together, findings suggest that CAM users are less likely to engage in intentional nonadherence, perhaps reflecting a stronger commitment to self-care through both conventional and nonconventional means. HIV care providers should actively assess their patients’ CAM use, seek to understand reasons for CAM use, and be flexible in creating an integrative treatment plan.

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## Citation and Meritorious Poster

## B-069

### ANXIETY MEDIATES THE ASSOCIATION BETWEEN FAMILY CONFLICT AND ADHERENCE IN LATINOS LIVING WITH HIV/AIDS

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People living with HIV/AIDS who experience symptoms of anxiety are at risk for non-adherence. One significant source of anxiety for Latinos living with HIV/AIDS is a disruption of the culturally central family structure. We hypothesized that anxiety would mediate the association between family conflict and medication adherence in this population. We conducted a cross-sectional paper-and-pencil survey of a non-probability sample of 300 HIV+Latinos of Mexican descent at an HIV primary care clinic on the U.S.-Mexico border. Measures included a section from National Latino and Asian America Study family cohesion scale assessing cultural conflict within the family (e.g., “You have felt that being too close to your family interfered with your own goal”). Self-reported adherence over the past month was assessed with the Simplified Medication Adherence Questionnaire (SMAQ) and anxiety was measured with the Hospital Anxiety and Depression Scale (HADS). We tested the hypothesized association of cultural conflict and nonadherence through anxiety with a resampling bootstrapped strategy. The initial total effect was statistically significant (c path: $B=.12$, $p<.05$), as was the effect of cultural conflict on anxiety (a path: $B=.62$, $p<.01$), and anxiety on medication non-adherence (b path: $B=.08$, $p<.05$). Our resampling approach yielded a statistically significant indirect effect (ab path: $B=.05$, 95% $CI=.01\text{-}.10$). These results suggest that family dynamics are an important area for assessment and potential intervention among Latinos living with HIV who are experiencing difficulty with anxiety and medication nonadherence.

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## B-071

### PERCEIVED STIGMA AND OPTIMISM AMONG ADOLESCENTS AND ADULTS LIVING WITH CYSTIC FIBROSIS

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Cystic fibrosis (CF) is a life-threatening genetic disease that affects the respiratory, digestive, and reproductive systems. Medical advances have resulted in dramatic increases during the past 25 years in life-expectancy for patients with CF, yet little is known about how individuals cope with CF beyond early childhood. Previous research has suggested that CF is a stigmatizing disease, and that stigma may contribute to psychological distress. This study examined the relationship among stigma, optimism, mastery, and indicators of psychological and physical health in adolescents and young adults with CF (ages 14 to 25). Sixty-five patients (female=33) completed self-report questionnaires assessing stigma, anxiety and depression, CF-specific quality of life, optimism, and mastery. Health data were recorded from patient medical records, including BMI and pulmonary function, as well as number of medications, comorbid diagnoses, and recent hospitalizations. T-tests, correlations, and hierarchical regressions were used to analyze the data. Results indicated that patients with CF reported lower levels of stigma relative to other chronically ill populations ($p<.05$). However, stigma was associated with greater psychological distress ($p<.001$), poorer quality of life (controlling for physical health; $p<.01$), lower optimism ($p<.01$), and lower mastery ($p<.001$). Higher optimism buffered the effects of stigma on anxiety (and distress), while lower optimism combined with higher stigma was associated with elevated levels of anxiety (and distress). Thus, stigma appears to have a negative influence on psychological health in patients with CF, but optimism may act as a protective factor. Patients with lower optimism and higher stigma may be more likely to experience difficulty coping with CF. Future longitudinal data will help elucidate the interrelationship of stigma and psychological health in the context of chronic illness exacerbations. This information can eventually be used to target future interventions aimed at improving quality of life and psychological well-being among patients coping with CF.

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## B-072

### NEW PERSPECTIVES ON SOMATIZATION: CONTRIBUTIONS OF NEGATIVE AFFECT AND GENDER ROLE STRESS

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Recent research on somatization disorder has indicated the presence of other clinical features associated with the condition including the presence of medically unexplained symptoms (MUS) and health anxiety (HA). These features have consistently been shown to occur more often in women than in men. Feminine gender role expectations and negative affect have been implicated in the increased prevalence of somatization among women.

The present study examined the relationship between feminine gender role stress (FGRS), negative affect and somatization. Somatization was characterized as a latent construct consisting of MUS and HA. Participants included 207 undergraduate females, ranging in age from 18 to 31 years-old ($M=19.48$, $SD=1.87$). Results provided support for a two-indicator model of somatization as a syndrome comprised of MUS and HA ($\chi2=6.654$, $df=1$, $p=0.01$, $GFI=0.984$, $CFI=0.952$). HA accounted for 55% of the explained variance in somatization syndrome, whereas MUS accounted for 12% of the explained variance. The strength of HA as an indicator of somatization is noteworthy given that somatization disorder’s current diagnostic criteria are defined by a history of multiple physical complaints. This model suggests that somatization is more likely to be predicted by the psychopathological processes underlying it than somatic symptoms.

Additionally, results of a bias-corrected bootstrap indicated FGRS was a significant predictor of somatization syndrome ($\beta=0.404$, $p=.004$; 95% $CI=.248$ to $.583$) and the relationship between FGRS and somatization syndrome was partially mediated by negative affect ($\beta=.139$, $p=.107$; 95% $CI=-.037$ to $.319$; relationships are mediated when the indirect effect is statistically significant and the direct effect drops to a level that is no longer significant). These findings indicate that negative affect may explain FGRS’ ability to predict somatization syndrome. Thus, feminine gender role expectations may prompt women to more readily focus upon and express negative emotions, which in turn may contribute to greater health anxiety and symptom reporting.

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## B-073

### ETHNIC IDENTITY, DISORDERED EATING & BODY IMAGE IN CHINESE AND CAUCASIAN STUDENTS

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Asian individuals in Western societies with greater acculturation to Western values have shown fewer eating problems than their less acculturated Asian peers. Those who are highly acculturated to their native culture may be at increased risk for disordered eating.

Methods: Participants ($N=586$; 67.2% Caucasian; 32.8% Chinese) completed an online survey of disordered eating (Eating Attitudes Test; EAT-26), body image (Body Shape Questionnaire; BSQ) and ethnic identity (Multiethnic Identity Measure (MEIM) with ethnic identity search (EIS) and affirmation, belonging and commitment (ABC) subscales). Chinese participants were recruited from over 100 colleges throughout the U.S.; Caucasians were from a southeastern university. Participants completed the survey in their preferred language (Chinese or English).

Analyses: A MANCOVA compared Caucasians, Chinese-language responders (CC) and Chinese English-language responders (CE) on EAT-26, and BSQ scores. Regression analyses tested whether MEIM subscales predicted EAT-26 and BSQ scores in Chinese participants.

Results: Women had higher EAT-26 and BSQ scores than men ($p<.001$), but Chinese and Caucasians did not differ on these variables. In Chinese participants, the combination of higher EIS scores and lower ABC scores was associated with higher EAT-26 scores in men ($p=.007$) and higher BSQ scores in women ($p=.028$). In CC participants, higher EIS scores alone were associated with higher BSQ scores in women ($p=.009$) and higher EAT-26 scores in men ($p=.003$). CE participants did not differ from the other groups on EAT-26 or BSQ scores and showed no relationship between MEIM subscales and EAT-26 or BSQ scores.

Discussion: Caucasian and Chinese participants did not differ in disordered eating and body image, contrary to the Westernization model. Additionally, increased involvement with traditional culture was related to greater levels of eating-related symptoms in CC participants. The lack of differences between CE participants and the other groups suggest that they fall between the others in terms of eating and body image concerns. Future research that includes a larger CE sample is needed.

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## B-074

### OBESITY AND CHRONIC DISEASE LIFESTYLE RISK FACTORS IN PRIMARY CARE PATIENTS WITH ANXIETY DISORDERS

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Anxiety disorders (AD) are common and adversely affect primary care patients but are not studied as often as depression. We used data from the Coordinated Anxiety Learning and Management (CALM) Study to evaluate the prevalence of obesity and lifestyle risk factors (excess alcohol, smoking, and no exercise) in relation to interview-determined ADs and level of depression symptoms. Substance dependence was an exclusion. Participants ($N=1004$, 71% female; average age 43.5, 43% nonwhite minorities) were 78% high school or higher educated, 54% married, and 71% employed. Interview assessment confirmed diagnostic criteria for ADs: 75% had Generalized Anxiety Disorder (GAD), 40% Social Anxiety Disorder (SAD), 47% Panic Disorder (PD), and 18% Post Traumatic Stress Disorder (PTSD). Most met criteria for multiple ADs: 39% had 2, 16% had 3, and 3% had all 4 ADs. Self-reported health information determined presence of obesity (BMI>= 30) and the lifestyle factors. Unadjusted prevalence of obesity (31%), smoking (21%), excess alcohol (22%) and no exercise (56%) varied in expected directions with demographic and socioeconomic status. Smoking was more prevalent in PD and PTSD (p's<.05) and increased with>1 AD ($p=.01$); otherwise prevalence for obesity or lifestyle factors was not different across ADs or number of ADs. After adjusting for demographic, socioeconomic, and health variables, comorbid depression symptoms (PHQ-8 scores) were significant predictors of the prevalence of obesity (p's=.05), excess alcohol use (p's<= .04), smoking (p's<.04), and participants with moderate through severe depression were much less likely to report any exercise (p's<.005). Obesity and lifestyle risk behaviors are prevalent in primary care patients with ADs, especially in the presence of comorbid depression symptoms. Studies are now needed to determine if anxiety and/or depression treatment facilitates lifestyle modification in patients with ADs.

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## B-075

### A COMPARISON OF DEPRESSED AND NON-DEPRESSED NICU MOTHERS ON INFANT HEALTH, BREASTFEEDING, AND HOUSEHOLD SMOKING

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Depression in mothers, particularly in the postpartum period, has been associated with negative infant outcomes. Little is known about depression in mothers of high-risk infants admitted to a neonatal intensive care unit (NICU). This study investigated potential associations between maternal depression and infant health status, two health-related behaviors (i.e., breastfeeding and smoking), and demographic variables, among NICU mothers. Cross-sectional data on depression (using the Center for Epidemiological Studies Depression Scale; CES-D) and the other variables were collected from 128 mothers of infants in the NICU and at four post-discharge visits. Prevalence rates for a CES-D score (>16) suggestive of depression were between 20% and 50% at all time points. Nearly 65% of infants had at least one serious health-related condition, and a significant association ($p<.05$) was found between depression and visible signs of an infant's serious health condition; depressed mothers were more likely to have an infant with visible signs of illness. Breastfeeding approached 60% for the mothers in the NICU, and depressed mothers measured at this time were significantly ($p<.05$) less likely to breastfeed their infant. Almost 20% of the mothers reported that at least one smoker resided in the home of the infant, and a significant association ($p=.01$) between smoking and depression emerged whereby depressed mothers were more likely to have a smoker living in the home. Also, depression tended to be more common for mothers with less education and income and for younger mothers. Results indicate a need for multiple support services to assist depressed mothers of NICU infants to initiate important health behaviors (e.g., breastfeeding) and change unhealthy ones (e.g., smoking), as well as to cope with having an ill child.

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## B-076

### PTSD TREATMENT IN PRIMARY CARE: LENGTH OF TREATMENT AND TYPES OF INTERVENTIONS UTILIZED

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Primary Care-Mental Health Integration (PC-MHI) is a VA initiative that strives to increase identification of Veterans with mental health needs and increase access to mental health treatment. Treatment in PC-MHI is brief (up to 6 half-hour sessions) and evidence-based. PTSD is one of four focal conditions that PC-MHI is tasked with assessing and treating; however, the two treatments (cognitive processing therapy and prolonged exposure), which are the standard of care for PTSD in the VA, cannot be optimally delivered within the PC-MHI model. The purpose of this study is to describe how PC-MHI psychologists are currently treating PTSD in the primary care setting. Eligible participants were Veterans who attended two or more PTSD treatment sessions with a PC-MHI psychologist between 12/1/2010 and 5/31/2010. All patients meeting the criteria were identified and retrospective chart reviews were conducted for each identified Veteran. The final sample ($n=42$) was 43% women ($n=18$) and 57% men ($n=24$) with an average age of 48.52 ($SD=14.72$). Most participants identified as either Caucasian (52%) or African American (45%). During this 6 month time frame, participants had an average of 2.88 treatment sessions with a PC-MHI psychologist where PTSD was the primary diagnosis. The most common treatment modality was CBT, which was identified as the primary intervention in 64% ($n=78$) of treatment sessions. Supportive therapy accounted for 8% ($n=10$) of treatment sessions, psychoeducation accounted for 7% ($n=9$), and behavior therapy for 3% ($n=4$). When visits outside of the 6 month time frame were included and all PCMHI visits were included regardless of diagnosis, participants had an average of 13.78 treatment sessions with a PCMHI psychologist. Results indicate that most Veterans being treated for PTSD in PC-MHI are receiving CBT; however, PC-MHI model fidelity is often compromised, since most Veterans are receiving more than twice the number of sessions that are indicated by the PC-MHI model. Results highlight the need for additional research to guide evidence-based treatment of PTSD in PC-MHI.

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## B-077

### GENDER DIFFERENCES IN THE RELATIVE IMPORTANCE OF MENTAL HEALTH SATISFACTION DOMAINS

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The present study investigated gender differences in the relative importance of several mental health satisfaction domains. At several diverse care provider sites, 1765 males and 1950 females completed anonymous questionnaires regarding satisfaction with services. The items were reduced to six domains: Access to Services, Quality and Appropriateness, Participation in Treatment Planning, Outcome of Services, Improvement in Functioning, and Social Connectedness. There was higher overall satisfaction among females than males, $t=4.4$, $p=.000$. Linear regression analyses were used to determine the relative importance of these subscales to overall satisfaction for men and women. While the correlations between each subscale and overall satisfaction were significant for both males and females, gender was found to moderate the relationship between most subscales and overall satisfaction. Improvement in Functioning [$F(1, 3711)=23.65$, $p<0.001$] and Outcome of Services [$F(1,3711)=20.34$, $p<0.001$] were more important to overall satisfaction for males, whereas Access to Services [$F(1, 3711)=14.18$, $p<0.001$] and Participation in Treatment Planning [$F(1, 3711)=274.81$, $p<0.001$] were more important to females. Results indicate that process features of therapy might be more important to women while treatment results might be more important for men. Consistent feedback of results may be particularly effective for engaging males in treatment.

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## B-078

### MENTAL HEALTH NEEDS OF LOW INCOME INDIVIDUALS ATTENDING A RURAL FREE CLINIC

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In the typical primary care setting between 16% and 43% of patient have a diagnosable mental health problem. Individuals who live in poverty are at increased risk for developing depression and anxiety. Free clinics provide low-income persons with physical and mental health care; however, little is known about the patients rates of psychological problem of if their needs are addressed. The purpose of this study was to examine the mental health needs and treatment of clients at a free primary care clinic that provides in-house mental health services. Pharmacy and medical records were examined. Records of filled prescriptions ($n=2,658$) between July 1st, 2008 and June 30th, 2009 were summarized and indicated that approximately 10% ($n=286$) were psychiatric medications, including antidepressants ($n=237$), insomnia medication ($n=25$), and anxiety and depression medication ($n=15$). Medical records of 50 individuals (27 women, 23 men) whose first clinic visit was between July 1st, 2008 and June 30th, 2009 were randomly selected and abstracted. The sample ranged in age from 18 to 64. At intake, regardless of presenting problem, 50% endorsed 4 or more symptoms of psychological problems, and 86% endorsed at least one symptom of depression specifically. Twelve (24%) and eight (16%) patients (respectively) were diagnosed by a provider with depression or anxiety. Only 16 of the individuals who presented with at least one symptom of a psychological problem were referred to in-house or community based counseling and only four reported seeking psychological services elsewhere. The study suggests that mental health needs of low income, uninsured clinic clients are high, yet primary care providers are not identifying potentially significant mental health problems and in-house mental health services could be utilized more effectively.

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## B-079

### DEPRESSION AND ANXIETY PREDICT DISTINCT COMPONENTS OF PAIN EXPERIENCE AMONG BREAST CANCER PATIENTS

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Pain experienced during the course of breast cancer often relates to cancer treatment as well as the disease itself. Pain is a complex experience with sensory, affective and cognitive dimensions. It is possible that each dimension is influenced by different neuropsychiatric symptom patterns. While depression and anxiety symptoms are common among cancer patients, little is known about the relationship between these psychiatric factors and pain experience among breast cancer patients. In the present study, 60 pre-treatment females presenting to an NCI-designated Cancer Center with newly diagnosed breast cancer completed the Center for Epidemiological Studies 10-item Depression Scale, the 20-item State Instrument of the Spielberger State-Trait Anxiety Inventory and the McGill Pain Questionnaire Short Form. 72% of participants exceeded the cut-off for clinically significant anxiety symptoms ($M=46.75\pm6.14$) and 48% exceeded the cut-off for clinically significant depression ($M=10.25\pm5.83$). Participants reported moderate sensory (44%) and affective (45%) pain. Anxiety was positively predictive of the sensory component of the pain experience ($r=.36$, $p=.006$), but not the affective component of the pain experience ($r=.12$, ns). Depression was predictive of the affective component of the pain experience ($r=.36$, $p=.005$) but not the sensory component ($r=-.04$, ns). Findings suggest that anxiety and depression are common among newly diagnosed breast cancer patients; furthermore, patients experience an appreciable amount of pain prior to the initiation of oncologic treatment. Results suggest that state anxiety and depression may be processed via different neural networks that overlap with distinct pain processing networks among cancer patients. Future epidemiological, neuroimaging, and interventional research may be warranted to better understand these patterns and to determine optimal strategies for managing anxiety, depression and pain among breast cancer patients.

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## B-080

### WHEN HIGH INTELLIGENCE IS NOT PROTECTIVE: THE EFFECTS OF IQ AND EARLY EDUCATIONAL ACHIEVEMENT ON DSM–IV SYMPTOM TRAJECTORIES IN YOUNG ADULTHOOD

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Background/Context: Intelligence, most frequently assessed using a standardized measure of IQ, has often been cited as a protective factor associated with a number of health outcomes. For example, lower childhood IQ was shown to be an antecedent of several common psychiatric disorders, predicting both persistence and comorbidity (Koenen et al., 2009). Even so, there may be instances when higher IQ may not protective and in fact may be a potential mental health risk factor.

Objective: The analyses described herein combined educational data from the North Carolina Educational database and psychiatric and IQ data from the Great Smoky Mountain Study (GSMS) to examine whether the interaction between intelligence and early educational achievement, as measured by middle school standardized test scores, predicted distinct DSM–IV symptoms count trajectories from early adolescence through early adulthood.

Method: Beginning in early adolescence, the Child and Adolescent Psychiatric Assessment (CAPA) was administered on a yearly basis to all individuals enrolled in the GSMS ($N=1420$); after age 18 individuals were assessed using the Young Adult Psychiatric Assessment (YAPA). Taken together, these measures provide a yearly assessment of DSM–IV symptom counts, serving as a general measure of psychiatric health. IQ was measured using the Wechsler Abbreviated Scale of Intelligence (WASI).

Results: Longitudinal trajectory analyses implementing growth curve modeling showed that individuals with high IQ and high early academic achievement had the best mental health outcomes over time, whereas individuals with high IQ and low early academic achievement had the worst mental health outcomes over time.

Conclusion/Discussion: High IQ, when coupled with certain other risk factors, may in fact be associated with poorer long-term health outcomes. Implications for possible mediating self-regulatory mechanisms as well as early intervention strategies are discussed.

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## Citation Poster

## B-081

### PSYCHOSOCIAL WORK ENVIRONMENT AND PSYCHOLOGICAL DISTRESS AMONG CHINESE IMMIGRANTS

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Adverse psychosocial work environments pose numerous risks to workers' health and wellbeing. Research indicates that situations of effort-reward imbalance (ERI), a mismatch of perceived workplace efforts and rewards, can adversely affect workers' physical and mental health. To date, however, almost no studies have studied ERI and health among low wage, immigrant workers. Using survey data collected in a Community Based Participatory Research study conducted in San Francisco, we examined the relationship between ERI and depression and anxiety among Chinese immigrant workers (n=309). The Effort-Reward Imbalance Questionnaire (ERI-Q) was used to assess the psychosocial work environment. The Center for Epidemiologic Studies Depression Scale (CES-D) and Hospital Anxiety and Depression Scale anxiety subscale(HADS-A) were used to screen for depression and anxiety respectively. Socio-demographic and other workplace factors were also measured. Confirmatory factor analyses indicated a good fit for the ERI model (CFI= 0.89, RMSEA=0.08) and the reliability of the CES-D ($\alpha$=0.08) and HADS-A ($\alpha$=0.77) were strong. Final multivariate regression models were adjusted for gender, age, time in U.S., and education and fit separately for CES-D and HADS-A scores and ERI model components. Effort ($\beta$=0.54, $p<0.01$), reward ($\beta$=-0.60, $p<0.01$), and the ratio of efforts and rewards ($\beta$=0.54, $p<0.01$) were significant associated with depression. Similarly, effort ($\beta$=0.50, $p<0.01$), reward ($\beta$=-0.47, $p<0.01$), and the ratio of efforts and rewards ($\beta$= 0.49, $p<0.01$) were significantly associated with anxiety. The results of this study indicate that ERI may be an appropriate and valuable model for studying relationships between psychosocial work environments and immigrants' health. Future research, including studies of interventions that address workplace organization and management, are needed to safeguard health of a vulnerable and growing segment of the nation's workforce.

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## B-083

### BRINGING HOME THE BACON: TECHNIQUES FOR AUGMENTING SALIVA COLLECTION

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Saliva is a reliable, non-invasive, and cost effective biomarker measure in research and clinical settings. In many cases saliva sampling is an attractive alternative to using other biological fluids (e.g. blood, urine, CSF) and offers important advantages, especially when ease of use, point-of-care sampling, minimizing costs, and non-invasive measures are priorities. Within certain populations and under special circumstances, saliva sampling may be difficult due to insufficient saliva flow, which may cause complications for researchers, clinicians, and the participant. Such difficulties may also create confounding variables that could potentially compromise the diagnosis or research integrity. In this study, we aimed to increase salivary flow rates during sample collection without compromising the integrity of biomarkers.

Various methods (e.g. administering citric acid, chewing gum, drink-mix crystals, marshmallows, cotton) to increase saliva flow have been explored. Each may have drawbacks of compromising sample integrity. We therefore investigated two methods to increase saliva flow. First, Maxisal is an over-the-counter, anhydrous crystalline maltose intended to increase saliva production for xerostomia patients with potentially broader benefits. Second, participants smelled freshly cooked bacon to stimulate a Pavlovian-type reflex. A common sampling strategy involves imagining a favorite food or looking at pictures of delicious foods to stimulate saliva flow. The advantage of smelling bacon is that there is no introduction of material into the oral cavity and sample integrity is maintained. Repeated Measures ANOVA analyzed the times of collection required to generate 2 mL of saliva across (a) control day; (b) Maxisal day; and (c) bacon day. Compared to the control day, both Maxisal ($p$=.019) and freshly prepared bacon ($p<.001$) significantly decreased saliva collection time. We will follow this up by performing assays to determine whether Maxisal or bacon interferes with common salivary biomarker quantification. This study demonstrates novel methods to increase saliva flow without compromising sample integrity.

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## B-084

### SELECTING AN EVALUATION FRAMEWORK FOR COMMUNITY BASED INTERVENTIONS: RE-AIM IN RURAL GEORGIA

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Randomized clinical trials are often seen as the most rigorous and desirable evaluation approach, however, they are not universally feasible or appropriate for community based interventions. Further, determining what and how to evaluate in community driven interventions can be challenging. Evaluations that focus on community-level programs must be capable of assessing change at multiple levels of the socio-ecological model (e.g., community, individual). The purpose of this presentation is to discuss the application of the RE-AIM framework in rural Georgia within the context of DUI prevention. ONE Bulloch represents a local component of Georgia Strategic Prevention Framework State Incentive Grant, Priority 1: Alcohol Related Crashes and Fatalities. RE-AIM was selected based on the scope of the evaluation, evaluation capacity, and the nature of the intervention. Because the selected interventions were environmental, evaluation activities focused on community, system, and environmental processes and outcomes. Multiple methods including intercept interviews, web site and media tracking, and secondary data analysis were used to determine the extent to which interventions strategies and message reached the target audience. The extent to which DUI prevention efforts were adopted was monitored through tracking of invited and participating organizations and businesses. Implementation was assessed using key informant interviews using the Environmental Fidelity Rubrics (i.e., Social Norms Marketing/Social Marketing/Mass Media, Media Advocacy, and Sobriety Checkpoints). Potential maintenance of DUI prevention efforts among settings in Bulloch County was assessed through observation and key informant interviews. Outcome evaluation (i.e., effectiveness/efficacy) using mixed methods (e.g., intercept interviews, secondary data analysis) focused on the assessment of short-term outcomes (e.g., attitudes toward DUI) specified. RE-AIM provides a community friendly evaluation framework that can accommodate the complexity inherent in bringing about community or systeM–level change.

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## B-085

### AUTOMATED VOICE REMINDERS OR SMS TEXT REMINDERS: WHAT IS ASSOCIATED WITH PREFERRED MODALITY?

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Using reminders is an important strategy to increase intervention engagement. Automated Voice Reminders (AVR) and SMS (short message system/text) messages are accessible, inexpensive reminder modalities. This study explored the associations of participants' sociodemographic, health status and contextual factors with their choice of reminder modality (AVR or SMS). Participants (n=595) were Healthy Directions 2 (HD2) enrollees randomized to receive the intervention and reminders. HD2 was a RCT implemented in 2 urban health centers that addressed 5 health behaviors A self-administered survey assessed socio-demographics (race/ethnicity, education, perceived household financial status), self-reported height/weight, contextual factors (own cell phone, computer comfort, frequency of internet and SMS use). Bivariate analyses examined associations between assessed variables and selected reminder modality. Variables significant at $p<0.10$ (age, computer comfort, frequency of internet use and SMS) were included in a series of multivariable logistic regression models until we created a final parsimonious model. The sample was racially/ethnically diverse (29.3% Black; 54.9% white, 8.4% Hispanic/Latino), 62.9% female, had a mean age of 53.7 yrs (SD=13.8), and 59.9% graduated college. More than half (63.3%) were overweight/obese and 53.3% reported their health as being excellent. Over one-third (39.4%) had never sent/received text messages and 8.5% never used the internet. Overall. 53.7% chose AVR and 46.3% selected SMS. In the final multivariable logistic regression model. choosing SMS was associated with younger age and greater internet use ($p<0.05$). Interventions implemented in this setting should consider using both AVR and SMS reminders, as both modalities were selected by nearly half of participants, and self-selection of reminder modality may help to increase intervention engagement.

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## B-087

### UNDERSTANDING DRINK CHOICES IN SOUTHWEST VIRGINIANS: AN APPLICATION OF THE THEORY OF PLANNED BEHAVIOR

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The primary objective of this formative study targeting adults residing in rural southwest Virginia was to apply the Theory of Planned Behavior (TPB) to investigate culturally specific attitudes, subjective norms and perceived behavioral control constructs related to sugar-sweetened beverages (SSB), water, and artificially sweetened drink consumption. Methods: Using a purposeful sampling strategy, eight focus groups were conducted with 54 adult participants who exceeded SSB recommendations. A qualified moderator and co-moderator utilized a semi-structured script grounded in the TPB to guide the focus group. All focus groups were audio taped and transcribed verbatim. Three researchers independently coded meaning units (MU) to the major themes of TPB and subsequently reviewed codes and reconciled disagreements. Results: Important beverage specific themes emerged for attitudes, subjective norms and perceived behavioral control. Across all beverages, the most notable themes included taste (n=161 MU), availability/convenience (n=95 MU), cost (n=28 MU), and habit/addiction (n=57 MU). Health consequences associated with beverages and issues with water quality also surfaced, as well as normative beliefs including the influence of doctors and peers on beverage behaviors. Conclusion: Collectively, the identified themes and sub-themes provide critical insight into understanding the salient beliefs associated with beverage behaviors and helps inform the development, implementation and evaluation of future intervention efforts targeting beverage behaviors in the health disparate region of southwest Virginia.

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## B-088

### PSYCHOMETRIC PROPERTIES OF THE PERCEIVED THERAPEUTIC EFFICACY SCALE FOR ADHERING TO A CHOLESTEROL-LOWERING DIET

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Background: Outcome expectations may play an important role in behavior change. A previously developed scale measuring outcome expectations related to adhering to a cholesterol-lowering diet lacked psychometric data from a large sample. Objective: To test the psychometric properties of the Perceived Therapeutic Efficacy Scale (PTES), a 10-item scale, on a larger sample. Methods: The PTES and Connor Diet Habit Survey (DHS) were administered to 224 adults being treated for hypercholesterolemia and currently enrolled in a cardiac rehabilitation program. Results: The sample (N=224) was, on average, 69.35 years old (SD=10.79) and was predominantly male (66.5%) and White (92.4 %); nearly all participants (96.0%) completed high school. The inter-item correlation matrix revealed that correlation coefficients were>0.8 between 4 pairs of items, suggesting that 4 items were redundant. Thus, we reduced the scale to 6 items. Principal Component Analysis revealed a one-factor scale with high loadings for all 6 items, each>0.7. Cronbach's $\alpha$ was .91, and the scale also demonstrated good convergent and discriminant validity. The total PTES score had a moderate correlation with self-reported behaviors of adhering to a cholesterol-lowering diet (r=0.36); there was a low correlation with salt consumption (r=0.22), eating in restaurants/modifying recipes (r=0.22) and no significant correlation with the carbohydrate (r=0.11) and beverage scores (r=0.05). Conclusion: The revised and shortened PTES scale retained its good psychometric properties. While the correlation between the PTES score and dietary adherence is moderate, the instrument can be easily administered and also may be useful to measure individuals' outcome expectancy related to adhering to a cholesterol-lowering diet. A lower score on the PTES could provide an intervention target. The scale needs to be tested in more diverse populations.

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## B-089

### HOUSEHOLD FOOD INSECURITY: PREDICTING HEALTH STATUS IN HISPANIC COLLEGE STUDENTS

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Objectives: To examine (a) the prevalence of household food insecurity (HFI) in Hispanic college students, (b) the possible predictors of HFI, and (c) the association between HFI and overweight status in Hispanic college students.
Participants: 147 college students from a large southwestern university participated in this study.
Methods: Besides various demographic questions, students completed the U.S. Household Food Security Survey (Blumberg et al., 1999). In addition, students' anthropometric measurements (height and weight) were taken and students' body mass index (BMI) was calculated.
Results: The results of this study showed that 20.4% of our sample was classified as household food insecure, including 3.4% with hunger. The study also indicated that among other predictors, academic assistance, depression, and metabolic syndrome had the strongest correlation with HFI. Surprisingly, the results did not show a strong correlation between students' BMI and HFI.
Conclusions: The prevalence of HFI among Hispanic college students was approximately two times the U.S. national average, but still very similar to the prevalence reported among Hispanic population. The results of this study also help understand the relationship between the HFI and various predictors. Future studies should focus on different ethnic groups so that specific interventions could be designed in order to raise awareness and help this population live a healthier lifestyle.

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## B-090

### EVALUATION OF THE HEALTHY EATING FOR LIFE ENGLISH AS A SECOND LANGUAGE CURRICULUM

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Low health literacy is a significant contributing factor to cancer health disparities affecting minorities and the medically underserved. To address the problem of low health literacy in this population, we designed and implemented Healthy Eating for Life (HE4L), an English as a Second Language (ESL) curriculum focusing on nutrition. HE4L is a theory-driven, content-based, multi-media curriculum aimed at promoting healthy living and cancer prevention in an ethnically diverse, medically underserved, immigrant population. The purpose of this study was to evaluate the effectiveness of HE4L. The intervention was delivered by ESL teachers who were specifically trained to deliver the HE4L curriculum. Students (N=256) in 20 classrooms were exposed to HE4L during the course of one semester. Questionnaires were administered in the students' native languages at the beginning and the end of the semester. Students exposed to HE4L demonstrated significant increases in key outcomes of interest including knowledge of a healthy diet, fruit and vegetable consumption, and action and coping planning skills (all p-values<.05). Additionally, compared to the state average, students in the HE4L classrooms achieved higher reading scores on the nationally endorsed adult learning and literacy test. Overall, there is evidence to support the effectiveness of HE4L with respect to both healthy eating and English language learning outcomes.

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## B-091

### INTUITIVE EATING PRACTICES AMONG AFRICAN-AMERICAN WOMEN LIVING WITH DIABETES

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Intuitive eating involves awareness of the physical and emotional sensations experienced while eating or in a food-related environment, and can improve dietary adherence. However, its use is unexplored among minority women diagnosed with type 2 diabetes. The goal of this study was to investigate nutrition beliefs of African-American women living with diabetes, and how women's current eating practices aligned with intuitive eating concepts.

This study used focus group methodology. African-American women with type 2 diabetes who had not previously attended a diabetes education class were recruited from the local safety net hospital. Verbatim group transcriptions were analyzed by two independent reviewers for themes using a combined inductive-deductive approach.

Participants (n=33) had an average age of 52±9 years and mean body mass index of 39±7. Mean time with a type 2 diabetes diagnosis was 10±10 years. All participants believed that dietary habits contribute to glycemic control. Participants stated that there are good and bad diet foods, and people with diabetes have to follow a different diet than recommended for the general public. Participants expressed dissatisfaction with perceived good foods and reported frequent noncompliance with a healthy diet. The women also reported regularly occurring instances of eating in the absence of hunger, yet stated that the determinant factor for when to stop eating was to recognize a feeling of fullness. Participants reported knowing they were full when they felt physically uncomfortable or actually became sick. Many participants also stated that they experienced multiple distractions while eating, both self-imposed and from friends and family.

While these participants were aware that dietary choices can impact diabetes control, they had limited knowledge of healthy dietary practices. Dietary habits discussed were also inconsistent with the principles of intuitive eating. Future studies should assess the impact of intuitive eating interventions on dietary habits among low-income African-American women with type 2 diabetes.

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## B-093

### INSTITUTIONAL INFLUENCES ON HEALTH-RELATED PROGRAMMING IN CHURCHES: A QUALITATIVE STUDY

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Background: Previous health promotion interventions have shown that churches are a viable community partner for reaching the general populations. Despite the evidence that suggests that they are an effective setting for targeting health and behaviors there is limited information about the institutional capacity or beliefs of churches toward health. Purpose: The purpose of this qualitative study was to examine how a churches' doctrine, parent organization (e.g. conference/diocese), and leader training (e.g. seminary school) perceive and support health-related issues. Methods: Sixteen faith leaders (87.5% male, 100% White, 31% Methodist) from different denominations participated in semi-structured interviews. The interviewer addressed the doctrine/philosophy of their church on health, parent organization support for health, and education and training on health. Interviews were recorded, transcribed verbatim and coded using a social ecological framework. Results: Faith leaders reported that their churches' doctrine included views on health as it related to stewardship and emphasized a holistic approach to health. Several leaders offered biblical references to support health focused activities in their church. The most common form of health-related support offered by the churches' parent organizations were health insurance programs and clergy wellness initiatives, with limited support for congregational programs. Most faith leaders reported little or no instruction on health during seminary school, and indicated that they would have liked instruction on health related self-care in seminary school. Conclusion: This study revealed a number of previously undocumented institutional influences on health and wellness within churches. Future programs could include policy and environment level initiatives to address clergy health, and the development of culturally tailored interventions concurrent with church doctrine.

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## B-094

### DELAY DISCOUNTING, FOOD CONVENIENCE, AND ENERGY INTAKE AMONG OVERWEIGHT AND OBESE WOMEN

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Convenience is a key determinant of food choice, and individuals may be more likely to overconsume foods that require little or no preparation. This study tested whether delay discounting, a facet of impulsivity reflecting the influence of immediate rewards on decision-making, moderates the effect of food convenience on energy intake in overweight and obese women. Participants (N=82; body mass index: M=32.0, SD=3.9; age: M=32.6, SD=8.0; 70.7% ethnic minority) completed weighed food records assessing the amount consumed and perceived taste of foods and beverages for seven days. Foods were coded as ready-to-eat, away-froM–home, and home-prepared by a registered dietitian based on the description, brand, source, and preparation method provided. Beverages were coded as a separate category. A binary choice task assessed delay discounting of monetary rewards, with a smaller area under the curve reflecting greater impulsivity. Taste ratings [χ2(3, N=80)=9.1, p=.03] and caloric intake [χ2(3, N=82)=475.2, p <.0001] for individual foods varied by convenience, with away-froM–home foods having the highest taste ratings and most calories consumed per item. The delay discounting by convenience interaction predicted caloric intake in linear mixed models that adjusted for taste, age, body mass index, income, and education [χ2(3, N=78)=10.3, p=.02]. More impulsive responding on the delay discounting task was associated with greater caloric intake for ready-to-eat (coefficient=-.74, z=-2.48, p=.01) and away-froM–home (coefficient=-1.23, z=-2.18, p=.03) foods, but was not associated with caloric intake for beverages (p=.89) or home-prepared foods (p=.95). Individual differences in delay discounting predict intake of ready-to-eat and away-froM–home foods in overweight and obese women, suggesting the need to promote reliance on home-prepared food in obesity counseling with impulsive individuals.

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## B-095

### INITIAL IMPLEMENTATION OF A BRIEF INTERVENTION TO CHANGE MATERNAL BEHAVIOR IN URBAN CHILDREN AT RISK FOR OBESITY

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Background: Rates of obesity in urban, minority populations are high. This study's goal is to reduce obesity rates in 2-4 year old, minority children using a brief intervention delivered in a primary care setting.

Methods: Caregivers of 205 children (36.3±8.9 mo; 89% Hispanic, 11% Black) received a brief (3-5 min) intervention delivered either by their pediatrician during a well child visit or a nurse during a WIC visit. Using a motivational interviewing framework, clinicians reviewed caregiver's responses to a brief nutritional and activity survey, provided positive feedback and identified areas of potential concern focusing on 4 behavioral targets (decreasing sweetened beverages, reducing inappropriate milk consumption, decreasing screen time to ≤2 hrs/day; increasing physical activity to ≥60 min/day). Caregivers selected one behavioral target, a written plan was created, and caregivers were instructed to complete a self-monitoring calendar. Telephone follow-up occurred within 7 days to assess initial implementation of the intervention.

Results: The plans were directed at switching to 1% milk (26%), decreasing milk volume to ≤2 cups/d (8%), decreasing juice consumption to ≤6 oz/d (51%), eliminating sweetened beverages (16%), decreasing screen time (5%) and increasing activity (2%). Telephone follow-up was completed with 89% of caregivers. 96% of mothers had implemented the targeted behavior change, 75% were at least moderately confident in their ability to sustain this change, 73% reported no barriers to behavior change, and 71% reported using the self-monitoring calendar.

Conclusions: Within an urban population, a brief, focused intervention was successful at changing maternal behavior after a single dose. The intervention's brevity promoted acceptance by pediatricians and nurses. Ongoing follow-up with repeated doses will determine whether changes are sustained and decrease BMI% in children.

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## B-096

### COMPARING THE EFFICACY OF TWO APPROACHES TO WEIGHT LOSS: A BEHAVIORAL VERSUS A PSYCHOLOGICAL APPROACH

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Background: In the current study, the authors introduce a novel approach to weight loss treatment, New Perspectives (NP), a program directed at changing unhealthy relationships with food, the body, and attitudes about weight. The primary aim of this study is to compare treatment outcomes, including weight loss, self-monitoring, and psychological variables between this novel, psychologically-based treatment approach with a program representative of behaviorally-focused approaches. The behaviorally-focused program emphasized healthy habit formation, unhealthy habit disruption, and environmental modification (Carels, 2011).
Methods: Sixty-two participants were recruited for a free 12-week group weight loss program. Participants completed baseline and post-treatment measures of body image, depression, binge eating, emotional eating, habits, the household food environment, explicit weight bias, and internalized weight bias. Participants were predominately Caucasian (85.5%) and female (79.1%) with a mean BMI of 38.3 (SD=7.7). The primary outcome was weight change, while secondary outcomes included self-monitoring and psychological outcomes.
Results: Repeated measures ANOVA indicated a significant overall treatment effect for weight loss from baseline to post treatment ($p<.01$). Over 12 weeks, participants lost, on average, 6.5% of their baseline body weight. There were no differences between groups in weight loss, self-monitoring frequency, and energy expenditure and intake. Both groups significantly improved in body image, depression, binge eating, emotional eating, healthy habit formation, and explicit and internalized weight bias ($ps<.05$). Explicit negative weight bias and weight preoccupation was lower in the NP group, relative to the TYL group ($p<.05$)
Conclusions: Both weight loss approaches provided equal benefits in weight loss and psychosocial outcomes. The NP intervention appears to represent an attractive option for individuals seeking an alternative to the traditional behavioral approach to weight loss.

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## B-097

### THE OLBRISH BARIATRIC EATING STYLE EVALUATION (OBESE): A SCALE TO MEASURE SUBCLINICAL PROBLEMATIC EATING BEHAVIORS IN A SURGERY-SEEKING OBESE PATIENT SAMPLE

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Assessing eating patterns in severely obese patients prior to bariatric surgery can lead to important information that can be used in future clinical and research endeavors that aim to improve long-term weight management. Several instruments are available that examine pathalogical eating (e.g., binge eating); however, they fail to capture subclinical problematic eating behaviors that contribute to obesity. The Olbrisch Bariatric Eating Style Evaluation (OBESE), a 75-item true/false measure, was developed to capture these subclinical problematic eating behaviors (e.g., problems with food preferences, emotional eating, self-control, and thoughts about eating) in adults with weight problems. The purpose of this study was to investigate the reliability of the OBESE and its relationship to depression, BMI, and other relevant variables. Pre-surgical bariatric patients ($n=128$) completed the questionnaire (Mean age=44.7; Mean BMI=48.7; 78.1% Female). Reliability of the total questionnaire was excellent (KR-20=.91). Higher OBESE scores (indicating more problematic eating patterns) were significantly associated with depression scores ($r=.52$, $p<.001$) on the Beck Depression Inventory (BDI) but not with BMI or number of current medical comorbidities ($ps>.50$). One-way ANOVA revealed that patients endorsing SEVERE, MODERATE, MILD, and MINIMAL depressive symptoms on the BDI differed signficantly on OBESE scores, $F(3,127)=11.36$, $p<.001$, $\eta2=.22$. Patients with MINIMAL symptoms had significantly lower scores than the MILD, MODERATE, and SEVERE symptom groups, $ps\leq.01$. The OBESE appears to be a reliable measure of problematic eating that is related to depression but not BMI in this patient population. Further psychometric study is warranted on the OBESE.

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## Citation Poster

## B-098

### SELF-MONITORING FOR SUCCESSFUL MAINTENANCE OF LOST WEIGHT IN LIFESTYLE TREATMENT OF OBESITY

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Frequent self-monitoring has been associated with successful weight management, but little is known about the importance of consistency and comprehensiveness of self-monitoring, particularly in the long-term management of obesity. We examined this issue among 113 female participants (Mean age=59.5; Mean BMI=36.5) in the TOURS study, a randomized trial consisting of a 6-month lifestyle intervention for weight loss followed by12 months of extended care. We categorized participants according to amount of long-term weight loss (HIGH $\geq$10% of initial body weight, MODERATE $\geq$5% and <9.99% of initial body weight, and LOW <5% of initial body weight), and we examined between-group differences in frequency, consistency, and comprehensiveness of self-monitoring during the year following initial treatment. MANOVAs were used to examine differences in frequency and comprehensiveness, and a chi-square test was employed to test differences in consistency (i.e., completion of 3 days per week of self-monitoring for>50% vs. < 50% of the weeks during Months 7 to 18). Results revealed that the three groups differed significantly for frequency of self-monitoring, $F(2, 107)=14.71$, $p<.001$, $\eta2=.22$, such that HIGH group completed more written self-monitoring records than the MODERATE and LOW groups, $ps<.01$. No significant difference was found between MODERATE and LOW groups for frequency of self-monitoring, $p=.32$. Group differences for comprehensiveness did not reach Bonferroni-corrected significance, but Chi-square results showed a significant association between consistency of self-monitoring and weight maintenance success, $\chi2(2, N=113)=29.35$, $p<.001$, Cramer's V=.510; consistency of self-monitoring accounted for 26% of the variance in the success of maintaining lost weight. These findings have practical implications for weight-management counseling and suggest the potential importance of both frequency and consistency of self-monitoring to success in the long-term behavioral management of obesity.

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## B-099

### USING SOCIAL MARKETING TO PROMOTE INDIVIDUAL AND ENVIRONMENTAL WELLBEING: A NEW FRAMEWORK FOR "WHOLESOME COMMUNITIES"

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There is mounting evidence which suggests that current food production, transport, land use and urban design negatively impact both climate change and obesity outcomes. Recommendations to prevent climate change provide an opportunity not only to improve environmental outcomes but alter our food and physical activity environments in favour of a "healthier" energy balance. Hence, setting goals to achieve a more sustainable society offers a unique opportunity to reduce levels of obesity. In the case of children, this approach is supported with evidence that even very young children show emerging understandings of complex environmental issues and are capable of both internalising positive environmental values and influencing their own environmental outcomes. Given young children's high levels of environmental awareness, it's easy to see how environmental sustainability messages may help educate and motivate children to make 'healthier' choices. The purpose of this paper is to highlight a new approach to tackling childhood obesity by tapping into existing social movements, such as environmental sustainability in order to increase children's motivation for healthy eating and physical activity behaviours. We contend that a social marketing framework may be a particularly useful tool to foster behaviour change beneficial to both personal and environmental health; by increasing perceived benefits and reducing perceived costs of behaviour change. We encourage researchers to move on from current obesity interventions and consider a new approach to tackling the childhood obesity epidemic. Accordingly, we propose a new framework which highlights suggested pathways for helping children initiate and sustain 'healthier' behaviours. This framework should serve as a guide to future research and inform intervention strategies in this area.

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## B-100

### DO WOMEN ENROLLED IN COMMERCIAL WEIGHT LOSS PROGRAMS MEET PUBLIC HEALTH RECOMMENDATIONS FOR WEIGHT-CONTROL BEHAVIORS?

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Objective: This study examined (a) the proportion of women using commercial weight-loss programs meeting public health guidelines for leisure-time physical activity (LTPA) and daily fruit/vegetable consumption (DFVC), and (b) identify variables that differentiate between meeting and not meeting public health guidelines for LTPA and DFVC. Method: Data were collected from a purposive sample (N=90; Mage=38.34 ±13.65 years) enrolled in one of four commercial weight-loss programs. Most participants were married/common-law (78.90%), university educated (70.80%), full/part-time employed (76.40%), Caucasian/White (92.20%), and within their first year of program enrollment (58.40%). Body Mass Index (BMI) values ranged from 18.14 to 49.49 kg/m2 (74.80% greater than 25.00 kg/m2). Each participant completed a multi-item questionnaire using an internet-based site on a single occasion. Results: Prevalence estimates indicated most women engaged in sufficient weekly LTPA to be classified as either ‘active’ (60.00%) or ‘moderately active’ (13.30%) yet less than one-third surpassed the DFVC recommendations (30.00%). Women meeting the physical activity guidelines were older, reported a lower BMI, and had spent longer enrolled in commercial weight-loss programs than those not meeting the guidelines (p’s< 0.05; Cohen d’s=0.58 to 0.98). No subgroup differences were evident between women meeting versus not meeting the DFVC guidelines (p’s>0.05; Cohen’s d’s=-0.27 to -0.53). Conclusions: Overall, it appears that many women enrolled in commercial programs designed for weight-loss engage in LTPA at a level commensurate with current guidelines yet do not consume the recommended servings of fruit/vegetables per day. The sensitivity of LTPA to demographic, anthropometric, and prograM–based considerations across subgroups implies limited utility of a ‘one-size fits all’ approach to changing this weight-control behavior.

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## B-101

### IMPLEMENTATION OF A NATIONWIDE WEIGHT MANAGEMENT PROGRAM: PROVIDERS’ FEEDBACK ON THE VETERANS HEALTH ADMINISTRATION-MOVE!® PROGRAM FOR VETERANS (MOVE!)

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The staff of large healthcare organizations may benefit from having evidence-based resources to implement health programs. Yet little is known about how these programs are implemented or received across an organization’s care locations. The present study examined perceptions of the VA’s MOVE!® weight management program, the largest US weight program offered in an integrated health care system. VA providers (N=900) from various locations completed a web-mediated survey about MOVE!. Respondents included MOVE! facilitators and other providers who had either referred veterans to MOVE! or interacted with veterans about their participation in MOVE!. Most respondents were female (81%), Caucasian (79%), and trained as nurses (50%); other providers included physicians and physician’s assistants, psychologists, and physical activity or behavioral health specialists. A majority of respondents (84%) contributed 5 or fewer hours per week to MOVE! care. Descriptions of MOVE! logistics across VA networks suggest some heterogeneity (in length and format of sessions, number of facilitators, etc.). Across locations, respondents generally agreed that MOVE! is effective for helping participants lose weight, prevent weight regain, improve eating habits, and improve quality of life (mean ratings ~4.0 of 5, SD ~0.8). Overall, MOVE! facilitators perceived the program as more effective, and MOVE! participants as more satisfied, than did other providers (p.<.001). Although providers describe variety in local MOVE! programs, providers view MOVE! as beneficial for the veteran population. Providers not directly involved with MOVE! may underestimate its effectiveness, suggesting an area of opportunity for clarifying perceptions among referring providers in a large integrated healthcare system.

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## B-102

### EFFECTS OF A FAMILY-FOCUSED HEALTHY LIFESTYLE INTERVENTION ON OBESE YOUNG ADULTS WITH INTELLECTUAL DISABILITIES

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Obesity among young adults with intellectual disabilities(ID)is double their non-disabled peers.While programs to address obesity in children of typical intellect are often parent-centered,these are rarely used with the disabled.We evaluated the effects of a 12-week recreation center-based healthy lifestyle intervention for 30 obese young adults(YA)with ID living at home. Participants were randomly assigned to one of 3 cohorts: young adults only,young adults and parents,or parents only. The YA intervention used a theory-driven nutrition/exercise curriculum for persons with ID(Marks,2006).The parent curriculum was based on the PATCH program(Golan,2008)adapted for families with YAs with ID. It emphasized creating family environments that modeled healthy lifestyle behaviors. Baseline(T1),post-test(T2),and 3-month follow-up(T3)YA outcome variables included blood samples, nutrition, anthropometric and fitness measures. There were no significant differences among the groups at baseline. At T2,compared to a wait list control, the YA only group had greater weight loss,decreased BMI and blood pressure(BP),and improved scores on the Tinetti Balance test(all p<.05). No other differences were found on blood draw assessments or fitness/anthropometric measures. Across time,any intervention was better than no intervention. Parent BMI did not affect YA results. Significant(p<.05) reductions (T1 to T3)occurred for all 3 cohorts regarding YA weight, BMI, BP, hip circumference, and exercise barriers. Changes were quadratic: reductions from T1 to T2, with increases(but not return to baseline) from T2 to T3. Linear increases occurred across time (p<.05) re the bench press, Tinetti,and sit-to-reach. Young adults with Down syndrome had less weight loss. The effectiveness of partnering with recreation center personnel to implement/sustain the healthy lifestyle intervention was supported. Recommendations for parental involvement include emphasis on personal healthy lifestyle goals and increased participation in YA exercise programs.

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## B-103

### EXPLORATION OF GROCERY SHOPPING BEHAVIORS AND SOCIODEMOGRAPHIC FACTORS ASSOCIATED WITH VENUE OF MEAL CONSUMPTION: RESULTS FROM THE NATIONAL CANCER INSTITUTE’S FOOD ATTITUDES AND BEHAVIORS (FAB) SURVEY

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The aim of this study was to explore associations of sociodemographic factors and shopping behaviors with consumption of meals in various venues: fast food, in front of the television, and with family or friends. We analyzed data from the respondents (N=3,397) in the National Cancer Institute’s Food Attitudes and Behaviors (FAB) Survey, a mail survey of US adults, administered in 2007. Sociodemographic variables and shopping behaviors were entered into three linear regressions onto the following outcomes: number of fast food meals per week, meals eaten in front of the television, and meals eaten with family or friends. The number of times per week that respondents consumed fast food was more likely among respondents with lower education levels (p<0.001), those without children living in their home (p<0.01) and those who were more likely to shop for groceries at convenience stores (p< 0.01). The number of times per week that respondents ate in front of the television was more likely among respondents with lower education levels (p< 0.001) and those who live with grandchildren (p<0.01), while those who live with children were less likely to consume meals in front of the television (p< 0.001). The number of times per week that respondents reported eating meals together with friends or family was more likely among those with lower education levels (p<0.01) and those who shopped at discount superstores (p< 0.05) or convenience stores (p<0.05). Together these variables accounted for 14-19% of the variance in the venue of meal consumption. These results have important implications for promoting healthful meal consumption and shopping behaviors and prevention of obesity, particularly among disadvantaged socioeconomic groups and those living in food deserts.

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## B-104

### HEALTH BEHAVIOR CHANGE IN A MINDFUL YOGA-BASED RESIDENTIAL WEIGHT LOSS INTERVENTION

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OBJECTIVE: Overweight and obesity are prevalent in the US, with poor health behaviors a frequent concomitant. Preliminary evidence suggests newer treatment paradigms incorporating mindfulness and acceptance may effectively promote positive health behaviors in this population; for example the Health at Every Size (HAES) model, which advocates a 'non-dieting,' intuitive eating, and acceptance-based approach for health behavior promotion among overweight and obese individuals. This exploratory pilot study was conducted to explore the impact of a 5-day mindful yoga-based, residential lifestyle modification program for weight loss program incorporating constituents of mindfulness, acceptance, and HAES on health behaviors.
METHODS: Participants ($n=37$) were overweight and obese men (5%) and women aged 33-65 recruited from existing program registrants via email. No exclusion criteria were employed. Surveys were administered to participants via surveymonkey.com's online survey interface. The Lifestyle II Profile was administered to assess health behaviors and related constructs.
RESULTS: All results were tabulated in SPSS. Outcomes among program completers indicate statistically significant improvements in fruit and vegetable consumption ($p<0.001$) and low-fat intake ($p<0.001$) immediately post-program ($n=31$, 45% attrition) and at 3-month follow-up (both items significant to $p<0.01$; $n=17$, 84% attrition). Statistically significant increases in mindfulness ($p<.0001$) and positive affect ($p<.0001$) were observed post program. These changes were maintained and at 3-4 month follow-up; mindfulness ($p<.0001$) and self-compassion ($p<.0001$).
CONCLUSIONS: The results of this study indicate that a mindful yoga-based residential weight loss protocol may promote a healthier diet 3 months following program completion.

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## B-105

### INTERNALIZED WEIGHT BIAS: A COMPARISON OF RATINGS OF THE SELF, NORMAL WEIGHT, AND OBESE INDIVIDUALS AND PSYCHOLOGICAL MALADJUSTMENT

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Background: Current measures of internalized weight bias, such as the Weight Bias Internalization Scale, assess factors such as responsibility for weight status, mistreatment because of weight, etc. A potential complementary approach for assessing internalized weight bias is to examine the correspondence between individuals' ratings of obese people, normal weight people, and themselves on positive and negative personality traits.
Current Study: We examined the relationships among different measures of internalized weight bias, as well as the association between those measures and psychosocial maladjustment (i.e., depression, binge eating, body image dissatisfaction). Sixty-two weight loss treatment seeking adults (BMI>27 kg/m2; mean BMI of 38.3, SD=7.7, 86% Caucasian, and 79% female) completed measures of explicit and internalized weight bias as well as body image, binge eating, and depression.
Results: Greater internalized weight bias was associated with greater depressive symptoms, binge eating, and body image dissatisfaction. Discrepancies between participants' ratings of obese people in general and ratings of themselves on both positive and negative traits predicted between 4.6 and 10 percent unique variance in measures of maladjustment above a traditional assessment of internalized weight bias. Using comparisons of positive and negative trait ratings of obese, normal weight, and the self appears to offer a novel approach to measuring internalized weight bias that provides information above and beyond traditional measures of internalized weight bias.

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## B-106

### ASSOCIATIONS BETWEEN MEASURED AND PERCEIVED WEIGHT STATUS AND PHYSICAL SELF CONCEPT AND PHYSICAL ACTIVITY AMONG ADOLESCENT GIRLS

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Background: Discordant weight perceptions among adolescents may contribute to unhealthy weight-related attitudes and behaviors.
Purpose: To examine the relationship between concordance of perceived and measured weight status and physical self-concept measures (depression, perceived body fat (PBF), self-esteem (SE), and global physical self-concept (GPSC)), and physical activity (PA) in adolescent girls.
Methods: Measured and self-reported height and weight of 589 healthy 11th grade girls, mean age 16.7+.04 years, were classified as underweight, normal weight, overweight, or obese. Concordance was classified as: concordant (C: perceived=measured), positive discordant (PD: perceived<measured), and negative discordant (ND: perceived>measured). Minutes of moderate-to-vigorous PA (MVPA) were assessed using accelerometers. Physical self-concept was assessed using questionnaires. Multiple regression models controlling for race/ethnicity were used to determine associations of depression, BF, SE, GP, and PA with weight status concordance and least square means (LSM)±SE.
Results: Body mass index (BMI, kg/m2) of PD girls (27.2±0.5) was higher than C (23.1±0.3) or ND (22.4±0.8) girls ($p<.001$). ND girls (22.4±1.1) had lower GPSC scores than C (26.2 ±0.4, $p=.003$) or PD (25.9±0.6, $p<.02$) girls. ND girls (19.9±1.3) also had lower PBF scores than PD girls (25.3±0.7), which was lower than C girls (28.6±0.5) ($p<.001$). PD girls had less minutes of MVPA (20.7±0.7) than C (17.7±1.1) or ND (18.8±1.9) girls ($p=.05$). Concordance was not significantly associated with SE or depression scores.
Conclusions: Girls who perceived their weight as higher than measured had a less positive physical self perception than girls who perceived their weight status as equal to or lower than measured which may place them at risk for disordered eating or exercise behaviors. Girls who perceived their weight status as lower than measured had higher BMI and lower MVPA than girls with perceived weight status equal to measured which may place them at risk for obesity and other chronic diseases.

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## B-107

### DOES BEHAVIORAL WEIGHT LOSS TREATMENT RELIABLY IMPROVE OR WORSEN DEPRESSION AMONG WOMEN WITH MAJOR DEPRESSION?

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Although behavioral weight loss interventions improve depressive symptoms overall, two recent investigations showed that some patients (10-14%) experience increases in depression during treatment (Faulconbridge et al., 2009; Simon et al., 2010). However, little is known as to whether people with clinical depression are vulnerable to worsening of depression during a weight loss intervention. We examined depression change and predictors of depression change among 143 obese women with clinical depression who participated in a trial comparing behavioral activation for depression plus a lifestyle intervention to a lifestyle intervention alone. A reliable change cutoff (i.e., only a 5% likelihood of change being due to chance) of 8.2 BDI points was calculated. 62.9% of the total sample showed reliable improvement in depression symptoms, 35.7% showed no reliable change and 1.4% showed reliable deterioration at 6 month follow-up. In a logistic regression analysis, lower baseline levels of depression ($p=.001$), less baseline physical activity ($p=.02$), and greater symptoms of attention deficit hyperactive disorder (ADHD, $p=.05$) were associated with failure to reliably improve in depression. Even after controlling for these baseline characteristics, less weight loss at 6 months was associated with failure to reliably improve in depression ($p<.001$). We found no evidence for an iatrogenic effect of behavioral weight loss treatment on depressive symptoms among obese women with clinical depression; in fact, most women experienced reliable improvement. Women who did not experience reliable improvement in depression were less physically active, less depressed and more likely to have symptoms of ADHD at enrollment, and lost less weight during treatment.

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## B-108

### 'I AM FIT' PROJECT: BMI AND BODY WEIGHT CHANGES IN ADOLESCENTS

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Background: Childhood obesity has reached epidemic proportions and strong correlations with diabetes and hypertension make it an important focus for pediatric research. The 'I AM FIT' project is an on-going 4-year school-wide walking program that allows participants to hike a "virtual 8-week trail" around the world each year. Findings are presented for the first 3 years.
Methods: Student participants were divided into teams based on grade levels 9-12. The teams competed for distance walked per week. Participants wore pedometers each day and recorded steps at the end of every week. A 2 (group) x 2 (time) repeated measures design was used to determine the impact of the intervention. Blood pressure, heart rate, height, weight, and body fat composition were recorded at pre- and posttest and compared to demographically matching control schools that did not participate in the walking program. Institutional review board approval was obtained for the study. Parental permission was obtained for participation in health evaluations.
Results: 405 high school students (ages 14-18 yrs) completed evaluations at the beginning and end of each 8-week virtual walk. Weekly average steps were not significantly different between males (22366 steps, 11.2 miles) and females (18153 steps, 9.1 miles, Z-score=1.36, p=0.17). Mean BMI at pretest was 23.5±4.8 for males and 24.8±6.5 for females. At posttest there were slight increases of 1.2±5.5 lbs in males and 0.7±4.1 lbs in females in the 'I AM FIT' group which gained less weight (0.89 lbs) and had a smaller increase in BMI (0.018) compared to increases of 2.06 lbs and 0.32 BMI for controls (both ps<.04). No statistically significant changes was found for blood pressure, heart rate, or body fat composition.
Discussion: The 'I AM FIT' project demonstrates feasibilty of a school-wide walking program, and slightly blunted the normal 8-week body weight/BMI growth rate compared to controls. Future health promotion programs for overweight and/or obese children may benefit from inclusion of a similar walking protocol.

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## B-109

### HARD-WON SUCCESSES IN A CBPR STUDY TO IMPROVE HEALTHY LIFESTYLES OF OBESE PEOPLE WITH INTELLECTUAL DISABILITIES

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The purpose of this presentation is to describe ten key processes in CBPR success from our work to improve healthy lifestyle behaviors of young adults with intellectual disabilities (ID). Obesity and sedentary behavior among people with ID is a national health disparity. Addressing this disparity took two years and several small grants. It culminated in a three-arm randomized trial of a healthy lifestyle and weight loss intervention for obese young adults (18-35 y.o.) with ID living at home with their parents. Survey data from people with disabilities, family members, and professionals (n=56) indicated obesity and a sedentary lifestyles is "a widespread problem" (58%) that families are willing to partner with researchers to address (96%). Focus groups and individual interviews identified values for a healthy lifestyle intervention. An interdisciplinary panel selected an evidence based curriculum that met expectations for duration and intensity. The adaptive programming department of a county recreation center refined and implemented a 12-week intervention that included van transportation and recreation center membership. To build capacity, county-employed recreation therapists delivered the curriculum content and supervised the physical activity of all 30 participants in the study. The dropout rate of participants was low (3%) and attendance was high (>70%). Participants lost weight (6 lbs. on average) and maintained some weight loss through the 3-month follow-up period. The overall cost of the program was less than $140/month per participant. Hard-won successes achieved in this CBPR study may apply to other studies. We distill our ten key processes to three principles of sharing the win, distributing information, and enjoying each other.

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## B-110

### PREDICTING QUALITY OF LIFE IN WEIGHT MANAGEMENT PATIENTS: THE IMPACT OF PERCEIVED STIGMA AND NEGATIVE COPING

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Obesity is a common, chronic medical condition associated with negative physical, emotional, and psychological sequelae. Individuals with obesity perceive significant stigmatization regarding their body weight and engage in a variety of positive and negative coping mechanisms. This study evaluated the influence of perceived stigma and the negative coping mechanisms of repression and avoidance on quality of life and related outcomes among adults seeking behavioral treatment for obesity. Fifty-five patients (31% male, 76% white, mean age=45.8±11.2, mean BMI=47.4±13.4) were recruited at the outset of either a 3 or 6-month weight management program consisting of weekly educational classes, physical fitness evaluations, a supervised, reduced-calorie meal plan, and access to exercise facilities and classes. Participants completed the following self-report measures at the beginning of weight management: perceived stigmatization, maladaptive coping, psychological distress, and health-related and weight specific quality of life. Correlational and hierarchical regression analyses were used to assess relationships among study variables. Correlational analyses indicated that perceived stigma was associated with lower emotional (r=-.37, p<.01) and weight specific quality of life (r=.74, p<.01), greater coping through avoidance (r=.33, p<.05), more depressive symptoms (r=.63, p<.01), and greater anxiety (r=.45, p<.01), but not with BMI or physical fitness. Hierarchical regression predicting physical quality of life revealed a significant interaction between repression and stigma (t= 2.49, p<.05), indicating low physical quality of life among repressors regardless of level of perceived stigma, but among non-repressors low levels of perceived stigma were associated with normal levels of physical quality of life. Results indicate that individuals with obesity who perceive higher levels of stigmatization associated with their weight and engage in repression and/or avoidance may be at risk for poorer quality of life.

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## B-111

### DAILY SELF-WEIGHING WITHIN A BEHAVIORAL WEIGHT LOSS PROGRAM: IMPACT ON DISORDERED EATING SYMPTOMS

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Objective: The primary aim of the current study was to examine change in disordered eating over the initial 6-month treatment phase of a behavioral weight loss program in which participants were instructed to self-weigh daily, and to examine whether frequency of weighing was associated with increased disordered eating behavior.
Methods: One hundred seventy-eight adults (53% female, 92% non-Hispanic White, 52.0+8.6 years, mean baseline weight of 101.85+18.2 kg) were enrolled in a randomized trial testing two dietary prescriptions within a lifestyle intervention. Participants in both treatment groups were told to weigh themselves daily throughout the course of the program. Frequency of self-weighing and disordered eating were assessed at 0 and 6 months.
Results: Adherence to the weighing prescription was high; at 6 months 83.8% of participants reported weighing at least daily. There was a significant reduction from baseline to 6 months in the eating disorder composite score (BL=16.6+8.7, 6 months=12.1+6.8; p<.0001). GEE analysis found a significant effect across time for change in BED diagnosis (p<.0001), showing a reduced odds of being diagnosed with BED at 6 months compared to baseline, and there were significant reductions in all categorical and continuous individual symptoms of binge eating (all p's<.001). Finally, there was no relationship between increased frequency of self-weighing and increased disordered eating (p=.872).
Conclusion: Daily self-weighing within the context of a behavioral weight loss program did not produce disordered eating or exacerbate preexisting symptoms of disordered eating. Rather, an improvement in symptoms was noted over the course of the initial 6-month treatment phase.

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## B-112

### DEVELOPING WEIGHT LOSS PROGRAMS FOR YOUNG ADULTS: WHAT DO WE NEED TO DO DIFFERENTLY?

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Background: Young adults (YA) are underrepresented in behavioral weight loss trials (BWL) and achieve poorer outcomes than older adults. There has been a call to develop programs for YA but limited data exist as to how standard protocols should be adapted to better meet the needs of YA.
Methods: One hundred thirty-seven overweight YA (64% female, 83% White, age=21.8+2.2, range 18-25, BMI=30.1+4.7) completed questionnaires assessing demographics (including height/weight), weight loss motives, barriers to program participation, preferences for program format and intensity, and current weight related behaviors.
Results: A majority of participants (94.9%) reported wanting to lose weight and 78.8% were willing to join a weight loss program (p's<.001). Improving appearance and improving health were the top motivations for weight loss. The most commonly reported barriers to enrolling in a program were "lack of motivation" and "lack of time" (cited by 63% and 57%,respectively as one of top 3 barriers). An online / email format was most preferred (60.3%) and most preferred length was <12 weeks (54.8%). When asked about weight related behaviors over the last 30 days, 64.1% reported engaging in a >30-min exercise bout at least weekly, whereas 51.1% reported self-weighing less than once or twice, 78.8% reported never keeping track of their fat, and 78.1% never kept a written food diary.
Conclusion: Findings suggest YA would benefit from core BWL content focused on self-monitoring and decreased dietary fat. Data also indicate that YA are engaging in regular exercise; thus, programs that emphasize activity may be more appealing to this group. Recruitment messages, program intensity, and format may need to be adapted to engage YA; an increased emphasis on appearance (in addition to health), using internet / email for recruitment and intervention, and brief, low-intensity programs that decrease time barriers and aim to increase motivation may be more effective than traditional protocols.

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## B-113

### LATENT PROFILE ANALYSIS OF NEIGHBORHOODS AT RISK FOR OBESITY

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Background: A substantial challenge exists in the field in fully capturing the impact of characteristics of neighborhoods on physical activity (PA) and obesity risk. A relatively-underexplored layer of such challenge is characterizing neighborhoods using community-level contexts, which bears theoretical as well as practical implications. Empirical investigation is needed to explore heterogeneous constellations (i.e., latent profile groups) of neighborhood characteristics and to examine the relationship among the ascertained subgroups, physical activity and obesity risk factors. Methods: Segment-level data was obtained from an ongoing, obesity-prevention clinical trial, Healthy PLACES, was used (n=233). We conducted a latent profile analysis (LPA) using five neighborhood-level indicators: the census track Normalized Difference Vegetation Index (NDVI), achievement score of the neighborhood school (NS), % of Hispanic students (HS) in NS, % of students receiving free/reduced lunch (FL) in NS, and number of parks. Results: A 5-profile model fit the data best: Low vegetation, low achieving NS, high % HS & FL, many parks (LP1, n=39); high vegetation, high achieving NS, low % HS & FL, some parks (LP2, n=62); moderate vegetation, high achieving NS, low % HS & FL, some parks (LP3, n=39); low vegetation, moderate % HS & FL, some parks (LP4, n=80); moderate vegetation, moderately achieving NS, moderate % HS & FL, few parks (LP5, n=13). Subsequently, a series of generalized linear models and logistic regression models were conducted predicting physical activity and obesity risks among children and adults, with LP status as the main predictor, adjusted for age, gender and ethnicity. The LPs were associated with accelerometer moderate PA (p<.10), frequency of walking (p<.10), and waist circumference (WC) among children (p<.05). They were also related to Body Mass Index and WC among adults (p's<.001). Conclusion: Latent profile subgroups based on neighborhood contexts provide valuable information to design targeted obesity interventions.

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## B-114

### RACE/ETHNIC DIFFERENCES IN BODY SIZE PERCEPTION IN THE SCALE WEIGHT LOSS STUDY; THE ASSOCIATION OF SOCIO-ECONOMIC STATUS, STRESS AND SOCIAL NETWORK BODY SIZE

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Factors associated with race/ethnic differences in perception of ideal body size and body image dissatisfaction are not well understood. The SCALE pilot study is a 12-week weight loss intervention of 114 black and Hispanic adults with a body mass index (BMI)$\geq$25 kg/m$^2$ living in Harlem and the South Bronx, New York. Participants' perception of their body size and that of social network members were measured at baseline using the 13 figure Gardner scale, a human form scale correlated with BMI values ranging from 17-33 kg/m$^2$. Body image dissatisfaction was calculated as the difference between current and ideal body size. Student t-tests were used to calculate race/ethnic differences in body image dissatisfaction. Multivariate regression models were used to analyze the relationship between body image dissatisfaction and age, sex, BMI, education, insurance, employment status, marital status, perceived stress, and social network body size. Blacks selected a larger ideal figure compared to Hispanics (7.1 vs. 5.8, p=0.002) and blacks had lower body image dissatisfaction (2.8 vs. 4.8, p<0.0001). Blacks identified the size of social network members as larger compared to Hispanics (7.7 vs. 6.5, p<0.01). Race/ethnicity was associated with body image dissatisfaction after adjustment for socio-economic status (p< 0.0001). As perceived stress increased, body image dissatisfaction rose in Hispanics and blacks, with higher baseline levels in Hispanics. Among blacks, body image dissatisfaction was positively associated with social network body size (p=0.004) and BMI (p=0.02). Among Hispanics, there was a positive association between body image dissatisfaction and stress (p=0.03). Findings from this study support race/ethnic differences in body image dissatisfaction after adjustment for socio-economic status, and a potential role for social network body size and stress in race/ethnic variations in body size perception.

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## B-115

### FACTORS CONTRIBUTING TO PARENTS' UNDERESTIMATION OF THEIR CHILD'S WEIGHT STATUS

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It is has been shown that parents' underestimate their child's weight status yet contributing factors are less understood. Interestingly, Black women are known to underestimate their own weight status yet a few studies suggest that ethnicity is not related to underestimations of child weight status. The purpose of this study was to explore ethnicity and other demographic factors. Participants were 205 dyads consisting of a primary care giver (parent) and a child 4-10 yrs old. Height and weight were taken for each, and parents completed a paper-pencil questionnaire. The parent sample was 89% female, 50% White, 46% married, 52% income<40K, 71% overweight with a mean age of 38.6 (8.2) yrs. The child sample was 50% female, 42% overweight with a mean age 7.1 (2.1) yrs. Actual weight status was defined using CDC categories for BMI for adults and children. Perception of weight status was assessed by asking, "how would you describe your child's weight" on a 5-point scale from very underweight to very overweight. Underestimation of weight status was defined as actual weight status being greater than perceived status. Logistic regression models examined the factors associated with parent underestimation of child weight status. Covariates entered were child's age and gender and parent's income, education, marital status, ethnicity, and parent underestimation of their own weight status. Black parents were more likely to underestimate their child's weight status than White parents (OR=1.96, 95% confidence interval (CI)=1.05-3.70); parents of older children (6-10 yrs) were more likely to underestimate than parents of younger children (4-5 yrs) (OR=2.15, CI= 1.08-4.29). Parents who underestimated their own weight status were more likely to underestimate their child's (OR=1.89, CI=1.00-3.57, p<.05). Unlike previous studies, ethnicity was a significant factor and parents more accurately described younger children. Given the current emphasis on reporting BMI in school and primary care, further research is needed to determine how to frame messages to best engage families in healthy weight management.

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## B-117

### HEALTH EFFECTS OF A RELIGIOUS VOCATION: A QUALITATIVE STUDY

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Faith leaders serve in a unique profession, often serving in multiple capacities in their faith-based organization (FBO). Although religious involvement has been associated with health protective effects, little is known about the health effects of serving as a religious leader. The purpose of this qualitative study was to examine faith leaders’ perceptions of how health relates to their personal faith, and how a religious vocation affects their personal health. Semi-structured interviews were conducted with 16 faith leaders (100% White, 88% male) from various denominations. Faith leaders were asked about the role of health in their personal faith and to describe the effects of being a faith leader on their personal health. Responses were audio recorded, transcribed, and coded by the authors using thematic analysis. Faith leaders stated that good health helped them to be better leaders and cited the Bible as an important influence on their health beliefs. Most of the faith leaders reported that being a faith leader had a negative effect on their personal health (overweight, heart attacks, stress) and behaviors (poor diet, sedentary). Faith leaders characterized their profession as stressful and said they often felt required to put others needs ahead of their own. These results suggest that although faith leaders believe health is important, they do not feel their occupation is conducive to good personal health. Future studies should consider targeting the health and behaviors of faith leaders as part of broader community health initiatives.

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## B-119

### PSYCHOSOCIAL CORRELATES OF SELF-RATED HEALTH IN MILITARY PERSONNEL WITH MULTIPLE PHYSICAL COMPLAINTS

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Introduction Self-rated health has been shown to be a reliable measure of objective health, and low-self rated health is a known predictor of numerous negative health outcomes including slow recovery from illness, low quality of life, and mortality. Psychosocial factors such as social support and depression have also been shown to relate to health outcomes; however, there is little research examining the relationship between psychosocial factors and self-rating of health. This study compared the correlates of self-rated health among Marine Corps personnel reporting multiple physical health complaints.

Methods Data were acquired from surveys and included demographics, depression, physical health status, stress, coping, social functioning, and resilience. Participants included 563 Marines who reported 3 or more health complaints, such as headaches or back pain. Self-rated health (low vs. high) was assessed using several questions regarding health status.

Results Analysis revealed significant correlations between several psychosocial factors and self-rated health in univariate and multivariate models, even after controlling for number of health complaints and resilience. At the univariate level, individuals were more likely to rate their health as low if they reported limited social participation due to health (OR=6.0, 3.6-10.3 95%CI), work-related stress (OR=2.0, 1.3-3.1 95%CI), family stress (OR=2.0, 1.3-3.1 95%CI), and depression (OR=1.6, 1.1-2.4 95%CI). Multivariate analysis revealed the strongest correlate of a low self-rated health was limited social participation (OR=4.6, 2.6-8.1 95%CI).

Conclusions Participants who experienced multiple health complaints were more likely to rate their health as low if they reported limited social participation, high stress, or depression.

Administering a brief assessment to patients with multiple health complaints in the primary care setting may better inform providers on psychosocial factors that could influence recovery. Providers could then refer patients to resources addressing social support, stress management, or mental health.

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## B-120

### MORE FREQUENT SOCIAL CONTACTS ARE ASSOCIATED WITH REDUCED MORTALITY IN A LARGE NATIONALLY REPRESENTATIVE US SAMPLE

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Social relationships are associated with better psychological and physical health. Our understanding of the social relationship/health association can be advanced by addressing several issues in the literature. Although those with greater social ties appear to enjoy a mortality advantage, the association between social ties and mortality are reduced after adjustment for confounding factors. This could be a function of socioeconomic status (SES) stratification of social ties, a pattern which is theoretically expected and represents a plausible rival explanation for the observed social ties/mortality association. Moreover, it is more difficult to decisively rule out SES and other confounding variables within the sample sizes typical of the literature to date (mean N=2085; median N=772; Holt-Lunstad et al., 2010) and many studies have examined only one social relationship variable, precluding evaluation of the relative importance of different relationship domains. The purpose of the present study was to 1) evaluate whether the social relationship/mortality association is independent of SES and 2) to jointly compare the relative predictive strength of structural (relationship quality) and functional (2 week social contact frequency) social relationships with all-cause mortality. These associations were evaluated using one perceived emotional support question and a six-item recent social contact measure in a large (>31,000) nationally representative US sample followed for five years (N=1937 events). Analyses adjusted for demographics, SES (education and employment) and reported chronic diseases. Perceived emotional support was unrelated to mortality (p’s>.50) whereas more frequent social contacts were associated in a nonlinear fashion with mortality risk. Lower mortality risk was observed for those reporting 5 or 6 contacts in the last two weeks (hazard ratios=.72 (95%CI .56-.92) and .66 (95%CI .51-.85)) but not for those reporting 0-4 contacts (p’s>.40). Similar patterns were observed when omitting participants with early mortality (< 1 year). High levels of frequent social contacts were associated with lower mortality risk and were independent of SES markers.

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## B-121

### EATING WHEN BORED: REVISION OF THE EMOTIONAL EATING SCALE WITH A FOCUS ON BOREDOM

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Introduction: Emotional eating has been defined as a change in the consumption of food in response to emotional stimuli, and has been linked to negative outcomes (e.g., weight gain and obesity, anxiety, depression). A considerable amount of research has examined emotional eating; however, few studies have looked at specific emotional states that influence eating. Particularly lacking is an inquiry into eating in response to boredom. The current study sought to discover whether eating when bored is a distinct construct from other negative emotions by examining a revised Emotional Eating Scale (EES), which included the addition of a boredom subscale. Additionally, endorsement of eating when bored compared to eating in response to other negative emotions was examined.

Methods: One hundred thirty nine undergraduates (70% female; M BMI=24.9, SD=5.1) completed open-ended questions assessing behaviors when experiencing different intensities of emotion. Participants were then given the revised EES with the additional 6 items designed to measure boredom.

Results: An exploratory factor analysis revealed that boredom is a unique construct, different than other negative emotions. Additionally, participants indicated that they ate more frequently in response to boredom than other emotions (i.e., depression, anxiety, anger/frustration). Specifically, “eating when bored” was the most frequently endorsed item on the revised EES.

Discussion: This study provides a significant contribution to the literature on emotional eating, and to the study of eating in response to boredom. These results strongly point to the need for a separate boredom construct in measures of eating behaviors. Boredom as a unique trigger for eating has long been overlooked by researchers, and in the future, boredom should be incorporated into the study of eating in response to emotional stimuli.

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## B-122

### GENETIC TESTING FOR AUTISM: AWARENESS, ATTITUDES, AND EXPERIENCE AMONG U.S. PARENTS OF CHILDREN WITH AUTISM SPECTRUM DISORDERS

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Background and purpose: The rapid growth of genomic medicine has significantly advanced the quality and quantity of genetic testing, especially in the Autism Spectrum Disorders (ASD) area. ASD genetic testing is currently available for examining karyotype, fragile X, and a panel of chromosome abnormalities. Although the advancement of ASD genetic testing holds enormous promise for the early detection of children with ASD and subsequent gene therapy, it also raises many ethical, legal, and social questions. In order to address the concerns with ASD genetic testing and promote better genomic services, this study sought to examine the awareness, attitudes, and experiences regarding ASD genetic testing among U.S. parents of children with ASD.
Methods: We conducted in-depth, semi-structured interviews with parents of autistic children. All interviews were audio-taped, transcribed and then coded into major themes, with the assistance of Nvivo8. Thematic saturation was achieved after 42 interviews.
Results: Approximately half of the participants identified themselves as Black, Hispanic and Asian Americans. More than half of our sample had never heard about ASD genetic testing before our interview. Parents obtained ASD genetic testing information from personal research, communication with other parents, and their health care providers. The majority supported ASD genetic testing for the following reasons: 1)early intervention and treatment of ASD; 2)finding the etiology of ASD; 3)informing family planning; 4)helping with ASD research; and 5)eliciting more family support. For parents who had taken their children for ASD genetic testing, however, most reported negative experience.
Conclusion: Our findings suggested that although the majority of parents of children with ASD lacked knowledge and awareness of ASD genetic testing, most supported this type of testing. Moreover, health professionals should educate parents of children with ASD regarding ASD genetic testing and improve the quality of genetic testing services.

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## B-123

### DISTINCT COPING PATTERNS: IMPLICATIONS FOR ADAPTATION IN INFERTILITY

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Introduction: Infertility can present a significant challenge to quality of life via blocked goals. Few investigations have explored the process by which women adapt to premature ovarian insufficiency (POI) over time. Latent factors representing adaptive (planning, support seeking, benefit finding, goal disengagement/reengagement) and maladaptive (self-blame, avoidance, substance use) coping were proposed. Coping at Time 2 was hypothesized to mediate the association between Time 1 personal resiliency and Time 3 outcomes (distress and wellbeing). Method: The sample consisted of 102 women (M=32 years old) diagnosed with POI an average of 41 months before study enrollment. Trait levels of personal resiliency, along with state coping, distress and wellbeing were assessed via self-report measures at three time points over one year. Confirmatory Factor Analysis, multiple regression, and single mediator models were used to examine associations. Results: Two empirically derived adaptive coping factors along with a standalone maladaptive strategy, avoidance, emerged as relevant for adaptation. The first coping factor was comprised of strategies indicative of "letting go/moving on". The second factor, labeled "approach coping" was comprised of strategies directly addressing the experience of infertility. A main effect of letting go/moving on revealed that higher levels of this strategy predicted greater future wellbeing and less future distress. Approach coping moderated the association between personal resiliency and wellbeing; this strategy was protective for those low on personal resilience, but mattered little for those high on this trait. Finally, avoidance partially mediated the association between personal resiliency and distress. Conclusions: Findings are noteworthy inasmuch as they utilize parsimonious analyses that minimize spurious associations with clinically meaningful result. Moreover, they suggest that situational coping styles along with traits may signal those individuals at greatest risk. Finally, they offer targeted avenues for intervention in order to bolster adjustment in women suffering from infertility.

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## B-124

### HOSTILITY, VIRTUOUS BEHAVIORS, AND HEALTH: CULTURE OF HONOR VERSUS SOUTHERN HOSPITALITY?

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The purpose of the present study was to investigate the influence of location of upbringing upon hostility, virtuous behaviors, and health, based upon hypothesized differences between Southerners and Northeasterners according to models of the Southern Culture of Honor and Southern Hospitality. Participants were 648 undergraduate students (M=19.9 years; 71.3% female). Participants reported the state where they were predominantly raised and completed questions about hostility (Cook Medley Hostility Scale), physical health (Pennebaker Inventory of Limbic Languidness), psychological health (Brief Symptom Inventory), health behaviors (Healthy Lifestyle Questionnaire), and virtuous behaviors (Virtuous Behaviors Scale, Values in Action Inventory of Strengths Scale).
Participants were categorized as either Southerners or Northeasterners using the Gastil Index of Southerness and t-tests were conducted to compare groups. Notably, Southerners and Northeasterners did not differ in their reports of physical health, psychological health, engagement in health behaviors, or engagement in virtuous behaviors as measured by the Values in Action Inventory of Strengths Scale.
Results indicated that hostility was higher for Northeasterners (M=10.14, SD=.79) than for Southerners (M=9.37, SD=.79), t(646)=3.15, p=.002, ηp2=.016. Furthermore, Northeasterners (M=167.52, SD=17.77) engaged in fewer virtuous behaviors than Southerners (M=173.03, SD=16.85) as measured by the Virtuous Behaviors Scale, t(646)=3.49, p=.001, ηp2=.023.

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## B-125

### RACIAL AND ETHNIC DIFFERENCES IN COMPLEMENTARY ALTERNATIVE MEDICINE USE IN THE US, 2007

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There is growing interest in better understanding racial and ethnic disparities in use of complementary and alternative medicine (CAM), in particular, provider-based CAM such as acupuncture and Traditional Chinese Medicine (TCM). In 2007, the National Health Interview Survey (NHIS) inaugurated specific questions inquiring about CAM use for health and wellness (in contrast to emphasizing on CAM use for treatment, as was done in earlier panels).Investigation of CAM use for wellness is scientifically significant in light of national public health priorities and the high burden of lifestyle diseases. Using data from the 2007 CAM supplement of NHIS, this study investigates prevalence of use among Whites, African Americans, Latinos, and Asians, using a nationally representative sample of adults. We examine these differences separately for men and women. We also consider the most common health reasons for use, and whether such reasons depend on race and ethnicity. Weighted bivariate and multivariate logistic regression methods are used. A major advantage of this study over much of the other CAM research is the high-quality of the NHIS data, specifically with respect to external validity and generalizability. By identifying and characterizing racial and ethnic patterns in CAM use, providers and public health program and policy makers can be better informed and develop culturally competent outreach.

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## B-126

### PSYCHOSOCIAL CLUSTERS AND ASSOCIATIONS WITH WOMEN'S PHYSICAL AND MENTAL HEALTH: A CLUSTER ANALYSIS

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Background: The extent to which different psychosocial factors interrelate, and are related to women's health, is unknown. We determined how psychosocial factors clustered in a large sample of older, postmenopausal women, and how clusters related to physical and mental health outcomes.
Methods: This study used baseline data from 141,653 postmenopausal women, aged 50-79, from the Women's Health Initiative (WHI). Hierarchical cluster analysis was used to identify clusters from eight psychosocial variables: optimism, negative emotional expressiveness (NEE), social support, social strain, hostility, ambivalence over negative emotional expression (AMB), caregiving and stressful life events. Poisson and linear regressions were used to test associations between clusters, and physical (chronic disease index) and mental (SF-36 mental component) health outcomes.
Results: A two-cluster solution was produced—a Social Cluster, comprised of optimism and social support, and a Stress Cluster, comprised of NEE, AMB, social strain, hostility, caregiving and stressful life events. The Stress Cluster was positively (b=.04, p<.001), and Social Cluster was negatively (b=-.004, p<.001), associated with physical health. The Stress Cluster was negatively (b=-2.05, p<.001), and Social Cluster was positively (b=.36, p<.001), associated with mental health. There was evidence that the social cluster modified the stress cluster association with health.
Conclusions: Women with higher social cluster levels had better health; women with higher stress cluster levels had worse health. Identifying clusters is a first step toward understanding how individual psychosocial concepts are interrelated. This approach is also useful for understanding psychosocial concepts across health surveillance programs. Future research could apply clusters to examining longitudinal health.

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## B-127

### IMPLEMENTING AN ONLINE PATIENT-PROVIDER COMMUNICATION SERVICE INTO ROUTINE CLINICAL PRACTICE: UNEXPECTED CONSEQUENCES

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For 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, 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 a nurse and physician 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 preliminary 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 OPPC highly recommended it.
This study demonstrates unexpected consequences that can occur when moving an intervention from one context to another.

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## B-128

### ASSISTANCE WITH ACTIVITIES OF DAILY LIVING AS A PREDICTOR OF THE LIKELIHOOD OF HIRING A HEALTH CARE ADVOCATE FOR A PARENT WITH ALZHEIMER'S DISEASE

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The increase in the prevalence of Alzheimer's disease (AD) has forced more adult children to act as caregivers for aging parents with AD. More than half of caregivers do not receive outside assistance, although caregiving has been increasingly viewed as requiring a team effort. A Health Care Advocate (HCA) is a paid professional who coordinates the patient's health care and provides supportive assistance to the patient and the caregiver. In the present study, a community-based sample of adult children with at least one parent with AD (N=62) was randomly selected to complete a questionnaire regarding HCAs. Respondents were also asked whether they experienced assisting their parent(s) with activities of daily living (ADL). The reported experience of assisting a parent with ADL was expected to predict a greater likelihood of hiring an HCA for one's parent(s) than not to assisting parents with ADL. A one-way (Assistance of ADL Yes or No) ANCOVA was performed to examine the likelihood of hiring an HCA for one's parent among those who had a parent with AD. Age, ethnicity, and family income were added as covariates into the analysis. Results revealed a significant main effect for assistance of ADL on likelihood to hire an HCA for one's parent, F(1,57)=34.382, p=.043. Contrary to the hypothesis, those who provided their parents with assistance of ADL reported being less likely to hire an HCA (M=4.49, SD=3.00) than those who did not provide assistance (M=6.36, SD=3.04). Further research is needed to identify other factors that predict the likelihood of hiring an HCA.

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## B-129

### GOAL ORIENTATION AND WELL-BEING: A CROSS NATIONAL STUDY

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Self-determination theory suggests that the pursuit of intrinsically motivated goals such as autonomy and relatedness leads to positive affect and well-being to a greater extent than the pursuit of extrinsic goals such as money or recognition. There are also some evidence that intrinsic values and goals orientation become more pronounced under stressful conditions e.g. among people suffering from a chronic illness or among people that have experienced a traumatic event.
The aim of the current study was to examine the association between intrinsic and extrinsic goal orientation with positive affect, negative affect and well-being in a large random cross-national European population based sample from 23 countries (n=43 000).
Intrinsic goal orientation was strongly and positively related to well-being (β=0.26, p<0.001) and extrinsic goal orientation was unrelated to well-being, and positively related to negative affect (β=0.10, p<0.001). The association between intrinsic goal orientation and well-being was stronger for people under chronic stress, and increased with age. People under chronic stress scored relatively higher on intrinsic vs. extrinsic goal orientation, and the balance between intrinsic and extrinsic goals weighted heavier towards intrinsic goals with increased age.
The results indicate that intrinsic goal orientation seems to be important to promote well-being in the general population. This influence seems to be increasingly important with increased age and during chronic stress.

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## B-130

### MEDICATION ADHERENCE AFTER HOSPITAL DISCHARGE

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This descriptive study follows one hundred subjects over 3 months, and was conducted at a rural hospital as patients were being discharged from medical/surgical/telemetry units. Patient self-reported adherence to discharge instructions was collected at 2 weeks and 3 months. Changes in patient adherence to the post-hospitalization medication regimen and its potential relationship with demographic variables were examined.

A nurse researcher observed the patient receiving instructions from hospital staff and noted medications prescribed at discharge. Subjects were interviewed at 2 weeks and 3 months to assess adherence to the instructions. Self-reported adherence was measured with the Morisky Medication Adherence Scale (MMAS-4), additional interview questions, and a 3-day medication recall. Subjects were asked to review their medication list and describe their medication taking for the previous 3 days. Researchers subsequently calculated the percent of nonadherence.

At the 2 week assessment (N=83), MMAS-4 scores ranged from 0-3 (median=0), with most (55.4%), answering no to all 4 questions, indicating adherence. Missing a dose and forgetting produced the most frequent affirmative responses (40% and 37%, respectively), and 20% of subjects stated that they are not taking a currently prescribed medication. Older subjects were more likely to report missing a dose at 2 weeks (Wald Chi-Square=5.45, p=.02) with an odds ratio of 1.05 (1.01, 1.09). At 3 months post-discharge (N=77), the MMAS-4 score range was unchanged, with 48.1% indicating adherence (median=1). Missing a dose and forgetting continued to generate the most frequent affirmative responses (54% and 46% respectively), and 13% indicated that they are not taking a currently prescribed medication. Percent of nonadherence ranged from 0-100 in both assessments. The mean percent of nonadherence was 8.24 (SD 18.03) and 9.09 (SD 18.90) at 2 weeks and 3 months, respectively.

Patient nonadherence to the prescribed medication regimen appears to increase after hospital discharge, which may affect patient outcomes and re-hospitalization rates. Further study in this area is indicated.

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## B-131

### IMPLICIT ATTITUDES ABOUT SOUND AND THEIR EFFECTS ON TINNITUS MAINTENANCE

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Chronic subjective tinnitus is a perception of ringing or buzzing in one or both ears with no externally relevant noise source, and occurs in approximately 10% of the population. Severe chronic tinnitus often leads to long-term reduction in quality of life, increased depression and anxiety and in some cases suicide. Increased neural activity has been hypothesized to cause and possibly maintain chronic tinnitus. A cause of increased neural activity may be unconscious negative attitudes toward one's tinnitus perception. The goal of this pilot study was to investigate negative attitudes toward tinnitus perception (i.e., ringing or buzzing)among individuals with chronic tinnitus symptoms compared to those without tinnitus. Participants (n=30) with and without tinnitus were instructed to complete two questionnaires and an Implicit Attitude Test (IAT; Greenwald, McGee, & Schwartz, 1998). The IAT measures the extent to which participants perceived sounds as "positive" or "negative." Specifically, a positive attitude toward a pair of words (e.g., buzz and pleasant) results in more rapid responding than a negative attitude toward the same words (e.g., buzz and pain). The individuals with tinnitus (N=7) reacted significantly (t=2.39, p=.023) more slowly (M=3.04, SD=.11) than individuals without tinnitus (n=23, M=2.94, SD=.10) to word incongruent pairings. The results indicate that individuals with tinnitus perceived sound-related words as significantly less positive than individuals without tinnitus. While additional data is needed, patients with negative implicit attitudes toward their auditory perceptions may be helped by treatments that focus on changing and/or accepting these attitudes. While CBT may be especially helpful for changing cognitions, Acceptance and Commitment Therapy, may be useful for targeting acceptance of the implicit thoughts and subsequent attenuation of tinnitus.

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## B-132

### GENDER AND AGGRESSION: CONCEPTS IN MASCULINITY

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Aggression has interested researchers for decades. Studies utilizing animals show testosterone plays a key role in the behavioral expression of aggression and dominance. This has been largely replicated in studies on humans, though the correlation between testosterone and aggression in humans has been unclear. This study hopes to elucidate that connection by addressing those individual difference factors that may confound the issue. We investigated a series of factors that may influence the behavioral expression of aggression in light of the individual's testosterone exposure. We focused on traits that are gender dichotomous or found predominately in one sex, including sensation seeking behavior, performance on a mental rotation task, and pain threshold, as these traits may indicate which participants are the most masculine beyond their self-identification of male and female. In particular, pain threshold was chosen due to its direct linkage to a violent lifestyle. Across 30 participants, we measured the 2D: 4D digit ratio, a measure that indirectly indexes prenatal testosterone exposure. Individual difference factors were investigated using self-report measures, a mental rotation task, and algometer readings. We propose that individuals with more masculinized digit ratios would display more masculine characteristics, even after controlling for sex. Though there were some interesting trends toward significance which indicated that prenatal testosterone exposure may be related to adult masculine characteristics, by and large the effects were nonsignificant. This may indicate that effects were null or, at best, small and prenatal testosterone exposure does not strongly determine adult masculinity. Lower pain threshold was significantly associated with higher prenatal testosterone exposure (r(29)=-.382, p<.05), suggesting masculinity may be linked with "masculine" pain tolerance. Understanding aggression and gender in humans is vital to decreasing war, crime, abuse, and inequality.

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## B-133

### BARRIERS TO FHH KNOWLEDGE WITHIN IMMIGRANT FAMILIES OF MEXICAN ORIGIN IN PROJECT RAMA

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Although most Americans have never collected their family health history (FHH), FHH knowledge is one of the most important tools used to guide disease screening and prevention recommendations. Immigrant families may experience communication barriers when collecting FHH, stemming from acculturation processes.

The current analysis is based on Project Risk Assessment for Mexican Americans (RAMA), which investigated factors associated with immigration that may influence FHH knowledge of heart disease (HD) and diabetes (DB) among 497 members of 162 families in Houston, Texas. Participants responded "yes," "no," or "don't know" (DK) to FHH questions regarding the HD and DB diagnoses of their relatives. DK responses were quantified as a proportion of the participants' total FHH.

Taking the survey in English and being born in the US were associated with a 14% and 16% increase in the proportion of DK responses, respectively, while having at least a high school diploma or equivalent resulted in a 10% increase (ps<0.0001). Similarly, increases in behavioral aspects of acculturation were associated with a 10% increase in DK responses (p<0.0001). Our results suggest that certain aspects of the acculturation process may interfere with disease risk communication processes that are necessary to collect complete FHH information. Specifically, speaking English, obtaining higher levels of education, identification with US culture over Mexican culture, and being born in the US are associated with lower levels of FHH knowledge.

This lack of knowledge may lead to skewed risk perceptions and inappropriate screening and lifestyle behaviors, which could be detrimental for those at increased risk for HD or DB due to unknown familial genetics. Further study of disease outcomes among more acculturated family members, as well as the communication pathways among immigrant families is warranted to determine the need and/or effectiveness of potential interventions aimed at encouraging the collection and sharing FHH information.

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## B-134

### COMPARISON OF FIRST TIME AND REPEAT COMMUNITY ORAL HEALTH INTERVENTION PARTICIPANTS

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Limited data exist on uninsured children's oral health status and behaviors. Follow-up data after receipt of treatment are also scarce in this population. Using Community-Based Participatory Research methods, we conducted a parent survey during an annual county-wide one day intervention, Give Kids a Smile (GKAS), that provides free preventive and restorative care to uninsured children aged 3-10 years. GKAS provides critical services to which this vulnerable population would otherwise not have access. Our project assessed parent's report of their child's oral health behaviors, insurance history, and demographics of 173 uninsured children in 2011. Participants were a self-selected convenience sample. Parents reported 24% (n=35) of the children previously attended GKAS (Repeat Participants-RP) and 76% (n=108) attended GKAS for the first time. RP were more likely than first time attenders to: have visited the dentist in the past year (94% vs 44%; Odds ratio (OR)= 19.5), have fluoride varnish (48% vs 19%; OR=8.5), have their parent not know if they had fluoride varnish (34% vs 21%; OR=5.5), never have been covered by Medicaid (62% vs 40%; OR=2.4), or by any other insurance (62% vs 29%; OR=4.0), have their parent complete the survey in Spanish (57% vs 35%; OR=2.5), live in a multi-parent household (93% vs 71%; OR=5.6), and were less likely to have no family income reported (0% vs 13%). RP parents are more likely to be Spanish-literate, indicating the importance of addressing possible language barriers when developing projects to address the health needs in this group. Despite reporting some income, RP demonstrate ongoing need as many remain uninsured. The larger proportion of multiple parent homes among RP may make GKAS participation more feasible. More RP were reported having fluoride varnish but more parents also reported not knowing whether their child had fluoride varnish, indicating a need for increased education on the treatment provided at GKAS.

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## B-136

### PREDICTORS OF CHANGES IN PHYSICAL ACTIVITY IN A SAMPLE OF TREATMENT-SEEKING PARTICIPANTS WITH CHRONIC PAIN

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Physical activity (PA) is positively related to various indices of quality of life and physical and mental wellness. In the delivery and subsequent assessment of interventions, it is useful to track PA, especially among individuals presenting with chronic medical conditions, such as chronic pain. This investigation sought to determine whether a psychological intervention increased PA over time in a sample of participants with chronic pain. Treatment-seeking individuals with chronic pain (N=114) participated in a clinical trial comparing Cognitive-Behavioral Therapy (CBT) with Acceptance and Commitment Therapy (ACT). Accelerometer devices were used at 3 time points of the study (baseline, post-treatment, and 6-month follow-up) to assess physical activity. Data from 85 participants were usable in the current analyses. Hierarchical linear modeling was used to analyze the data structure in which hours (level-1) were nested within time points (level-2), which were then nested within persons (level-3). Physical activity was hypothesized to increase over time. In the event that this hypothesis was not supported, exploratory analyses would be conducted to determine which predictors accounted for the variance in PA. Change in physical activity was not significantly predicted by time (b=104.67, p=.92). Exploratory analyses found that PA was significantly predicted by gender, with women evidencing higher levels of PA than men (b=6804.08, p=.02). In addition, PA was significantly predicted by type of day of the week, suggesting that participants had greater PA on weekdays as compared to weekends (b=-2247.45, p=.007). These results suggest that psychological interventions may not significantly increase PA in certain groups of treatment-seeking individuals with chronic pain. Therefore, psychological interventions for individuals with chronic medical conditions may benefit from the addition of exercise-based intervention techniques when seeking services.

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## B-137

### THE RELATIONSHIP BETWEEN PAIN INDICATORS AND SELF-EFFICACY AMONG OLDER BLACK AND WHITE ADULTS WITH CANCER

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Perceived self-efficacy is particularly relevant among cancer patients who face issues dealing not only with their diagnosis, but the day to day challenges of symptom management, physical functioning, and psychological well-being. The purpose of the current investigation was to examine the relationship between self-efficacy and pain indicators among older adults receiving outpatient services at a comprehensive cancer center. One hundred and thirty-one Black and White adults 55+ years of age (65.14±7.93), completed a series of questions assessing demographic and behavioral characteristics, health status and pain indicators. Multivariate regression models were calculated to examine the predictive utility of demographic, health (e.g., number of chronic conditions) and behavioral (self-efficacy) characteristics in accounting for individual differences in pain intensity. More than half of the sample were women (61.1%) and white (79.4%). Moderate negative correlations were found between self-efficacy and current pain (r=-24, p<.01), and least pain (r=-.18, p<.05). Results showed that race was a significant predictor of least pain (b=-.22, p<.05; CI: -1.99 to -.16). Race (b=-.24, p<.05; CI: -1.55 to .004) was also a significant predictor of current pain, suggesting that Blacks are more likely to report pain. Although self-efficacy was not a significant predictor of pain intensity, race was a significant predictor in terms of least and current pain. More research is needed on cancer pain management among older adults considering the prevalence of elderly persons diagnosed with cancer. Furthermore, the growth of a diverse older adult population warrants further exploration of racial differences in cancer pain and pain management. These research efforts would provide a scientific basis for understanding the physical and psychological implications of chronic pain, while developing models that assess how social, race and ethnicity, and environmental factors influence the daily experience of pain among adults from diverse race populations.

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## B-138

### EXERCISE, SOCIAL SUPPORT, AND COPING STYLE ON OSTEOARTHRITIS

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Osteoarthritis (OA) is a chronic pain condition that affects health status. While exercise's impact on health status has been studied, no study has examined the relationship between exercise behavior and coping styles among OA adults. Both probleM–focused and emotion-focused are widely studied coping styles and social support can be a stress-buffer. The present study tested moderated mediation models for exercise behavior, both coping styles, and social support among adults with OA. It was hypothesized that probleM–focused coping would be related to exercise behavior, exercise would be related to health status, and this relationship would vary as a function of social support. A curvilinear relationship was also hypothesized between levels of emotion-focused coping, exercise, social support, and health status. The results did not support, after controlling for age, gender, baseline health status, and intervention, moderated mediation. However, social support moderated the effects on both coping styles. When social support was high, more probleM–focused coping was associated with better health status (F(1, 250)=5.15, p=.024). This reversed when social support was low. Less probleM–focused coping was associated with better health status. Emotion-focused coping had a curvilinear relationship with health that was moderated by social support (F(1, 250)=5.95, p=.02). When social support was high, participants with low to moderate levels of emotion-focused coping had better health status than those with high levels. However, this trend reversed when social support was low. Findings have theoretical implications. Previous emotion-focused coping studies have produced mixed results, perhaps because they tested the linear relationships. Thus, the benefits of emotion-focused coping may be overlooked when its curvilinear effects are not tested. Although moderated mediation was not found, this study has broader implications for the development of statistical models for exercise. Statistical models may help chronic pain researchers identify factors that influence exercise, explain its impact, and offer predictions.

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## B-139

### PAIN COPING PARTIALLY MEDIATES THE RELATIONSHIP BETWEEN MARITAL SATISFACTION AND DEPRESSION

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Depression is highly comorbid with chronic pain. The Marital Discord Model of depression (Beach et al., 1990) suggests that dissatisfaction within a couple's relationship can contribute to depression. Furthermore, factors related to pain coping (e.g., activity limitations and cognitive styles such as pain catastrophizing) have been associated with increased symptoms of psychological distress within this population (e.g., Bair et al., 2003; Cano 2004). Few studies, however, have examined the combined effect of pain coping and relationship satisfaction on symptoms of psychological distress in chronic pain patients. Therefore, the goal of the current study was to explore how pain coping and relationship satisfaction collectively affect symptoms of depression and anxiety. It was expected that both coping and marital satisfaction would significantly influence psychological distress. Data were collected from 78 patients from two Midwestern pain clinics. Participants in the study were asked to complete the Dyadic Adjustment Scale (Spainer, 1976), the Mood and Anxiety Symptom Questionnaire (Watson & Clark, 1991), and the West-Haven Yale Multidimensional Pain Inventory (Kerns et al., 1985). A computer scoring system (MAP) was used to determine the coping styles of participants consistent with Turk et al., (1988). Results showed significant differences on martial satisfaction (t (67)=2.73, p<.01) and depressive symptoms (t (67)= -5.08, p<.001) between the coping styles. There was also a significant relationship between marital satisfaction and depressive symptoms (r=.35, p<.01), but not anxiety symptoms. Mediation analyses showed that the effect of marital satisfaction on depression ($\beta$=-.35, p=.002) was partially mediated when taking coping style classification into account (marital satisfaction $\beta$=-.22, p=.04). Results are discussed in terms of current theoretical models of couples functioning in the context of pain. Additionally, clinical implications and future research are also discussed based on the results.

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## B-140

### PSYCHOMETRIC PROPERTIES OF THE SLEEP HYGIENE INVENTORY IN PATIENTS WITH CHRONIC PAIN

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The majority of patients with chronic pain suffer from sleep disturbance. This sleep disturbance can be from many different factors including unhealthy sleep habits. The Sleep Hygiene Inventory (SHI) consists of 13 items designed to assess sleep habits. Although the SHI has shown adequate psychometric properties in a college sample, it has not been validated in a sample with chronic pain. Thus, this study aimed to 1) determine the factor structure of the SHI and 2) examine reliability and validity of the SHI in Korean patients with chronic pain. A total of 161 patients seeking treatment in a tertiary pain center located in Seoul, Korea participated. Results indicated that the SHI consists of 2 factors, 'irregular sleep-wake schedule' and 'sleep-disturbing behavior and environment.' The internal consistency for total was .74; 'irregular sleep-wake schedule', .74 and 'sleep-disturbing behavior and environment', .69, indicating adequate inter-relatedness of items. Correlations were significant between the SHI total score and pain intensity, pain-related anxiety, depression, and sleep quality; between the 'irregular sleep-wake schedule' subscale and pain-related anxiety, depression, and sleep quality; and between the 'sleep-disturbing behavior and environment' subscale and sleep quality. Also, a hierarchical multiple regression analysis was performed to examine significant and unique contributions of sleep habits to the prediction of sleep quality, controlling for demographic variables including pain duration, pain intensity, pain-related anxiety, and depression. The result indicated that two subscales of the SHI added a significant increment in explained variance in the equation where the regression coefficient for 'irregular sleep-wake schedule' was significant, but not for 'sleep-disturbing behavior and environment.' These findings suggest that maintaining a regular sleep-wake schedule may be critical for better sleep quality in patients with chronic pain. In conclusion, the SHI has reliability and construct validity support for the measurement of sleep habits in a Korean patient sample with chronic pain.

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## B-141

### ACUTE MEDICATION USE ACROSS AND WITHIN HEADACHE EPISODES: A QUALITATIVE ANALYSIS OF THE BEHAVIORS AND BARRIERS REQUIRED FOR OPTIMAL USE OF ACUTE HEADACHE MEDICATIONS

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Medication effectiveness depends on the extent to which a patient performs behaviors required to optimize medication effectiveness. Existing research focuses on consistent use of fixed-schedule medications. Little research has examined optimal use of acute medications used to treat episodic disorders such as headache.

21 people with headache [mean headache days/30 days=9.9 (SD=9.4)] and 15 health care providers (86.7% physicians, 13.3% nurses) participated in individual phenomenological interviews. Audio-recording and transcribing established an audit trail. Interviews were coded independently by research team members and discrepancies resolved by discussion. Categories were evaluated through peer-debriefing.

Interviews identified 8 behaviors required for optimal use of acute headache medications. 3 behaviors occur across headache episodes [1) keeping medication available; 2) communicating with health care providers, and; 3) limiting the frequency of acute medication use]. The remaining behaviors occur within specific headache episodes [4) correct categorization of headache type; 5) taking the optimal type/dosage of medication; 6) optimal timing of medication use; 7) utilization of alternative treatment options, and; 8) repeating doses].

Interviews identified 10 barriers to the successful performance of behaviors described above, including 1) lack of knowledge; 2) forgetting to keep medication available; 3) difficulty distinguishing between headache types; 4) restricting medication use to severe headaches; 5) side effects; 6) perception that medication is ineffective; 7) cost/insurance constraints; 8) conflicts between roles (employee or parent) and optimal medication use; 9) poor social influences, and; 10) a preference to avoid medication.

Behaviors required for optimal use of medication, and barriers to performing these behaviors, are numerous and complex, occurring across and within headache episodes. Delineation of these behaviors and barriers is prerequisite to developing targeted assessments and interventions.

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## B-142

### AN EXAMINATION OF MEDICAL PROFESSIONAL LOCUS OF CONTROL IN THE TREATMENT OF SEVERE MIGRAINE TRIAL

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Medical professional locus of control (MPLOC) refers to the belief that medical professionals are responsible for headache severity and outcome. The expected relationships between MPLOC and headache frequency, disability, and other psychosocial variables are unclear and may depend on engagement in treatment. After 1 month of optimal acute therapy, 232 people with severe migraine were randomized into a 2 [Preventative Medication (PM) vs. Placebo] by 2 [Behavioral Migraine Management (BMM) vs. No BMM] design. A 4-month treatment period included BMM and medication dose adjustment, followed by a 12-month follow-up. Participants recorded a daily headache diary during the study. Measures of disability, self-efficacy (SE), and internal and chance LOC were administered during clinic visits.

Mixed models for repeated measures revealed a significant Time main effect, F (1,1075)=10.92, p<.01 qualified by a BMM*Time interaction, F(1,1075)=8.15, p<.01. Drug therapy only (No BMM) increased MPLOC more than BMM.

At baseline, correlations revealed that higher MPLOC was associated with greater migraine days, disability, chance and internal LOC, and lower SE (ps<.05).

After the 4-month treatment period in the No BMM group (n=87), no first-order correlations between MPLOC and other variables remained significant (rs<.11). Regression revealed a curvilinear relationship between MP and chance LOC. At low and moderate levels of MPLOC, increases in MPLOC were associated with increases in chance LOC (pr=.24, p<.05); however, at high levels of MPLOC, further increases were associated with decreases in chance LOC (pr=-.23,ps<.05). A marginally significant curvilinear relationship was also observed between MPLOC and SE (prs<.07). After treatment with BMM (n=90), MPLOC remained marginally associated with SE (r=-.18, p<.10), but not with other variables (rs<.09). As above, regression revealed a curvilinear relationship between MPLOC and chance LOC. Relationships between MPLOC and headache frequency, disability, SE, internal and chance LOC depend on engagement in (pharmacological and behavioral) treatment and magnitude of MPLOC.

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## B-143

### ADULT BEHAVIOR AND CHILD DISTRESS IN THE POST-ANESTHESIA CARE UNIT

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Introduction: Previous research has noted that parental behaviors in the perioperative setting are associated with children's distress and regulating behavior. The purpose of this abstract is to examine the associations between healthcare provider and parent behavior on children's behaviors in the post-anesthesia care unit (PACU).
Method: Participants were 124 families of children undergoing elective surgery with general anesthesia induced via mask. Children were on average 4.8 years of age (SD=2.2 years) and were evenly distributed in gender (50.5% male). Videotaping started when the child entered the PACU and continued throughout their visit. Three 5-minute segments were selected and coded. The segments were: (1) first 5 minutes children were awake and coherent, (2) a segment during IV removal, and (3) a random segment, identified through a random number generator, in which children displayed a distress behavior. Coding using the CBCS-P was done by 3 trained research assistants blinded to study hypotheses. To ensure reliability, coders underwent a 4 month training with requirements of Kappa≥0.80.
Results: Time-window sequential analyses revealed several significant time contingent relationships. Nurses', fathers', and mothers' use of emotional language (e.g., reassurance, apologies, minimizing language) was related to the onset of a distress episode in children 5 seconds after the adults' behavior (nurses, t(93)=1.99, p<.05; fathers, t(56)=1.98, p=.05; mothers, t(97)=4.78, p<.001).
Discussion: What healthcare providers and parents say to their children was related to children's distress. Adults' use of emotion focused speech may focus children on their negative emotions, and illicit a distress episode. These distress episodes are highly correlated to the experience of pain. These preliminary findings highlight the importance of working with healthcare providers and parents in the PACU setting in order to help children with their distress. Future studies should examine what behaviors can reduce distress and/or promote coping among children, and how to translate these findings into practice.

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## B-145

### OUTCOME EXPECTATIONS FOR PHYSICAL ACTIVITY IN PERSONS WITH LONGSTANDING MULTIPLE SCLEROSIS

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Research suggests that physical activity (PA) may have a beneficial effect on symptoms (e.g. weakness, depression, fatigue, and cognitive difficulties) experienced by persons with multiple sclerosis (MS). While persons with MS may derive benefit from PA, challenging barriers exist which may lead to progressively sedentary lifestyles as these individuals age. Little is known about outcome expectations (OE) for PA in persons with longstanding MS and how these expectations relate to PA behaviors. The purpose of this study was to explore dimensions of OE for PA in persons with longstanding MS and the relationship of specific OEs to frequency of PA.
A sample of 328 persons with MS (86% female, mean age 61.2+2.5; mean length of diagnosis 24.5+6.6 years) in an ongoing longitudinal study of health promotion and quality of life completed the Multidimensional Outcome Expectations for Exercise Scale (MOES), the Health Promoting Lifestyle II (HPLP II) and the Human Activity Profile (HAP). In addition to the MOES total score ($\alpha$=0.91), there are three subscales: physical OE ($\alpha$=0.83), social OE ($\alpha$=0.82), and self-evaluative OE ($\alpha$=0.84). The PA subscale ($\alpha$=0.88) of the HPLP II assesses how often persons engage in PA of varied intensity. The HAP, a self-report measure of PA, provides a maximum and adjusted activity score (AAS). Descriptive statistics and Pearson correlations were used to analyze the data.
Mean average item scores for the physical OE (4.2+0.8) were more positive than those for the self-evaluative OE (4.0+0.7) and social OE (3.1+0.7). Total HPLP PA subscale scores and HAP AAS were significantly (p<.01) correlated respectively with physical (r=.45; r=.35), self-evaluative (r=.41; r=.28), and social (r=.37, r=.18) OE.
Findings support the expected theoretical relationship between OE and behavior. Additional research is needed to explore if interventions to enhance expectancies would result in increased PA in persons with longstanding MS.

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## B-146

### PHYSICAL ACTIVITY BEHAVIOR IN SIXTEEN MICHIGAN PARKS

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Background: The Building Healthy Communities (BHC) initiative addresses inadequate physical activity in Michigan to prevent chronic disease. Eighteen local health departments through 2010 received $1,505,179 to plan and implement community-based interventions to increase physical activity among low-income and minority populations. This paper examines park user demographics, compares park user demographics to the demographic characteristics and examines physical activity behaviors of park users. Methods: BHC Park usage was examined from 2008-2010 using SOPARC. One sample binomial tests were used to examine if the proportion of male and female park users was different than the proportion of males and females in Michigan and to examine if the proportion of white and other park users was different than the proportion of whites and others in Michigan. A chi-square goodness-of-fit test was used to examine whether the observed proportions for age groups observed using the park differed from the actual proportions for age groups in Michigan. Results: When comparing the proportion of whites (54.7%) and others (42.8%) observed using the parks to the proportion of whites (79%) and others (21%) residing in Michigan, there was a significant difference (p<.001) with a greater proportion of whites and smaller proportion of persons of other ethnicities expected to be observed using the parks. This chi square goodness of fit test showed a significant difference in the observed and expected number of persons observed using the trail in each age group ($\chi^2$=4897.707, df=3, p<.001) with a greater number of children (n=1939) and teens (n=1116) observed than the number of children (n=828) and teens (n=305) expected based on census data. Conclusions: A greater proportion of non-whites (compared to whites) were observed using the park than would be expected. In Michigan, 60% of blacks, 37% of Hispanics, and 53% of other minority groups do not meet national physical activity recommendations.

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## B-147

### A PROFILE FOR PREDICTING ATTRITION FROM EXERCISE IN OLDER ADULTS

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Objectives. Attrition associated with exercise programs is a significant challenge for researchers and clinicians. Previous research has implicated executive function (i.e., self-regulation) failure as a key contributor to deficits in physical function and sporadic physical activity participation. The purpose of this study was to determine a profile for predicting attrition among older adults involved in a 12-month exercise program. Design. The parent study was a single-blinded randomized controlled trial. Setting. The study took place within a university setting. Subjects. Older adults (N=179) completed baseline assessments of functional performance and psychosocial measures. Participants who relinquished their consent to participate or did not return after missing more than one continuous month of exercise sessions were considered "dropouts" and those remaining were classified as "completers." Results. A discriminant function analysis differentiated dropouts (n=35) from completers (n=144) at likelihood much better than chance (72% accurate overall) across four measures: frequency of forgetting, barriers self-efficacy scale, balance, and stair performance. Study dropouts exhibited a higher frequency of forgetting, lower efficacy for overcoming barriers to exercise, poorer single leg balance, and longer times to walk down stairs. Conclusions. The results provide an initial validation of a profile for discriminating between "dropouts" and "completers," one that may have considerable utility for screening older adults prior to study entry.

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## B-148

### FACTORS ASSOCIATED WITH FOSTER PARENT INSTRUMENTAL SOCIAL SUPPORT FOR PHYSICAL ACTIVITY

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Background: The transition from childhood into adolescence marks a steady decline in physical activity (PA). To be physically active, youth often rely on parents or other adults for specific instrumental social support (ISS) such as providing transportation, purchasing equipment, and paying fees to participate in athletics or PA classes. Foster youth are a particularly high-risk population for negative health outcomes. Foster parents may serve as important agents in which to promote healthy lifestyles, including PA. To date no studies have assessed how psychosocial variables are associated with ISS as a behavioral outcome. Methods: Ninety-one foster parents completed surveys to assess perceptions related to foster child PA (PA level, PA enjoyment, and athletic coordination), five psychosocial variables (positive and negative behavioral beliefs, normative beliefs, perceived behavioral control, and self-efficacy) to provide ISS for PA, and foster parent and child demographics. Associations between these variables and ISS were determined using multiple regression analysis. Results: More supportive normative beliefs about providing ISS, higher self-efficacy for providing ISS, and duration of foster child residence (> 3 years) with foster parents were significantly associated with more foster parent-reported provision of ISS. Conclusions: Perceived social expectations to provide ISS from others and confidence in the ability to provide ISS were associated with foster parent provision of ISS for PA in this foster parent sample. Future work examining influences on foster parents' provision of ISS for PA should investigate the role of the social environment beyond normative beliefs, including the role of social norms and social support for youth PA.

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## B-149

### BUILT ENVIRONMENT INFLUENCES ON WALKING IN OLDER LATINOS

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Older Latinos are not physically active at recommended levels and are at risk of poor health outcomes. Walking is associated with positive health outcomes, but little is known about factors that influence older Latinos' walking behavior. The residential neighborhood is the most common location for walking; however, in urban environments environmental factors (e.g., limited access to resources) compound individual risk factors (e.g., obesity, low income), generating health disparities. Thus, focus groups were conducted with older Latinos to assess barriers and facilitators to walking in their neighborhood. Participants included English-speaking women (ESW) [N=7, M(SD) age=74.6(4.5), years in US=66.9(17.0)]; English-speaking men (ESM) [N=3, M (SD) age=69.3(5.9), years in US=69.3(5.9)]; Spanish-speaking women (SSW) [N=5, M(SD) age=66.4(6.7), years in US=38.2(22.9)]; and Spanish-speaking men (SSM) [N=5, M(SD) age=74.0(6.5), years in US=43.0(19.3)]. Focus groups were conducted, audio taped, and transcribed. Themes were generated from a content analysis following a grounded theory approach. Using Atlas.ti software, differences and similarities were summarized. The most discussed themes included safety, changes in the neighborhood, weather, reasons for exercising, health outcomes, and destination walking. Fear of crime, presence of kids, and poor sidewalk/street conditions were subthemes in the safety category that all four groups mentioned. The groups of men talked about how things in the neighborhood have changed. All groups discussed weather, but women mentioned it more than men, and how it influenced their fear of falling. Reasons for exercising included enjoyment (SSM), health (Spanish-speaking groups), and necessity (English-speaking groups). Destination walking was mentioned more in the English-speaking groups, who used destination walking to socialize. Evidence suggests that neighborhoods could be more conducive to PA if barriers are addressed by researchers and government officials.

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## B-150

### CHILD'S PLAY: GENDER AND ETHNIC DIFFERENCES IN THE PHYSICAL PLAY ACTIVITIES OF ELEMENTARY SCHOOL CHILDREN

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Childhood obesity has risen to epidemic proportions. Physical activity (PA) interventions aimed at reducing childhood obesity report that gender and ethnic disparities influence the success of these efforts. An understanding of the demographic differences in the activities that children play is necessary to develop appropriate interventions. The purpose of this study was to describe demographic differences in the percentage of children who engage in typical playground activities. Children in 4th and 5th grade (n=258, mean age=10.22 (SD=.77), 49.2% female, 46.5% Hispanic, 26.5% white, and 27% other) from 4 elementary schools in Denver, Colorado reported their age, ethnicity, and gender, and indicated which activities they play from a list of 15 typical elementary school activities. Chi-squared analysis revealed that more girls than boys indicate: jump rope (75% v 29%, p<.01), swings (93% v 64% p<.01), monkey bars (72% v 57%, p=.01), and hopscotch (53% v 17%, p<.01). More boys than girls indicate: soccer (63% v 48%, p=.02), basketball (75%, 60%, p=.01), foursquare (64% v 43%, pp<.01), baseball (28% v 15%, p=.01), and climbing walls (38% v 22%, p=.01). More Hispanics than whites and others reported playing tetherball (58% v 28%, 38%, p<.01) and tag games (74% v 57%, 62%, p=.04), while more whites and others reported playing foursquare than Hispanics (65%, 60% v 47%, p=.04). Results confirm that there are popular activities (e.g., swings, basketball, and monkey bars) and demographic differences in PA participation. Therefore, children's PA interventions should include a broad range of activities and consider gender and ethnic group PA preferences to improve the promotion and maintenance of PA.

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## B-151

### QUALITATIVE ASSESSMENT OF MOTIVATIONAL INTERVIEWING ENCOUNTERS IN PERSONS WITH ARTHRITIS

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Regular physical activity can reduce pain and improve function for people with arthritis. Only 24% of the US adult population with arthritis report engaging in physical activity at CDC recommended levels. Motivational interviewing (MI) is an approach used successfully in other health settings where the client and provider work together to achieve behavior change, but it has not been tested with arthritis patients. The study purpose was to develop an instrument to determine the patient's assessment of the utility of MI strategies for changing physical activity behavior during a therapeutic encounter using a three-stage process (expert advice, focus groups, cognitive interviews). The instrument was modeled on the Behavioral Change Counseling Index, used to assess providers' use of MI in encounters. The 13-item Client Assessment of Motivational Interviewing Encounter Instrument rates on a 4-point scale how much the client perceives that the physical activity coach carried out the collaborative processes of MI. Modifications to wording of the instrument were made based on feedback from three MI experts. Two focus groups of multiethnic, midlife, arthritis patients (n=13) who participated in an intervention promoting physical activity utilizing an MI style were asked to review the instrument and provide feedback. Focus groups were recorded and transcribed. Cognitive interviews were conducted with an additional nine arthritis patients who had participated in the same intervention.

The majority of focus group participants had difficulty with the concept of "summarizing". They also suggested adding an item that focused on goal-setting. Focus group and interview participants stated they liked the instrument's brevity and the simplicity of the instructions. The results suggest that expert advice, focus groups, and cognitive interviews provide a comprehensive approach to instrument development for MI.

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## B-152

### EXPLORING PHYSICAL ACTIVITY BY ETHNICITY AND GENDER IN COLLEGE STUDENTS USING THE SOCIAL COGNITIVE THEORY

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The psychological determinants of physical activity (PA) among college students may vary by ethnicity and gender, but few studies have considered these characteristics. This study tested constructs from the Social Cognitive Theory (SCT) by ethnicity and gender to explain differences in PA. Participants & Method: 231 African American and 218 White college students (52.5% male) completed an in-class SCT questionnaire and a PA assessment two months later. Sequential regressions with interaction terms were used to examine ethnic and gender effects on SCT constructs when predicting PA. Results: Self-efficacy was a significant predictor of PA for both ethnic groups (β=.24**) and both genders (β=.29***). Self regulation goal setting was also a significant predictor of PA for both ethnic groups (β=.17*) and both genders (β=.15*). The prediction of PA was statistically moderated by gender for perception of available facilities in which to be active, with a stronger association for females (β=.20*). However, the prediction of PA was not moderated by ethnicity for any of the SCT constructs. Conclusion: This study suggests that the SCT may aid in understanding collegiate PA and help begin to explain differences in PA based on gender. Last, because of strong associations shown in this study, self-efficacy should be considered when developing ethnic-specific PA interventions in college students.

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## B-153

### CORRELATES OF LEISURE TIME PHYSICAL ACTIVITY IN A ONE-MONTH DAILY DIARY STUDY: PRACTICAL BARRIERS AND NARROW PERSONALITY TRAITS

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Previous studies examining correlates of leisure time physical activity (LTPA) have relied on retrospective reports, which may be biased, and on broad measures of personality, which might limit detection of important relationships. The purpose of the present study was to minimize these shortcomings by measuring narrower personality traits, and by using daily reports to measure potential barriers to and amount of LTPA. 1192 participants completed baseline measures of personality, then reported their LTPA and several situational and environmental factors daily for 25 days. Multilevel modeling was used to measure how personality traits, practical barriers, and interactions between these factors affected (1) the likelihood of engaging in LTPA and (2) the duration of episodes of LTPA. Several traits were associated with LTPA. Higher standing on Activity and Discipline and lower standing on Assertiveness were associated with greater likelihood of engaging in LTPA. Higher standing on Discipline and Activity and lower standing on Assertiveness and Aesthetics were associated with longer episodes of LTPA. Several factors acted as barriers to LTPA. Less leisure time was associated with lower likelihood of engaging in and shorter duration of LTPA among participants older than 30; and more sleep was associated with less likelihood of LTPA among participants younger than 30. Having a non-routine day was associated with shorter duration of LTPA episodes. Counterintuitively, poor weather conditions predicted higher likelihood of LTPA. It might be easier to target interventions based on narrow traits (e.g., Discipline) rather than very broad traits (e.g., Conscientiousness).

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## B-154

### PURPOSE IN LIFE IS ASSOCIATED WITH PHYSICAL ACTIVITY MEASURED BY ACCELEROMETER

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Encouraging individuals to initiate and maintain a physical activity program has proven to be difficult. Understanding the correlates of physical activity may prove useful in developing physical activity adoption interventions. Previous research has shown that purpose in life, or the belief that one's life is meaningful and oriented to some ultimate goal, has been consistently associated with greater levels of self-reported physical activity. However, given the known psychometric problems with self-report measures of physical activity, the observation that no studies to date have tested this association with an objective measure of physical activity displays a weakness in the literature. The purpose of this study was to examine the relationship between accelerometer-measured physical activity and purpose in life. Volunteers from the community (N=104; M age=35.5, SD=15.0; 71% female) completed measures of purpose in life and other measures of positive thoughts (e.g., optimism, mastery) and mental health and then wore accelerometers for three consecutive days. Purpose in life was positively associated with average movement over the three days (r=.22, p<.05). This relationship remained significant after controlling for demographics, optimism, mastery, depression, positive and negative affect, and life satisfaction (β=.30, p=.03) and trended towards significance after controlling for perceived stress (β=.27, p=.055). Moreover, purpose was positively associated with engaging in more minutes of moderate to vigorous physical activity after controlling for the same factors (β=.28, p=.045). These results suggest that purpose in life is a robust correlate of objectively measured physical activity. Future research could explore how changes in purpose are associated with changes in physical activity over time, or whether purpose changes as a result of becoming more physically active.

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## B-155

### DO POSITIVE OR NEGATIVE COGNITIVE BIASES PREDICT DISCREPANCIES BETWEEN OBJECTIVE AND SELF-REPORT MEASURES OF PHYSICAL ACTIVITY?

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Self-report measures of physical activity are subject to a number of biases, including over report of physical activity. However, objective measures of physical activity (e.g., accelerometer) are costly and require greater demand from participants. It is useful to researchers to understand what factors influence biased report of physical activity in order to control for these factors when using self-report measures. In particular, positive or negative cognitive biases may help identify participants who over or under report physical activity. This study's purpose was to examine the differences between self-report measures of moderate to vigorous physical activity (MVPA) and accelerometer measured MVPA, and to examine psychological correlates (i.e., optimism, purpose in life, mastery, depression) of this difference. Adults (N=91; 75% female; M age=33.8, SD=14.5) completed measures of positive cognitive biases (optimism, purpose in life, mastery) and depressive symptoms then wore accelerometers and kept records of their activity for three consecutive days. Additionally, participants recalled their physical activity one day after they completed their records. Difference scores were calculated using minutes of MVPA (metabolic equivalent [MET]>3.0) reported on either the record or the recall minus the minutes of MVPA recorded by the accelerometer. On average, participants recorded engaging in 231 more minutes of MVPA (SD=379) and recalled engaging in 192 minutes more of MVPA (SD=389) over the three days than what was recorded by accelerometer. After controlling for demographics, optimism, purpose in life, and mastery were not associated with over or underreport of physical activity. Depression was associated with reporting less activity on both the record (β=-.20) and recall (β=-.26) than what was recorded on the accelerometer. These results suggest that having a depressed view is associated with underreport of physical activity whereas positive cognitive biases are not associated with overreport. Both objective and self-report measures of physical activity have limitations, and future research should explore ways to improve physical activity measurement.

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## B-156

### ASSOCIATIONS BETWEEN ACTIVITY, INFLAMMATION, AND INSULIN RESISTANCE IN T2D AND METS: THE ROLES OF FITNESS AND FATNESS

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Inflammation and insulin resistance are associated with the development of the metabolic syndrome (MetS), the onset of type 2 diabetes (T2D), and risk of CVD. Physical activity may reduce CVD risk by reducing inflammation and insulin resistance. Decreased abdominal adiposity and increased cardiorespiratory fitness (CRF) have been hypothesized to partially mediate these associations. However, these relationships have not been studied extensively in overweight/obese individuals, who are often unfit and sedentary. The purpose of this study was to examine the associations between baseline measures of physical activity, abdominal adiposity, CRF, inflammation and insulin resistance in a sample of adults with type 2 diabetes and/or metabolic syndrome. Baseline data from participants enrolled in either of two studies of patients with T2D (n=116) or MetS without T2D (n=126) were used for this analysis. Structural equation modeling was used to determine if physical activity is associated with reduced inflammation or insulin resistance in these samples. Possible mediational roles of adiposity and low cardiorespiratory fitness were also examined. Walking was indirectly related to decreased abdominal adiposity, $B=-.695$, $p<.05$, via a positive association with cardiorespiratory fitness, $B=.885$, $p<.01$. Abdominal adiposity was positively related to inflammation, $B=0.025$, $p<.001$. Abdominal adiposity was also positively related to insulin resistance, although the relationship differed significantly between participants with T2D, $B=0.017$, $p<.001$, and those with MetS, $B=0.013$, $p<.01$. There were no direct associations between walking and inflammation or insulin resistance in this sample. Therefore, walking may decrease cardiovascular risk, insofar as it indirectly reduces abdominal adiposity.

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## B-157

### SEX DIFFERENCES IN SOCIAL RESOURCES AS PREDICTORS OF WALKING IN AFRICAN AMERICAN ADULTS

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The high rate of inactivity among underserved (lower income, ethnic minority) adults has led to national concern for understanding factors associated with physical activity (PA), including walking. Previous research suggests that social and economic resources may be important factors to consider in the promoting walking, as such resources have the potential to connect individuals to additional support networks and material resources. However, it is unclear how these resources are related to walking among underserved adults living in low income communities. Furthermore, given the limited research investigating predictors of walking in underserved men, it is unclear whether associations may differ based on sex. Thus, the present study investigated sex differences in two levels of social resources (family social support for PA, collective efficacy) and household income on walking in in African American adults enrolled in the Positive Action for Today's Health (PATH) trial. Baseline data from 242 predominately lower income African American adults (68% female, M=53.2 yrs) were obtained. Family social support for physical activity (PA), collective efficacy (social cohesion among neighbors combined with their willingness to intervene on behalf of the common good), and walking behavior were assessed using previously validated self-report measures. Body mass index (BMI) was obtained from objective measures of height and weight. Separate linear regressions were used to evaluate the influence of social resources and income on walking in men and women while controlling for BMI. The model for men was significant ($F(4,72)=2.623$, $p<.05$), and indicated that lower BMI ($\beta=-.233$, $p<.05$) and higher collective efficacy ($\beta=.254$, $p<.05$) were associated with higher reported walking levels. The model for women was not significant. These findings suggest that collective efficacy may be an important predictor of walking behavior in African American men. Future research should continue to explore community-level social resources in understanding walking behaviors in underserved communities.

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## B-158

### INDIVIDUAL, SOCIAL, AND ENVIRONMENTAL CORRELATES OF ADULTS' TELEVISION VIEWING TIME: A LONGITUDINAL STUDY

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Introduction: Prolonged TV viewing is an independent risk factor of morbidity and mortality. Most adults tend to increase TV viewing time as they age. Little is known about attributes associated with change in TV viewing over time.
Methods: Adult participants (n=897) from a longitudinal epidemiological study in Australia reported TV viewing time at both baseline (2003-2004) and follow-up (2007-2008). We examined individual, social, and environmental correlates of change in TV viewing time using generalized linear modeling, specifying a gamma distribution, in STATA 11.
Results: The mean TV viewing time increased from 112 min/day (SD=92) at baseline to 116 min/day (SD=90) at follow-up. Having a tertiary education was associated with a 13% lower TV time at follow-up (p=0.007). Each additional hour of occupational and transport physical activity at baseline was associated with 2% and 7% lower TV viewing at follow-up (p=0.031/0.023, respectively). For men, an additional hour of domestic physical activity was associated with 7% higher TV viewing time at follow-up (p=0.006). A significant neighborhood walkability×working status interaction (p=0.035) indicated that for those who were not working, living in a high, rather than low-walkable neighborhood was associated with a 23% lower TV viewing time at follow-up (p=0.003).
Discussion: Adults with lower educational attainment, lower occupational and transport physical activity, men with higher domestic physical activity, and non-working adults living in low-walkable neighborhoods were at higher risks of increase in TV viewing time. Interventions should target multiple variables at the individual, social, and environmental levels to prevent further increase in TV viewing time.

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## B-159

### THE PHYSICAL ACTIVITY MOTIVATIONAL SURVEY (PAMS): A VALIDATION STUDY

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Research suggests that appetitive and aversive motives influence engagement in risk behaviors and result in poor health outcomes. Cultural and family values may sensitize motivational tendencies for specific behaviors. The Physical Activity Motivational Survey (PAMS) assesses behavior-specific motives for physical activity. The purpose of this study was to examine the validity of the PAMS. This study also examined the relative strengths of the PAMS and BIS/BAS scales (Carver & White, 1994) for predicting physical activity beliefs, behavior and health outcomes. Methods. College Students (n=495) completed an online questionnaire assessing physical activity beliefs and practices, height and weight. Blood pressure was assessed in a subsample. Results. Overall, the seven PAMS subscales strongly correlated with six other measures of physical activity beliefs. Of 39 significant correlations, the average r=.44 (p values<.01). In contrast, the four Carver & White (C&W) BIS/BAS subscales revealed weak correlations with the same measures (average r=.14; p values<.05). Regarding behavior, the PAMS strongly related to physical activity in the expected directions. Appetitive motives for physical activity positively related to (average r=.25, p values<.01) and aversive motives for physical activity negatively related to (average r=-.21, p values<.01) all activity levels. The C&W Drive subscale only positively related to vigorous activity (r=.11, p<.05) whereas the BIS subscale negatively related to physical activity (average r=-.19, p<.01). The PAMS also predicted body composition and blood pressure. Respectively, appetitive and aversive motives for physical activity negatively (average r=-.31; p values<.05) and positively (average r=.28; p<.05) related to BMI, waist hip ratio, and systolic blood pressure. In contrast, the C&W (1994) BIS/BAS scales did not significantly relate to body composition or blood pressure. Summary. The PAMS exhibited good concurrent validity with existing measures of physical activity beliefs and strongly predicted physical activity practices and related health outcomes, particularly when compared to the C&W (1994) BIS/BAS scales.

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## B-160

### PARTNERS PERCEPTIONS OF CAPACITY FACTORS INFLUENCING IMPLEMENTATION AND SUSTAINABILITY OF THE POSITIVE ACTION FOR TODAY'S HEALTH (PATH) TRIAL

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PATH was a National Institutes of Health funded trial to develop and test the efficacy of a two year environmental intervention to improve access and safety for physical activity and trail use in underserved African American communities. The study randomized three communities to one of three conditions including: a police-patrolled walking and social marketing intervention, police-patrolled walking only intervention, or no walking intervention. The purpose of this study was to present findings from in-depth interviews conducted with eight key partners from the two PATH intervention communities to increase our understanding of capacity for program sustainability. The interviewees represented community center staff, resident walking leaders, police officers, walking program participants and steering committee members. The interviews were conducted at the conclusion of the PATH study and addressed sustainability from an ecological framework that included assessing trail maintenance, police support, and social capacity issues. Interview findings revealed an emphasis on increased community capacity for networking and connecting with community members and area leaders, planning and implementing walking programs, addressing safety and improving their physical environment. For example, police officers discussed the importance of their role, perceptions of neighborhood safety and their personal capacity to build relationships with local residents. Other interviewees also discussed increased connectivity with neighbors; however, they also emphasized how participation in the project improved their understanding of how to work with area organizations and civic leaders to get action taken in their neighborhoods. Lastly, interviewees also described how their increased capacity and participation in the project enhanced others' perceptions of their ability and their role within the community. Findings highlight how capacity building and connectedness was essential at multiple levels for sustainability.

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## B-161

### EXERCISE AND DIET HAVE SYNERGISTIC EFFECTS ON MOOD: A RANDOMIZED TRIAL

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Background: Research has revealed the benefits of exercise (Craft & Landers, 1998; Schlicht, 1994) and diet (Benton & Nabb, 2003) on mental health, especially one's mood. Less is known about the differential or combined effects of diet and exercise on mood.

Purpose: This study evaluated the benefits of exercise and diet on mood, by examining them individually and in combination.

Method: This study included 61 moderately overweight or obese middle-aged men and women in a 12-week study of the effects of diet and exercise on mood. Participants were divided into 3 groups: (1) High intensity resistance and cardiovascular training and a balanced diet (RC+BD, 40% CHO: 40% PRO; n=27, 16 female/11 male, age=42±9 yrs); (2) Moderate intensity cardiovascular training and a traditional diet (C+TD, CHO 50-55%; PRO 15-20%; FAT <30%; n=19, 10 female/9 male, age=43±10 yrs); and (3) An inactive control group (C, n=17, 5 female/12 male, age 43±11 yrs). Participants completed the Profile of Mood States questionnaire as pre- and post-tests. Between-group effects were explored via repeated measures ANOVAs. Within-group effects were clarified using t-tests.

Results: The high intensity combined exercise and diet intervention (RC+BD) resulted in significantly great improvement, than the two comparison conditions, in Total Mood Disturbance (POMS; p<.05).

Conclusions: Findings suggest that various methods of weight management may improve mood; however, additional research is needed to clarify the possible differential impact of various strategies (e.g., a matched sample to control for pre-group differences).

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## B-163

### RELIGIOUS COMMITMENT AS A PREDICTOR OF DECREASED BLOOD PRESSURE IN HIGH-RISK PREGNANCIES OF SOUTHERN APPALACHIA

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Extensive literature review inspired a mediational model of the relationship between Religiosity/Spirituality (R/S) and Blood Pressure (BP), tested through secondary analyses of data from the TIPS program. Participants included 205 (92.1% Caucasian; age M=23.72, SD=5.33) pregnant Southern Appalachian women drawn from the region's at-risk pregnancy population. The only variables correlated with BP were women's weight (r=.430, r=.467, p<.01, for diastolic and systolic BP, respectively) and prenatal care utilization (r=.138, p<.05, with diastolic BP), but not R/S. Multiple regression analyses confirmed participant weight as the only significant independent predictor of BP. Previous findings of health benefits of R/S cannot be assumed to generalize to pregnant women without further study. Limitations of this study and possible explanations for the findings are discussed.

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## B-164

### BODY IMAGE, BODY MASS INDEX, AND DEPRESSION IN A PRENATAL SAMPLE

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During pregnancy, women experience substantial changes in their body shape and weight that result in significant changes to their body image attitudes and perceptions (Boscaglia, Skouteris, & Wertheim, 2003). Body image dissatisfaction among pregnant women has been positively correlated with symptoms of depression (Dancombe et al., 2008), placing women at risk for obstetric complications like preterm delivery and low birth weight of the fetus (Field et al., 2004). One factor commonly associated with body image and depression in non-pregnant women is body mass index (BMI; Wadden et al., 2006; Ogden & Clementi, 2009). Specifically, greater BMI predicts both body image disturbance and depressive symptoms. Interestingly, limited research exists on the relationship between these factors within a prenatal population. The aim of this study was to examine correlations between prenatal BMI, body image attitudes, and depressive symptoms, and to explore whether body weight or body image is a stronger predictor of prenatal depression.

A total of 130 women in their third trimester of pregnancy were recruited from OB/GYN and midwifery offices in the greater Philadelphia area as part of a larger IRB-approved study. Of the original 130 participants, 39 did not report their weights and were excluded from the study. Ninety-one pregnant women who reported their weight completed the Body Attitudes Questionnaire (BAQ; BeM–Tovin & Walker, 1991) and the Edinburgh Postpartum Depression Scale (EPDS), and provided their height and weight in the third trimester.

A multiple regression analysis using the enter method to determine whether BMI or body dissatisfaction were significant predictors of prenatal depression yielded a significant model F(2,89)=6.0 p=.003 and explained 10% of the variance in prenatal depression (Adjusted Rsquared=10.0). Body dissatisfaction in the third trimester was a significant predictor of depressive symptoms in the third trimester (β=-.35, p<.001), but BMI was not (β=-.02, p>.05). These results suggest that pregnant women's dissatisfaction with their bodies, rather than their actual weight, predicts depressive symptoms.

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## B-165

### SOCIO-DEMOGRAPHIC DIFFERENCES ON COPING STYLES AND CORTISOL PATTERNS DURING PREGNANCY

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Despite several studies linking cortisol (a biological marker of stress) to adverse health outcomes among expectant mothers and their infants, few studies have addressed how women from diverse ethnic and socioeconomic backgrounds may cope and react to stress differently during pregnancy. The current study examined whether pregnant women from three different socio-demographic groups [i.e., low-income Latina group (n=37), low-income African American group (n=34), and a high SES comparison group (n=29)] displayed different coping styles (Prenatal Coping Inventory, Brief Resilience and Gratitude Scale) and different salivary cortisol patterns in response to a laboratory stressor (Trier Social Stress Test: public speaking and math task). Our sample was comprised of 100 women (mean age=26+6 years; 62% with an annual family income less than $20,000) in their second trimester of pregnancy (M=17+5 weeks of gestation). ANOVA analyses revealed that low-income African American women demonstrated higher levels of probleM–solving (F=6.9, p<.001), spirituality (F=4.5, p<.01), resilience (F=2.8, p<.05), and gratitude (F=4.0, p<.01) to cope with stress during pregnancy compared to low-income Latina women and those in the high SES comparison group. Further, Repeated Measures ANCOVA analyses showed that low-income Latina women and those in the high SES comparison group displayed the greatest increases in cortisol reactivity in response to a laboratory stressor, compared to low-income African-American women (F=5.5, p<.01). ANOVA analyses also demonstrated that although there were no group differences in how women rated the difficulty level and stressful nature of the laboratory tasks, low-income Latina women reported giving up on the laboratory tasks to a greater degree than women in the other groups (F=6.4, p<.01). These findings highlight the unique coping styles that women from different socio-demographic backgrounds may use in response to stress during pregnancy, which might help inform the tailoring and implementation of prenatal stress management interventions.

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## B-166

### GENDER SCHEMAS IN OB-GYNS AND IMPACT ON PATIENT SATISFACTION

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The field of OB-GYN faces challenges including declines in work satisfaction that may lead to providers leaving the field, an aging physician workforce, and an increasing population of reproductive aged women (Wienstein, 2008; Santani, Williams, Ellison, Landon & Gabbe, 2011). One factor that may be exacerbating the OB-GYN shortage is a decline in men entering the field. Roter & collegues (1999) found that women were more satisfied with female providers, even when male providers engaged in more desirable stereotypical “female” behaviors. Gender role schemas may be related to this finding. They are “the features we assign to men and women … due to the social roles that men and women hold” (Helgeson, 2009, p. 79).” They may influence what women expect from OB-GYNs (e.g., compassionate care from a female). The current study investigated the impact of women’s gender role schemas on satisfaction with male and female OB-GYNs. A total of 126 college women were randomly assigned to listen to interactions with either male or female OB-GYN providers. Brief audiotaped narratives were presented in which the OB-GYN provider engaged in either male schema consistent or female schema consistent ways. The male and female schema consistent narratives were created based on a previous study of women’s gender schemas for OB-GYNs Participants imagined that they were the patient in the narrative and rated their level of satisfaction with the provider, how likely they would be to see that provider again, and rated the provider on a number of personal attributes. Results supported that providers who engaged in female schema consistent behaviors were rated more positively. There was an interaction between sex of provider and schema consistency for provider attribute rating, F(2,124)=5.62, p<.05 and provider satisfaction ratings, F(2,124)=4.183, p<.05. This interaction revealed that female OB-GYNs were viewed more negatively than male OB-GYNs when they behaved in male schema consistent behavior. The results support that women prefer providers who engage in female schema consistent behaviors. Women are just as satisfied with, and as likely to return to a male provider who engages in these behaviors, as they are to a female provider.

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## B-168

### USING A SELF-AFFIRMATION INTERVENTION TO DECREASE ALCOHOL CONSUMPTION

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Threatening health communications are often used to motivate behavioral change, but people may react defensively to such communications. Self-affirming and increasing self-concept clarity are both associated with adaptive reactions to threat, and thus may encourage adaptive behavioral change in response to such communications. The purpose of this study is to test the effectiveness of simultaneously self-affirming and either increasing or decreasing self-concept clarity as a strategy for decreasing alcohol consumption among female college students exposed to a message communicating a health threat. Female college students (N=249) either self-affirmed in a manner that increased or decreased self-concept clarity, then read a threatening health message informing them that their alcohol consumption put them at risk for breast cancer. Participants reported their alcohol consumption one week later. Among the participants who consumed the most alcohol at baseline, self-affirming in a high self-concept clarity manner resulted in lower alcohol consumption relative to those who self-affirmed in a low self-concept clarity manner (p=.02). These results suggest that presenting health recommendations in the context of a self-affirmation opportunity that increases self-concept clarity can yield healthy behavioral change.

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## B-169

### LATINOS AND COLLECTIVISM: PARALLELS BETWEEN HEALTH AND LEGAL ISSUES

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In this paper we present a multidisciplinary perspective on the importance of Latinos’ collectivistic orientation when dealing with social services. There is evidence that Latinos use their social networks to make health decisions and obtain health care, and also in other domains of life such as with legal concerns. Based on this, we compare decision-making among Latinos when faced with health and legal concerns in order to answer the question of how do Latinos decide when to use informal networks and when to use the formal system.

We draw on data from two studies conducted in Allegheny County, Pennsylvania. Study A focused on health and health care and collected data through participant observation and a survey of a random sample of 206 participants. Study B focused on grievances and analyzed data from 20 in-depth interviews. We compare qualitative data relating to decision-making and accessing resources.

In Study A, Latinos consulted individuals in their close social circle to make sense of their health problems. These individuals in turn involved others in the decision-making. This social chain enabled Latinos to obtain culturally appropriate care without resorting to the formal system for information, a pattern found even among Latinos with health insurance. In Study B Latinos were also found to depend strongly on their social circles, both to understand their concerns regarding grievances and to find a resolution when possible. Moreover, sometimes grievances that could have been brought forward to the formal legal system were not pursued in order to protect and secure social networks.

In both cases, Latinos resorted to social circles to solve a problem and to fulfill their need to operate in a community setting. Data indicate that a collectivistic orientation is at the root of these actions. These findings underscore Latinos’ collectivistic orientation beyond the realm of health care and beyond strict need to access services. As a result, policy makers should develop ways to allow collectivism to be incorporated into health care provision as well as legal services.

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## B-170

### LIMITATIONS OF USING MULTIFACTORIAL GENETIC RISK INFORMATION TO EDUCATE SMOKERS ABOUT THE RISK OF TOBACCO USE

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Mass media can help disseminate health information to the public. However, conveying risk information that has multiple causal factors such as the interactive influence of genes and environment (GxE) is complex. For instance, reading about a GxE risk may cause unexpected decreases in perceived risk (e.g., Smerecnik 2009). We examined the cognitive and affective effects of reading an online news article about a genetic basis for nicotine addiction.

Young adult smokers (N=316) were recruited from psychology subject pools at two large universities. Participants were randomly assigned to read one of three news articles. One was an abbreviated version of a real article describing a genetic basis for nicotine addiction. The second article was altered to reflect the absence of a genetic basis for addiction. The third article was unrelated to health. Participants read the articles and completed measures of health cognitions and affect.

Separate ANCOVAs examined the relationship between experimental condition and beliefs about nicotine addiciton, risk feelings, worry, and quitting self-efficacy and intentions. Institution, gender, and smoking status (current vs. intermittent) served as covariates. An interaction term between condition and prior knowledge of the genetic risk was also included. Reading about a genetic basis for nicotine addiction did not influence any beliefs, cognitions, or affective variables, ps>.05. Experimental condition and prior knowledge did not interact to influence any of the variables, ps>.05.

Reading about a GxE risk of nicotine addiction may not have detrimental effects on smoking-related beliefs, cognitions, or feelings among young smokers. Concerns that media reports of GxE risks may be harmful to public health may be premature. Future research should examine the effect of GxE information about nicotine addiciton in nonstudents and nonsmokers.

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## B-171

### PATIENT RECALL OF CARIES RISK STATUS AND RECOMMENDATIONS

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Objective: To examine patient recall of caries risk assessment (CRA) and recommendations from a previous CRA along with self-reported adherence to recommendations and motivation for caries risk reduction.

Methods: Eight-five adult patients with previous CRA were interviewed by two investigators who administered 13 questions (6 open-ended) and recorded responses on a standardized form. CR and recommendations were compared to charted data for percent agreement and Kappa statistics. Open-ended questions were qualitatively summarized for thematic content.

Results: On average, patients were 60 years old (19 to 84), clinic patients for 18 months (2months - 20years) and had received a CRA within 10 months (1-25 months). Forty-six percent were males. Forty-one patients (48%) underestimated their caries risk, while 36% remembered or ‘guesstimated' it correctly. Accurate recall was not associated with age, time since CRA, time as patient, or initial CRA. Agreement between patient recall and chart audit of prescriptions for chlorhexidine rinse and NaF toothpaste was 71% (Kappa=.613) and 63% (Kappa=.594), respectively. Twelve patients did not fill or complete the prescriptions; barriers were bad taste, expense or forgetting. Although few nutrition discussions were charted, 37 patients reported dietary advice about reducing sugared snacks and beverages. Patients reported reducing sugared snacks/beverages for ‘general health and weight issues' or 'because I am diabetic'. Few patients made sustainable changes. Motivation to comply with brushing and flossing advice was to ‘preserve teeth, avoid pain, and save money in the long run'.

Conclusions: CR status was not often remembered correctly and adherence to recommendations appropriate for the determined risk was poor. The clinic requirement that patients sign an acknowledgment of risk to future treatments if CR is not reduced was never identified as motivation for adherence. Assessing and utilizing patients’ reasons for adherence is a strategy that needs to be incorporated into the dental setting.

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## B-173

### GENDER DIFFERENCES IN MENTAL HEALTH AND HEALTH-RELATED BEHAVIORS AS PREDICTORS OF SEXUAL FUNCTION

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Empirical evidence suggests that sexual function is important for overall health and well-being. Research has explored the impact of both psychosocial and physical predictors of sexual function separately. However, little research has examined how mental and physical health factors might influence women and men differently. This study sought to examine health-related behaviors and mental health variables as predictors of sexual function among young adults. Participants (136 women and 85 men), ages 18 to 39, completed a questionnaire assessing sexual health. Among men, 22% reported at least one problem in the areas of sexual interest, erections, orgasm, or satisfying their sexual partner. Among women, 40% reported at least one problem with sexual interest, lubrication, orgasm, or satisfying their sexual partner. For women, sexual function was significantly negatively correlated with depression. For men, sexual function was significantly negatively correlated with depression, anxiety, perceived stress, and smoking frequency, and positively correlated to hours of sleep per night.

Hierarchical regression analyses revealed that mental health variables (depression, anxiety, perceived stress) were not significant predictors of sexual function for males (Adjusted $R^2$=.042, F=2.28, p=.085). However with the inclusion of health behaviors in the second step (marijuana, alcohol, smoking, sleep, exercise) the model was significant (Adjusted $R^2$=.197, $\Delta$F=4.25, p=.002). For women, mental health variables were significant predictors of sexual function (Adjusted $R^2$=.038, F=2.84, p=.040) and no significant variance was added to the model with the inclusion of health behaviors (Adjusted $R^2$=.018, $\Delta$F=.44, p=.820).

The results illustrate the differential impact of health behaviors and mental health on sexual function in men and women. These findings support current models of men and women’s sexual dysfunction and have implications for further studies of factors that contribute to sexual function and how these factors may vary by gender.

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## B-174

### AN EXAMINATION OF SEXUAL SATISFACTION AND SEXUAL RISK IN US COLLEGE STUDENTS

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Identifying predictors of sexual health is imperative as sexual risk behaviors are prevalent in college students and associated with myriad of negative outcomes (e.g., relationship problems, unintended pregnancies, sexually transmitted infections). A few studies suggest that sexual satisfaction—subjective evaluation of positive and negative sexual experiences—is associated with positive sexual health in young adults (e.g., protection against STIs and pregnancy). However, we know little about the sexual satisfaction of US college students. The purposes of this study are to a) characterize the sexual risk behaviors and b) sexual satisfaction among a sample of US college students and c) examine sexual satisfaction as a predictor of sexual risk.

Participants (N=77) were mostly male (65%), with a mean age of 19.85 (SD=2.19) and an average of 1.71 (SD=2.09) sexual partners in the past year and 4.04 (SD=5.27) lifetime. Sexual risk behaviors were measured by the Sexual Risk Scale, with average total risk behaviors over the past six months at 70.44 (SD=156.67). Top risk behaviors include sexual intercourse without a condom (M=27.24, SD=126.85), giving or receiving unprotected oral sex for men (M=11.43, SD=23.40) and women (M=11.52, SD=28.92), and using alcohol or drugs before or during sex (M=5.33, SD=14.96). Sexual satisfaction was measured using the 30-item Sexual Satisfaction Scale, with average sexual satisfaction (M=107.3, SD=26.39) comparable to an initial mixed-gender college student sample. Few differences were found among comparison groups, with sexual satisfaction being significantly different depending on relationship status—“single” (M=99.00) significantly lower than “not single” (M=118.63) (t(74)=-3.42, p<.01). Sexual satisfaction, though previously identified as a predictor, did not predict sexual risk behaviors in this sample. Number of sexual partners in the past year and lifetime were predictive of risk (R2 change=.162, F change (2,59)=5.71, p<.01). Limits include small sample size and insufficient power to conduct analyses on sexual satisfaction subscale scores as predictors of sex risk.

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## B-175

### HEALTH BELIEF MODEL- VERSUS THEORY OF PLANNED BEHAVIOR-BASED CONDOM PROMOTION INTERVENTIONS: GENDER DIFFERENCES IN EFFECTIVENESS

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Core constructs of the Health Belief Model (HBM) and the Theory of Planned Behavior (TPB) were experimentally manipulated in order to increase putative mediators from each theory and condom use behavior. Given extensive research on gender differences in condom use a key question was the extent to which the model and the interventions functioned similarly for men versus women. 93 men and 165 women completed theoretically relevant measures and were randomly assigned to one of three computer-based interventions (HBM, TPB, or information only control). 199 (77.13%) completed follow-up assessments one-month later. Mediational analysis of intervention effects were conducted in a multiple-groups framework for men and women simultaneously. These analyses revealed that for men perceived susceptibility, perceived benefits, and intervention type all directly predicted risky sexual behavior; this was not true for female participants. Interestingly, theory-based interventions were more effective at changing proposed mediators for women; but they were not successful at creating behavior change. Current health behavior theories should be examined by gender to determine which is most effective at capturing the unique experiences of males and females. Further, interventions to increase condom use behavior among men and women may need to be targeted to each gender separately, based on analyses of which theoretical mediators successfully result in behavior change.

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## B-176

### FEASIBILITY AND ACCEPTABILITY OF AN ONLINE HIV/STI PREVENTION SURVEY AMONG ASIAN AMERICAN AND PACIFIC ISLANDERS COLLEGE STUDENTS

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Evidence suggests that the number of AIDS diagnoses in Asian American and Pacific Islanders (API) has steadily increased. Information about API young adults' sexual behaviors, however, is very limited. The internet has increasingly served as a platform for sample recruitment, data collection and intervention delivery in health-related research. The flexibility in access and confidentiality offered by the internet make it a logical venue to conduct HIV/STI prevention research.

This study aimed to establish the feasibility and acceptability of recruiting API college students to an online survey on risky sexual behaviors. Feasibility was defined by the proportion of eligible individuals who responded to the survey and the proportion of questions completed. We evaluated acceptability based on the respondents' perceptions of ease of use, understandability, and appropriateness of question content.

A cross-sectional survey was conducted via the internet. Student services provided a random sample of 600 e-mail addresses of students who self-identified as API and were between 18-35 years old. Potential participants then received an email invitation letter describing the study purpose, procedures, benefits/risks, and confidentiality. Each respondent received a $10 Amazon gift certificate.

A total of 140 students participated in the survey (response rate 23.3%) within 4 months. Among those who responded, 110 of them completed the survey with less than 6.5% missing data. The average age of the sample was 25.02 (SD=4.22); 57.3% (n=63) were males. We considered a response rate of 23.3% feasible because of the sensitive nature of sexual health questions and the low missing data rate. The response rate was also comparable to other similar studies. About 93% of participants rated the survey "somewhat" or "very easy" to follow; 42% said the questions were clear; 51% reported that questions were "somewhat easy." Regarding the appropriateness of questions asked, 71% reported "very much so" or "quite a bit."

The findings suggest an acceptable feasibility and a high acceptability of examining sexual behaviors among API college students via an internet survey.

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## B-178

### RELATIONSHIPS AMONG SLEEP AND OBESITY IN RURAL, LOUISIANA SCHOOL CHILDREN OVER A 28-MONTH PERIOD

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Several studies have reported associations between short sleep duration and increased obesity in children. These studies have been primarily cross-sectional and assessed sleep via surveys. This study assessed cross-sectional and prospective relationships among objective measures of sleep duration, percent body fat (PBF) and body mass index Z score (BMIZ) in a subsample of rural, Louisiana children participating in LA Health. Assessments were completed at baseline (T1), 18 mos (T2), and 28 mos (T3). In-person height, weight (Tanita 310), and PBF (Tanita 310) were measured. Physical activity and sleep duration (Actigraph GT1M) were accessed over 72 h. Lunch energy intake (food photography) was assessed over three days. Participants (N=83, T1 M age=11.00 yrs; 73.2% female; 82.9% African-American (AA)) with accelerometer data for at least two nights at each assessment were used in analyses. Percent of students overweight or obese included 42.7% at T1, 40.3% at T2, and 47.6% at T3. Repeated measure ANOVAs indicated that sleep duration decreased across time (T1=8.15 hrs, T2=7.73 hrs, T3=7.41 hrs, p<.01) and average sleep onset time increased across time (T1=10:01, T2=10:14, and T3=10:33, p<.01). Most students did not receive the recommended 9 hrs of sleep a night (T1=86.6%, T2=92.7%, T3=7.6%). A series of hierarchical regression analyses controlling for gender, race, physical activity, kcals consumed during lunch, and treatment condition assessed cross-sectional and prospective relationships between sleep and obesity. T1 sleep duration was marginally related to T1 BMIZ (p=.09) and PBF (p=.02); however, the overall model was not significant. Cross-sectional relationships between sleep and obesity at T2 and T3 were not significant. No significant prospective relationships between sleep and obesity were found. Findings indicate that rural, LA students are getting insufficient sleep and that sleep duration decreases across time. However, short sleep duration was not related to obesity.

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## B-180

### USING SMART PHONE MOBILE APPLICATIONS FOR HEALTH: THE POTENTIAL FOR INTERVENTION

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Smart phone mobile applications are a new channel for real-time multimedia, interactive interventions. Younger adults (n=677; 61% female; 17% high school diploma; 25% college degree; 78% <30 years old; 29% married; 13% Hispanic; 10% African American; 56% White; 48%<$50,000 per year) were surveyed in 2010-11 to determine their use of smart phones and mobile applications for health. Smart phones are widely available with over half (57%) of respondents owning a smart phone (32% planning to upgrade to one) and most (76%) are always on. Mobile applications are popular (57% used them and 48% several times a day) and can be potentially reached with health information, as many adults used mobile applications (43%) or accessed websites (31%) with health information with smart phones. Also, 93% text (79% several times a day; 54% use it for texting more than voice; ; 66% access the Internet (47% several times a day); 63% check email (59% several times a day); and 46% watch video (19% several times a day) on smart phones. We asked a subsample (n=80) about tablet computers and 12% owned one or more, using them to access the Internet (90%), check email (80%), access health websites (60%), watch video (50%), and run applications (70%; 20% a health application). As a specific case, we explored use by smokers (n=126), finding that they used cell/smart phones more than non-smokers, 23% had received information on quitting over their phone and 39% would be interested in doing so. Finally, we asked the subsample about use of multiple devices. Cell/smart phones were used most for texting and to run applications, while personal computers (desktop/laptop) were used most to browse the Internet, watch videos, take surveys, create documents, and post comments, reviews, and photos). Adults use multiple devices and for different functions, so interventions that integrate mobile applications with online and mobile communication may be most successful for tobacco cessation, diet, or exercise, and health promotion.

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## B-181

### TOBACCO USE AND VICTIMIZATION CORRELATION AMONG HIGH SCHOOL MALES

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Purpose: Victimization has been linked to tobacco use among adults; however, few studies have examined this correlation in youth. The purpose of this study was to determine the relationship of early on-set tobacco use and victimization among United States high school males. Understanding the correlates of victimization and tobacco can lead to more appropriately designed prevention programs for youth.

Methods: This study used a sample of high school males ($n=8,537$) taken from the 2009 Youth Risk Behavior Survey. Univariate and multivariate analyses were used to examine the relationship of victimization and tobacco use. Victimization variables included school threats, fighting injuries, and forced sex. Tobacco variables included lifetime smoking, 30-day smoking, and daily smoking history.

Results: All levels of victimization were correlated to 30-day smoking and daily smoking, but not lifetime smoking. Victims of school threats were more likely to report using tobacco in the past 30 days ($F=4.494$; $p\leq.001$) and daily tobacco use ($F=3.358$; $p=.001$). Participants who were injured in a fight at school were also more likely to report using tobacco in the past 30 days ($F=15.423$; $p\leq.001$) and daily tobacco use ($F=16.892$; $p\leq.001$). Thirty-day use ($F=14.403$; $p\leq.001$) and daily smoking ($F=22.024$; $p\leq.001$) were also higher among those victims of forced sex. Multivariate analysis of variance indicated that victimization by threats and forced sex significantly relate to higher rates of 30-day smoking ($F=6.579$; $p\leq.001$) and daily smoking ($F=8.133$; $p\leq.001$). The interaction between school injuries and forced sex also related to 30-day smoking ($F=3.168$; $p=.013$) and daily smoking ($F=5.265$; $p\leq.001$). Interaction of all three victimization variables correlated to daily smoking among participants ($F=2.565$; $p=0.18$).

Conclusions: Male students victimized through school threats, fighting injuries, and forced sex are more likely to exhibit tobacco smoking behaviors. Behavioral risk factor prevention programs for high school students should address the interplay of multiple risk factors such as victimization and tobacco use among males.

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## B-182

### ORAL HEALTH KNOWLEDGE, BELIEFS AND SELF-CARE BEHAVIORS AMONG SMOKERS CALLING A TOBACCO QUITLINE: OPPORTUNITIES FOR INTERVENTION

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Smoking is a risk factor for oral diseases and smokers are less likely to receive regular dental care and meet oral hygiene recommendations compared to nonsmokers. The objectives of this study were to characterize smokers' oral health knowledge, beliefs, and behaviors and identify modifiable psychological correlates of non-adherence to regular oral health self-care. Results will inform a future oral health promotion intervention integrated with tobacco quitline services. Mailed survey data were collected in 2010 from a representative sample of callers to the Washington State QuitLine. Analyses were restricted to cigarette smokers ($n=725$). Respondents were mostly female (61%), white, non-Hispanic (81%), and of lower socioeconomic status. Dentate respondents reported moderately high levels of motivation and self-efficacy (SE) for engaging in oral health behaviors (brushing mean motivation=6.6, mean SE=6.6; flossing mean motivation=5.3, mean SE=5.4; visiting the dentist mean motivation=5.6, mean SE=5.4) (7=very motivated/confident). Despite this, 43% did not brush their teeth at least twice daily, 80% did not floss daily, and 53% had no dental visits in the past year. Persons not meeting oral health recommendations endorsed significantly lower levels of motivation and self-efficacy compared to those with optimal behaviors. No differences in oral health knowledge were observed, although smokers were generally unaware of the association between oral health and general health, and most underestimated their personal risk for oral disease. Among those not meeting daily hygiene recommendations, nearly half (48%) believed they were already brushing and flossing as much as needed. Thus, there are notable opportunities to enhance oral health knowledge, beliefs, and behaviors among smokers. Doing so could improve oral health outcomes among this high-risk population.

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## B-183

### WHEN THE USUAL PREDICTORS FAIL: CORRELATES OF SMOKING AMONG A COMMUNITY SAMPLE OF AFRICAN AMERICAN WOMEN AND MEN

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Studies have found that cigarette smoking among African American adults is predicted by low socioeconomic status (SES), low acculturation, and frequent racial discrimination. No study has examined all three factors simultaneously, nor tested the extent to which they predict smoking among Black women vs. Black men. We partnered with a Black community health organization to explore these issues for the first time. We used a novel, community-based surveillance method in which data were collected from a random, statewide sample of $N=2118$ Black adults, door-to-door, on weekends, by Black community surveyors.

Three logistic regressions were conducted for the sample as whole. Model 1 contained only SES variables and revealed that smoking was predicted by low education ($OR=1.796$, $p=.001$), low income ($OR=2.678$, $p=.005$), and unemployment ($OR=2.59$, $p=.0005$). Model 2 contained only sociocultural variables, and revealed that smoking was predicted by low acculturation ($OR=1.501$, $p=.013$) and by racial discrimination ($OR=1.575$, $p=.008$). Model 3 was hierarchical, with SES variables entered first and sociocultural variables second. Model 3 revealed that only low education ($OR=2.186$, $p=.011$) and low acculturation ($OR=1.805$, $p=.018$) predicted smoking - income, unemployment, and racial discrimination did not.

These models then were repeated for women and men separately, with similar results: In Model 3 for women, only a cultural factor, i.e., low acculturation, predicted smoking ($OR=2.112$, $p=.04$), whereas in Model 3 for men, only SES factors, i.e., low education ($OR=2.779$, $p=.029$) and low income ($OR=3.851$, $p=.033$) predicted smoking.

These findings suggest that some of the usual predictors of smoking (i.e., low income and racial discrimination) may not contribute to smoking when examined in the context of multiple social and cultural factors. The findings also suggest that culturally-tailored smoking cessation programs designed for low-acculturated (traditional) African Americans may be appropriate for women only.

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## B-184

### FAMILIES OF HIGH RESPIRATORY RISK INFANTS IN A NEONATAL INTENSIVE CARE UNIT: WHO HAS A HOUSEHOLD SMOKING BAN?

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Secondhand smoke exposure (SHSe) threatens high respiratory risk, very low birth weight infants discharged from a neonatal intensive care unit (NICU). Parents of infants in the NICU tend to be from disadvantaged backgrounds, which is associated with a higher likelihood of having at least one smoker in the household. Little is known about the smoking practices of NICU families. The purpose of this study was two-fold: (1) to assess the prevalence of NICU parents of high respiratory risk (HRR) infants who report at least one household smoker; and (2) among households with a smoker, to identify the characteristics associated with having a home and car smoking ban. Participants ($N=108$) were enrolled in The Baby's Breath Project, a hospital-based SHSe intervention trial targeting parents with a high-risk infant in the NICU who reported a smoker in the household. Measures of sociodemographics, smoking, home and car smoking bans, SHSe knowledge, stress and depression were collected at baseline. Results indicated that 26% of parents of HRR infants in the NICU over a 3-year period ($N=947$) reported having a household smoker, 75% of whom were the fathers. Chi-square analyses tested for differences on baseline measures between families who did and did not report a total smoking ban in their home and car. Many differences emerged. Results indicated that mothers who reported not having a smoking ban were more likely to be English-speakers, have greater than 3 children in the house, report severe financial problems, have less knowledge about SHSe, and to report more depression and stress related to their NICU experience. NICU mothers who do not have a home and car smoking ban appear to be significantly challenged psychosocially and economically, and are clearly in need of multiple support services, including mental health and SHSe interventions.

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## B-185

### PERCEIVED RISK AND WORRY FOR ONE'S PARTNER AND SELF PREDICT DESIRE TO QUIT IN DUAL-SMOKER COUPLES

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Quit rates are lower and relapse rates are higher in couples where both partners smoke. Smokers report health concerns as a key reason to quit, however, little is known about degree of concordance in health concerns between partners and their implications for desire to quit when both partners smoke. To test this idea, we recruited 64 dual-smoker couples from the community in central North Carolina. Participants were aged 21 to 67 (M=43.2, SD=11.2), married/living as married for <1 to 44 years (M=7.8, SD=8.6) and had been smoking for 4 to 51 years (M=23.3, SD=11.4) with an average of 16 (SD=9.5) cigarettes/day. Correlations between couple members revealed concordance between partners' ratings of worry about physical harm of smoking for oneself (r=.40, p<.01) and partner (r=.30, p<.05), perceived risk of disease for self (r=.32, p<.05), and desire that their partner quit (r=.41, p<.01). At the level of the individual member, one's own desire to quit was greater when he or she worried about partner's health (r=.31, p<.01), viewed partner at higher risk for disease (r=.43, p<.01), believed partner's risk for disease was higher because of his or her smoking (r=.32, p<.01), and believed that his or her own smoking had caused partner more physical harm (r=.40, p<.001). Individuals' own desire to quit was also related to worry about own health (r=.49, p<.001), perceived risk of getting a disease if they continue to smoke (r=.37, p<.001), and belief that smoking has caused them physical harm (r=.27, p<.01). Perceiving more harm for partner than self was associated with a greater desire to quit smoking (b=.23, p<.05). Participants had an extremely strong desire (76%=7 on 1-7 scale) for their partner's help if they were to quit smoking. In sum, findings show significant concordance in partners rating of risk of disease and worry and that an individual's own desire to quit is related to ratings of risk and worry for partner and self.

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## B-186

### DESCRIPTIVE CHARACTERISTICS OF SEXUAL MINORITIES WHO ENGAGE IN TOBACCO USE: IMPLICATIONS FOR IMPROVING SMOKING CESSATION PROGRAMS

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Background. Tobacco use is the single most preventable cause of disease, death, and disability in the United States. Research suggests that sexual minorities have an increased risk for smoking, as well as other substance-use behaviors. This study examined characteristics differentiating smokers from non-smokers in a sample of male and female sexual minorities accessing care at an urban community health center.

Method. Patients at a community health center catering to the needs of sexual minorities were invited to complete a brief, cross-sectional, 25-item questionnaire which assessed demographics, general health, and substance use.

Results. Of the 3068 patients completing the questionnaire, 1555 identified as gay or bisexual. Of these sexual minority respondents, 77.6% identified as male and 22.4% as female. The sample was predominantly Caucasian (84.3%) with a mean age of 38 (SD=9.37). Twenty-seven percent (27%) reported being current smokers. Smokers were on average younger than non-smoking respondents (t(1536)=5.53, p<.001). Less education (χ2 (3)=37.45, p<.001), lower household income (χ2(4)=13.95, p<.01), cocaine (χ2 (1)= 84.77, p<.001), heroin (χ2 (1)=21.16, p<.001), and alcohol use (χ2 (1)= 96.81, p<.001) were all associated with an increased likelihood of smoking. No statistically significant difference in the likelihood of smoking emerged between men and women (χ2 (1)=2.53, p=.112) or the different ethnic or racial groups represented in the sample (χ2 (2)=.70, p=.872).

Conclusion. Within this sample, sexual minority smokers were more likely to be substance and alcohol users, have received less education, reported lower household income, and were on average younger than non-smokers. These findings have the potential to inform smoking cessation interventions that focus on sexual minorities. Smoking cessation programs placed within the context of co-occurring substance and alcohol use and designed to meet the needs of younger sexual minority smokers from lower socioeconomic backgrounds may be particularly effective.

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## Meritorious Poster

## B-187

### BODY IMAGE, ANXIETY & SMOKING

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Among Mexican origin youth anxiety is associated with cigarette experimentation. The desire to be thin also is associated with smoking, especially among white girls; and among immigrant youth who report dissatisfaction with their body image, low acculturation protects against substance use. Our goal was to examine relationships between body image, anxiety and cigarette experimentation among Mexican origin youth. In 2005-06, 1,328 adolescents aged 11 to 13 years enrolled in a cohort study to examine non-genetic and genetic factors associated with cigarette experimentation. In 2008-09, 1,154 participants completed a follow-up. They reported on smoking status, anxiety and body image (assessed using a 10-item scale). Height and weight were measured. OLS regressions were computed to examine the relationship between anxiety and body image, controlling for age, country of birth, socio-economic status (SES) and body mass index (BMI). Multivariate logistic regression models were computed to examine associations between smoking and body image, anxiety, and country of birth, controlling for age, SES and BMI. All models were stratified by gender. Only participants who answered "yes" or "no" (response option also included "not sure") to 9 or more of the body image scale items are included in the current analyses. Of these 766 participants, 51% were boys; 75% were US-born. On average participants were 14.4 years old (SD=1.02) at follow-up. Poor body image was associated with anxiety for girls (p< 0.01) and boys (p=0.021). Among girls, experimentation was associated with age (OR= 1.84; p<0.01) and poor body image (OR=1.15; p=0.03). Among boys, experimentation was associated with age (OR=2.29; p<0.01), poor body image (OR=1.15; p=0.04) and anxiety (OR=1.04; p<0.01). Country of birth, SES, and BMI were not associated with experimentation for either gender. Poor body image is associated with cigarette experimentation among boys and girls. Anxiety may mediate the relationship between poor body image and experimentation in boys, whereas among girls, poor body image is an independent risk factor. Our results have implications for the design of gender-specific smoking prevention materials.

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## B-188

### GOOGLE VERSUS PRIMARY CARE: CHARACTERISTICS AND SUBSEQUENT PARTICIPATION OF REGISTERED SMOKERS IN A WEB-ASSISTED TOBACCO INTERVENTION

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BACKGROUND: Most smokers recruited to web-assisted tobacco interventions are from search engines (eg: Google). However, online recruitment alone may limit the number of smokers recruited, and smokers searching online are likely only the more proactive subset. Because the majority of smokers (70%) see a health provider at least once per year, this may be a promising avenue for recruiting smokers. METHODS: We conducted a prospective cohort study of smokers recruited from primary care medical practices (N=85), and through Google advertisements to Decide2Quit.org from May 2010 to July 2011. Decide2Quit.org included interactive assessments, tailored motivational emails, secure messaging with Tobacco Treatment Specialists (TTS), and a peer support group. When smokers registered, we collected demographics and smoking behavior. The system also tracked online visits. We compared: 1) demographics of smokers by recruitment source, and 2) participation by recruitment source adjusted by smoker characteristics. We developed a multivariate model and adjusted for characteristics. Because the participation data was skewed, we used negative binomial regression. RESULTS: The majority of the 477 smokers who participated were female (65%). Google smokers were of similar age to smokers from medical practices, but were more frequently college graduates (68% versus 84%, p< 0.01) and more likely to have already set a quit date or quit (40% versus 22%, p< 0.01). After adjustment for demographic characteristics and readiness to quit, Google smokers had higher predicted counts of web page visits (17.1 (95%CI 15-19)) compared with medical practices (12.6 (95%CI 11-14)). Google smokers were also more likely to utilize the TTS and peer support group in adjusted analyses. CONCLUSIONS: Google smokers were different, and more ready to quit. Independent of readiness to quit, Google smokers had higher participation rates in Decide2Quit.org compared with those from medical practices.

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## B-189

### COMPARING E-REFERRALS WITH PAPER REFERRALS TO A WEB-ASSISTED TOBACCO INTERVENTION: RANDOMIZED TRIAL IN 260 U.S. COMMUNITY-BASED CLINICAL SETTINGS - THE QUIT-PRIMO AND DPBRN STUDIES

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Public health quit-smoking interventions are underused. Provider referrals might increase participation. We created an e-referral portal where providers could, with smoker's consent, enter the smoker's email into the portal. The smoker is then sent a series of motivational email messages encouraging registration in our online smoking cessation system, Decide2Quit.org. METHODS: We are evaluating participation in Decide2Quit.org following referral from 160 primary care medical and 100 dental practices through a randomized trial. In the comparison group, practices were trained to refer smokers using a paper-based "information-prescription". Intervention practices were trained to use paper referrals plus the e-referral system. Once e-referred, smokers were sent up to 10 emails encouraging them to register on Decide2Quit.org. Intervention practices also received a feedback report through the e-referral portal regarding the number of smokers they referred and the participation of their smokers. We compared rates of referral and registration, and estimated the cost of training and booster calls to each intervention practice (including call attempts, number of trainings). RESULTS: Comparison practices referred 3,126 smokers, while e-referral practices referred 2,265 smokers. Only 350 (11.2%) of the comparison practices smokers registered, compared with 700 (30.9%) from the intervention practices ($p<0.001$). The average estimated cost to develop and implement the e-referral system at each practice was US$417.6 (SD= 85.0). CONCLUSIONS: Although intervention practices received e-referral training and feedback on their performance and patient registration rates, comparison practices reported higher rates of referral, suggesting that paper referrals are easier to use. The e-referral approach doubled the absolute number of smokers registered (almost tripling the proportion referred) at a reasonable cost of training.

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## B-190

### ETHNIC DIFFERENCES IN ADOLESCENT SMOKING AND QUITTING BEHAVIOR

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While the literature reveals ethnic differences in adolescent smoking behavior (Dornelas et al., 2005; Wallace et al., 2002), studies examining differences in adolescent quitting behavior are infrequent and inconsistent (Tong et al., 2006; Tucher et al., 2005). It is also not clear whether these differences can be attributed to peer smoking, which is a well-known predictor of smoking and quitting behavior (Wang et al., 1995), or to some other factor. Given that research suggests ethnic differences exist in the rate at which teenagers are asked to provide identification before purchasing cigarettes (Gratlas et al., 1999), it could suggest that this limit to access could contribute to these differences in smoking behavior. Data from 2002-2008 of the California Student Tobacco Survey ($n=89026$) were used in a logistic regression to predict smoking and quitting behavior from ethnicity after controlling for the influence of age, gender and peer smoking. The analyses revealed that Caucasian students were significantly more likely to smoke than were Hispanic students ($OR=2.27$, $p<.001$). These same differences were found before controlling for peer smoking ($OR=1.69$, $p<.001$). However, there were no such ethnic differences in quitting behavior, again after controlling for the influence of age, gender and peer smoking ($OR=1.18$, $p=.119$). Before controlling for peer smoking, Hispanics were found significantly more likely to quit than were Caucasians ($OR=1.28$, $p=.017$). The same data was also used in a logistic regression to predict whether a student was asked for ID when attempting to purchase cigarettes from ethnicity after controlling for the influence of age and smoking behavior. The analysis suggests that Hispanic students are more likely to be asked for identification that are Caucasian students ($OR=1.46$, $p<.001$).

These findings suggest that limited access to tobacco products, in the form of identification checks, may help explain the ethnic differences in youth smoking behavior, but that peer smoking may be the driving force behind quitting behavior.

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## B-192

### THE BLESSING OF A CURSE: AN EXAMINATION OF GROWTH AND TRANSFORMATION FROM CHRONIC FATIGUE SYNDROME

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Empirical research in posttraumatic growth has observed that people can experience positive change from suffering (Tedeschi & Calhoun, 1995). In recognition of this phenomenon, and to identify the potential "benefits" of a chronic illness characterized by medical uncertainty and limited treatment options, the current study explored whether—and if so, how—persons with chronic fatigue syndrome (CFS) perceive their condition as a catalyst for positive change.

The sample included 15 adults diagnosed with CFS who reported personal, spiritual, and/or religious growth or transformation from their illness experience. A majority ($n=12$) were female. All participants described developing, modifying, or already having a spiritual or religious meaning system. In-depth semi-structured interviews were conducted in-person or via telephone.

A qualitative method involving thematic analysis (Aronson, 1994) was used to understand how persons with CFS experience and perceive the processes of positive change from their illness. Analysis revealed that the ongoing reconstruction of meaning, combined with attitudinal shifts in acceptance ($n=15$) and receptivity ($n=13$), significantly altered the context by which participants approached, experienced, and viewed adverse circumstances. Mediated by ongoing cognitive reappraisals, an interrelated series of positive changes emerged from these gradual adjustment processes over time. As a result, a majority ($n=13$) believed their lives are better now than before CFS, despite illness symptoms, while all reported a greater appreciation of life, and spiritual change as part of their growth or transformation.

These findings suggest the potential for persons to develop a highly adaptive response to not only cope with but also psychologically thrive from the illness experience of CFS. These results highlight the need to re-examine concepts of health and wellness in relation to the unique circumstances of the CFS population.

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## B-193

### THE ROLE OF SPIRITUALITY IN SATISFACTION WITH COMPLEMENTARY AND ALTERNATIVE MEDICINE

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Spirituality is associated with health and well being. Complementary and Alternative Medicine (CAM) emphasizes essentials of both body and mind, providing a more holistic treatment than conventional allopathic medicine and is being increasingly used in Western culture. As CAM treatments are believed to include more spiritual forms of healing, it is important to examine the link between spiritual values and the satisfaction with CAM usage. Most of the research on CAM and spirituality has focused on patients with chronic illnesses. This study examined the association between spiritual values and satisfaction with CAM in a non-patient sample of young adults. It was hypothesized that higher scores on the Meaning/Peace subscale of the Functional Assessment of Chronic Illness Therapy-Spiritual Well Being Scale (FACIT-Sp) and Spiritual Openness subscale of the Spiritual Experience Index-Revised (SEI-R) would predict greater satisfaction with CAM usage. Also, when divided into the four quadrants suggested by SEI-R, we expected that "underdeveloped" quadrant would significantly differ from "growth-oriented". 366 Introductory Psychology undergraduates completed SEI-R and FACIT-Sp, both measuring spiritual beliefs, as well as the International Complementary and Alternative Medicine Questionnaire (I-CAM–Q) measuring use and satisfaction with CAM. Multiple regression revealed that FACIT-Sp Meaning/Peace and SEI-R spiritual openness subscale scores predicted mean satisfaction scores [$F(4,308)=4.645$, $p<0.001$]. ANOVA analyses revealed that the "underdeveloped" quadrant had the lowest satisfaction with CAM [$F(3,318)=3.298$, $p=0.021$]. Also, the "growth-oriented" quadrant scored the highest on FACIT-Sp-Meaning/Peace subscale with "underdeveloped" scoring lowest [$F(3,342)=11.516$, $p<0.001$]. These results indicate that spiritual and religious values might play a role in one's satisfaction with CAM use. The study results may suggest that offering CAM to those who are spiritually-oriented might lead to greater use and satisfaction.

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## B-195

### SOURCES OF STRESS IN SPORT: A RASCH ANALYSIS

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The purpose of this study was to examine sources of acute stress experienced by competitive athletes using the Rasch model. Participants (N=336) consisted of 167 college-aged males (49.7%) and 169 females (50.3%) who had competed in an organized high school or college sports team. Sources of Stress in Sport Inventory (SSSI) was created to measure perceived level of sport stress intensity. Function of the rating scale was tested to determine if the 5 original rating scale categories were the best fit. Analysis included estimating difficulty level of stress items for students. The existing 5 rating scale categories functioned well. The most difficult level of acute stress item was making a physical or mental error (logits=-0.56) and the least difficult was athletes having negative communication with others (logits= 0.83). Rasch analysis results support SSSI as an effective scale assessing acute stress in sport among college students.

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## B-196

### IS SELF-REPORTED STRESS RESPONSE ASSOCIATED WITH ACTUAL STRESS RESPONSE? CONSTRUCT VALIDATION OF THE CALGARY SYMPTOMS OF STRESS INVENTORY

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The primary aim of the current study was to examine the construct validity of the Calgary Symptoms of Stress Inventory (CSOSI; Carlson & Thomas, 2007). CSOSI subscales assessing self-reported cognitive, affective, and physiological responses to stress of 70 undergraduate students were compared with the same three domains of stress responding during exposure to two laboratory stressors (hand grip, mental arithmetic). Using hierarchical regressions controlling for sex differences, a computed CSOSI Affect subscale (Anger+ Depression) was associated with avoidant coping , F (4, 65)=4.38, p<.01, R2=.21, and cognitive anxiety responses to lab stress, F (4, 65)=6.09, p<.001, R2=.27. The computed CSOSI Physiology subscale was associated with residualized change scores aggregated across heart rate and systolic and diastolic blood pressure responses to lab stress, F (4, 65)=4.55, p<.001, R2=.22, as well as negative affect response to stress, F (4, 64)=6.13, p<.01, R2=.28, and positive affect response to stress, F (4, 65)=2.70, p<.05, R2=.14. The CSOSI Cognitive Disorganization subscale was not associated with any lab stress responses. The CSOSI exhibits construct validity for measures of physiological response to stress, but validation for other response domains has yet to be demonstrated. The factor structure of the CSOSI among a healthy, young-adult population is being explored further.

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## B-197

### DEVELOPMENT AND VALIDATION OF THE PEDIATRIC PARENTING STRESS INVENTORY

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Parents of children with serious illnesses experience distress and encounter numerous challenges related to their child's illness and treatment. Current measures of parenting stress lack specificity to pediatric illness or have limited psychometric data. This work aimed to develop and evaluate a pediatric-specific measure of parenting stress, the Pediatric Parenting Stress Inventory (PPSI). Two samples of mothers of children newly diagnosed with cancer (N1=456 and N2=402) were recruited as part of two intervention studies. Mothers completed the PPSI at baseline. Factor structure was evaluated using exploratory factor analysis (EFA) on the first sample and confirmatory factor analysis (CFA) on both samples. Construct validity was assessed via Spearman correlations with measures of maternal distress. Internal consistency was evaluated using Cronbach's alpha. EFA resulted in a stable four-factor solution with 35 items. CFA indicated that this solution demonstrated reasonable fit in both samples. Internal consistency of the subscales and full scale was adequate to excellent. Construct validity was supported by moderate to strong correlations with measures of maternal distress, depression, and posttraumatic stress symptoms. The PPSI demonstrated good psychometric properties in assessing current problems and distress experienced by mothers of children newly diagnosed with cancer. This tool may help clinicians identify individualized targets for intervention in families of children with serious illnesses.

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## B-198

### EFFECT OF MULTIPLE ROLES ON RESTING AND AVERAGE DAILY AMBULATORY BLOOD PRESSURE IN WOMEN

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The role of psychosocial risk factors for coronary heart disease (CHD) in women is not yet well understood. Stress has long been implicated as a risk factor for CHD. Conceptually, the common experience of women's multiple roles may contribute to an increase in total stress burden, called background stress, due to conflicting demands of family and work responsibilities. Method: The current study examined the relationship between multiple roles, background stress, and blood pressure (BP) in a sample of 102 normotensive women at a state university using partially latent structural regression analysis modeling. Separate models were tested for baseline BP and average daily ambulatory BP, and considered effects of social support, having young children in the home, and traditional predictors of BP. Results: Variables in both models were able to account for 32.5% of variance in background stress (p<.001). In addition, the baseline BP model accounted for 17.2% of variance in systolic BP (p<.01) and 15.9% of variance in diastolic BP (p<.01). Variables in the ambulatory BP model were unable to account for significant variance in BP. Being a mother in addition to being a student/employee was associated with higher levels of background stress ($\beta$=.41, p<.005). A trend between higher background stress and systolic baseline BP was identified ($\beta$=.21, p=.06). Post-hoc linear regression analyses suggest that background stress is only predictive of higher baseline BP in mothers (ps<.05), and this effect is more pronounced in single mothers (ps<.02), though results should be interpreted with caution. Conclusions: The current study was able to establish a statistical model for the relationship between multiple roles, background stress and BP. Working mothers are contending with an under-recognized stress burden that may contribute to a gradually increasing vulnerability to heart disease, a process that may begin as early as in one's 20's-30s. Perhaps more so than any other developmental period, women are struggling to meet competing demands of job and family, which in turn may represent the basis for preventative interventions to address potential effects on adverse health outcomes.

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## B-199

### THE RELATIONSHIP BETWEEN PROSOCIAL EMOTIONAL ELEVATION, HEALTH BEHAVIORS, SOCIAL WELL-BEING, AND LIFE EVALUATION

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It has been well documented that positive emotions have an immediate effect on expanding one's outlook, and over time can have a more permanent, health-promoting role by fostering a greater breadth of resources to draw on in times of need. Recent research has even suggested that positive emotional experience goes beyond prevention of disease to promote thriving. Elevation is a specific positive, prosocial emotion that can be experienced by witnessing social moral acts. Elevation has a significant effect on increasing altruistic motivation and behavior. Healthy outcomes associated with altruistic behaviors include, decreases in depression; increases in sense of purpose; reduced risk of dying; greater life satisfaction; and positive physiological effects such as reduction in stress hormones and increases in a protective antibody. This study examined the relation between elevation and health behaviors, social well-being, and life evaluation. Data were completed by 340 college students (60% female) as part of a larger study examining HPV vaccination behavior. Participants were classified into the 5 Stages of Change for healthy sleep habits, diet, and stress management. Results indicated that those in Precontemplation(i.e. those not intending to adopt healthy sleep habits, eat a healthy diet, or effectively manage stress) had significantly less experiences of elevation compared to those who were better at managing sleep (F=2.6, α<.05, η^2=.03), diet (F=7.44, α<.01, η^2=.08), and stress (F=6.18, α<.01, η^2=.09). Regression analyses revealed that elevation was a significant positive predictor of both social well-being (R^2=.012, F (1, 338)=3.98, p<.05) and life evaluation (R^2=.024, F (1, 338)=8.35, p<.01). Results indicate a positive relation between elevation and healthy functioning. Future research should investigate whether elevation has differential effects on healthy functioning in comparison to other positive emotions. Practical implications of utilizing elevation in order to cultivate positive emotions in clinical interventions designed to promote health behavior change will be discussed.

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## B-200

### THE STRESS THERMOMETER: A SINGLE-ITEM MEASURE FOR EVALUATING PERCEIVED STRESS

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Expediency and ease-of-use are important factors, which must be balanced with reliability and validity, when selecting measures for use in biomedical research. Brevity and convenience are important considerations in settings where time is limited (e.g., clinical settings, repeated measures designs, etc.). Given that perceived stress can affect and impair physiological and psychological well-being, a brief measure of perceived stress would be advantageous. The present study tested a single-item visual-analog scale (i.e., stress thermometer, ST) to capture perceived stress, and explored its validity by comparison with the validated four-item perceived stress scale (i.e., PSS, Cohen 1983). To examine contextual and within individual influences, we scored stress when all participants were experiencing a similar stressor (i.e., a common cold).<p>
In order to capture perceived stress in this unique context, 662 participants were given the PSS and ST on three different days across the duration of a cold: at symptom onset (Intake); three days after intake (Day 3); and on the first symptoM–free day (Exit). Structural Equation Modeling was used to determine (a) the stability of the PSS and ST across the duration of the cold; (b) the association of the PSS with ST at each time point; and (c) the ability of the ST to predict subsequent PSS scores and vice versa.<p>
Like the PSS, the ST was highly stable across concurrent evaluations ($\Delta\chi^2$=.08, p=.78). The PSS was significantly more stable than the ST ($\Delta\chi^2$=35.54, p<.001), which may indicate that the ST is more sensitive to perceptions of immediate circumstances (having a cold) or bodily state, whereas the PSS reflects a more global perception of behavioral constraints. However, the ST and PSS were highly correlated, suggesting utility for some applications. Yet, the association between the PSS and ST diminished over the course of the cold ($\Delta\chi^2$=65.81, p<.001). This suggests the ST performs better when a person feels ill or behaviorally impaired than as a general measure of nonspecific life stress in a healthy individual.

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## B-201

### EMPIRICALLY DERIVED PATTERNS OF EMOTIONAL RESPONSES TO AN EVALUATIVE STRESSOR AND VARIATION IN CARDIAC REACTIVITY AND DEPRESSION SYMPTOMS: A LATENT CLASS ANALYSIS

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Negative emotions have been shown to influence psychological symptoms and cardiac reactivity (e.g., depression and blood pressure). However, empirically derived patterns of emotional responses have not been examined. The present study investigated the existence of empirically derived patterns of emotion to an evaluative stressor and the link between these patterns, blood pressure responses, and depression symptoms.
104 undergraduate students (48 males) completed a 3-minute speech in front of a 2-way mirror and video camera. Emotional responses to the stressor were assessed after using 4 PANAS subscales: fear, shame, sadness, and anger. Depression symptoms were assessed using the CESD. Blood pressure (BP) was assessed continuously throughout the session. Time 1 BP was averaged during the last minute of a 3-minute relaxation period and Time 2 BP was averaged during the speech.
Three patterns emerged as the best fit for the data from a latent class analysis controlling for gender and Time 1 BP: "High Emotion (HE; n=6, 5.8%)" had the highest scores on all subscales; "High Shame (HS; n=21, 20.6%)" had its highest score on the shame subscale; and "Low Emotion (LE; n=77, 73.7%)" had the lowest scores on all subscales. Group differences were found in mean arterial pressure (MAP) change from Time 1 to Time 2: HE>HS (p=0.04), and HS<LE (p=0.05). The HE group had higher depression scores than the other groups (p<0.05).
The results indicate that those who report greater emotion on fear, shame, sadness, and anger scales (HE) after an evaluative stressor may experience greater BP reactivity and increased depression symptoms than those who report lower emotionality or elevated shame alone. The connection between depression and health emphasizes the importance of the results linking pattern and depression symptoms. Results suggest that empirically derived patterns of emotional responses to evaluative stressors may be important in understanding variation in cardiac reactivity.

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## B-203

### PUFF, PUFF, PASS: NORMS AND SELF-EFFICACY PREDICT CANNABIS USE

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The Theory of Planned Behavior (TPB) has been used to explain use of addictive drugs such as alcohol and nicotine, but less research has examined the role TPB-specified constructs play in cannabis use. The goal of the present research was to determine the extent to which attitudes, norms, and self-efficacy predict the initiation, maintenance and increase of cannabis use among a group of college students. Participants (N=129) were classified into one of three categories: abstainers (n=45, have never used cannabis), infrequent users (n=41; on average smoke less than four times per month), and frequent users (n=43; smoke more than five times per week). Cannabis use and related TPB constructs were assessed at baseline and again at a 12-month follow-up session. Results show that among infrequent users, self-efficacy to resist use and descriptive norms of peer use significantly predicted change in cannabis use. Specifically, lower self-efficacy and more positive norms at baseline predicted greater cannabis-use 12-months later. These findings highlight the impact of social-cognitive contexts on substance use among college adolescents, an age group at greater risk for developing substance use problems.

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## B-204

### CORRELATES OF SUBSTANCE USE AMONG AFRICAN AMERICAN ADOLESCENT WOMEN

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Adolescent substance use continues to be a major public health concern, influencing development and resulting in significant health consequences that may continue throughout their adult years. Prevalence data from national surveys conducted in 2006 and 2007 indicate that use of illicit substances for youth between ages 12-17 have not declined. Research continues to confirm the complexity of factors influencing drug use decisions, such as individual factors, relational/interpersonal dynamics, and societal forces. To date there is a paucity of research examining these factors and their influence on drug use among African American adolescent women. The purpose of this study was to assess the prevalence of substance use and to examine the correlates of use in this population.

Participants include a clinic-based sample of African American women between ages 14 and 20. Participants completed an audio-assisted computerized interview assessing sociodemographic characteristics, sexual history, substance use behavior, and psychosocial characteristics.

The study sample comprised 701 females with a mean age of 17.62 (sd= 1.66). Of these, 87.7% reported substance use, defined as having ever used marijuana, alcohol, ecstasy/GHB, and/or methamphetamines. Half of participants came from low income families receiving some form of public government assistance. A multivariable logistic regression analysis controlling for covariates suggests that individual factors such as history of abuse (AOR=3.00; p=.0001), and multiple sex partners (AOR=4.10; p=.0001), interpersonal/family factors such as having older sexual partners (AOR= 2.10; p=.006) and lack of parental monitoring (AOR=1.14; p=.025) as well as social factors such as experiences of racial discrimination (AOR= 2.45; p=.002) were significant predictors of substance use.

Findings of this study extend prior research suggesting that future efforts to reduce substance use among young African American women must consider not only individual level risk factors but also interpersonal dynamics and social stressors, particularly those affecting minority groups such as racial discrimination.

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## B-205

### OVERESTIMATION OF DRINKING NORMS AMONG COLLEGE STUDENTS: THE CASE OF CELEBRATION DRINKING VERSUS DRINKING IN GENERAL

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Background: The problematic drinking patterns among college students are serious cause for concern on college campuses as the use and misuse of alcohol and the resulting negative consequences are widely documented. The college environment, be it peer influence or the availability of alcohol, is a contributing factor to the prevalence of alcohol related problems among college students. Nationally, 18% of college students were likely to have suffered from clinically significant problems associated with alcohol misuse in the last year. Given the harmful outcomes associated with high-risk drinking, it is imperative to identify situations and influences that contribute to precarious alcohol consumption. Moreover, it is advantageous when designing intervention programs deterring high-risk alcohol consumption to recognize specific drinking behaviors, influences and occasions that may contribute to alcohol-related tragedies. Therefore, this study explored misperceptions of celebration drinking and general drinking norms in a college population. Participants (n=287) were traditional college students. Methods: A stratified random sample was drawn and an online questionnaire was developed to assess personal drinking behavior, in celebration and in general, and perceived drinking norms. Results: Significant misperceptions exist among students regarding their perception of the drinking patterns and behaviors displayed by their peers both in general and during celebration events. Overestimation is more prevalent for celebration drinking than for drinking in general; however, predictors of overestimation remain consistent. The odds of being an over-estimator are greater for out-of-state residents, frequent drinkers, and students with lower GPA's. Conclusion: Misperceptions held by students are a cause for concern and effective strategies should be implemented to correct them especially for celebration events. Correcting misperceptions will likely lead to a reduction in the amount of alcohol consumed and subsequently the associated harmful outcomes.

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## B-206

### READINESS FOR DRUG TREATMENT AS HIV PREVENTION AMONG TANZANIAN HEROIN INJECTORS

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Our studies in Tanzania indicate that injecting heroin is rapidly becoming the preferred method for ingesting drugs, especially among drug users less than 25 years old. In Dar es Salaam, risky needle use and sexual behaviors are common among injection drug users (IDUs), half of injectors are infected with HIV, and almost 50% of used needles contain HIV. Drug treatment of any kind is extremely rare in sub-Saharan Africa and it is unclear whether drug treatment as HIV prevention would be acceptable or efficacious for Tanzanian IDUs. This formative research was conducted to determine the potential for drug treatment as an HIV prevention intervention in Tanzania. Survey data were collected from 87 male and 39 female heroin injectors in Dar es Salaam. Measures included demographic characteristics, recent heroin use, and drug problems, serious health issues, drug use affecting health and drug use out of control, and readiness for drug treatment scales. Respondents were poor, working an average of 18 days in the month before the interview and receiving an average monthly income of less than 60,000 TZ shillings ($36 U.S.). Participants injected heroin an average of 29 days per month. Virtually none of the respondents had a history of treatment for psychological problems. Scales ranged from 0 to 4. The average rating on the drug problems, serious health issues, drug use affecting health and drug use out of control scales were 3.94, 3.17, 3.76, and 3.82 respectively. The average score on the readiness for treatment scale was 4.0. The vast majority of IDUs interviewed for this study recognized injecting heroin was causing serious health problems and that their drug use was out of control. All said they were ready to engage in drug treatment. Because drug treatment is so new in sub-Saharan Africa, it is clear IDUs are ready for treatment, but unclear whether they understand what opioid substitution therapy is or what drug treatment involves.

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## B-208

### COPING STYLE, WELLBEING, AND MEDICAL FACTORS AMONG PATIENTS WITH HEPATITIS C AWAITING LIVER TRANSPLANTATION

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Few studies have investigated the relationship between coping style and mental/ physical health among individuals waitlisted for transplantation. This exploratory study examined the relationship between coping style and mental/ physical wellness among patients with Hepatitis C (HepC) awaiting liver transplantation. Thirty-eight UNOS waitlisted liver transplant candidates from a single transplant center with End Stage Liver Disease (ESLD) due to Hepatitis C (HepC) completed psychological, psychosocial, and quality of life questionnaires. Descriptive and frequency statistics were conducted to describe demographics. Bivariate Pearson correlations were conducted to examine relationships between biopsychosocial variables.

Participants (70% male, 82% Caucasian) had mean age and years of education of 56.92 (SD=7.82) and 13.46 (SD=2.37) respectively. Perceived wellbeing was associated with stress level (r=-.36, p<.05), psychological resiliency (r=.63, p<.001), depression (r=-.82, p<.001), and total mental (r=.84, p<.001)/ physical (r=.73, p<.001) health. Wellbeing was also related to ProbleM–Focused (PFC) (i.e., taking action: r=.49, p<.01), Emotion-Focused (EFC) (i.e., positive thinking: r=.47, p<.01), and Dysfunctional (DC) (i.e., behavioral disengagement: r=-.42, p=.01) coping styles.

Emotion-Focused Coping (r=-.39, p<.05), PFC (r=-.34, p<.05), and self-distraction (r=-.49, p<.01) were related to MELD score, PFC to encephalopathy (r=-.49, p<.01), and Karnosfsy Status to behavioral disengagement (r=-.38, p<.05), planning (r=.49, p<.01), active coping (r=.36, p<.05), humor (r=.37, p<.05), and physical functioning (r=-.40, p=.01). BMI was related to humor (r=-.33, p<.05) and physical (r=-.35, p<.05)/ mental (r=-.35, p<.05) health.

It is important for healthcare providers to be aware of the significant relationships between coping and wellbeing, mood, and medical factors for those with HepC and ESLD while awaiting, and after, transplant to inform specific treatment plans and supports.

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## B-209

### THE LONGITUDINAL STABILITY OF INDIVIDUAL BARRIERS TO MEDICATION ADHERENCE IN PEDIATRIC ORGAN TRANSPLANTATION

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Higher numbers of barriers are related to lower medication adherence in pediatric transplant recipients, as well as negative medical outcomes such as rejection or death. Although overall level of barriers has been shown to be stable over time, little focus has been given to the stability of individual barriers. Attention to individual barriers can more precisely direct intervention for non-adherence. Interventions to reduce longitudinally stable individual barriers may increase adherence. Our 18-month longitudinal study included 63 parents and 51 adolescents, ages 12-22 (M=17.1, SD=2.4). Transplant types included 39 kidneys, 16 livers, 10 hearts, and one double-lung. Parents and adolescents completed barriers measures (Parent Medication Barriers Scales [PMBS] and Adolescent Medication Barriers Scales [AMBS]) at T1 and T2. Barriers were scored on a 1-5 scale for correlational analyses and dichotomized as endorsed or not endorsed for individual participant analyses. In correlational analyses of 16 PMBS items from T1 to T2, 2 showed no significant relationship, 10 showed a medium relationship (r=.34 to .48), and 4 showed a strong relationship (r=.54 to .62). Of 17 AMBS items, 3 showed no significant relationship, 2 showed a small relationship (r=.28 to .30), 9 showed a medium relationship (r=.31 to .48), and 3 showed a strong relationship (r=.53 to .78). Percentages of parents reporting a barrier at T1 and also reporting it at T2 ranged from 20 to 85.7% per individual barrier. Percentages of adolescents reporting a barrier at T1 and at T2 ranged from 20 to 87.5% per barrier. Results indicate that overall, barriers to medication adherence are stable, even at the individual item level, but the strength of association differs per barrier. Adolescents who experience particular barriers to adherence will likely continue to do so without proper intervention to target highly stable barriers.

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## B-210

### PERSPECTIVES OF TRANSPLANTATION AS SHARED BY AFRICAN AMERICAN DIALYSIS PATIENTS

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Background: The incident rate of end-stage renal disease (ESRD) in the African American (AA) population is 3.7 times greater than that among whites. When analyzed in proportion to ESRD prevalence, Georgia ranks lower than other southeastern states in transplantation of AAs. This pilot study explores AA ESRD patients' decisions to pursue transplantation; and, their experiences with referral and evaluation for transplantation.

Methods: In-depth, personal interviews were conducted among AA patients recruited from Georgia dialysis clinics. Topic areas discussed included: ESRD history, personal experiences with and concerns about transplantation, perceptions and experiences with living donation, lifestyle and ESRD, insurance and financial assistance, relationships with healthcare providers; and, fairness of the dialysis and transplantation system. Participants also completed a questionnaire inclusive of demographics and ESRD/transplantation history.

Results: Seventeen patients from three dialysis clinics participated in this study. Barriers to transplantation were categorized as institutional (e.g., doing time on dialysis, loss of paperwork), system (e.g., socio-economic versus racial disparities), and patient-centered (e.g., financial issues, personal responsibility). Two salient issues pervasive throughout the data were: the realities of transplant economics and the need for improved communication with the patient regarding transplantation.

Conclusions: While optimistic about transplantation, participants identified barriers that not only impede their abilities to make informed decisions but stifle the evaluation process and placement on the transplant waiting list. The findings highlight the need for collaboration within the dialysis/transplant communities to intervene, on behalf of this population, at both the policy and practice levels.

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## B-211

### PREDICTORS OF PSYCHOLOGICAL RESILIENCE AMONG CANDIDATES AWAITING LIVER TRANSPLANTATION

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Patients awaiting liver transplantation have been found to report lower quality of life and increased psychological symptoms compared to other types of organ transplant candidates. Assessment of psychological well-being and coping strategies in these patients is essential for optimizing pretransplant care. This study examined whether coping strategies predicted levels of resiliency in adults with End Stage Liver Disease (ESLD) awaiting liver transplantation.

Participants included 113 UNOS waitlisted liver transplant candidates from a single transplant center. Data was collected using four self-report measures: Beck Depression Inventory (Beck et al., 1983), Connor-Davidson Resilience Scale (Connor & Davidson, 2003), Brief COPE (Carver, 1997), and the Short ForM–36 (Ware et al., 1993). Descriptive and frequency statistics were conducted to describe demographics. Bivariate Pearson correlations were performed to determine associations between variables. A multiple regression analysis was conducted to examine the relationship between predictor variables and resiliency. In the regression model, CD-RISC total scores were entered as the dependent variable, and coping strategies were entered as independent variables.

Results showed significant correlations between resilience and quality of life (SF-36; r=.42, p<.001), depression (BDI; r=-.58, p<.001), ProbleM–focused coping (PF; r=.28, p<.01), Emotion-focused coping (EF; r=.37, p<.001) and Dysfunctional coping (DC; r=-.39, p<.001). Regression analyses revealed that three types of coping strategies significantly contributed to the model (R2=.36; p<.05). EF (t=4.1; p<.001), PF (t=2.1; p<.05), and DC (t=-6.0; p<.001) were statistically significant predictor variables accounting for 36% of the variance in resiliency scores.

Studies examining the relationship between coping style and resilience among transplant candidates highlight the association between stress, emotional adjustment, and health. Clinicians that provide strengths-based, coping-focused interventions may optimize pretransplant quality of life for high risk patients.

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# Friday
# April 13, 2012
# 8:45 AM–10:15 AM

## Symposium 19 8:45 AM–10:15 AM 3000

### INFORMATION PROCESSING AND DECISION MAKING ABOUT CANCER SCREENING: CHALLENGES AND OPPORTUNITIES

Christian von Wagner, PhD[1] and William Klein, PhD[2,3]

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This symposium is organized by the Health Decision Making SIG and features three presentations that will deal with challenges associated with information processing and decision making about cancer screening. The first presentation will introduce different approaches to communication about cancer screening which are based on different assumptions about how people process information and make decisions about participating in cancer screening. It will offer data from a nationally representative survey in the UK to illustrate peoples' preferences for information about risks and benefits and their attitudes towards guided vs. independent decision-making. The second presentation will use US data about public awareness of revised United Preventive Services Task Force (USPSTF) recommendations for breast cancer mammography to demonstrate that despite media attention and public health communication women's knowledge about screening guidelines is low. The third presentation will look more closely at the role of emotions in information processing and describe defensive strategies for dealing with potentially threatening information about cancer risk and how these might be associated with correlates of screening decision making and behaviour (e.g. beliefs, attitudes and intentions). Together the three presentations will bring to the fore important challenges involved in educating the public about cancer screening. The discussant will synthesize take home messages from the presentation and facilitate discussion on different approaches to facilitating informed choice in cancer screening, efforts to increase public awareness and the potential for behavioural science to tackle not only cognitive but also emotional challenges associated with cancer communication and decision making

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## Symposium 19A 3001

### DECISION-MAKING PREFERENCES IN CANCER SCREENING: RESULTS FROM A NATIONALLY REPRESENTATIVE SURVEY

Christian von Wagner, PhD,[1] Craig Jones, BSc,[1] Jo Waller, PhD,[1] Alice Simon, PhD,[1] Vicky Hammersley, BSc,[2] Christine Campbell, PhD[2] and Jane Wardle, PhD[1]

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OBJECTIVE: Screening programmes for breast, bowel and cervical cancer are offered in most industrialised countries. However uncertainty remains over how healthcare providers should best communicate about screening and how they manage the conflict between promoting uptake and respecting patient autonomy. The 'Be Screened' approach aims to maximise uptake with an authoritative recommendation. The 'Analyse and Choose' approach prioritises individual informed choice by offering detailed, research-based information about benefits and risks of screening. Currently, there is a dearth of information about public preferences for these different models of information provision.
METHOD: 2067 UK adults (50-80 years old, 53% women, 47% men) participated in a face-to-face, household survey in July 2011.
RESULTS: Almost 80% of respondents trusted their healthcare provider (in this case the UK National Health Service, NHS) to decide whether a specific form of cancer screening is worth having, and 85% wanted an explicit recommendation to participate. However, trust in the NHS was matched by an equally strong desire to be fully informed about the risks and benefits of screening (74% wanted to receive all available information about benefits and 73% wanted all available information about risks). These proportions were similar across SES groups.
CONCLUSION: The results of this survey suggest that the UK public values a recommendation from their healthcare provider, and accepts a 'Be Screened' approach, but this trust is based on a policy of transparency about the risks and benefits of cancer screening programmes. These observations support an approach that gives a clear healthcare provider recommendation but maintains trust through full disclosure of risks and benefits.

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## Symposium 19B 3002

### AWARENESS DOES NOT EQUATE TO ACCURATE, COMPLETE KNOWLEDGE OF NEW BREAST CANCER SCREENING RECOMMENDATIONS

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BACKGROUND: In November 2009, the United States Preventive Services Task Force issued revised recommendations for breast cancer screening mammography for average risk women; the update recommended individual decision-making between women and their physicians, but against routine screening, for women 40-49, and reduced the recommended frequency for women 50-74 from annual screening to screening every other year. We examined the accuracy of women's knowledge about the updated recommendations.
METHOD: 508 US women ages 40+ took part in a nationwide telephone survey; half were age 40-49 and half were age 50+. The survey was conducted in Nov/Dec 2010, approximately 1 year after the guidelines update. Results reported here are for the subsample of women who reported awareness that changes had been made to screening guidelines (n=212). Those women answered an open-ended question asking what changes had been made to recommendations. Responses were coded for age change and for frequency change by two independent coders. All women completed demographic and socioeconomic status items.
RESULTS: Only 11.9% of "aware" respondents had accurate knowledge about both age (e.g., "start later or start at age 50") and frequency (e.g., "decrease frequency" or "every 2 years"). 17.5% reported that the change was to starting at an earlier age. 13.2% reported that the change was to increase the screening interval. 23% were aware that changes had been made but answered "don't know" to what the changes were. Accuracy was unrelated to age, race, education, or area of the country.
CONCLUSIONS: Despite media attention and public health communications about the guidelines changes, women's knowledge about the changes is quite low. These findings suggest the need to disseminate guideline changes to the general public, and to develop decision aids for women and physicians to initiate discussion of the recommendations, and in those aged 40-50, to clarify patient preferences for mammography.

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## Symposium 19C 3003

### CORRELATES OF DEFENSIVE INFORMATION PROCESSING REGARDING COLORECTAL CANCER SCREENING

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OBJECTIVE: Individuals have a large repertoire of defensive strategies for dealing with personally relevant negative feedback including information about cancer risk. Defensive processes are addressed in a diverse literature and in theoretical models such as the Extended Parallel Process Model, but outside the psychopathological domain, little attention has been paid to the conceptualization and measurement of defenses. We reviewed the broad literature, developed an integrated conceptual model of various defensive strategies, developed and tested measures, and report on various factors associated with these new measures.

METHOD: We conducted two surveys of independent samples of screening-age adults (N=226, 287) to test and refine measures using confirmatory factor analysis. To assess construct validity, additional correlates were measured in survey 2 including CRCS-related constructs (beliefs, attitudes, intentions, prior CRCS), dispositions (e.g., optimism, self-esteem, temporal orientation), coping, affect, social desirability, and trust in doctors.

RESULTS: Our conceptual model informed our development of measures for four stages of defensive information processing (attention avoidance, blunting, suppression, and counterarguing). Final subscales ranged from 3 to 8 items, showed good internal reliability, and demonstrated expected patterns of association with other correlates of colorectal cancer screening more consistently than with general measures of interpersonal differences.

CONCLUSION: Future research is planned to replicate and further validate these scales. We anticipate that the conceptual model and sample measures will increase understanding of defensive processes and can be used in the design and evaluation of future interventions and cancer risk communications to potentially reach and impact more resistant individuals.

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## Symposium 20 8:45 AM–10:15 AM 3004

### MULTIPLE PERSPECTIVES ON THE CANCER EXPERIENCE: ANALYSES OF THE 2010 LIVESTRONG SURVEY FOR PEOPLE AFFECTED BY CANCER

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With advances in early detection and treatment, most cancer survivors can now expect to live for many years after their diagnosis. Research and clinical practice are working to keep pace with these advances in survival, and the specific study of post-treatment survivorship is still relatively new. In this symposium, we will share unique data representing one of the largest efforts to capture survivors' experiences during the post-treatment period.

The first presentation, Experiences with Information Management among People With and Without a History of Cancer, will offer an in-depth look at the cancer information seeking behaviors and experiences of post-treatment survivors and will compare these outcomes to survivors in treatment and to individuals without a personal history of cancer.

Presentation #2, The Physical, Emotional, and Practical Concerns of Latino Post-Treatment Cancer Survivors and their Care Seeking Patterns, will focus specifically on the post-treatment experiences of Latino cancer survivors. This talk will identify the main concerns among this traditionally underserved group and describe how their care seeking patterns differ from survivors in the majority culture.

The third presentation will explore post-treatment experiences of adolescent and young adult (AYA) post-treatment cancer survivors. Post-Treatment Challenges among Adolescent and Young Adult (AYA) Cancer Survivors will identify the unique burden of physical, emotional, and practical concerns among post-treatment AYA survivors as well as highlight strategies for better serving this group.

Finally, a discussion titled The Role of Surveillance in Advancing Post-Treatment Survivorship Research and Practice will link these three presentations together and provide a roadmap for the evolution of this field of study.

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## Symposium 20A 3005

### EXPERIENCES WITH INFORMATION MANAGEMENT AMONG PEOPLE WITH AND WITHOUT A HISTORY OF CANCER

Ellen B. Beckjord, PhD, MPH,[1,3] Kerry A. Reynolds, PhD,[3] Stephanie Nutt, MPA[2] and Ruth Rechis, PhD[2]

[1]University of Pittsburgh, Pittsburgh, PA; [2]LIVESTRONG, Austin, TX and [3]RAND, Pittsburgh, PA.

Background: Health information is necessary, but not sufficient, to successfully navigate a health crisis such as cancer. Here, we compare the information management experiences of post-treatment cancer survivors; individuals undergoing cancer treatment; and individuals without a personal history of cancer.

Methods: Data are from the 2010 LIVESTRONG Survey for People Affected by Cancer. This on-line survey was fielded by LIVESTRONG between June and March 2010. Participants included 4286 post-treatment survivors; 819 people in treatment for cancer; and 6927 individual without a history of the disease. We examined confidence in obtaining cancer information; information seeking; information sources used; and information seeking experiences.

Results: Cancer status was significantly associated with all outcomes ($p < 0.01$); though more than 90% of each group had searched for cancer information, seeking was significantly more common among those personally affected by cancer. Information search experiences were worst among participants without cancer; this difference was largely driven by more concerns about information quality and more difficulty understanding cancer information. More than 70% in each group reported to use the Internet first in their most recent search; however, those in treatment for cancer were the most likely to have used their health care provider first (HCP), but this figure was low (17%). Search experiences were worse among those who used the Internet compared to those who used a HCP. Confidence in obtaining cancer information was generally high, but significantly lower among those without a personal history.

Conclusions: Respondents were highly engaged with cancer information; however, these results replicate previous research showing that cancer information seekers without a personal history of the disease tend to have worse search experiences, and also that the Internet is more commonly used, but less satisfying, in cancer information searches compared to HCPs.

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## Symposium 20B 3006

### THE PHYSICAL, EMOTIONAL AND PRACTICAL CONCERNS OF LATINO POST-TREATMENT CANCER SURVIVORS AND THEIR CARESEEKING PATTERNS: EVIDENCE FROM THE 2010 LIVESTRONG SURVEY

Sarah Arvey, PhD,[1] Ellen Beckjord, PhD, MPH,[2] Ruth Rechis, PhD,[3] Stephanie Nutt, MA[4] and Kerry Reynolds, PhD[5]

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Background: Few studies have focused Latino cancer survivors and how their post-treatment concerns and careseeking patterns differ from other ethnic groups.

Methods: Of the 4286 post-treatment survivors who completed the online2010 LIVESTRONG Survey for People Affected by Cancer; 190 reported to be Latino (average age=44 (SD=13). Survivors reported 14 physical concerns (e.g., pain, fatigue), 8 emotional concerns (e.g., emotional distress, fears of recurrence), and 4 practical concerns (e.g., employment problems; debt) that began after their cancer diagnosis. Bivariate analyses examined the prevalence of each concern, number of concerns in each category, and careseeking patterns by ethnicity status (Latino/Not Latino).

Results While Latino survivors' physical, emotional and practical concerns did not differ significantly from the larger group, yet meaningful differences in patterns of care did. Specifically, Latino survivors were less likely ($p < 0.05$) to have used their PCP as a source of care for emotional concerns and were less likely to have used their oncologist as a source of care for physical concerns, compared to non-Latino survivors. Further, Latino survivors were significantly more likely ($p < 0.05$) than others to seek care for practical concerns from their oncologists, friends and family.

Conclusions: Data suggests Latino survivors may be less likely to rely on medical sources of care for physical and emotional concerns, but more likely to seek care from the health care system and family and friends for practical concerns compared to non-Latino survivors. Results have important implications for survivorship care delivery among Latinos.

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## Symposium 20C 3007

### POST-TREATMENT CHALLENGES AMONG CANCER SURVIVORS DIAGNOSED AS ADOLESCENTS AND YOUNG ADULTS

Kerry A. Reynolds, PhD,[1] Ellen B. Beckjord, PhD, MPH,[1,2] Stephanie Nutt, MPA[3] and Ruth Rechis, PhD[3]

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Background. The physical, emotional, and practical concerns of post-treatment cancer survivors diagnosed in adolescence and young adulthood (AYAs) have not been well documented in large scale studies. The current study investigates the prevalence of these concerns among AYAs and examines how these concerns compare to those of older survivors. Methods. Data are from the 2010 LIVESTRONG Survey for People Affected by Cancer. Participants included 3898 post-treatment cancer survivors, 35% of whom had been diagnosed between the ages of 15 and 39 (AYA survivors). We examined 14 physical concerns; 8 emotional concerns; and 4 practical concerns that had a post-treatment onset. Results. Despite being significantly younger at the time of the survey, AYA survivors reported an equal number of post-treatment physical concerns as those diagnosed at 40 or older. AYA survivors also reported significantly more emotional concerns, and more problems with health insurance. Receipt of care for concerns was low in both groups, but AYA survivors were more likely to have received care for emotional (55%) and practical (25%) concerns compared to those diagnosed at older ages (49% and 16%, respectively). Among AYAs, physical concerns were more common among those who were female, had longer times since diagnosis, and who received chemotherapy. Emotional concerns were higher for women, younger survivors, and those who received chemotherapy with either surgery and/or radiation. Conclusions. AYA survivors face many physical, emotional, and practical concerns, and these concerns persist for years after their cancer diagnosis. The finding that AYA survivors report the same burden of concerns compared to their older counterparts - and more concerns in some areas - is cause for concern and represents an urgent call to action. AYA survivors may require increased support, services, and resources to overcome cancer related challenges as their survivorship journey continues into older adulthood.

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## Symposium 21 8:45 AM–10:15 AM 3008

### INNOVATIVE APPROACHES TO LONG-TERM WEIGHT MANAGEMENT: RETHINKING THE INITIAL TREATMENT PHASE

Lesley D. Lutes, PhD,[1] Deborah F. Tate, PhD,[2] Michaela Kiernan, PhD[3] and Lenord H. Epstein, PhD[4]

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The current gold standard of obesity treatment consists of two main components: an initial intensive behavioral weight loss phase focused on adhering to a low-calorie diet and a moderate to high exercise program, followed by a continuous-care model of long-term follow-up. While initial significant weight loss is achieved, long-term weight maintenance remains elusive. Examining alternative treatment approaches, particularly during the initial treatment phase, may have significant implications on long-term maintenance. This symposium will describe three very different, even controversial, treatment approaches to the study of long-term weight management that involve rethinking the initial treatment phase. All approaches are informed by theory, utilize systematic research designs, utilize large-scale clinical trial samples, and have promising initial results. The first presentation will describe an intervention that removes traditional restrictive and pre-set dieting guidelines and examines the effectiveness of a patient-driven, small changes treatment approach to initial weight loss. The second presentation will describe an intervention that differentiates between the skills needed for weight loss and maintenance but reverses the typical sequence for acquiring those skills to promote a mastery experience. The third presentation will describe an initially lower-intensity intervention that optimizes the efforts of participants and staff, increasing when needed, and may perform as well as a standard high-intensity intervention. Data will be presented that ranges from initial 3-month weight loss to 18-month outcomes. The goal of this symposium is to promote the rethinking of treatment approaches aimed at long-term weight loss maintenance - which can include modifying the initial treatment approach.

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## Symposium 21A 3009

### A STEPPED-CARE BEHAVIORAL WEIGHT LOSS INTERVENTION: 18-MONTH RESULTS OF AN RCT

Deborah F. Tate, PhD,[1] Kelli Davis, PhD,[2] Kristen Polzien, PhD,[1] Karen E. Erickson, MPH, RD,[1] Amy D. Rickman, PhD, RD,[2] Wei Lang, PhD[3] and John M. Jakicic, PhD[2]

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Behavioral interventions involving substantial lifestyle modification (SBWL) are evidence-based therapies for weight loss. However, the intensive nature of these programs limits dissemination. An alternative approach is a stepped-care intervention (SC) that begins with a lower intensity approach and intensifies the intervention only when the patient fails to respond to lower intensity approaches.

Participants were randomized to either SBWL or SC and prescribed standard energy intake and physical activity goals. SBWL met weekly for group sessions for 6 months, met bi-weekly for months 7-12, and met monthly for months 13-18. SC attended 1 session per month for 18 months, with increases in intensity of contacts at 3 month intervals if predetermined weight loss goals were not achieved. Weight loss goals were 5% at 3 months, 7% at 6 months, and 10% at 9, 12, 15, and months.

Participants (n=364) were age 42.2±9.0 years, BMI of 32.9±3.6 kg/m2, 68% white, and 83% female. Weight loss at 18 months was not significantly different between SBWI (8.5±8.7 kg; 9.2±9.3%) and SC (7.7±8.1 kg; 8.2± 8.5%). There was no significant difference between groups for the percent of participants achieving >5% (SBWI=61.7%; SC=64.0%, p=0.70), >7%, (SBWI=51.7%; SC=54.7%, p=0.63), or >10% (SBWI=45.0%; SC= 37.4%, p=0.22) weight loss at 18 months. There was no significant difference between groups for attrition at 18 months (p=0.662).

Both SBWI and SC were effective at reducing weight at 18 months, with an average weight loss of 8-9% and the non-significant difference between groups being 0.8 kg. If shown to be more cost-effective, SC may provide an alternative that is feasible to implement in a variety of healthcare settings. Future investigations may find ways to improve the SC approach.

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## Symposium 21B 3010

### PROMOTING HEALTHY WEIGHT WITH 'STABILITY FIRST': 18-MONTH MAINTENANCE RESULTS

Michaela Kiernan, PhD,[1] Susan D. Moore, PhD,[1] Danielle E. Schoffman, BS,[1] Katherine Lee, MS,[1] Abby C. King, PhD,[1] C Barr Taylor, MD[1] and Michael G. Perri, PhD[2]

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We describe the 18-month results of a randomized trial that examined whether learning a novel set of 'stability skills' before losing weight improved long-term weight management. Individuals may need to learn stability skills that optimize current satisfaction with lifestyle and self-regulatory habits, i.e., without feeling deprived (relative deprivation theory) and regulating the balance among eating, activity, and weight with minimum effort and attention (limited resources theory). Also, they may be more successful at maintenance if they learn stability skills before losing weight, capitalizing on initial motivation and providing a mastery experience for stability (social cognitive theory). Obese women (N=267, BMI 32.1±3.5, 48.4±10.8 years, 66.3% White) were randomly assigned to one of two 6-month interventions. Maintenance First women participated first in a novel 8-week stability skills maintenance module, then in a standard 20-week weight-loss program. Weight Loss First women participated first in a similar 20-week weight-loss program, then in a standard 8-week probleM–solving maintenance module. There was no intervention staff contact during the 1-year follow-up, only 6, 12 and 18-month assessments. Trial retention was excellent, 93.3% were weighed at 18 months with no intervention difference (p>.38). As designed, Maintenance First women lost the same percent of initial weight at 6 months as Weight Loss First women (M=-8.6%±5.7 vs. M=-9.1%±6.9, p=.52). However, Maintenance First women gained back significantly less weight from 6 to 18 months than Weight Loss First women (M=3.3±10.4 lbs vs. M=7.3±9.9 lbs, p<.001, d=0.4). Indeed, almost twice as many Maintenance First women displayed a 'model' pattern of weight change than Weight Loss First women (32.6% vs. 17.8%, p<.005), i.e., lost ≥5% of initial weight at 6 months and gained <5 pounds at any time point from 6 to 18 months. Trial results have exciting practical and theoretical implications for long-term health behavior change.

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## Symposium 21C 3011

### IMPACT OF A SMALL CHANGES TREATMENT APPROACH WITH VETERANS: 3-MONTH RESULTS FROM THE ASPIRE-VA RCT

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A small changes treatment approach to weight loss focuses on individuals making small but manageable changes in their daily nutrition and physical activity to minimize the weight regain that is common with traditional behavior therapy. While clinical trials suggest that this is a promising strategy to prevent weight regain, less is known about its effectiveness in promoting weight loss and maintenance. ASPIRE-VA is a multi-site, randomized trial to test the effectiveness of a small changes treatment approach focused on patient-driven changes, relative to baseline patterns, that would result in slower initial but continued weight loss over time among Veterans. Participants recruited at two Veterans Affairs (VA) health care systems were randomized to one of three 12-month programs: 1) ASPIRE-VA via phone; 2) ASPIRE-VA via face-to-face group; or 3) usual care VA weight management. We report results for the first 3 months of treatment, which consisted of weekly sessions with an undergraduate level lifestyle coach (small changes arms) or a multidisciplinary treatment team headed by a registered dietician (usual care VA). Participants (n=356) were predominantly male (87%), non-Caucasian (54%), and obese (BMI=36.44 kg/m2), with a high prevalence of type 2 diabetes (61%). At 3 months, all arms experienced significant weight loss (-1.49kg, -1.39%; -2.0kg, -1.69%; and -1.45kg, -1.25%, respectively; ps<.001) with no significant differences between groups (ps>.62). However, participants in the two ASPIRE-VA treatment arms completed significantly more sessions compared to usual care (7.8, 6.8, and 3.5, respectively; p<.001). In summary, three-month results suggest that ASPIRE-VA promotes weight loss and engages Veterans in treatment.

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## Symposium 22 8:45 AM–10:15 AM 3012

### USING REAL-TIME MOBILE PHONE TECHNOLOGIES IN PHYSICAL ACTIVITY AND EATING BEHAVIOR RESEARCH

Genevieve F. Dunton, PhD, MPH,[1] Susan M. Schembre, PhD, RD,[1] Eric Hekler, PhD,[2] Stephen Intille, PhD[3,4] and Audie Atienza, PhD[5]

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Advances in mobile phone technologies have created opportunities for real-time assessment and intervention in physical activity and eating behavior research. Common smartphones are capable of running applications that trigger electronic surveys, measure body movement, indicate geographic location, and provide real-time feedback. Smartphones are becoming more ubiquitous, affordable, and easy to use, and thus have the opportunity to reach large numbers of people. Thus symposium will describe how mobile phone technologies can enhance eating and physical activity research by gathering real-time self-report and objective information about perceptions, mood, contexts, and behaviors. It will discuss how real-time methods can be used to predict obesogenic eating patterns from situation-specific and environmental factors. This session will also explore the use of commercially available (e.g., Calorific and Zen Reminder) and custom mobile phone applications to promote behavior change in eating and physical activity. Presenters will discuss programming and design issues related to the integration of multiple phone features (e.g., motion sensor, location system, camera, external wireless sensors) to provide context-sensitive prompting and feedback. An example will be provided of an application under development to trigger electronic surveys based on real-time location and motion information. Practical, ethical, and financial challenges associated with deploying real-time mobile phone technologies will be discussed. Overall, this symposium will stimulate discussion on the capacity of real-time mobile phone technologies to enhance obesity prevention research.

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## Symposium 22A 3013

### USING ECOLOGICAL MOMENTARY ASSESSMENT TO PREDICT MALADAPTIVE EATING EVENTS

Susan M. Schembre, PhD RD,[1] Stefan Keller, PhD,[2] Genevieve Duntun, PhD[1] and Donna Spruijt-Metz, PhD[1]

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There is a clear interest and need to understand how aspects of today's environment influences patterns of eating that promote excessive weight gain and obesity, from childhood/adolescence through adulthood. However, given the methodological complexities of collecting data on person-specific states and environmental factors that motivate maladaptive eating behaviors, our ability to identify what truly predicts these behaviors has been limited. Though ecological momentary assessment (EMA) is not a new concept, its' integration with user-friendly and ubiquitous technologies (e.g., mobile phones) allows researchers to more easily collect these complex types of data. This presentation will describe how EMA is being used in the area of eating behavior to understand the psychological, physiological, and environmental predictors of disordered eating, both clinical and non-clinical. Results from a pilot study, Project TwEATs (Text with Ease Appetite Tracking System), in 33 young adults (70% women, 30% overweight/obese), will be used to demonstrate the influence of stress as a predictor of eating events occurring in the absence of hunger using multi-level analyses. Project TwEATs implemented two types of EMA reports. Participants were asked to report current stress and hunger ratings in response to automated, hourly text-message prompts (signal-related reports, n=2,743) during waking hours for 7-days and kept a record of their eating events (event-related reports, n=784), that included time/day, perceived meal size, as well as their pre-meal hunger and stress ratings. Over the seven days, 231 eating events (7.0±6.2 per person) were reported to occur in the absence of hunger. Using these data, we will explore whether level of stress, the variation in stress ratings, or increasing trajectories of stress are significantly associated with 'eating in the absence of hunger'. Results will reveal the extent to which stress influences eating in the absence of hunger, which has been implicated in excessive weight gain.

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## Symposium 22B 3014

### DEVELOPING CONTEXT-SENSITIVE ECOLOGICAL MOMENTARY ASSESSMENT ON MOBILE PHONES: EXAMPLES FROM PILOT PROJECTS

Stephen Intille, PhD, Tony Lazenka, BA and Kyle Bechtel, BS

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Context-Sensitive Ecological Momentary Assessment (CS-EMA) software for mobile phones permits timely triggering of tailored self-report questions based upon automatic detection of a person's behavior or context using the phone's sensor system. Sensors that may be used include the phone's internal motion sensor (accelerometer), location sensor (GPS and cell tower positioning), proximity sensor, light sensor, and audio sensor, as well as data on phone usage that can be automatically gathered (e.g., initiation of phone calls, texting) and information captured by external wireless sensors, such as motion sensors and heart rate monitors. Self-report questions can be triggered in response to sensed physical activity (or lack thereof) or in response to major changes in location. Context-sensitive EMA might reduce the burden of self-report, especially because software applications can be designed in a fun and lighthearted way that encourages additional reporting and offsets the annoyance of interruption.

We will highlight the benefits and challenges of CS-EMA, using examples gathered from pilot projects deploying the technology on Android mobile phones for health behavior measurement and intervention. In one project, questions are triggered immediately after a potential "stressful event," detected when heart rate increases are detected that do not have a corresponding increase in physical activity (as detected by a wearable external heart rate monitor and wireless motion sensors). In another project, tailored questions are triggered in response to patterns of physical activity as measured by the phone's internal motion and location-finding sensors. We will discuss practical issues investigators using this technique must consider, such as dealing with prompting based on noisy sensors and power-management issues on mobile devices.

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## Symposium 22C 3015

### COMPARISON OF CUSTOM SMARTPHONE APPLICATIONS VERSUS COMMERCIALLY AVAILABLE OPTIONS FOR TESTING MECHANISMS OF BEHAVIOR CHANGE

Eric B. Hekler, PhD,[1] Frank X. Chen, BS,[2] Shauna Shapiro, PhD[3] and Abby King, PhD[1]

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Background: Smartphones and other technologies offer exciting new opportunities for testing behavior change theories. A traditional method for testing theories would involve developing and testing custoM–designed interventions. This customizability comes at a great cost as resources (e.g., money, time) must be dedicated to programming before any behavioral tests can be accomplished. A search for “exercise” applications completed on 9/11/2011 on Google’s Android application market returned 2852 applications. Although these applications are largely untested, if they could be validated and linked with theoretical models of behavior change, they could offer a wealth of “experimental manipulations” of theoretical constructs. Objective: In this presentation, the author will discuss lessons learned related to developing and testing custom smartphone applications compared to using commercially available options for testing theories of behavior change. Methods: The discussion will be based on two research trials. The first was a pilot study comparing the efficacy of three theoretically-informed, custoM–built smartphone applications focused on promoting increased physical activity and decreased sedentary behavior to a commercially available smartphone application focused on promoting more healthful food (i.e., Calorific). The second trial was a pilot study exploring the utility of the Zen Reminder iPhone application as an agent for promoting increased mindfulness and subsequent improvements in diet and exercise. Results: Preliminary results suggest that commercially available applications do not appear to promote behavior change, but may still be valuable as "prototypes" for later development. Implications: Participants of this presentation will learn about the pros and cons of developing custom applications versus using commercially available applications for testing mechanisms of behavior change.

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## Symposium 23 8:45 AM–10:15 AM 3016

### TRANSLATING PHYSICAL ACTIVITY AND WEIGHT MANAGEMENT RESEARCH INTO POPULATION-LEVEL HEALTH CARE INTERVENTIONS

David E. Goodrich, EdD,[1,2] Caroline R. Richardson, MD,[1,2] Mathew P. Buman, PhD,[3] Kenneth R. Jones, PhD[4] and Michael G. Goldstein, MD[4]

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The Society of Behavioral Medicine and the American College of Sports Medicine (ACSM) recently began a professional partnership, identifying the Exercise is Medicine® initiative as an area of mutual interest. The goal of this initiative is to promote the health benefits conferred by regular exercise participation by supporting the integration of evidence-based physical activity and weight management programs into routine medical care. However, translating successful clinical trial interventions into programs that can be effective in real world medical settings has been a long-standing challenge. This symposium will present two case studies to compare the successes and practical challenges to implementing physical activity and weight management programs on a scale that yields a population health benefit. Dr. Richardson will discuss the application of new e-health technologies by profiling the case of the Blue Care Network of Michigan to adopt an innovative internet-mediated walking program offered by a managed care company for personalized obesity risk reduction. Dr. Jones will summarize lessons learned from implementing the largest weight management program in the U.S. through the integrated healthcare system of the Veterans Health Administration. Dr. Buman will summarize the history of the Exercise as Medicine initiative and identify a roadmap for SBM and ACSM to support the translation of effective research lifestyle trials into programs for real world dissemination. Finally, Dr. Goldstein, a pioneering researcher of exercise prescription in primary care settings, will discuss the work presented and implications for future efforts for large scale implementation of physical activity and weight management programs.

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## Symposium 23A 3017

### ADVANCING AN EVIDENCE-BASED POPULATION-LEVEL PHYSICAL ACTIVITY PROGRAM FOR THE EXERCISE IS MEDICINE® INITIATIVE

Matthew P. Buman, PhD,[1,4] David E. Goodrich, PhD,[2] Caroline R. Richardson, MD,[2,3] Barbara E. Ainsworth, PhD, MPH[1] and Abby C. King, PhD[4]

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In March 2011 the Society of Behavioral Medicine (SBM) began a collaborative relationship with the American College of Sports Medicine (ACSM) to enhance ACSM's Exercise is Medicine® (EIM) initiative. The objectives of the EIM initiative are to make physical activity a “vital sign” that is routinely assessed at every patient interaction and to include physical activity when designing patient treatment plans. SBM is partnering with ACSM to more fully develop the program referral process and access to evidence-based behavioral interventions. The goals of the SBM–ACSM partnership are to identify evidence-based interventions that are scalable at the population level and have the potential to cut across a wide range of healthcare delivery settings, and identify and/or develop the most effective types of referral systems to enact the link between the primary care office referral and program delivery source. A key challenge for this partnership is that well-controlled interventions tested for dissemination often are not easily adapted for large scale implementation in complex health management systems. In this presentation we will summarize the history and goals of the EIM initiative, discuss the unique and shared roles that SBM and ACSM members are playing to move it forward, and provide an overview of the progress of this joint initiative. In particular, the process of developing priorities along with providing examples of the types of evidence-based physical activity programs that have promise for population-level dissemination across communities and healthcare settings will be discussed. Methods to enhance the referral process (e.g., providing brief training to providers, integrating physical activity referrals into the electronic record, automating referral decision-making) will also be discussed.

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## Symposium 23B 3018

### WEIGHT MANAGEMENT IN A LARGE, INTEGRATED HEALTH SYSTEM: THE VETERANS HEALTH ADMINISTRATION EXPERIENCE

Kenneth R. Jones, PhD, Leila Kahwati, MD, MPH, Trang Lance, MPH, Susi Lewis, MPH, Lynn Novorska, RD, LDN, Sophia Hurley, MSPT and Linda Kinsinger, MD, MPH

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In 2006, the MOVE!® Weight Management Program was implemented to provide weight management (lifestyle modification of diet and physical activity) for overweight/obese patients served by the Veterans Health Administration (VHA). As the largest national weight program of its kind, MOVE! policy development and oversight are carried out nationally while facilities implement services locally. MOVE! is provided at every VHA medical center and over one-half of community-based outpatient clinics. This presentation will focus on the successes and challenges of MOVE! implementation identified from five years of program evaluation. Data collected from a variety of sources including administrative and clinical data, annual facility reports, and patient surveys have provided rich information. Participation in at least one MOVE! visit has doubled since implementation began, but stabilized at 9-12% in recent years. Among the 23,558 patients (Mean BMI=35.8) with available FY 2010 data, 17.2% achieved 5% or greater weight loss after six months whereas 25.3% of a subset of 5,884 who participated in more intense and sustained care (8 visits over at least 4 months) achieved 5% weight loss. MOVE! group-based treatment is increasingly utilized (72% in FY 2010); but more than half of patients had only 1-2 visits, with decreased interest/motivation as the most common reason to discontinue care. Program evaluation has also shed light on practical lessons to inform policy, program development, and guidance to the field. Best practices, identified through qualitative comparative analysis include the use of a group-based care model, a standardized curriculum, and other quality improvement strategies. The impetus for newer treatment modalities (tele-health) will be discussed in the context of behavioral medicine initiatives to deliver more patient-centered care. Findings will also be compared to other primary care setting to inform similar initiatives.

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## Symposium 23C 3019

### LARGE SCALE IMPLEMENTATION OF AN INTERNET-MEDIATED WALKING PROGRAM FOR OBESE INSURED ADULTS

Caroline R. Richardson, MD,[1,2] Donna Zulman, MD,[3] Ryan Smith, BS[1] and Laura Damschroder, MS MPH[2]

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The Diabetes Prevention Program Study (DPP) demonstrated the effectiveness of lifestyle interventions for the prevention of type 2 diabetes. However, large scale implementation of such interventions remains a challenge. This mixed methods study illustrates the barriers, solutions and successes associated with the implementation of an internet-mediated walking program for obese individuals. A health insurance company sponsored program (Blue Care Network's Healthy Blue Living) in collaboration with a commercial company that delivers a low-cost pedometer-based and internet-mediated walking program (walkingspree.com), offered the program to insured obese adults. Administrators involved in the program implementation were interviewed to document details of implementation decisions, barriers to implementation, and successful strategies for overcoming barriers. Participants who choose to enroll in the walking program wore the program supplied enhanced pedometer and uploaded step-count data regularly. Participants who successfully met the program goal of averaging at least 5,000 steps per day received financial rewards in the form of substantial premium discounts. Administrators reported barriers related to information technology, communication, legal and policy related restrictions, and customer service. Between October 2010 and July 2011, 6496 obese insured adults enrolled in the walking program. Of the 5669 individuals who had been enrolled in the program for at least 90 days prior to July 27, 2011, 96.2% uploaded step-counts regularly and met the 5000 step-count program minimum. Automated internet-mediated lifestyle change interventions can be successfully disseminated on a large scale. However, program administrators face barriers to implementation not apparent in smaller scale implementation studies.

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## Symposium 24 8:45 AM–10:15 AM 3020

### ONGOING SUPPORT FOR HEALTH: IMPACTS OF "ORGANIZATIONAL HOME" ON SUSTAINABILITY OF PEER SUPPORT PROGRAMS

Renee I. Boothroyd, PhD, MPH,[1] Monika Safford, MD,[2] Amireh Ghorob, MPH,[3] Lyndee Knox, PhD[4] and John Elder, PhD, MPH[5]

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Disease management requires ongoing support to address dynamic, evolving, "real world" conditions that influence behavior. Even with clinical care and patient education, people often find themselves on their own to implement and sustain self-management efforts. Amidst evidence of peer support's contribution to health, sustaining such programs and improved outcomes greatly depends on specific features of organizational and community contexts. In addition to well-defined program models, scaling-up peer support programs requires attention to features of the "innovator" - organizations (e.g., infrastructure, leadership, climate), people (skills, capacities, needs), and resources (technical and fiscal). Here we describe three organizational-home cases as part of Peers for Progress, a program of the American Academy of Family Physicians Foundation to promote peer support in prevention and health care. In San Francisco, peer coaches ended up delivering support in the community rather than with clinic teams; in rural Alabama, peer advisors liaised with community coordinator champions to deliver ongoing support to people with diabetes; and within a San Antonio, TX medical home system, care companion programs are expanding from 15 to 22 practice sites. Each project will describe their experience establishing peer support programs with organizational and community partners, and present lessons (e.g., linking with medical homes, staff, and processes) and key questions (e.g., addressing ongoing training needs, finding stable funding, crafting business cases) for sustaining and scaling-up such programs within particular organizational homes . Discussion will explore goals, strengths, and challenges associated with any organizational home for peer support, including coverage/reach of services and maintaining critical linkages among community and clinical communication and referral systems.

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## Symposium 24A 3021

### SUSTAINING PEER SUPPORT FOR DIABETES IN A RESOURCE-POOR RURAL COMMUNITY WITHOUT A WELL-ESTABLISHED PEER SUPPORT PRESENCE

Monika Safford, MD

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Peer support can help individuals with chronic diseases succeed at self-management. Yet peer support traditions for health are not widespread in communities such as those in the rural Deep South, where diabetes is highly prevalent. Establishing sustainable diabetes peer support programs in such communities is challenging: Southern rural communities often have more than one-third of their residents living below the federal poverty line; distance barriers are considerable; and education systems are suboptimal, with Alabama consistently ranking among the worst primary school education systems in the US. We describe our efforts at working with community members and organizations in largely African American, rural Alabama communities to sustain a well-received diabetes peer support program that was initially grant-funded. Key lessons include the importance of engaging and partnering with the medical community, even though the programs are not based in medical practices; seeking out and working with established community-based programs or organizations that could be home bases for peer support programs; and engaging key community member champions to promote peer support for diabetes. Ongoing challenges include obtaining financial support for peer advisor training and administrative and organizational infrastructure needs. We share our perspectives as we continue to move toward the goal of ongoing peer support for diabetes in these communities.

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## Symposium 24B 3022

### WHY PEER SUPPORT BELONGS IN PRIMARY CARE

Amireh Ghorob, PMH, David Thom, MD, PhD and Thomas Bodenheimer, MD

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In 2009, 25 low-income patients with diabetes received 36 hours of training in health coaching and the fundamentals of diabetes, hypertension and hyperlipidemia. In 2010-2011, these peer coaches interacted with patients having poorly-controlled diabetes. The peer coaches were patients at one of 6 safety-net primary care clinics, and the patients they coached were generally from the same clinic. However, with some exceptions, the peer coaches were not well-accepted as members of the primary care clinic teams. The interactions between the peer coaches and patients generally took place by telephone or as meetings in the community rather than in the clinic. Only rarely did peer coaches attend patients' clinician visits. Even though the project intended to be primary-care-based, it turned out that the coaches were not closely linked with the primary care clinics. This situation created serious problems in the coaching relationship. Most patients did not know their HbA1c, LDL-cholesterol, or blood pressure levels, which made it difficult for the peer coaches to have meaningful discussions on how to bring these levels to goal. The peer coaches did not know the clinicians' treatment plan because the patients often did not understand the plan, making it impossible for the peer coaches to help the patients understand and agree with the treatment plan. The peer coaches were at times frustrated because they were not part of the clinic health care team. This project both demonstrates the challenges and suggests the advantages of embedding peer support into the primary care team.

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## Symposium 24C 3023

### IMPLEMENTING A PEER SUPPORT PROGRAM IN A MEDICAL GROUP: LESSONS LEARNED FROM THE WELLMED MEDICAL GROUP

Lyndee Knox, PhD

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WellMed Group, a progressive physician-led primary care medical group in San Antonio Texas has implemented a model peer mentoring program focused on improving outcomes in patients with diabetes in 15 practices and is currently expanding the program to all 22 of its practice sites. Along the way, lessons have been learned by WellMed that can aid other organizations interested in implementing peer support programs within clinical care settings. These include issues such as identifying and training mentors, training health care professionals to work effectively with peer mentors, integrating peer mentors into the clinical care processes, integrating mentors into the administrative infrastructure of the organization, and supporting, training and supervising the mentors, engaging patients in the peer mentoring process, and the business case and funding for the program. This presentation will discuss important lessons learned and factors that either facilitated or have created barriers to the implementation and eventual spread of the program.

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## Symposium 25 8:45 AM–10:15 AM 3024

### BACK TO THE FUTURE: TRANSLATING THEORY INTO INTERVENTIONS AND INTERVENTIONS INTO THEORY

Pablo Mora, PhD,[1] Alan Christensen, PhD,[3] Howard Leventhal, PhD,[2] James Coyne, PhD[4] and Elaine Leventhal, MD, PhD[5]

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Despite three decades of progress, behavioral medicine faces the daunting task of addressing the demands of translating findings from basic research into practice. The image of translational research has been conflated, however, with the incorporation of genetics into new bio-medical treatment ignoring the need to translate phenomena in learning, communication, and culture into the practice setting. These translational issues are largely identified with programs for evidence based practices and implementation science. Common to both programs, however, is the absence of and the need for detailed concepts and methods to address how people engage in the prevention and management of existent threats to health, and responding when threats are, and will be, life ending. This symposium presents 3 perspectives on how research can be conducted to translate what we have and discover what we have not yet conceptualized, develop methods for both, and develop the evidence for implementation of practices effective in real world settings such as patients and families in clinics, hospitals, home, at work and in the community, who are dealing with diseases and life transitions that alter cognitive and physical function. This requires a new approach to building and testing theory, a challenge for effective interdisciplinary collaboration, openness to negative findings, and a review and publication policies that will advance a comprehensive program for behavioral health research and practice. The first presenter will discuss the current issues in the development and testing of theories. The second presentation will focus on the relevance of proper scrutiny of research and evidence for informing both basic research and interventions. The third presentation will discuss the interrelationship between basic and translational theory. The discussant will integrate the presentations and provide a unique perspective on the role that journals and editors play in facilitating scientific progress.

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## Symposium 25A 3025

### DO WE REALLY KNOW HOW THAT WORKS?: THEORY, MECHANISMS, AND EXPLANATIONS IN HEALTH BEHAVIOR THEORIES

Pablo Mora, PhD

Psychology, University of Texas at Arlington, Arlington, TX.

In spite of a large body of literature in behavioral medicine, disagreements about the validity of some behavioral models persist. The increase in research output has not resulted in a better understanding of the mechanisms underlying health-related behaviors. In this presentation I will discuss the issues and practices that can impede and facilitate the development of stronger theory. I will first discuss, from a philosophy of science perspective, how the lack of competing theoretical models leads to the co-existence of theoretical models that are not fully supported by the evidence. I will also address other issues such as the use of "surrogate" theories (Gigerenzer, 2010) and institutional practices that facilitate the fragmentation of theory. I will then argue that to address the lack of progress (Noar & Zimmerman, 2005), behavioral medicine researchers need to develop mechanistic models that map out the pathways through which factors at different explanatory levels influence behavior (i.e., culture, social, psychological, biological, etc). This will require that we recognize both the conceptual redundancy and the incomplete nature of current models. This endeavor will allow researchers to properly test competing hypotheses at the same level of explanation and discard those not supported by evidence. Only then will it be possible to abandon unsupported models and replace old theories with new ones (Lakatos, 1970). In the last part of this presentation I will provide a practical example of the approach proposed here and discuss how future studies that adhere to a mechanistic view can help us advance basic and translational research.

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## Symposium 25B 3026

### IMPLEMENTATION SCIENCE: CREATING A SCIENCE FOR CHRONIC ILLNESS MANAGEMENT

Howard Leventhal, PhD[1] and Elaine A. Leventhal, MD, PhD[2]

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Implementation science involves the translation of basic biological and behavioral science into health promoting treatments and interventions in communities and clinical settings. Viewing behavioral translation through the biological window highlights similarities and differences. In most instances the science in behavioral medicine lacks the detailed underlying structures analogous to genetic arrays in biology, the activation of these mechanism by contextual, environmental factors as in gene expression, e.g., personal history unfolding in a social environment, and the dynamic processes leading from activation to biological development, disease and by analogy, to ongoing behavior. Our thesis is that behavioral medicine offers a unique, real world window to the unfolding of the cognitive, behavioral and affective mechanisms involved in individual and interpersonal processes for the promotion of health and management of chronic illness that is not captured by the overly simple labels and verbally focused measurement currently used. We address deficits in linkage to mechanisms of concepts such as cultural sensitivity, motivation, self efficacy and habit, also visible in current approaches to measurement of adherence and emotional states.

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## Symposium 25C 3027

PSYCHONEUROIMMUNOLOGY OF CANCER: TOOTH FAIRY SCIENCE?

James C. Coyne, PhD

University of Pennsylvania, Philadelphia, PA.

This presentation will critically examine claims that stress is related to incidence, progression, and outcomes of cancer. Extant studies relating stress exposure to cancer incidence, progression, and outcomes suffer from numerous methodological problems, and the better the study methodologically, the closer the hazards ratio approaches a null 1.0. Weak or no effects are also observed when one examines the data from psychological interventions focused on strengthening the immune system. The illusion of an effect is due to over emphasis of positive results and strong confirmatory bias in reporting new results and recounting of past studies. Similarly, psychosocial interventions aimed at improving cancer survival have dismal effects. To date no trial has ever found that psychotherapy improved the median survival time of women with metastatic breast cancer. Further, no trial in which survival was chosen as the outcome of interest ahead of time has demonstrated a survival effect for patients with any type of cancer, when psychotherapy was not confounded with improved medical surveillance or treatment. Despite negative evidence, positive evaluations of the association between stress, psychosocial interventions and cancer outcomes persist.

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## Symposium 26 8:45 AM–10:15 AM 3028

HEALTH BRANDING: MARKETING AND BRANDING TECHNIQUES IN HEALTH BEHAVIOR CHANGE

Wendy Nilsen, PhD

Office of Behavioral and Social Sciences Research/NIH, Bethesda, MD.

There is much to be learned from commercial marketers on how to use branding techniques to promote health behaviors. Brands are designed to build relationships between consumers and the products, services or organizations they represent by creating value based on consumer's desires, attitudes and goals. Brands are used to make promises to consumers about benefits they can expect to receive from a product. Successful brands deliver on those promises. Through brand promotion, consumers form associations, which can become established and lead to a long-term relationship. These relationships are strengthened each time consumers receives value or benefit from the product.

Similarly, health branding builds relationships between health behaviors and target audiences by creating positive associations about benefits and the behaviors. Health brands are strategically positioned within the larger social and physical environments in which target audiences live and reflects their values. The use of branded health messages as part of public health campaigns has been shown to be an effective behavior change strategy at the population level. However, branding has not been used as frequently when targeting individual behavior change programs.

In September 2011, the National Institutes of Health (NIH) sponsored a Health Branding Conference to review current health branding research and develop a'branding blueprint'for research. The conference brought together researchers from various disciplines (e.g. social psychology, health communication, etc.) together with industry experts to explore: 1) the application of branding principles from both the research and commercial worlds; 2) successful strategies and techniques; 3) the value of and key challenges of incorporating branding concepts into research recruitment, interventions, and dissemination efforts; and, 4) the potential areas of investment for health branding research.

This symposium will feature a panel of presenters who will provide a snapshot of the NIH's Health Branding Conference and describe the identified areas for future research.

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## Symposium 26A 3029

BRANDING HEALTH BEHAVIORS: REVIEW OF THE EVIDENCE

W. D. Evans, PhD

SPHHS, GWU, Washington, DC.

This presentation will provide an overview of health branding and research. Like commercial brands do with consumers and products, health brands build relationships between behaviors and consumers. Like commercial brands, they can be measured by the associations they form with health behaviors and lifestyles. Brands in both sectors can also apply to organizations and upstream factors that promote organizational impact and well-being. Public health branding - building positive associations with healthy behaviors and lifestyle choices - is a previously underutilized but growing strategy that has tremendous potential for health promotion and disease prevention.

This article describes a framework for branding behaviors in a way analogous to that in which products have traditionally been branded. Products are essentially collections of benefits at a price point. Behaviors offer benefits much as products do, with some important differences. We explore these relationships in the presentation.

Brand research is a growing field that serves two functions. First, it is about measuring and evaluating determinants of brand choice. Consumers choose to use a category of branded product or behavior due to market factors such as price, availability, and to the brand associations they form with the category or individual product. Brand research is concerned with identifying and analyzing those determinants of brand choice. Second, brand research is concerned with evaluating the outcomes of brand choice. What effect do brand choices and utilization of brands and brand categories have on individual health outcomes? Brand research, in its outcome evaluation function, is concerned with this question. It is concerned with 'brand equity' as a mediator of health outcomes. 'Brand equity' is a multi-dimensional, validated construct that characterizes brands and brand identification among target audiences.

This presentation explores case studies in health branding and brand research, including obesity prevention, reproductive health, and condom use. We describe important future brand research questions and sketch a research agenda.

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## Symposium 26B 3030

TRUTH AND EX: USING BRANDS TO INFLUENCE HEALTH BEHAVIOR

Donna Vallone, PhD

Legacy Foundation, Washington, DC.

Legacy has developed, implemented and evaluated two national, branded mass media campaigns for the purpose of preventing youth and young adult smoking (truth), and increasing quit attempts among smokers (EX). The tobacco industry has some of the strongest brands in the world; truth and EX were designed as "counter" brands, positioned to compete directly with industry brands. The truth campaign was designed explicitly to redirect youth rebelliousness toward the tobacco industry, by means of a campaign that highlighted the actions of the tobacco industry in marketing, including failures to be truthful about cigarettes, addictiveness and health effects. The audience consists of sensation seekers who are open to smoking; the brand persona is edgy, risky and intelligent. The EX campaign provided a new, aspirational brand with which individuals struggling to quit could identify. The audience consists of lower income and blue collar smokers, ages 18-49, who were interested in quitting; the brand persona is empathetic and honest, acknowledging how difficult it is to quit. In each case, the brand was developed in conjunction with the literature on smoking prevention and cessation and extensive formative research. Segmentation analysis was used to define the campaign audience. Focus groups, one-on-one interviews and quantitative survey data were used to develop the brand persona, the key message, advertising concepts and executions and media plans. Brand positioning determined how the audience would encounter the brand, with a focus on enhancing audience perceptions of the brand through association with other brands and products. Evaluation revealed that a substantial proportion of the target audience knew the brand and was receptive to key messages associated with the brand. The brands are now being disseminated to the audience via emerging platforms such as mobile and gaming. New tools (e.g., Google Analytics & Radian 6) enable us to track the brand online reducing reliance on self-reports. Research indicated that internalizing the truth brand was associated with greater reductions in smoking uptake above and beyond simple campaign exposure to campaign messages

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## Symposium 26C 3031

### WHAT PSYCHOLOGY HAS TAUGHT US ABOUT MARKETING AND HOW WE CAN RE-LEARN IT

Samantha Post, MPH

Government Services, MMG, Inc., Rockville, MD.

The ultimate goal of commercial marketing is to increase product sales. However, product sales are not possible if consumers are unaware of products or what differentiates them from the competition. Branding is a strategy used by commercial marketers to identify the makers or sellers of a product or service. At face value, brands are names, terms, signs, symbols, or designs; however, contrary to popular belief, brands are much more than just names and logos.

Much like humans, brands have identities that make them unique and govern how they look, speak, and act. Successful brands mimic the personas and aspirations of their target market, allowing consumers to form human-like relationships with them. Through interactions with brands in these relationships, consumers form attitudes about whether or not consumers perceive that the brand will help them reaffirm their identity or achieve a desired goal. It is this process that drives behavior, or consuming or not consuming the brand.

Through this presentation, the presenter will 1) illustrate how brands behave like humans and form emotional relationships with consumers, 2) discuss the psychological and public health theories that underlie branding, and 3) discuss how behaviors can act like brands.

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## Symposium 26D 3032

### DESIGNING EFFECTIVE HEALTH BRANDS

Kent Lawson, BFA

IDEO, Chicago, IL.

Designing a health brand that can be used to aid in behavior change requires a human-centered, design-based approach. Brand development requires a design that incorporates elements of the product or behavior and knowledge of the user. This information is then used in creating a brand identity and positioning it. Contrary to popular belief, a brand name and logo do not completely comprise a brand's identity. Instead, they are the brand symbols. Brands exhibit personas that embody a collection of qualities that humanize it and allow the target audience to form human-like relationships with them. In order to successfully do this, brands need to mirror the (actual or perceived) identity of the target audience and reinforce the target audience's identity. Brands, representing health or a product, also need to be positioned. Marketers do not create brand positioning; rather, they create the strategies used to cultivate brand perceptions in the target audience's mind that persuade or dissuade the consumption of certain brands. This is done by promising the audience some benefit if they engage in the targeted behavior or consume the product. This session will examine health brands from an industry perspective to explore the added value of branding behavior change. The session will cover the development and implementation of a brand using human-centered design principles.

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## Symposium 27 8:45 AM–10:15 AM 3033

### PERSONALITY AND SOCIAL CONTEXT: MOTIVATIONAL PERSPECTIVES ON HEALTH BEHAVIOR

Heather Patrick, PhD

Health Behaviors Research Branch, National Cancer Institute, Bethesda, MD.

Much attention has been given to the application of theory to health behavior change and intervention. Motivational perspectives and theories seem particularly useful for understanding the mechanisms through which people engage in, change, and maintain health behaviors. This is in part because, conceptually, motivational perspectives address the reasons why people do what they do and the energy that guides behavior. Further, many motivational perspectives consider the role of both the social context in supporting psychological energy for change as well as stable, enduring characteristics of individuals that may make them particularly susceptible to interventions. This symposium will consist of three programs of research oriented toward different motivational perspectives and health behaviors including physical activity, tobacco use, and oral health. Although a growing body of research has tested the tenets of self-determination theory (SDT) in a variety of health contexts, it is unknown whether the activating elements of SDT can be delivered via web-based interfaces, thus reducing costs and extending the reach of this approach shown to facilitate both behavior change and maintenance. The emerging concept of implicit theories of health (ITH) - the extent to which people believe that health and health behaviors are relatively static versus malleable - is gaining attention for its role in health behaviors. However, little is known about how ITH are involved in risk perceptions and behavioral intentions. Finally, although a substantial body of evidence has examined the motivating role of message framing (gain vs. loss) in health behavior change, little is understood about how dispositional motivational orientations (i.e., approach/avoidance) may moderate these effects and, in particular, the extent to which matching of message framing with motivational orientations improves health behaviors. Together, these presentations serve to inform our understanding of the ways in which different aspects of motivation can be harnessed to promote health.

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## Symposium 27A 3034

### TESTING THE TENETS OF SELF-DETERMINATION THEORY IN THE DIGITAL WORLD TO PROMOTE PHYSICAL ACTIVITY

Heather Patrick, PhD,[1] Amy Canevello, PhD[2] and Geoffrey C. Williams, MD, PhD[3]

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Self-determination theory (SDT) posits that when people's psychological needs for autonomy, competence, and relatedness are supported, they experience greater autonomous motivation, persistence, and effort quality. SDT has been studied in several domains, with a recent exponential increase in research focusing on applications of SDT to physical activity, and a flurry of research activity aimed toward developing SDT-based clinical trials. However, one limitation of randomized trials developed to date is that successfully supporting psychological needs and internalization of motivation is labor-intensive, thus potentially limiting the large-scale practical capacity of SDT. This research tested whether psychological need support could be provided through a computerized interface. Participants were 197 young adults between 18-30 years old, randomly assigned to work with either a need-supportive (NS) or controlling computerized personal trainer (CPT). To be eligible for the study, participants could not have been physically active at moderate-vigorous levels of intensity on a regular basis (2+ times per week) at any time in the previous 12 months. Participants had 7 weekly CPT sessions and completed daily records of exercise behaviors between sessions. Results from lagged analyses using hierarchical linear modeling indicated that those assigned to the NS-CPT evidenced greater weekly psychological need satisfaction ($F(1, 891)=6.17$, $p<.05$); weekly need satisfaction was associated with greater autonomous motivation ($F(1, 890)=26.88$, $p<.001$) and perceived competence ($F(1, 890)=136.70$, $p<.001$). Motivation, in turn, resulted in greater daily exercise intensity ($F(1, 1136)=25.79$, $p<.001$) and frequency. These findings suggest that a CPT can support psychological need satisfaction, thus providing further evidence for SDT's practical utility.

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## Symposium 27B 3035

### IMPLICIT THEORIES OF HEALTH: PEOPLE WHO SMOKE (PROBABLY WON'T) QUIT

Annette Kaufman, PhD, MPH,[1] Caitlin E. Kennedy, ABD[2] and Philip J. Moore, PhD[2]

[1]Tobacco Control Research Branch, Behavioral Research Program, Division of Cancer Control and Population Sciences, National Cancer Institute, Rockville, MD and [2]Psychology, The George Washington University, Washington, DC.

Implicit theories (IT) about the malleability of human attributes have been shown to motivate behavior in numerous domains. Entity theorists believe that attributes are fixed whereas incremental theorists believe that such attributes can be changed. Implicit theories of health is an emerging concept that examines individual's beliefs about the malleability of health and health behaviors. The current study examines this framework for analyzing and interpreting human actions in the context of cigarette smoking. A novel six-item measure was developed to test IT of smoking ($\alpha$=.887) in a college student sample of smokers and non-smokers (N=339). IT of smoking was significantly associated with smoking attitudes, beliefs about smoking related death and addiction, and smoking intentions (p<.05). For example, incremental theorists were more likely to endorse the statement "I could smoke for a few years and then quit if I wanted to" (r=.341, p<.01). Smokers were significantly less likely to hold an entity view compared to non-smokers (p<.05). Furthermore, smoking moderated the relationship between IT of smoking and (1) smoking beliefs (F=3.821, p=.051) and (2) future intentions to smoke (p<.05). Building on these data, we discuss the importance of IT for understanding smoking beliefs and behavior. It appears that entity theorists may be more optimistic about smoking related outcomes compared to incremental theorists. We consider the implications of these findings for IT research and the practical utility of this motivational perspective in health.

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## Symposium 27C 3036

### IMPROVING ORAL HEALTH BEHAVIOR: A MOTIVATIONAL APPROACH TO HEALTH MESSAGE FRAMING

John A. Updegraff, PhD[1] and David Sherman, PhD[2]

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Message framing has long been investigated as a way to motivate healthy behavior. Historically, beliefs about risk have been thought to determine whether a gain- or loss-framed message is more effective in motivating behavior (Rothman & Salovey, 1997). More recently, our research has shown that dispositional differences in approach/avoidance motivational orientation also determine the relative effectiveness of gain- and loss-framed messages in motivating behavior. We review evidence from laboratory studies on oral health practices demonstrating this "congruency effect", and describe mechanisms that may underlie the effect on health behavior. Data are then presented from an ethnically diverse, longitudinal field study of 382 Americans who viewed gain- and loss-framed oral health videos over the internet, and assessed oral health behavior over the following 6 months. We found that the influence of the gain- and loss-framed videos on long-term flossing behavior were moderated by perceived risk of oral health problems and motivational orientation. Gain-framed messages led to significantly higher rates of flossing at 6-months among Americans with low perceived susceptibility to oral health problems (t=2.37, p=.018). In contrast, loss-framed messages led to marginally higher rates of flossing at 6-months among Americans with high perceived susceptibility (t=-1.66, p=.097). However, this framing effect among people with high perceived susceptibility was accentuated by motivational orientation: with loss-framed messages being even more effective than gain-framed messages among people with an avoidance motivational orientation (t=-1.96, p=.05). Findings from this field study suggest ways to integrate our motivational perspective (using personality factors) with other theories examining the role of specific health beliefs in shaping people's responses to framed health messages.

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# Friday
# April 13, 2012
# 11:45 AM–12:45 PM

## Panel Discussion 06 11:45 AM–12:45 PM 3037

### BUILDING A MULTILEVEL, MULTIDIMENSIONAL, MULTI-COUNTRY STRATEGY TO REDUCE OBESITY IN THE MEXICAN DIASPORA: IMPLICATIONS FOR THEORY, PRACTICE AND POLICY

Rebecca E. Lee, PhD,[1] Lucie Lévesque,[2] Karla Galavíz[2] and Juan Lopez y Taylor[3]

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Mexico has been cited as having the second highest obesity prevalence in the world after the USA (at #1), and Mexico's epidemic both impacts and is impacted by the United States and Canada as a result of economic and immigration considerations. Mexico is a middle income country leapfrogging from traditional food ways and physical activities to reliance on processed foods and technological advancements leading to sedentarism. An expert, multinational panel will discuss the case of and solutions to the obesity epidemic in Mexico and implications for the Mexican Diaspora. Scholar #1 (USA) will discuss how the Ecologic Model of Physical Activity can be operationalized in an environmental and cultural context born in Mexico, but broadly adopted by Mexican Americans in the USA. Scholar #2 (Canada) will discuss multilevel context and condition considerations for the implementation of a national policy to enhance food and physical activity access in Mexican schools. Scholar #3 (Mexico) will discuss political and cultural implications for implementing USA and Canadian evidence-based education into the Mexican medical education system. Scholar #4 (México) will discuss behavioral, political and cultural challenges to obesity prevention considering the context of Mexico. Discussion will focus on implications to healthcare, education and the economy of North American given success or failure in efforts to reduce obesity in Mexico and the Mexican Diaspora.

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## Panel Discussion 07 11:45 AM–12:45 PM 3038

### IMPACTING PROVIDER BEHAVIOR TO IMPROVE QUALITY OF LIFE FOR CANCER SURVIVORS

Lorenzo Norris,[1] Rebecca Cowens-Alvarado,[2] Katherine Sharpe,[2] Mandi Pratt Chapman,[3] Jennifer Bretsch, MS[3] and Michele Galioto[4]

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INTRODUCTION: The core of cancer survivorship care is the implementation of evidence based behaviors by both patient and provider that can result in an improved QOL in the post treatment period. The National Cancer Survivorship Resource Center Clinical Care Workgroup (CCW) convened a diverse set of health care professionals to examine what practices best promote provider adoption of evidence based practices in the four areas of survivorship care. METHODS: The CCW reviewed existing survivorship care guidelines and identified gaps. The CCW also examined the feasibility of implementing current guidelines in a time-limited practice setting, taking into account financial and human resources. The CCW developed a plan to address the lack of guidelines, ease of use of guidelines and limited resources to develop new guidelines. RESULTS: Due to the rigorous nature of clinical care guidelines development, the CCW chose instead to develop guidance documents. Guidance documents were chosen because a) they can be written for a wide audience of clinicians and patients; b) they are a low resource and potentially high impact intervention; c) evidence shows an enhanced probability of clinician behavior change, and d) guidance can be linked to existing interventions such as survivorship care planning and distress screening. CONCLUSION: There are many barriers to changing provider behavior and it is essential to address them when attempting to change an old paradigm of care. The use of guidance documents that are integrated with other evidence based modalities of provider and system change can potentially move the field of survivorship forward.

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## Panel Discussion 08 11:45 AM–12:45 PM 3039

### NIH ADHERENCE RESEARCH NETWORK: FUNDING OPPORTUNITIES IN ADHERENCE

Wendy Nilsen, PhD

Office of Behavioral and Social Sciences Research/NIH, Bethesda, MD.

The Adherence Network is a trans-NIH initiative whose goal is to provide leadership and vision for adherence research at NIH. Initially launched in May 2007, the Network includes 17 NIH Institutes, Centers and Offices. The mission of the Adherence Network is to pursue opportunities for strengthening adherence research at the NIH while innovating beyond existing investments.

This session will introduce attendees to the work of the NIH Adherence Network, including: new funding initiatives from the Network, as well as innovative work on enhancing self-report methodology in adherence research.

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## Panel Discussion 09 11:45 AM–12:45 PM 3040

### SCIENTIFIC LITERACY OF H1N1 PANDEMIC FLU INFORMATION & PUBLIC PERSPECTIVES

Christine Prue, MSPH, PhD,[1] Cynthia Baur,[2] Lauren McCormack,[4] Linda Squiers,[4] Bridget Kelly,[4] Molly Lynch,[4] Kathryn Maddox,[3] Marjorie Margolis[4] and Rebecca Moultrie[4]

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Scientific literacy includes the knowledge and understanding of scientific concepts and processes for personal decision making. In 2009, CDC created materials to communicate recommended actions that individuals could take to slow the spread of H1N1 flu. We conducted a content analysis of H1N1 flu information products followed by formative research with members of the public.

The purpose was to assess the scientific concepts used to explain prevention recommendations in government, mass media, and user-generated information for the public and to explore how scientific literacy influenced public acceptance and adoption of recommendations.

We analyzed 126 unique information products, including CDC products, media stories, and user-generated content. Using a scientific literacy framework, all products were coded for 6 factors: jargon (i.e. technical terms), ambiguous content, use of numbers and statistics, conveyance of scientific uncertainty, use of metaphors, and other language. Formative research was conducted with 36 participants. Questions explored understanding of scientific concepts, attitudes about H1N1 flu, and opinions about materials and recommended actions.

The content analysis showed that all products were full of jargon, most of which was not defined or was ambiguous. Scientific uncertainty and risk were frequent topics. Numbers were commonly used but context to help understand the numbers was lacking. Formative research participants identified many jargon terms and ambiguous concepts. Numerical data were more likely to be correctly interpreted when sufficient context was provided.

Future materials will need to avoid jargon and ambiguous concepts, include context with numerical data, and explain risk and benefit.

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## Panel Discussion 10 11:45 AM–12:45 PM 3041

### GRADUATE STUDENT RESEARCH PANEL DISCUSSION

Barbara Stetson, PhD,[1] Katherine Stewart[2] and Georita Frierson[3]

[1]University of Louisville, Louisville, KY; [2]Fay W. Boozman College of Public Health, University of Arkansas for Medical Sciences, Little Rock, AR and [3]Southern Methodist University, Dallas, TX.

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 deliberatively 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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# Friday
# April 13, 2012
# 2:00 PM–3:30 PM

## Citation Paper

## Paper Session 10 2:00 PM–2:18 PM 3042

### HOW EFFECTIVE ARE HEALTH LITERACY INTERVENTIONS TARGETING DISEASE SELF-MANAGEMENT AND HEALTH PROMOTION? A SYSTEMATIC LITERATURE REVIEW

Jamie M. Zoellner, PhD, RD, Kacie Allen, BS and Paul A. Estabrooks, PhD

Human Nutrition, Foods, and Exercise, Virginia Tech, Blacksburg, VA.

The purpose of this systematic review was to evaluate the quality and effectiveness of health literacy interventions targeting disease self-management and health promotion and to examine if effects are moderated by health literacy status. The systematic search strategy yielded 591 initial articles, the full-text of 72 articles was assessed, and 31 articles representing 25 trials published from 2000-2010 met inclusion criteria. Sample size of included trials ranged from 20 to over 600 participants, with an average of 217. The intensity of the trials varied substantially, ranging from one-contact interventions to a 12 contact intervention over 24-months. On a 9-point scale, the average quality rating score was 7.1 for the 14 randomized controlled trials and 1.4 for the 11 quasi experimental trials. Among the outcomes reported across studies, interventions were most likely to demonstrate effectiveness on health knowledge [5 increased, 2 mixed, 2 no effect, 1 not reported (NR)(i.e. no test statistic reported)] or health related self-efficacy/confidence [4 increased, 5 no effect, 1 NR]. Interventions were less likely to demonstrate significant effects if they targeted changes in health behaviors [4 increased, 1 mixed, 5 no effect, 4 NR] or clinical outcomes [2 increased, 2 mixed, 4 no effect, 2 NR]. Other outcomes were examined less frequently including health skills, self-reported health status/quality of life, utilization of health care, and health provider behavior or skills. Only 8 trials (32%) performed a moderation analysis by health literacy category, of which 1 found the intervention worked better for low health literate participants, 4 found the intervention worked as well for low and high health literate participants, and 3 found mixed effects across outcomes. This systematic review reveals numerous opportunities for improving the quality, design, reporting, and analysis of trials to advance the scientific evidence base for health literacy interventions targeting disease self-management and health promotion.

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## Paper Session 10 2:18 PM–2:36 PM 3043

### EFFECTS OF A TECHNOLOGY INTERVENTION ON DISEASE SELF-MANAGEMENT AMONG ADOLESCENTS WITH CHRONIC DISEASE

Jeannie Huang, MD, MPH,[1,2] Michael Gottschalk, MD, PhD,[3,2] Mark Pian, MD,[3,2] Lindsay Dillon, MPH,[1] Greg Norman, PhD[1] and L. K. Bartholomew, PhD[4]

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Adolescents with chronic disease demonstrate poor functional and psychosocial outcomes and are identified as "most vulnerable" by the Institute of Medicine.
MD2Me is a theory-based, technology intervention designed to improve disease self-management (DSM) skills and patient self-advocacy (PSA). The 6-mo intervention comprises an initial 2-mo phase during which DSM skills (self-monitoring and self-care) and PSA (active role in health) are promoted via a web and SMS curriculum and a subsequent 4-mo phase during which reviewed curricula may be accessed for review. The intervention provides a SMS-based communications portal for participants to interact with their healthcare teams on demand. The control group receives no intervention. Given that active participant involvement only occurs during the initial 2-mo intervention phase, immediate post-intensive intervention phase results are presented.
81 adolescents with chronic disease were recruited from a tertiary-care pediatric center in San Diego and randomized into either the treatment (N=40) or control group (N=41). Health literacy, DSM, and PSA assessments have been performed at baseline and 2 mo and are ongoing for a final 6 mo measurement. Randomization groups do not differ by age (19 v. 19 yrs, treatment v. control, p=0.58), gender (58% v. 51% female, p=0.57), racioethnicity (55% v. 51% white, p=0.73), or literacy level (25% v. 27% illiterate, p=0.85).
Repeated measures analyses using all available data from baseline and 2 mo indicate a significant treatment effect (group x time) on DSM (F=4.24, p=0.04) and PSA (F=7.67, p<0.01). Psychological and quality of life results will also be presented.
We demonstrate improvements in DSM and PSA among adolescents with chronic disease receiving a technology-based chronic disease management intervention. Further study is needed to determine whether such effects are durable.

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## Paper Session 10 2:36 PM–2:54 PM 3044

### USING EYE TRACKING TECHNOLOGY TO DETERMINE THE MOST EFFECTIVE CONTENT FOR PRESENTING OSTEOPOROSIS PREVENTION PRINT ADVERTISEMENTS

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Osteoporosis is a serious public health concern. However, the majority of women do not perceive themselves as being at risk of the disease, nor do they adequately engage in osteoporosis prevention behaviours (Gerend et al., 2006). Given that audiences are continually bombarded with thousands of competing messages each day (McQuarrie et al., 2005), the challenge becomes creating compelling osteoporosis prevention ads that attract attention. The present study consisted of two separate experiments in which young women's attention patterns were analyzed to determine the most effective message content for presenting osteoporosis prevention ads. Attention was measured through eye tracking technology, which captured viewers' eye fixations and dwell times. Sixty women aged 18-35 participated in each experiment, viewing 36 modified print advertisements. The first experiment examined whether osteoporosis prevention ads attracted more attention compared to competing fashion and beauty ads and exercise apparel ads. Within subject RM ANCOVAs and post-hoc analyses demonstrated that osteoporosis ads attracted significantly less attention than fashion and beauty ads (p<.01) and exercise apparel ads (p<.01). The second study examined the optimal message content for attracting attention within osteoporosis prevention ads specifically. A comparison was drawn between osteoporosis message content focussed on increasing calcium and vitamin D consumption or focussed on exercise in relation to fashion and beauty ads. Within subject RM ANCOVAs and post-hoc analyses revealed that osteoporosis ads featuring exercise messages were more effective at capturing attention in young women than those promoting increased calcium and vitamin D consumption (p<.01). As well, the fashion and beauty ads attracted more attention than the osteoporosis calcium and vitamin D ads. However, there were no significant differences between the attention towards osteoporosis exercise ads and the fashion and beauty ads (p>0.05). These findings may help inform the way in which future osteoporosis prevention ads are created to capture attention most effectively.

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## Paper Session 10 2:54 PM–3:12 PM 3045

### UNDERSTANDING THE INFLUENCE OF TIME PERSPECTIVE ON PREFERENCES FOR HEALTH MESSAGES: AN APPLICATION OF SOCIOEMOTIONAL SELECTIVITY THEORY

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Socioemotional selectivity theory (SST) asserts that individuals' perceptions of time play a critical role in their selection of specific goals. People who perceive time as expansive tend to pursue goals related to future optimization (e.g., knowledge acquisition, social status), while individuals who perceive time as limited prioritize emotion goals (e.g., strengthening relationships with loved ones). The purpose of this study was to test this theory in the context of health messaging. We hypothesized that older adults would prefer - and rate as more effective - emotionally meaningful health messages to those that featured future optimization, while younger adults would report the opposite preference. We created five pairs of messages encouraging physical activity and healthy sleep patterns. Each pair consisted of one future optimization and one emotion message. We tested the message pairs online using samples of younger (15-25 years; N=80) and older (70-80 years; N=80) adults. The participants read both versions of the message and indicated either the message that they preferred or the message they believed to be more effective. Overall, older adults preferred the emotion message in 3/5 pairs (odds of selecting the emotion message over the future optimization message [OR] ranged from 1.86 to 3.00) and younger adults preferred the future optimization message in 3/5 pairs (odds of selecting future optimization over emotion [OR] ranged from 2.17 to 3.00). In terms of effectiveness, older adults selected the emotion message in 4/5 pairs (OR 1.33 to 2.50) and younger adults selected the future optimization message in 3/5 pairs (OR 2.00 to 2.40). Our findings demonstrate differential preferences for and perceptions of health messages among individuals with varying time perspectives in a manner consistent with SST. The results suggest that the persuasiveness of health messages may vary as a function of the message recipient's time perspective.

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## Paper Session 10 3:12 PM–3:30 PM 3046

### SELF-DETERMINATION THEORY APPLIED TO HEALTH CONTEXTS: A META-ANALYSIS

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We conducted a meta-analysis of 184 independent data sets from studies utilizing self-determination theory (SDT; Deci & Ryan, 2002) to study motivation in health care and health promotion contexts. Correlations between SDT-based constructs, as well as those between these constructs and indices of psychological and physical health were meta-analyzed. Results showed that constructs assessing patient perceptions of psychological need support, psychological needs satisfaction, competence, and autonomous motivation were positively and significantly correlated with beneficial health outcomes, as predicted. A number of variables (e.g., participants' age, study design) were tested as potential moderators when effect sizes were heterogeneous. Study design was found to moderate the strength of relationship between several variables. Using the meta-analyzed correlations, two path analyses were also conducted to test the interrelationships among SDT variables, and between SDT variables and health outcomes according to the SDT Model for Health Behavior. The results suggested that SDT is a viable conceptual framework to study antecedents and outcomes of motivation for health-related behaviors.

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## Paper Session 11 2:00 PM–2:18 PM 3047

### THE ASSOCIATION BETWEEN MEDICAL TRUST AND CANCER SCREENING IN A RACIALLY DIVERSE, COMMUNITY-BASED SAMPLE

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Medical trust is associated with a number of health behaviors, including participation in preventive care. Although previous work has reported a relationship between medical trust or mistrust and cancer screening, the current study is among the first to examine this association in both men and women in a diverse community-based sample. Participants were 4588 adults age 18 and older recruited through a quota sampling strategy in Queens, NY as part of a larger intervention study conducted in 20 Queens neighborhoods (mean age=45.2 years; 47% male; 29% Latino, 30% Black, 18% Asian, and 24% White). Participants completed interviews assessing demographics, healthcare access, adherence to age-appropriate cancer screening guidelines, and physician visits. They also completed a brief measure of trust of doctors and hospitals. Separate multivariate logistic regression analyses were conducted to determine the association between medical trust and each health behavior. Each model included the following covariates: age, gender, race, acculturation, language of interview, health insurance status, report of a personal physician, personal cancer diagnosis, and status of intervention implementation in the participant's neighborhood. Results showed that trust was an independent significant predictor of self-reported mammogram in the past year (OR=1.303, CI: 1.103-1.540, p<.002), pap test in the past 3 years (OR=1.17, CI: 1.013-1.355, p<.03), any past endoscopic colorectal cancer screening (OR=1.156, CI: 1.007-1.327, p<.04), and a routine physician visit in the past year (OR=1.199, CI: 1.068-1.346, p<.002). These findings demonstrate that trust is an important, independent predictor of a wide range of target health behaviors in community samples. Further investigation of both individual and community-level factors that influence medical trust is warranted.

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## Paper Session 11 2:18 PM–2:36 PM 3048

### PATIENT AND MEDICAL PROVIDER CONCORDANCE ABOUT SYMPTOMS IN ONCOLOGY CLINIC VISITS

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With improvements in screening, detection, and treatment, more individuals diagnosed with cancer are surviving their disease, leading to greater attention to understanding patients' symptom experience. Cancer patients experience multiple concurrent symptoms that interact to create a general level of burden that affects quality of life and adherence with treatment. The purpose of this study was to explore the concordance in identifying patients' symptoms between patients and their oncology health care providers (HCPs).

Patients of three outpatient clinics at an NCI-designated cancer center and their HCPs provided data for this observational study. Eligible patients were at least 18 years old, diagnosed with stage 1, 2, 3, or 4 cancer 3-18 months prior to consent, and able to speak and read English. There were 94 participants in this pilot study. The average age of participants was 58.9. The distribution across cancer types was: breast=32, GI=35, and lung=27. There were more females (n=67) than males (n=27).

Before the visit with their oncology HCPs (oncologists and nurses), patients completed the Memorial Symptom Assessment Scale - Short Form (MSAS-SF). The HCPs completed an identical symptom list post-visit to indicate the patient's symptoms.

Patients reported an average of 9.4 symptoms on the MSAS-SF. Physicians, nurse coordinators, and nurse practitioners reported an average of 3.2 (n=68), 2.0 (n=28), 4.1 (n=36) symptoms respectively on the post-visit measure. In comparing the patients' and HCPs' report of the patients' symptoms, the intraclass correlation coefficients ranged between -0.307 and -0.180 for the patients and physicians, and between -0.448 and 0.999 for the patients and nurses. These results indicated low concordance between patients and their HCPs, with nurses having better concordance with patients about symptoms than oncologists.

The data demonstrate that patients and HCPs do not agree on the patient's symptoms, suggesting there may be problems with communication about symptoms in the oncology clinic visit. This low concordance may contribute to difficulties in the management of symptoms in oncology.

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## Paper Session 11 2:36 PM–2:54 PM 3049

### ASSESSING PATIENT EXPERIENCES WITH SURVIVORSHIP CARE PLANS: FINDINGS FROM AN ONLINE REGISTRY OF BREAST CANCER SURVIVORS

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The IOM (2005) recognized that survivorship care plans (SCPs) are critical to the delivery of comprehensive survivorship care. The plans are intended to integrate primary and follow-up cancer care, recognizing patients are mobile across healthcare systems. These recommendations present a significant challenge to oncology practices; yet, little is known about the delivery of SCPs and their value to patients. The Cancer Support Community, the largest network of providers of psychosocial support to cancer patients in the US, recruited breast cancer survivors to join the Breast Cancer M.A.P. (Mind Affects the Physical) Project, an online registry designed to examine the psychosocial impact of breast cancer. In November 2010, registrants (N=844) were asked to answer study-specific questions about their experience with SCPs. The sample was 99% female, 88% Caucasian, and the mean age was 55. 72% had at least a college degree. 58% were initially diagnosed with at least Stage II disease; 13% reported having had a recurrence. 90% did not receive a SCP (758 of 844). Of the survivors who did not receive a SCP, 96% would have liked to have received one. More than 60% wanted SCPs to include information and referrals for emotional, physical and nutritional needs, and more than 40% would have liked a referral for financial concerns or/and personal relationship difficulties. Of those who received a SCP (n=86), 71% found it to be useful or very useful. Of those who received a SCP, most received medically related summaries about: test results, treatment, potential side effects, contact information for their medical team. SCPs were less likely to include information or referrals for common survivorship needs, including: emotional distress, pain, sexual dysfunction, swelling, nutritional, financial support. The data from the M.A.P. Project indicate that the majority of breast cancer survivors did not receive a survivorship care plan and of those who did receive a plan, a substantial proportion did not find it useful. There continues to be gaps in the adoption, delivery, and utility of cancer survivorship plans.

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## Paper Session 11 2:54 PM–3:12 PM 3050

### LEADER-MEMBER EXCHANGE THEORY APPLIED TO DOCTOR-PATIENT RELATIONSHIPS

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Doctors have different relationships with every patient. Patients' perceptions of the quality of their relationship with a particular doctor may relate to how they feel about that doctor and about the overall quality of care. To study this individualized relationship, we borrowed from one of the most prominent theories in leadership research. Leader-Member Exchange (LMX) theory asserts that a high quality, individualized relationship between a leader and a follower is predictive of important outcomes for the follower, the leader, and the organization as a whole. Because leader-follower and doctor-patient relationships have similar qualities, we used LMX theory to explore how individualized doctor-patient relationships predict important outcomes such as doctor effectiveness, patient satisfaction, subjective health, and adherence to treatment recommendations.

Trained research assistants recruited participants (N=125) through their existing social networks. Participants reflected on their most recent visit to a doctor by rating a series of items in an online questionnaire comprised of a seven-item measure of relationship quality adapted from the LMX Scale (α=.89) and a four-item measure of adherence (α=.80). Participants also rated how effective their doctor was, how much they were influenced by that doctor, how much they liked their doctor, and how much their condition improved following the visit.

We found positive and significant correlations between scores on the adapted LMX scale and patient satisfaction (r=.69, p<.001), liking (r=.71, p<.001), improved health (r=.28, p<.01), doctor influence (r=.73, p<.001) and doctor effectiveness (r=.71, p<.001). However, we did not find a correlation between the adapted LMX items and adherence to treatment recommendations (r=.06, p=.72). Our results indicate that patients' perceptions of the quality of their doctor-patient relationship have consequences for certain patient outcomes, such as satisfaction and subjective health improvements. However, perceptions of this relationship quality may not be the key to increased patient adherence.

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## Paper Session 11 3:12 PM–3:30 PM 3051

### CONTRIBUTORS TO PERCEIVED SURGICAL TREATMENT CONSEQUENCES FOR BREAST CANCER IN LATINAS: PATHWAYS BETWEEN ILLNESS PERCEPTIONS, PATIENT-PHYSICIAN COMMUNICATION, AND PSYCHOLOGICAL ADJUSTMENT

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The Latino population is the fastest growing ethnic minority population in the United States. Despite the rapid population growth of Latinas, relatively few studies have attended to Latinas' experience with breast cancer. The purpose of this study was to elucidate pathways through which factors salient to Latinas predict perceived surgical treatment consequences and in turn psychological adjustment. Guided by models of communication and theories of illness perceptions, we hypothesized that illness perceptions and patient-physician communication would predict surgical treatment consequences, which would in turn predict adjustment over time. In this longitudinal study, low-income Latinas with breast cancer (N=72) were interviewed after surgery and three months later to assess illness perceptions (i.e., fatalistic expectancies about cancer), efficacy in patient-physician communication, perceived surgical consequences in two domains (i.e., self-evaluation, curative) and adjustment (i.e., cancer-specific distress, major depression assessed through the Structured Clinical Interview for the Diagnostic and Statistics Manual of Mental Disorders). Fifteen percent of women met criteria for major depressive disorder at the initial assessment and eight percent of women met criteria for major depressive disorder at the 3-month follow-up. Path analysis was used to examine postulated relationships. As hypothesized, high fatalistic expectancies and low efficacy in patient-physician communication predicted poorer perceived surgical consequences. However, only perceived negative surgical consequences for self-evaluation significantly predicted an increase in cancer-specific distress and major depression. The model had a relatively good fit, Robust S-Bχ2 (16)=19.49, p=.24; Robust CFI=.96; Robust RMSEA=.06. Findings highlight the importance of illness perceptions and communication in predicting treatment and adjustment outcomes and may inform culturally-tailored interventions.

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## Paper Session 12 2:00 PM–2:18 PM 3052

### DIFFERENCES IN FERTILITY RISK PERCEPTION AMONG PROVIDERS AND FAMILIES NEWLY DIAGNOSED WITH CANCER: IMPLICATIONS FOR ADOLESCENT FERTILITY PRESERVATION

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Despite the known adverse effects of cancer treatment on fertility, only 18-26% of at-risk adolescents/young men cryopreserve sperm prior to treatment in the US. It is not clear why sperm banking is underutilized, particularly in light of the high priority that survivors place on fertility and the psychological distress associated with fertility loss. Retrospective studies among adults surviving cancer suggest that misperception of fertility risk contributes to the low frequency of sperm cryopreservation. However, this has not been studied among those newly diagnosed or in adolescents. As part of an NIH-funded study investigating factors predictive of sperm banking outcome, perceptions of fertility risk were collected from 33 at-risk adolescents newly diagnosed with cancer (Mage=16.4 years, SD=2.04, range: 13-21 years) and their parents. Adolescents and their parents rated perceptions of infertility risk secondary to cancer treatment from 0 (no increased risk) to 3 (high risk). Oncologists (gold standard) also assigned infertility risk based on impending cancer treatment. Overall, adolescents rated their infertility risk lowest (M=1.19, SD=.70) followed by fathers (M=1.25, SD=.87), mothers (M=1.64, SD=.76), and oncologists (M=1.92, SD=.78). Paired sample t-tests revealed that adolescents perceived themselves as being at significantly lower risk for infertility compared to the perceptions of their mothers (t(24)=-2.40, p=.02) or oncologists (t(24)=-4.54, p<.001). There were no significant differences in adolescent-father, mother-father, or parent-oncologist perceptions of fertility risk. Results suggest that, compared to oncologists, families with newly diagnosed adolescents have relatively lower perceptions of treatment-related fertility loss, with adolescents reporting significantly lower risk beliefs compared to their mothers or oncologists. Implications for fertility preservation will be discussed.

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## Paper Session 12 2:18 PM–2:36 PM 3053

### EXAMINING THE CONGRUENCE OF FERTILITY-RISK COMMUNICATION AMONG FAMILIES AND PROVIDERS IN THE PEDIATRIC ONCOLOGY SETTING

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Infertility is a known late effect of cancer-directed therapy, and national guidelines recommend that fertility risk be expediently communicated by health care provider (HCP)s at cancer diagnosis. Yet, survivors of adolescent/young adult cancer frequently cannot recall these conversations and experience distress when opportunities for fertility preservation have expired. This study examined the congruence of fertility risk communication among adolescents newly diagnosed with cancer, their parents, and HCPs. Data were collected from 33 adolescents (Mage=16.4 years, SD=2.04), 41 parents, and 27 HCPs as part of a NIH-funded study examining predictors of sperm banking in this population. Among adolescents, 72.7% and 78.7% reported fertility risk discussion with a HCP or parent, respectively. Among parents, 78.0% reported discussions with a HCP, and 80.5% reported speaking with their son. Alternately, nearly all HCPs reported discussing fertility risk with parents (92.5%) or patients (96.1%). Patients and parents demonstrated 100% congruence regarding history of fertility risk conversation, with 82.7% of dyads agreeing that conversations occurred and 17.3% agreeing they had not. However, only 73% of patient-HCP dyads were congruent, all in the direction of affirmative discussion. Of the 27% of incongruent dyads, 85.7% were HCP affirm/patient deny, and 14.3% were patient affirm/HPC deny. For parent-HCP dyads, 77.7% were congruent, again in the direction of affirmative discussion. Of the 22.3% of incongruent dyads, 66.7% were HCP affirm/parent deny, and 33.3% were parent affirm/HCP deny. Results suggest that the majority of patients, parents, and HCPs report that fertility risk was discussed, with affirmative congruence rates relatively high. However, a notable number of participants indicated that no conversation took place or disagreed as to whether discussion occurred. Implications for fertility preservation and communication with medical teams are discussed.

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## Paper Session 12 2:36 PM–2:54 PM 3054

### PRELIMINARY OUTCOMES OF A RANDOMIZED CONTROLLED TRIAL TO INFORM MATERNAL DECISIONS ABOUT COMMUNICATING CANCER GENETIC TEST RESULTS TO CHILDREN

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Genetic counseling and testing for BRCA1/2 mutations is a well-established part of the identification and management of hereditary breast cancer risk. Thus, increasing numbers of women are confronting complex decisions about whether and how to communicate cancer risk information to their potentially at-risk relatives, including children. We conducted a multisite randomized controlled trial to assess the impact of a decision support intervention on maternal disclosure of BRCA1/2 test results to children and related outcomes. Following pre-test genetic counseling, 100 mothers (M age=44) completed a baseline telephone survey and were randomized to either a decision support intervention (DSI) or standard care (SC) group. Before receipt of their cancer genetic test results, mothers in the DSI group self-paced through a multistep decision guide based on the Ottawa Decision Support Framework, while mothers in the SC group accessed an educational booklet. An outcome survey was re-administered 1-month following post-test genetic counseling, and included child communication and intervention satisfaction assessments. The overall prevalence of disclosure to children (M age=12) was 62%. Child disclosure was significantly higher in the DSI group (73%) vs. SC (52%), X2 (1)=4.67, p=.03. After adjusting for the effects of child age and maternal BRCA1/2 status, mothers in the DSI group remained more likely to communicate to children than those in SC, OR=2.75, 95% CI=1.01, 7.47: intervention satisfaction was significantly higher among DSI vs. SC mothers, t=2.43, p=0.02. Theory based, self-paced decision support increased communication among mothers and their children about hereditary breast cancer risk and was associated with greater satisfaction.

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## Paper Session 12 2:54 PM–3:12 PM 3055

### COGNITIVE OUTCOMES IN CHILDREN EXPERIENCING SEIZURES DURING TREATMENT FOR ACUTE LYMPHOBLASTIC LEUKEMIA

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Objectives: Seizures occur in 3 to 13% of children treated for acute lymphoblastic leukemia (ALL); yet, little is known regarding cognitive outcomes of patients with this complication. This study assessed cumulative incidence of seizures, clinical factors associated with seizures, cognitive outcomes following seizure, and leukoencephalopathy among children treated for ALL.
Methods: Patients enrolled on an institutional ALL treatment protocol completed cognitive assessments at week 6 continuation (baseline evaluation), week 120 continuation (total continuation duration 2.5 years for girls and 3 years for boys), and 2 years post therapy completion. MRI exams were performed at the end of 6 week remission induction, week 7 continuation, and week 120 continuation. Each of the 18 patients experiencing on-therapy seizures was matched for gender, race, age at treatment, and treatment intensity to two patients treated on the same protocol who did not experience seizures (n=36).
Results: Two-year cumulative incidence of grade 3 seizures was 3.61%±0.84%. No factors significantly predicted seizure development. At week 120, the seizure group performed significantly worse on attention and working memory tasks than controls (80.14±17.87 vs. 100.52±13.29, p<.01) and their parents reported greater learning problems, impulsivity, and hyperactivity (p<.05). The same pattern was observed 2 years after therapy completion for attention and working memory, with additional processing speed deficits. Significant differences in prevalence of leukoencephalopathy on MRI were observed between the seizure and control groups at week 7 (56.25% vs. 12.90%, p<.005) and at week 120 continuation (38.46% vs. 6.06%, p<.05), but not at week 5 remission (15.38% vs. 2.94%, p=.18).
Conclusions: Compared to controls, children with on-therapy seizures performed significantly worse at therapy completion on attention and working memory tasks, and problems persisted two years later. Imaging findings suggest these children experience more significant early neurotoxicity that likely contributes to identified cognitive impairment.

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## Paper Session 12 3:12 PM–3:30 PM 3056

### THE ROLE OF SEXUAL COMMUNICATION ON PARENTAL INTENTION FOR HPV VACCINATION AMONG DAUGHTERS SURVIVING CHILDHOOD CANCER

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Human papillomavirus (HPV) is the most common sexually transmitted infection and a known cause of cervical and other cancers. HPV vaccination is available and recommended for females surviving childhood cancer, who are at increased risk for HPV-related complication secondary to immunocompromise and other late effects of cancer treatment. Rates of HPV vaccination remain suboptimal in this group, and factors such as parent-child communication have been implicated. Yet, the influence of communication on HPV vaccination has not been considered in pediatric cancer populations. As such, this study examined the influence of mother-daughter sexual communication and communication self-efficacy specific to HPV vaccination on mothers' intentions toward HPV vaccination for daughters surviving childhood cancer. Maternal caregivers (n =131, $M_{age}$=41.12 years, SD=8.66) completed the Mother-Adolescent Sexual Communication Questionnaire (Cox et al. 2008), a self-efficacy scale of HPV-specific vaccine communication, and a measure of maternal intentions to vaccinate their daughter. Hierarchical regression analysis revealed that self-efficacy for HPV-specific communication, sexual communication timing and content, and daughter's age accounted for significant variance in vaccination intentions ($R^2$=.17, F(4,126)=6.36, p<.001). Together, self-efficacy, communication content, and communication timing predicted mothers' intentions to vaccinate their daughters beyond the influence of daughters' age ($\Delta R^2$=.08, p<.001). Independently, results showed main effects of self-efficacy ($\beta$=.47, p=.02), content ($\beta$=-.08, p=.02), and timing ($\beta$=.15, p=.02) on vaccination intentions. Findings suggest that mothers who are more confident about discussing HPV vaccination with their daughters and who talk about sexual behaviors more frequently have greater intentions to vaccinate their daughters against HPV. Mothers who discuss sexual topics more broadly (i.e., not HPV-specific) may be less likely to endorse vaccination intentions.

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## Paper Session 13 2:00 PM–2:18 PM 3057

### QUALITY OF LIFE PREDICTS COUNSELING CALL COMPLETION FOR WEIGHT LOSS PARTICIPANTS

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Health-related quality of life (HRQOL) may be an important factor to consider in regard to an individual's motivation and ability to adhere to the intensive behavioral changes required for weight loss. By being informed of a patient's HRQOL prior to treatment, the clinician may be better prepared to support a patient's ability to adhere to treatment recommendations. The purpose of the current study was to investigate whether baseline HRQOL is associated with adherence to completion of phone-based counseling sessions among participants enrolled in the active arm of a primary care weight control randomized trial. The intervention was based on the Chronic Care Model (CCM) for obesity, and active arm participants received a pedometer, weekly food and activity diaries, and motivational interviewing (MI) telephone calls focused on facilitating readiness to increase physical activity and fruit and vegetable intake and decrease fat consumption. Participants (n=48) were 48.5±13.8 years-old, had a mean BMI of 36.64±8.1 kg/m2, 90% were Caucasian, and 71% were female. The SF-12 was used to measure HRQOL (Hays, Sherbourne, & Mazel, 1996), and consists of physical (PCS-12) and mental (MCS-12) component scores. In this sample, those completing≥75% of calls (n=27) had higher baseline MCS-12 scores (p=.02, d=-.69) compared to those completing<75% of calls (n=21). The relationship between counseling calls completed as a continuous variable and baseline MCS-12 remained significant after adjusting for age, BMI, and education (β=0.471, p=.00), and accounted for approximately 19% of the variance in counseling calls completed. Baseline PCS-12 did not significantly correlate with total number of counseling calls completed (r=-.21). The greater number of counseling completed, the greater the weight loss (r=-.46, p<.01). Results suggest that early assessment of general mental functioning but not physical functioning may identify those most likely to adhere to treatment, and those in need of amplified support for adherence in order to facilitate weight loss.

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## Paper Session 13 2:18 PM–2:36 PM 3058

### EXPLORING THE RELATIONSHIP BETWEEN BEHAVIOR-SPECIFIC SELF-EFFICACY, WEIGHT CONTROL BEHAVIORS, AND WEIGHT LOSS

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While self-monitoring of diet and physical activity is known to be a strong predictor of weight loss, self-efficacy has shown an inconsistent association with weight change. Few studies have examined the relationship of self-efficacy to specific weight control behaviors. Moreover, few have separately examined the relationships between eating self-efficacy (ESE) and diet or between physical activity self-efficacy (PASE) and exercise. The goal of this study was to examine the relationship between behavior-specific self-efficacy, the weight control behaviors and weight change over time.

We analyzed data from a 6-month standard behavioral weight loss intervention (N=164, 42.4±9.3yrs, BMI=33.0±3.6). Baseline PASE was not associated with self-reported days of exercise (p=.71) or BMI change (p=.73). An increase in PASE over time was associated with self-reported days of exercise (p<.001) and predicted a decrease in BMI (p<.001). The effect of change in PASE on BMI was partially mediated by self-reported days of exercise (p<.001). Baseline ESE was associated with days of diet reported (p<.01) and was predictive of BMI change (p<.01). Days of diet reported completely mediated the relationship between baseline ESE and BMI change (p<.05). An increase in ESE over time predicted days of diet reported (p<.001) and directly predicted weight loss (p<.001).

While baseline self-efficacy does not consistently predict weight loss, change in self-efficacy during treatment predicts intermediary weight control behaviors that are consistently associated with weight change. These results support suggestions made by other authors that ESE may be predictive of short-term weight loss while an increase in PASE may be associated with maintenance of both exercise and weight loss over time. Long-term follow-up of the relationship between behavior specific self-efficacy, weight control behaviors, and weight loss is warranted.

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## Paper Session 13 2:36 PM–2:54 PM 3059

### FITNESS MOTIVATION VS. FINANCIAL MOTIVATION: ADAPTIVE AND MALADAPTIVE CHANGES IN PREFERENCE FOR HEALTHY AND UNHEALTHY BEHAVIORS DURING A MULTIPLE BEHAVIOR CHANGE INTERVENTION

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The Make Better Choices (MBC) trial examined different strategies for maximizing simultaneous healthful change across multiple behaviors. All participants (n=200) had 4 risk behaviors at baseline: high saturated fat intake (Fat), low fruit and 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. For 3 weeks participants were coached and incentivized to change targeted behaviors. Before and toward the end of the treatment period participants reported their liking for each behavior. Target behavior change assignment did not predict changes in liking for any of the 4 behaviors; however, participants' motives for enrolling in the study did. Upon study entry, participants filled out a 32-item Motivation for Health Behavior Change questionnaire, which yields a composite measure of General Motivation for enrolling in the study, and 5 motive subscales: Fitness, Challenge, Enjoyment, Appearance, and Financial Incentives. After controlling for General Motivation, the Fitness Motive and Financial Motive subscales both predicted changes in liking, but in characteristically opposite directions. A relatively stronger Fitness Motive predicted adaptive changes in preferences: increased liking for FV (r=+.17), and decreased liking for Fat (r=-.15) and Sed (r=-.13). By contrast, a relatively stronger Financial Motive predicted maladaptive changes in preferences: increased liking for Fat (r=+.18), and decreased liking for PA (r=-.18) and FV (r=-.16). Findings are consistent with predictions from self-determination theory, which posits that autonomous motives support intrinsic motivation, whereas controlled motives tend to undermine intrinsic motivation. Findings suggest that participants' motives for research participation frame their experience of experimental conditions in ways that can influence study outcomes.

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## Paper Session 13 2:54 PM–3:12 PM 3060

### BARRIERS TO HEALTHY EATING IMPACT DIETARY INTAKE AND WEIGHT IN A 24-MONTH WEIGHT LOSS TRIAL

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How perceptions of barriers to healthy eating impact one's dietary habits and how each of these relates to weight change remains unclear. We examined associations among perceptions of barriers to healthy eating, dietary intake and weight loss over 24 months using data from SMART, a weight loss trial (N=210) that used a behavioral intervention with a randomized assignment to self-monitoring mode (paper or electronic diary). The Barriers to Healthy Eating Scale (BHE) has 22-items and yields 3 subscales: emotional barriers, daily mechanics of following a healthy eating plan, and social support. Total energy and fat intake data were extracted from two unannounced 24-hour dietary recalls guided by the Nutrition Data System for Research. Weight was measured using a digital scale. All measures were completed at baseline and every 6 months. We analyzed the data with longitudinal mixed regression modeling. The sample was mostly White (78%), female (85%), with a mean (±SD) age of 46.8±9.0 years and BMI of 34.01±4.5. Decreases in fat and energy intake observed at 6 months were maintained over 24 months. No differences were observed among treatment groups. The 6- to 24-month change patterns in total energy and fat intake were both significantly associated with the changes in the BHE total score (b=5.12, p<.001; b=0.32, p<.001), in emotional barriers (b=8.01, p<.001; b=0.47, p<.001), daily mechanics (b=9.63, p=.010; b=0.68, p<.001), and social support (b=16.66, p=.033; b=1.01, p=.016). The pattern of weight change paralleled the change pattern of total energy (b=0.001, p=.023) and fat intake initially (b=0.01, p=.006). Although weight and barriers decreased with intake initially, weight and barriers began to increase at 12 months while fat and energy intake did not. This discrepancy may be due to reduced energy needs at a lower weight, an under-reporting of intake or insurmountable barriers. It is possible that providing a sustained focus on reducing perceived barriers as part of the behavioral intervention could lead to an improved long-term weight loss.

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## Paper Session 13 3:12 PM–3:30 PM 3061

### THE EFFECT OF DAILY SELF-MONITORING OF WEIGHT ON CHANGES IN CALORIC INTAKE AND ENERGY EXPENDITURE

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Recent studies have demonstrated that frequent self-monitoring of weight promotes weight loss and maintenance. Little is known, however, regarding the behavioral mechanisms (e.g., increasing physical activity or decreasing caloric intake) through which this method of self-monitoring affects body weight. We addressed this question by recruiting 83 college students (74.7% female; mean age=20.0) to participate in a study on "undergraduate health behaviors," including measures of sleep, dental, eating, and exercise habits. Caloric intake was monitored for two weeks using six non-consecutive automated 24-hour recalls (two reflecting week day intake and one reflecting weekend day intake for each week), and total energy expenditure was estimated using SenseWear accelerometer armbands. After a week of baseline data collection, participants were randomly assigned to either a week of self-monitoring of weight (using paper records and a provided in-home dial scale) or sleep (control, using paper records). After controlling for baseline weight, race/ethnicity, and frequency of self-weighing, there was a significant difference between the self-monitoring and the control group in terms of total energy expenditure, p=.045, such that participants in the control group significantly decreased their activity from Week 1 to Week 2 compared to the self-monitoring group. No significant differences were found caloric intake, p=.682. These findings suggest that individuals who self-monitor weight may focus on increasing physical activity rather than decreasing caloric intake. Among individuals recruited for a general "health behaviors" study, self-monitoring alone may not be sufficient for changing caloric intake. Instead, intent for weight loss and goal setting may be necessary for changing eating behaviors. Further research is needed to investigate the long-term effect of self-monitoring of weight on energy expenditure and the effect of self-monitoring of weight in individuals who are attempting to lose or maintain body weight.

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## Citation Paper

## Paper Session 14 2:00 PM–2:18 PM 3062

### WEIGHT PERCEPTIONS AND READINESS TO CHANGE MEDIATE THE RELATIONSHIP BETWEEN INTERVENTION EXPOSURE AND PHYSICAL ACTIVITY AMONG ETHNIC MINORITY WOMEN

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Objective measurement shows only 5% of the population meets physical activity (PA) recommendations, and minority women are less physically active than white women. This study investigated whether exposure to an intervention was mediated by changes in weight perceptions and motivational readiness for exercise. African American and Hispanic or Latina women (N=410, M age=45.2 years, M BMI= 34.7 kg/m2) in the Health Is Power study participated in a 6 month behavioral intervention and completed a 7-day accelerometer protocol and body image distortion, self-efficacy, and motivational readiness questionnaires at baseline (T1) and post-intervention (T2). Confirmatory factor analysis was used to create a weight perception and readiness to change (WPRC) latent construct comprised of changes in body image distortion, exercise self-efficacy and exercise and weight stages of change. It showed a moderate fit between indicators and the WPRC latent construct (RMSEA=.065). Structural equation modeling was used to measure direct effects of intervention exposure (defined as attendance at intervention sessions) on change in PA and indirect effects through changes in WPRC. Maximum likelihood estimates and goodness of fit indices were evaluated for the model. BMI was significantly negatively correlated with PA at T1 (r=-.223, p=.002) and T2 (r=-.375, p=.001) and controlled for in the structural model. The structural model fit the data well (RMSEA=.049). Although intervention exposure did not have a direct effect on PA, it had a direct effect on WPRC (p=.029), which led to hypothesized changes in PA (p<.001). Findings suggest weight perceptions and readiness to change PA behavior may mediate the effects of an intervention on PA. Health promotion interventions should seek to improve complex cognitive and psychological factors, such as weight perceptions, self-efficacy and motivational readiness, to initiate behavior change.

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## Paper Session 14 2:18 PM–2:36 PM 3063

### EFFECTS OF A BRIEF INTERVENTION ON PHYSICAL ACTIVITY AND SOCIAL COGNITIVE DETERMINANTS IN WORKING MOTHERS

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Working mothers face numerous exercise barriers and thus exhibit high levels of inactivity. Although increasing physical activity among working mothers is an important priority, attention to this population in the exercise literature has been extremely limited to date. The purpose of the present study was to examine the impact of a brief exercise adherence intervention on physical activity and its social cognitive determinants among working mothers. Participants (N=141) were randomly assigned to an intervention or control condition. The intervention consisted of two interactive group-based counseling sessions, during which participants learned behavior modification strategies based on social cognitive principles (e.g., having realistic expectations, developing strategies to overcome barriers, scheduling time for exercise, enhancing self-efficacy, setting effective goals). Participants also received a pedometer and a session with a personal trainer. All participants completed measures of physical activity, self-efficacy, outcome expectations, goals, and social support at baseline and post-intervention. Physical activity was measured via self-report and accelerometry. Results of a MANOVA for physical activity revealed a significant group by time interaction, with the treatment group exhibiting significant increases in physical activity compared to the control group [F (2,107)=4.34, p=.02]. Similarly, interaction effects were significant for barriers self-efficacy [F(1,106)=5.09, p=.03], outcome expectations [F(1, 111)= 12.22, p=.001], goals [F(1,108)=36.02, p<.001], and social support from family [F(1,109)=5.60, p=.02], and all favored the treatment group. These results show a brief social cognitive theory-based intervention can effectively increase physical activity and key determinants among working mothers. The brief intervention format could allow for widespread dissemination and implementation of the program in diverse settings, which could lead to improved health and quality of life in large populations of working mothers.

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## Paper Session 14 2:36 PM–2:54 PM 3064

### EFFICACY OF A WEB-BASED PHYSICAL ACTIVITY INTERVENTION TARGETED TOWARDS WOMEN WITH A FAMILY HISTORY OF BREAST CANCER

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The high incidence of breast cancer (BC) and the importance of physical activity (PA) as it relates to BC incidence, recurrence, and mortality highlights the need for PA interventions that can be easily disseminated and that address the concerns of women with a family history of BC. This study tested a web-based non-face-to-face PA intervention compared to a contact control nutrition intervention. The PA intervention received emails 3 times per week with PA and BC information and access to a website to track their PA and communicate with other participants using a message board. The PA materials were individually tailored based on the Transtheoretical Model and Social Cognitive Theory. The BC material covered topics including modifiable and non-modifiable risk factors for BC. The nutrition intervention received access to a matching website and emails 3 times per week with nutrition and BC information. Sedentary women (n=55) with at least 1 first-degree relative with BC but no personal BC were randomized. PA was assessed with the Seven Day Physical Activity Recall. Women were 42 years old (SD=11.42) on average, non-Hispanic (91%), White (89%), and had some college education (93%). About half (44%) were married and most had a household income >40k (78%). On average, participants randomized to PA, increased from 14.11 min/week (sd= 22.53) at baseline to 213.13 min/week (sd=110.26) at 3 months and 207.92 min/week (sd=156.93) at 5 months. Those randomized to Nutrition reported on average 30.22 min/week (sd=25.51) at baseline, 129.04 min/week (sd=81.96) at 3 months and 118.70 min/week (sd=106.11) at 5 months. Linear regression models examining changes from baseline to follow-up amongst the intent-to-treat sample showed a significant between-group difference at 3 months (p< 0.01) and at 5 months (p<0.01). Findings suggest that a PA intervention that incorporates BC information is successful in increasing PA in women with a family history of breast cancer compared to a nutrition contact control intervention. Given the large number of women whose families are impacted by BC each year, a large scale trial of this intervention is warranted.

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## Paper Session 14 2:54 PM–3:12 PM 3065

### SOCIAL SUPPORT MEDIATES AN INCREASE IN MODERATE-TO-VIGOROUS PHYSICAL ACTIVITY OVER 12 MONTHS

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After childbirth women have reductions in purposeful bouts of Moderate-to-Vigorous Physical Activity (MVPA). Previous interventions involving women with children have shown social support (SS) to be a key mediator of the change in MVPA; but few have included ethnic minorities, particularly Asian-Americans and Hawaiians. Within a randomized controlled trial to increase MVPA in healthy, sedentary moms (2-12 mo postpartum), we hypothesized psychosocial factors would act as mediators of an increase in MVPA over a year. A tailored intervention included personalized telephone counseling, e-mails, and a website while a comparison condition received general MVPA materials. Active Australia survey measured MVPA. Longitudinal mediation models using path analyses tested the effects of mediators (barriers, SS, & self efficacy for exercise) on minutes of MVPA across 3 time points (baseline, 6 mo, 12 mo) in separate models. Women (n=278), 31±5 yrs, with baby 5.5±3 mo, 65% Asians & Hawaiians, with BMI=27.8±5 kg/m2 were enrolled. Main effect for condition was significant, with MVPA increasing from 38 min/wk to 175 min/wk by 6mo and 200.9 min/wk by 12 mo in the intervention (I) condition. The intervention also had a direct effect on increasing SS at 6 mo (BI,SS6=.165, p=.005), and this change in social support was significantly associated with the change in MVPA at 12 months (BSS6,PA12=.136, p=.035). Changes in barriers or self-efficacy for exercise were not significant. The mediated effect of SS suggests that increasing support from a partner, family, or friends promoted change in MVPA over 12mo. in intervention condition. Future technological interventions to increase MVPA could provide new mothers with innovative ways to increase SS for MVPA via the use of online social networking, smart phone apps, or online forums designed specifically to guide mothers on how to enlist social support for MVPA.

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## Paper Session 14 3:12 PM–3:30 PM 3066

### DEVELOPING A THEORY-BASED INTERVENTION TO ADDRESS PHYSICAL ACTIVITY BARRIERS FOR AFRICAN AMERICAN WOMEN IN THE DEEP SOUTH

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In the U.S., African American women report high rates of inactivity and related health disparities. Thus, to learn more about PA barriers/facilitators for African American women in the Deep South, we conducted 7 focus groups with 45 community health advisors affiliated with the Deep South Network for Cancer Control. These women were selected due to their expertise with health promotion in the target population. Another 4 focus groups with African American women recruited from the community (N=22) were held to gain feedback from the actual target population. A content analysis was performed to generate themes in participant feedback which were then incorporated into the intervention development process. Barriers included competing priorities, negative outcome expectations, safety, cost, social support, and fear of injury. Potential facilitators included religiosity and altruism. For enhanced appeal, suggestions included incorporating religion, focusing on health (not weight) and low cost popular activities (walking/dancing, not golf). The resulting home-based individually-tailored PA intervention was specifically geared to the intervention needs/preferences of African American women in the Deep South and vetted in a 1-month single-group, pre-post test study (N=10 African American women in Birmingham, AL). Results indicated high retention (90%) and program satisfaction. Of those who responded (N=8), 87.5% reported reading most/all of intervention materials and finding them helpful/enjoyable. All would recommend the program to friends. ITT analyses (baseline values carried forward) indicated increases in motivational readiness for PA (in 70% of sample) and self-report PA (7-Day PAR) from baseline (M=89.5 min/week, SD=61.17) to 1 month (M=155 min/week, SD=100.86; p=.056). Small improvements in fitness (6MWT), weight, and process measures (processes of change, decisional balance, self-efficacy) were also found, p's>.05. Preliminary findings are promising and call for future studies with larger samples to determine the efficacy of this program.

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Citation Paper

## Paper Session 15 2:00 PM–2:18 PM 3067

### INTERACTIVE EFFECTS OF BUILT ENVIRONMENT AND PSYCHOSOCIAL ATTRIBUTES ON PHYSICAL ACTIVITY: A TEST OF ECOLOGICAL MODELS

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Background:Understanding moderators of the built environment-physical activity association is a gap in research. Ecological models provide a framework for testing interacting effects from multiple levels of influences on behavior. This key principle of ecological models is seldom studied.

Methods:Built environment×psychosocial interaction effects on physical activity were tested using data from the Neighborhood Quality of Life Study conducted in neighborhoods in two US regions designed to vary on walkability and income (n=2199 adults; 25% non-white). Multi-level mixed regression was used to account for clustering within neighborhoods. Outcomes were: 1) objectively measured moderate-to-vigorous physical activity (MVPA), 2) reported transport walking, and 3) leisure-walking. Conceptually matched built environment variables, assessed by GIS or validated NEWS survey, were analyzed for domain-specific outcomes. Psychosocial variables were measured with validated scales

Results: With leisure walking as the outcome, built environment×psychosocial interactions were significant in 7 of 20 models tested, including recreation facilities×self-efficacy (p=0.006), recreation facilities×benefits of activity (p=0.003), recreation facilities×barriers to activity (p=0.006), public parks×benefits (p=0.001), public parks×barriers (p=0.017), walking/cycling facilities×social support (p=0.049), and neighborhood aesthetics×enjoyment of activity ( p=0.036). Directions of interactions were consistent, indicating a stronger built environment-leisure walking association in adults with less favorable psychosocial status. Little evidence supported built environment×psychosocial interactions with MVPA and transport walking as outcomes.

Conclusion:Results suggest that built environment may exert stronger influences on adults who are not psychologically predisposed to be active. Improving access to activity-friendly environments for all may be a promising approach to reducing disparities in physical activity.

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## Paper Session 15 2:18 PM–2:36 PM 3068

### IMPROVING ACCESS TO PHYSICAL ACTIVITY IN A LOW-INCOME, ETHNICALLY DIVERSE URBAN AREA THROUGH COMMUNITY INPUT

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Regular physical activity is essential for preventing chronic disease and obesity. However, most adults and youth do not participate in recommended amounts of physical activity. This study evaluated barriers and solutions for increasing access to physical activity in a low-income, ethnically diverse (Hispanic, Refugee population including Burmese, Nepali, Iraqi) urban community from a social-ecological perspective. Focus groups were conducted in five languages with 124 community members (61 adults, mean age=37.5±11.5, 72% female, 52% Refugee, 33% Hispanic; 63 youth, mean age=11.1±2.3, 43% female, 48% Hispanic, 24% African American, 22% Refugee) to assess individual, interpersonal, and environmental barriers and solutions for improving access to physical activity. Grounded theory was used to develop a codebook and a coding hierarchy, which were used to identify themes. Inter-rater agreement was 98% (kappa=0.67). Adults and youth identified 199 barriers with youth more frequently reporting environmental barriers and adults reporting more security related barriers. Key environmental barriers for youth were speeding, traffic, small or broken sidewalks, and improper crosswalks. Key security barriers for adults were crime and fear of attack. Solutions for improving access to physical activity were similar to barriers in that youth suggested more environmental (crosswalk repair and addressing community neglect) solutions while adults reported mostly security related solutions (lights and cameras). These findings in combination with a walkability survey and key informant interviews guided the implementation of improvements to the area including: repairs to crosswalks, traffic lights, and street lanes, and installing stop signs, speed limit signs, and lighting around schools. This project also constructed a walking path and created peer-walking groups. This study provides a model for gathering community input to guide implementation strategies to improve physical activity levels in low-income, high need areas.

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## Paper Session 15 2:36 PM–2:54 PM 3069

### READY FOR RECESS: EFFECTS OF ENVIRONMENTAL CHANGES AT RECESS ON PHYSICAL ACTIVITY (PA) LEVELS IN CHILDREN

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Introduction: Studies are needed to determine the optimal recess environment necessary to maximize PA in youth during the school day. The purpose of this study was to estimate the effects of having trained recess staff, recreational equipment, and a combination of the two on PA in elementary school children during recess.
Methods: The study was based on a two year clustered randomized design. Four schools in the first year (2009-2010), 8 in the second year (2010-2011) were randomized to one of four intervention groups: 1) staff training+equipment (ST+EQ), 2) staff training (ST), 3) equipment (EQ), and 4) control. Participants were children (N=683, 52% girls) ages 7- 12 (60% receiving free and reduced lunch). Multi-level models controlling for the nesting of observations/assessments within days of measure within schools examined changes in the percentage of time spent sedentary and physically active during recess.
Results: Based on accelerometry, boys in the ST+EQ increased (+2.7%) and boys in the ST decreased moderate-to-vigorous PA (MVPA) (-3.5%) in comparison to the control. For girls, decreases in MVPA (-2.8%) for ST were found in relation to the control. For sedentary behavior, boys in the ST+ EQ decreased by 17.2%; boys in the ST increased by 18.7% in comparison to the control. For girls, the ST+EQ decreased sedentary by 6.5%; girls in the ST increased sedentary by 17.6% compared to the control.
Conclusions: Environmental modifications such as EQ+ST during recess can be effective for increasing MVPA and decreasing sedentary time in youth. When schools had ST without EQ, MVPA decreased and sedentary time increased. ST sites had high rates of supervisor turn-over during the school year that may have affected implementation fidelity at ST sites. Future recess staff training should emphasize school cooperation so that anyone supervising recess attends all trainings. Trainings should include strategies for indoor recess and teaching activities quickly. Strategies for promoting PA while simultaneously monitoring students for safety should be stressed.

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## Paper Session 15 2:54 PM–3:12 PM 3070

### ASSOCIATIONS OF PEER SUPPORT AND NEIGHBORHOOD WALKABILITY WITH PHYSICAL ACTIVITY AND BLOOD PRESSURE IN AFRICAN AMERICAN ADULTS IN THE PATH TRIAL

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High blood pressure (BP) disproportionately affects African American adults and is a leading cause of stroke and heart attack. Previous research indicates that engaging in recommended levels of physical activity (PA) reduces BP, and social and environmental supports for PA may increase PA and in turn decrease BP. The present study tested hypotheses that peer social support for PA (SS) and perceived neighborhood walkability (NW) would be positively associated with PA, which would be inversely associated with BP as part of a potential causal pathway. Baseline data were collected in 434 African American adults in underserved communities (low income, high crime) who were enrolled in the Positive Action for Today's Health (PATH) trial. SS and NW were measured with validated surveys. Moderate-to-vigorous PA was based on 7-day accelerometry estimates (MVPA, min/day), and a 4-week history of walking was obtained through an interview. BP was measured using standard protocols by trained staff. The sample was predominantly female (63%), overweight (body mass index [BMI]; M=30.9, SD=8.4, Median=29.8), and had elevated BP with a mean systolic BP of 132.4 (SD=17.9) and a mean diastolic BP of 81.4 (SD=11.0). NW ($r=.17$, $p<.01$) and SS ($r=.15$, $p<.01$) were positively correlated with MVPA, which was negatively correlated with SBP ($r=-.15$, $p<.01$). Structural equation modeling demonstrated that NW ($\beta=.08$, $p=.05$) and SS ($\beta=.10$, $p<.05$) significantly predicted MVPA. NW also predicted self-reported walking ($\beta=.13$, $p<.05$). No significant main effects of MVPA, or reported walking were found for BP, although relationships may have been obscured by the presence or absence of antihypertensive therapy and variable intensity and effects of treatment. These findings indicate the positive influence of social and environmental supports for PA. Future longitudinal research is needed to further explore causal pathways among social and environmental supports, PA, and health outcomes such as BP in African Americans.

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## Meritorious Paper

## Paper Session 15 3:12 PM–3:30 PM 3071

### EXAMINING THE SPATIAL DISTRIBUTION AND RELATIONSHIP BETWEEN SUPPORT FOR POLICIES AIMED AT ACTIVE LIVING IN TRANSPORTATION AND TRANSPORTATION BEHAVIOR

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Researchers examining psychological factors related to transportation behavior have rarely used a geographic perspective. Integration of geography with behavioral medicine encourages multidisciplinary research and practice. This study presents a spatial analysis support for policies aimed at active living in transportation (PAL-T) using a validated measure and examines the correlation between the PAL-T and active transportation (i.e., walking and cycling). Participants were 7012 adults aged on average 48.7 years (59% female) living on the Island of Montreal, Canada and recruited via random digit dialing (35.7% response rate). Analysis used Moran's I, Getis-Ord General G, and kernel density to estimate and visualize spatial autocorrelation. Ordinary least squares (OLS) and geographically weighted regression (GWR) examining the relationship between the support for policies, walking and cycling, controlling for age, sex, road and density of destinations were compared. Results will be presented using maps and statistics. Moran's I ($I=0.34$, $p<0.01$) and Getis-Ord General G ($G=0.001$, $p<0.01$) showed significant spatial clusters of the PAL-T. Examining kernel density maps showed clustering of support for policies in central neighborhoods and in an area exposed to a major highway. For walking OLS regression models explained 1.7% of the variance in walking and age ($b=-1.85$, $p<0.01$) was significantly related. GWR improved the explained variance to 2.3% by considering spatial relationships. For cycling OLS regression models explained 0.6% of the variance and significant variables were age ($b=-0.17$, $p<0.05$), sex ($b=-17.35$, $p<0.01$) and PAL-T ($b=7.24$, $p<0.05$). GWR improved the explained variance to 0.8% by considering spatial relationships. We conclude that integrating a spatial perspective into understanding psychological correlates is relevant.

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## Paper Session 16 2:00 PM–2:18 PM 3072

### CONTEXTUALIZATION OF HEALTH BEHAVIOR IN A HIV/AIDS INTERVENTION PROJECT AMONG SEX WORKERS IN CALCUTTA, INDIA

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In health communication research it is often found that an increase in awareness on the part of audiences does not always precipitate desired results like implementation and maintenance of positive health behavior. This is especially true in HIV/AIDS intervention programs among sex workers in which the lack of correlation between sexual knowledge and sexual behavior has been noted repeatedly.The current paper analyzes how environmental and structural barriers to health like poverty, violence and stigma can influence sexual health practices of sex workers by examining the case of the Sonagachi Project. Effective and sustainable mechanisms to address structural barriers such as violence and stigmatization are also discussed. The Sonagachi Project is a community-based HIV/AIDS intervention program undertaken in a red light district of Calcutta, India. The Sonagachi Project operates as a peer outreach and participation based communication intervention program spearheaded by the sex workers themselves in one of the biggest red light areas of Asia. A HIV/AIDS infection incidence of 10% has been achieved which is significantly lower than 50% to 90% among similar red light areas in India. The usage of condoms among sex workers also improved from 3% to 90% during implementation of the project. The findings of the current paper which is based on ethnographic research, and structured and semi-structured interviews, among 37 sex workers between 2010 and 2011 show that sex work, poverty and health did not have a paradoxical relationship in Sonagachi, for poverty ensured that the sex worker complied with safe sex practices and remained healthy. Unionization of the sex workers and stakeholder negotiation comprised a multilayered strategy to combat violence perpetrated against sex workers and resulted in a significantly increased condom compliance rate. A unique strategy of problematizing and mitigating stigma was also devised by the Sonagachi sex workers.

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## Paper Session 16 2:18 PM–2:36 PM 3073

### PREVENTING MOTHER TO CHILD TRANSMISSION (PMTCT) IN SOUTH AFRICA

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Despite widespread availability of PMTCT, not all mothers provided with medication take it or provide it to their newborns. This pilot intervention sought to increase male involvement in PMTCT and reduce HIV transmission to mother and baby in 240 pregnant women and their partners recruited from Mpumalanga Province, South Africa. Baseline data collected from month 4 of pregnancy to 6 weeks post-partum identified multiple sex partners and high levels of unprotected sex (50%) during pregnancy among both men and women and low levels of knowledge about HIV transmission and PMTCT. Preliminary data indicate high attendance rates in both conditions (Experimental Sessions: 86%; Control Sessions: 79%). At post-intervention, experimental participants had decreased unprotected sex in comparison with control participants (F=7.16, p=.008). At 32 weeks pregnant, no women in the experimental condition had seroconverted, while pregnant controls had an 8.6% HIV seroconversion rate at 32 weeks (66:5; with comparable baseline HIV prevalence at both experimental and control clinics). In addition, pregnant controls who seroconverted by 32 weeks reported more unprotected sex (F=7.81, p=007) and the majority declined post-partum testing for themselves or their infants. In the experimental group, every level of intimate partner violence by men and negative communication by women decreased (F=6.94, p=.009; F=9.30, p=.003) as well as having an increasing trend in positive communication and HIV knowledge and a decrease in the number of sex partners. Given the already high rate of HIV seroconversion (3%) during pregnancy in South Africa, results emphasize the importance of re-testing immediately prior to delivery. Protecting pregnant women from infection during the antenatal period requires active participation of male partners in risk reduction activities, and results suggest that men will actively participate in antenatal activities, including HCT and sexual risk reduction. This ongoing study is funded by an NIH/PEPFAR supplement to P30AI073961.

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## Paper Session 16 2:36 PM–2:54 PM 3074

### THE ASSOCIATION BETWEEN AIDS-RELATED STIGMA AND HIV TESTING AND TRANSMISSION RISK AMONG PATRONS OF INFORMAL DRINKING PLACES IN CAPE TOWN, SOUTH AFRICA

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South Africa has among the highest HIV prevalence rates in the world (UNAIDS, 2010). Voluntary HIV counseling and testing (VCT) campaigns have the potential to reduce rates of both high-risk sex behavior and sexually transmitted infections (Kamb et al., 1998). However, 40% of South Africans still have never been tested for HIV (Government of South Africa, 2009). Given their likely role in the continued spread of HIV, individuals who have never been tested represent an important population for research on testing barriers and HIV risk. AIDS-related stigma has been shown to be one robust barrier to HIV testing (Earnshaw & Chaudoir, 2009). Further, research on gay men has shown how stigma is associated with higher HIV transmission risks (Hatzenbuehler, 2011). The purpose of this study is to examine AIDS-related stigma as it relates to HIV testing and sexual risk among patrons of informal drinking venues in a Cape Town, South Africa township (N=2,572, mean age=32, 45% women, 54% Black, 44% Coloured). These venues represent potentially high-risk places where people drink heavily and often meet sex partners (Weinhardt & Carey, 2000). They are also often targeted by VCT campaigns. 31% of the sample reported having never been tested HIV. After controlling for demographics and alcohol use, higher endorsement of AIDS-related stigma was associated with a lower likelihood of having been tested for HIV (OR=0.88, p<.01). We also examined differences between HIV untested stigma endorsers and non-endorsers and found that endorsement of AIDS-related stigma was associated with HIV transmission risk. Specifically, stigma endorsement was associated with sexual risk behavior, including a higher likelihood of ever having sex on the premises of the bar (OR=2.73, p<.05) and reporting being diagnosed with an STI in the last four months (OR=4.64, p<.01). In sum, this study showed that AIDS-related stigma is both a barrier to HIV testing and an HIV transmission risk factor. Implications for VCT campaigns will be discussed.

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## Paper Session 16 2:54 PM–3:12 PM 3075

### TRANSLATION OF A BEHAVIORAL INTERVENTION IN ZAMBIA: STAFF EVALUATION AND IMPLEMENTATION STRATEGIES

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Community Health Centers (CHCs) represent the front line for HIV care in Zambia. Staff, site and funding limitations can negatively impact the translation of novel patient treatment strategies. This study presents staff and site evaluations from urban CHCs in Zambia, and strategies for their use during translation of an evidence-based, HIV positive prevention intervention. Staff (n=82) participated in focus groups and completed organizational assessments (site, staff and funding specific) on three domains, job satisfaction, burnout, and readiness for organizational change, to evaluate potential barriers to implementation and sustainability of the intervention. Focus group transcripts were reviewed to identify dominant themes to be addressed during implementation of the intervention. Themes included teamwork, patient volume, positive attitudes, insufficient compensation, concerns about personal safety and supply stocks-outs. Quantitative assessments indicated that 88% of staff reported working in clinics with over 25 employees and 50% endorsed overcrowding and 70% not having enough space to perform their jobs. Despite sharing office space (68%) with more than five people (50%), the majority of CHC staff across all clinics felt they worked well together as a team (70%). There was no difference between clinics in the level of reported job satisfaction (F=1.90, p=.11), and neither overall job satisfaction nor burnout were related to readiness for implementation of the intervention. Clinics differed on client- and work-related burnout (F=2.53, p=0.36); greater financial rewards or perceived employee appreciation were associated with lower burnout. Results highlighted the importance of both qualitative and quantitative assessment of staff during the initial evaluation phase of translation. Both modes of assessment provided unique and divergent information used to facilitate the implementation and uptake of the intervention in this resource limited community. Strategies for evaluation and implementation in public health settings are discussed. This study is funded by NICHD R01HD058481.

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## Paper Session 16 3:12 PM–3:30 PM 3076

### BEHAVIOURAL CHANGE COMMUNICATION TO ADDRSS ADOLESCENT GIRL'S VULNERABILITY TO REPRODUCTIVE AND SEXUAL HEALTH CONCERNS

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This paper discusses the findings of an operations research study undertaken;

1. to study the vulnerability of adolescent girls to sexual and reproductive health (SRH) concerns and HIV/AIDS due to premarital sex behaviour in a society where premarital sex has hitherto been a taboo, and
2. to promote adaptation of safe sex behaviour.

The study was sponsored by Government of India and carried out in selected rural and urban localities in Rajasthan. The project had two major components. First,a base line survey based on data collected from 614 randomly selected adolescent girls. The study shows that the premarital sex relationships were no longer a taboo among Indian adolescent girls living even in the villages or small towns. It was observed that social pressures for normative behaviour have relatively diluted in these groups. At micro level, image among peers was most influencing factor in promoting premarital sex relationships. Sexually active girls were better informed about sources of spread of HIV/AIDS and preventive measures. But it cannot be said that knowledge of preventive measures has led them to risk behaviour. Rather, it is linked to their inability to use these.

Secondly, a series of behavioural change communication (BCC) and health-care interventions were carried out for a period of one year. These included; inculcation of correct understanding and practices for reproductive and sexual health issues through creation of enabling environment, dialogue, discussion and counseling, creation of an enabling environment to receive and practice on information, and, referral to health care facilities for curative care.

Over 400 adolescents have directly participated in the project activities. Indirect benefits have reached to five times of this number. A case-control design was adopted to assess the outcomes. It shows;

1. an appreciable improvement in adolescent's understanding of reproductive and sexual health matters, gender sensitivity, self confidence and communication abilities,
2. almost five times increase in use of condom among sexually active adolescents,
3. schooling status of girls had a major influence in improving outcomes of interventions.

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## Paper Session 17 2:00 PM–2:18 PM 3077

### EPINEPHRINE, TRUNK FAT AND FASTING GLUCOSE

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The sympathoadrenal system has long been known to play a key role in glucose counterregulation in response to hypoglycemia. The aim of the present study was to test the novel hypothesis that sympathoadrenal activity decreases with increasing adiposity. Several previous studies have noted that epinephrine (EPI) is significantly lower in non-diabetic obese compared to lean individuals, both at rest and in response to exercise. In the present study, we examined the relationship of urinary and plasma EPI to trunk fat as assessed by DEXA in 445 healthy euglycemic (fasting glucose <90 mg/dl) men and women. Regression analysis revealed a significant negative association of trunk fat to plasma EPI at rest (p<.001), as well as to daytime (p<.01) and evening (p<.001) urine EPI. Plasma EPI levels were 3 times higher in individuals with lowest trunk fat (<11% trunk fat) compared to the ones with highest trunk fat (>38.5% trunk fat). In individuals with glucose levels >90, there was no relationship between in EPI levels and trunk fat. In a recent study we found that in individuals with high central adiposity, high levels of epinephrine were associated with increased non-esterified fatty acids and fasting glucose. Our present data suggest that the lower levels of sympathoadrenal activity may help maintain euglycemia in the presence of elevated body fat.

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## Paper Session 17 2:18 PM–2:36 PM 3078

### THE MEDIATIONAL ROLE OF WEIGHT LOSS IN GLUCOSE REDUCTION IN THE HEALTHY LIVING PARTNERSHIPS TO PREVENT DIABETES (HELP PD): A RANDOMIZED CONTROLLED TRIAL

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The purpose of this study is to examine the role of weight loss in reductions in glucose resulting from the HELP PD Lifestyle Weight Loss intervention (LWL). 301 individuals with prediabetes (Mean(SD) age=58(9.5), BMI= 32.7(4.0) m/kg2; fasting blood glucose=105.5(11.3) mg/dl) were randomly assigned to either LWL or an enhanced usual care condition (UCC). The goal of LWL was >7% weight loss achieved through physical activity (180 min/wk) and caloric intake (1500 kcal/day) goals. The intervention was administered by Community Health Workers trained by registered dietitians (RDs) employed in a local Diabetes Education Program and consisted of group meetings weekly for 6 months and monthly thereafter for 18 months. UCC consisted of 2 meetings with a RD and a monthly newsletter. At 12-months, the main group effect on glucose was -4.36 mg/dl (-4.47 LWL vs. -0.11 mg/dl UCC; p<0.001). The LWL also experienced significantly greater decreases in percent body weight (-7.4% vs. -1.4%; p<0.001) than the UCC. When percent weight loss was included in the model, the independent effect of group on glucose dropped to -0.99 mg/dl (SE=0.95, p=0.30) and this decrease was statistically significant (p<0.001). Therefore, it appears that weight loss mediates the impact of the LWL on reductions in glucose, accounting for 77% of the effect of the intervention on glucose, in patients with prediabetes. The results of this study provide additional evidence of the critical, mediating role of weight loss in glycemic control and potentially for the prevention of type 2 diabetes.

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## Paper Session 17 2:36 PM–2:54 PM 3079

### DIABETES SELF-CARE ACTIVITIES MEDIATE THE RELATIONSHIP BETWEEN PSYCHOLOGICAL FACTORS AND GLYCEMIC CONTROL

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The literature reports relationships between various psychological factors and diabetes self-care behaviors as well as glycemic control (HbA1c), but few reports provide evidence for the path from psychological factors through behavior to glycemic control. Furthermore, few studies distinguish between psychological factors that are "positive," such as optimism, and those that are "negative," such as depressed mood. We tested whether diabetes self-care behaviors mediate the relationship between psychological factors and HbA1c, and, if so, whether this was equally the case for positive and negative psychological factors. Data were from baseline measures of 165 persons with T2DM participating in a study of expressive writing. Participants were 65% female, 81% White, mean age=55.4 (SD: 10.1), mean BMI=37.34 (SD: 8.05), and mean HbA1c=9.13 (SD: 1.68). The Summary of Diabetes Self-Care Activities (SDSCA) assessed diabetes self-care behavior. An index of Positive Psychological Factors (PPF) consisted of generalized self-efficacy, dispositional optimism, life satisfaction, and positive affect. An index of Negative Psychological Factors consisted of diabetes distress, depressive symptoms, negative affect, and the negative impact of life events. SES (an index of education and income) correlated with HbA1c (r=-.24, p<.01) but not with SDSCA. Controlling for age, sex, race, and SES, SDSCA was negatively associated with HbA1c (r=-.23, p<.01). The PPF index correlated with both SDSCA (r=.27, p<.001) and HbA1c (r=-.27, p<.001) while the NPF index was uncorrelated with either one. With SDSCA in the model, the PPF index no longer correlated with HbA1c (r=-.12, p=ns). Thus, the relationship between positive psychological factors and glycemic control is mediated by self-care behaviors.

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## Paper Session 17 2:54 PM–3:12 PM 3080

### GENDER DIFFERENCES IN PHYSICAL INACTIVITY AND CARDIAC EVENTS IN TYPE 2 DIABETES

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Although physical activity (PA) is an essential element of diabetes management, limited longitudinal data are available on factors associated with physical inactivity (PI) and predictive of cardiac events (cardiac death, acute coronary syndrome, heart failure, and revascularization) in older adults with type 2 diabetes (T2DM). We analyzed data from the Detection of Ischemia in Asymptomatic Diabetics (DIAD) study to compare factors associated with PI at baseline, and predictors of cardiac events over 5 years, in men and women (n=1119) with T2DM, age 50 to 75 without a baseline diagnosis of coronary artery disease (CAD). Sociodemographic, diabetes, and cardiac risk factors, and PA levels, were assessed at baseline; PA and cardiac events were assessed every 6 months. Mean age was 61±6.6 years; 46% were women; 17% were Black; T2DM duration, 8.5±7 years; HbA1c, 7.1±1.5%; and 23% used insulin. Factors associated with baseline PI in women include: part-time employment (OR=0.49; p=.003); peripheral neuropathy (OR=1.85; p=.009); peripheral pain (OR=2.62; p=.002); and BMI (OR=1.05; p=.0006). For men factors were: being married (OR=2.05; p=.002); part-time employment (OR=0.46; p=.0007);autonomic neuropathy (OR=2.0; p=.007); higher waist circumference (OR=1.04; p=.047); and education (OR=0.91; p=.0006). Over 5 years the cardiac event rate was 8.4% (n=94). Factors predicting events in women were: Black ethnicity (HR=.31;p=.05), insulin use (HR=.34; p=.03); duration of T2DM (HR=1.10; p<.0001); HbA1c (HR= 1.3; p=.05); family history CAD (HR=2.3; p=.02); and higher pulse pressure (HR=3.02; p=.002). In men, predictors were: T2DM duration (HR= 1.04; p=.02); HbA1c (HR=1.2; p=.009); peripheral numbness (HR= 2.0; p=.009); waist-to-hip ratio (HR=1.04;p=.05);higher pulse pressure (HR=1.8; p=.046) and lower valsalva ratio (HR=2.03; p=.01). Gender differences were noted in factors associated with baseline PI and predictors of cardiac events. Given known benefits of PA on glycemic control and cardiac risk, gender specific interventions may help improve PA levels and decrease cardiac risk.

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## Paper Session 17 3:12 PM–3:30 PM 3081

### SOCIAL SUPPORT, DEPRESSION AND TREATMENT ADHERENCE AMONG TYPE 2 DIABETES PATIENTS

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Background: Research indicates that depression in patients with diabetes is related to increased morbidity, mortality, and lack of adherence to diabetes treatment; it is also established that social support is linked to both adherence behaviors and depression. However, the relationships between depression, social support and diabetes treatment adherence have not been fully understood. This study examined evidence for a moderating role of depression in explaining the relationship between social support and diabetes treatment adherence. Methods: The sample consisted of 147 participants with type 2 diabetes mellitus who were recruited through Massachusetts General Hospital. Participants completed measures of number of social supports, perceived satisfaction with support, depressive symptoms, and diabetes self-management. Results: Hierarchical regression analyses demonstrated that depression moderated the relationship between perceived satisfaction with support and medication adherence ($\beta=-.195$ $p=.02$). Similarly, a hierarchical regression analysis demonstrated that perceived satisfaction with support moderated the relationship between depression and medication adherence. Accordingly, at low levels of perceived satisfaction with support there was no relationship between depression and treatment adherence ($\beta=-.002$, $t=-.023$, $p=.982$), but at high levels of perceived satisfaction with social support, there was a negative relationship between depression and medication adherence ($\beta=-.36$, $t=-3.1$, $p=.003$). Moderation analyses for number of social supports fell short of significance ($p=.09$). Conclusions: Our study found that the relationship between perceived social support and diabetes medication adherence depends on the level of depression. Clinicians should, therefore, be mindful that even patients with high levels of social support are at risk for non-adherence if they suffer from depression.

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## Citation Paper

## Paper Session 18 2:00 PM–2:18 PM 3082

### DEPRESSIVE SYMPTOMS ARE ASSOCIATED WITH HIGHER LEVELS OF PEAK PLASMA GLUCOSE CONCENTRATIONS IN HISPANICS WITH METABOLIC SYNDROME

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While type-2 diabetes and depression are highly co-morbid, research on the physiological mechanisms that link these two conditions remains scarce. Recent research suggests that peak 1-hour plasma glucose concentration during an oral glucose tolerance test (OGTT) is associated with risk for future type-2 diabetes and correlates better with B-cell function and with indices of insulin secretion and resistance than fasting and 2-hour plasma glucose concentrations. The present study examined the association between depressive symptoms and peak plasma glucose concentrations obtained during an OGTT in the context of metabolic regulation in persons at risk for type-2 diabetes and heart disease. Results were based on participants who completed a baseline interview as part of a randomized controlled trial on the "Biobehavioral Bases & Management of Metabolic Syndrome" ($N=126$). All participants had metabolic syndrome and a non-diabetic OGTT based on ADA criteria. Multivariate linear regression revealed that higher levels of depressive symptoms (i.e., Beck Depression Index) were associated with higher levels of peak 1-hour plasma glucose concentrations ($B=.25$, $p<.01$) during an OGTT after adjusting for covariates (age, gender, BMI, and baseline glucose levels). Further analyses evaluating the somatic and cognitive subscales of the Beck Depression Inventory (BDI) revealed that after adjustment of covariates, only the cognitive/affective subscale score was significantly associated with peak 1-hour plasma glucose concentration ($B=.20$, $p<.05$). The somatic/physical subscale score was not associated with peak glucose levels. Consistent with the literature on depression, our results showed the importance of differentiating between psychological and physical symptoms of depression in patients with metabolic syndrome. Implications of these findings suggest further examination of the pathways linking cognitive and somatic depressive symptoms to the body's ability to process glucose efficiently during a physiological challenge, particularly among individuals with metabolic syndrome.

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## Citation and Meritorious Paper

## Paper Session 18 2:18 PM–2:36 PM 3083

### LEPTIN AS A NOVEL PREDICTOR OF DEPRESSION IN PATIENTS WITH THE METABOLIC SYNDROME

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The association between depression and the Metabolic Syndrome (MetS) has been extensively investigated, and inflammation has been identified as an underlying link. Recent reports, however, indicate a possible role of leptin in modulating the immune response, leading to an increase in inflammatory markers. The literature suggests this hormone may not only explain the metabolic abnormalities associated with depression but may also act as a biomarker of depression itself. This study aimed to determine the association between leptin and depressive symptoms after controlling for important confounding factors such as age, gender, insulin resistance, total adiposity and inflammation. We studied 118 participants, 66 females and 52 males, recruited for the Community Health and Risk-reduction for the Metabolic Syndrome (CHARMS) study. Depression was measured using the Beck Depression Inventory (BDI). Leptin was measured using a leptin-specific enzyme immunoassay. Inflammation was assessed using C-reactive protein (CRP) measured with a high-sensitivity assay. Participants with CRP levels greater than 10 mg/L were excluded from analysis. CRP and leptin levels were log transformed to achieve a normal distribution. Mean depression and (log) leptin scores were 11.17 ($SD=9.4$) and 3.50 ($SD=0.7$), respectively. Leptin levels were associated with elevated BDI scores ($\beta=0.28$, $p=.004$). After controlling for age, gender, insulin resistance, total adiposity and inflammation, leptin levels remained significantly associated with BDI scores ($\beta=.28$, $p=.025$). Other important predictors of BDI scores were age ($\beta=.23$, $p=.039$) and CRP levels ($\beta=.30$, $p=.009$). The model accounted for 33% of the variance in depression scores. Leptin is an independent predictor of depression in patients with the MetS. This association was independent of important confounding factors such as age and CRP levels. Further research is needed to elucidate the complex pathways linking depression and the MetS while incorporating the potential role of leptin.

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## Paper Session 18 2:36 PM–2:54 PM 3084

### MOOD AND BLOOD PRESSURE REGULATION IN RESPONSE TO ORTHOSTATIC CHALLENGE IN CHILDREN

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The link between orthostatic blood pressure (BP) dysregulation and anxiety poses a significant concern for mental and cardiovascular health. When moving from supine to standing, systolic BP is expected to increases as part of optimal orthostatic blood pressure regulation (OBPR). Notably, studies from our lab on school-age children indicate that poor OBPR, even when subclinical, is associated with mood and ADHD symptoms and poorer classroom effort. Therefore, we examined the association between OBPR and mood—as measured by the State-Trait Anxiety Inventory for Children and the Clinical Depression Inventory (CDI)—in Caucasian and African American children, aged 7 to 10 years ($N=119$). To assess OBPR, we used pulse pressure (PP) because it takes both systolic and diastolic BP into consideration. Pulse pressure was calculated by subtracting the diastolic BP from systolic BP, and PP change was calculated by subtracting supine PP from standing PP. A multiple regression model controlling for age, gender, ethnicity, and PP change examined the association between OBPR and state anxiety. African American children had higher state anxiety scores than did Caucasian children ($R2$ change=.06, $p=.01$). Additionally, as PP became more effective, state anxiety scores decreased ($R2$ change =.04, $p=.02$), suggesting that greater PP change is associated with lower scores of anxiety. Furthermore, poor OBPR predicted higher state anxiety scores in males ($R2$ change=.11, $p=.02$) but not in females. After controlling for CDI scores, the relationship between state anxiety and PP change was not affected ($R2$ change =.03, $p=.03$), which indicates that depression does not contribute to the association between state anxiety and OBPR. This outcome suggests that poor OBPR, independent of depression, may be a marker for increased anxiety. These findings warrant further research in evaluating how the relationship between OBPR and anxiety varies among different ethnicities and genders.

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## Paper Session 18 2:54 PM–3:12 PM 3085

### DEPRESSION REVERSES THE ANTI-INFLAMMATORY PROPERTIES OF LIGHT-TO-MODERATE ALCOHOL CONSUMPTION

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Light (1-7 drinks/week) to moderate (2 drinks/day) alcohol consumption is associated with lower cardiovascular (CVD) mortality and C-reactive protein (CRP), a predictor of cardiovascular risk. In contrast, depression is associated with higher CVD mortality and CRP. The present study assessed the moderating influence of depression on the anti-inflammatory properties of light-to-moderate alcohol consumption in 201 healthy, nonsmoking adult men and women (45% women, 40% minorities, aged 18-65 yr). Depression was assessed using the Beck Depression Inventory (BDI). Participants were asked to self-report their alcohol intake using 1 of 5 frequency patterns: never (no alcohol), former (no alcohol in last 12-months), infrequently (1 to 3 drinks/month), occasionally (1 to 7 drinks/week) and regularly (2 drinks/day). Fasting blood samples were used for assessment of high-sensitivity (hs) CRP. Preliminary analysis revealed that alcohol use did not differ between genders and was not associated with depression score in the overall sample or within each gender group. Univariate analysis revealed a linear trend between alcohol consumption and log-transformed CRP (p=.05) with occasional and regular users having the lowest CRP and former and never drinkers having the highest CRP. The association was consistent for both men and women. Adjusting for high density lipoprotein (HDL) cholesterol , age, body mass index (BMI), race and exercise, analysis of log-transformed CRP revealed a significant 3-way interaction between alcohol use, depression and gender (p=.008). In women, depression (BDI≥9) did not alter the relation of alcohol use to CRP. In men, however, depression reversed the effect of occasional/regular alcohol intake on CRP (p=.02), with depressed men exhibiting higher CRP (adjusted mean (SE)=2.26±.77 mg/L) than non-depressed men (0.96±.44 mg/L). Consistent with previous findings, light-to-moderate alcohol intake was associated with lower CRP in depressed women and non-depressed men and women. In men, however, depression reversed the cardioprotective properties of light-to-moderate alcohol consumption.

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## Paper Session 18 3:12 PM–3:30 PM 3086

### DEPRESSION SYMPTOMS AND CAROTID ARTERY INTIMA-MEDIA THICKNESS IN POLICE OFFICERS

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Police work is considered a stressful occupation. Depression may be an outcome of stress and depression has been associated with an increased risk of cardiovascular disease. This cross-sectional study tested the hypothesis that depressive symptoms in police officers are associated with carotid artery intima-media thickness (CIMT), a subclinical marker for cardiovascular disease (CVD). Participants included 412 officers (mean age=41 years) with complete data (305 men and 107 women). CIMT was measured with high resolution B-mode carotid ultrasonography. Depressive symptoms were measured using the Center for Epidemiological Studies Depression (CES-D) scale. Analysis of Variance and Covariance were utilized to examine the mean values of common CIMT (CCA IMT) and maximum CIMT (MMXIMT) across quintiles of depressive symptoms. No significant linear association was observed for CES-D scores with CCA IMT or MMXIMT before or after adjustment for covariates. However, it is possible that officers with other CVD related co-morbidities made the association between depressive symptoms and CIMT more difficult to detect. Therefore, we stratified other CVD risk factors (yes or no). Only hypertension made a difference; for officers classified with no hypertension, mean levels of CCA IMT increased with increasing quintiles of depression scores after adjustment for demographic and lifestyle variables (p=0.022). After inclusion of other CVD risk factors in this model, the association remained close to significance (p=0.054). Future prospective work would help to clarify possible causal relationships between depression and CVD.

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## Paper Session 19 2:00 PM–2:18 PM 3087

### CULTURAL AND LINGUISTIC ADAPTATION OF A COLORECTAL CANCER SCREENING DECISION AID FOR LATINOS WITH LIMITED ENGLISH PROFICIENCY

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Latinos with limited English proficiency (LEP) have the lowest colorectal (CRC) screening rates of any ethnic group in the U.S. It is critical to adapt culturally and linguistically successful English-language health communication intervention that can facilitate CRC related communication and decision making in this population. The need for formative research in designing health communication messages is widely accepted; however, no studies have examined the perspectives of LEP Latinos on a cultural and linguistic adaptation of an English language decision aid. This paper describes the adaptation process of a culturally and linguistically-targeted computer-mediated Spanish CRC screening decision aid for LEP Latino patients based on a previously developed effective English-patient decision aid. Using the focus group data from the OPCIONES ("Choices") project, an intervention study, as a case study, this study describes the formative work and steps in the adaption process of the English decision aid including review and appraisal of existing intervention, analysis of regional context and literature, engagement of key stakeholders, and solicitation of direct input from target population and how formative work shaped the development of the Spanish-language CRC screening decision aid for LEP Latino patients. We demonstrate how information gathered from each step of the adaptation process can be operationalized in a computer-mediated decision aid advocating CRC decision making. As the US population becomes more linguistically and culturally diverse, there is a need for effective health communication interventions that target LEP populations. Cultural and linguistic adaptation of interventions has potential to improve acceptability and utility by the target population as well as promote behavior change in colorectal cancer screening.

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## Paper Session 19 2:18 PM–2:36 PM 3088

### RANDOMIZED TRIAL OF A CHURCH-BASED TAILORED INTERVENTION FOR OLDER AFRICAN AMERICANS TO PROMOTE COLORECTAL CANCER SCREENING

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The ACTS of Wellness study was a randomized control trial developed to promote CRC screening and physical activity (PA) among urban African-American church members.

Urban African American churches were recruited from North Carolina (n=12) and Michigan (n=7). Church members age 50 and older (n=955) completed self-administered baseline and post-intervention surveys at 12 months. Intervention participants received 3 mailed tailored newsletters addressing CRC screening and PA behaviors over approximately 6 months. Individuals who were not up-to-date for screening at baseline also received motivational calls from a peer counselor (PC). PCs were provided with stool card test kits and a screening decision aid to give to unscreened members who requested them. Control churches received Body & Soul, a program designed to promote fruit and vegetable consumption. Screening outcomes included self-report of being up-to-date for any recommended CRC screening and screening in the past year.

Among study completers (n=712), baseline screening rates were high in both the intervention (75.9%, n=374) and control groups (73.7%, n=338). Rates increased in both the intervention and control groups (+6.4 and +4.7 percentage points respectively, p=0.25). Among participants who were due for screening during the intervention period (n=189), 33.0% of intervention and 33.7% of control participants reported receiving one in the past year (p=0.88); among intervention participants due for screening (n=91) those who recalled speaking with a PC were more likely to report a screening in the past year than those who did not speak with a PC (52.9% vs. 27.3%, p=0.04); those who recalled receiving newsletters (n=75) were also more likely to report a past year screening (36.0% vs. 18.8%, p=0.11).

Our intervention did not increase CRC screening in a highly screened urban, church population. Future studies should consider similar methods, but better identify and reach populations in need of screening.

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## Paper Session 19 2:36 PM–2:54 PM 3089

### PREDICTORS OF STRONG PREFERENCE FOR COLORECTAL CANCER GENETIC AND ENVIRONMENTAL RISK ASSESSMENT

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Background: This report identifies predictors of strong preference among primary care patients for colorectal cancer (CRC) genetic and environmental risk assessment (GERA). GERA involved having a blood test for the presence of specific Methylenetetrahydrofolate (MTHFR) genotypes (677/1298) and low folate, two reported CRC risk factors.
Methods: In a larger randomized, controlled trial, patients who were 50 - 79 years of age, were eligible for CRC screening, and completed a baseline survey were randomized either to a usual care control group or an intervention group. Participants in the intervention group met with a trained nurse to review a GERA informational booklet and clarify personal preference for having a GERA blood test. The nurse computed a GERA preference score (ranging from 0.00 to 1.00) based on elicited participant decision factors and related influence weights. We analyzed GERA preference scores for the first 344 participants in the intervention group. Scores were dichotomized as weak to moderate (0.00-0.62) or strong (0.63-1.00). Multivariable analyses were performed to identify predictors of strong preference. Reasons for preference expressed by participants were recorded and tallied.
Results: Intervention group participants tended to be 50-59 years of age (68%), white (58%), female (59%), single (52%), and have>HS education (72%). 23% of participants had a strong preference for GERA. Results of multivariable analyses showed predictors of having a strong preference included being nonwhite (OR=2.4, CI: 1.4, 4.0) and having≤to a high school education (OR=1.9, CI: 1.1, 3.2). Frequently expressed reasons for strong preference included a desire for knowledge about risk for CRC and worry about developing CRC in the future.
Conclusion: Research is needed to illuminate the importance of patient race/ethnicity, education, and concerns about risk relative to preference for GERA, and, ultimately on actual GERA testing.

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## Paper Session 19 2:54 PM–3:12 PM 3090

### ASSESSMENT OF BASIC NUMERACY SKILLS AMONG A SAMPLE OF APPALACHIAN MEN AND WOMEN PARTICIPATING IN A COLORECTAL CANCER SCREENING FORMATIVE RESEARCH STUDY

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In order to understand widely used cancer education materials and make informed medical decisions, patients need simple numeracy skills, including the ability to understand percents and fractions. Assessment of numeracy skills is germane to medically underserved populations such as residents of Appalachian Kentucky, a region recognized for cancer disparities and lower socioeconomic status. As part of a colorectal cancer screening formative research study, we conducted 35 interviews with men and women, age 45 and older who were patients of a federally-qualified primary care clinic in rural, southeastern Kentucky. Part of the interview focused on participants' numeracy skills including the ability to calculate percentages and fractions using stick gingerbread men. Respondents were primarily Caucasian (N=35, 100%) and female (n=27, 77%); the mean age was 58 years (SD 10.0) and 38% (n=13) of the sample had a high school education or less. The average score on the Rapid Estimate of Adult Literacy in Medicine (REALM) assessment was 62 (SD 8.7) indicating≥9th grade education. Almost all the participants could calculate 2 of 10 (n=34, 97%); however, 23% (n=8) could not calculate the fraction 2/3 (6 of 9 gingerbread men). Almost 30% (n=10) of the sample could not calculate 30% of 10 and close to 40% (n=13) could not compute 30% of 100. For the latter two calculations, the participants who failed to calculate 30% more commonly calculated 33.3%. As reported here, a sample of Appalachian men and women had difficulty calculating relatively simple fractions and percentages. Public health researchers and practitioners may consider using more visual, graphic data to make cancer information such as incidence and mortality rates, cancer risk statistics, risks and benefits of screening and treatment, and survival statistics, more accessible to less numerate populations.

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## Paper Session 19 3:12 PM–3:30 PM 3091

### EVALUATING THE TRAINING OF FILIPINO AMERICAN COMMUNITY HEALTH ADVISORS TO PROMOTE COLORECTAL CANCER SCREENING

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Background: Several reviews indicate that community health advisor-led interventions are associated with improved health promotion behaviors, such as cancer screening, in various populations. However, the process of training community health advisors is rarely described and evaluated.
Methods: We trained 91 Filipino American community health advisors from 19 organizations to conduct small-group sessions with members of their organizations to promote colorectal cancer screening. Community health advisors completed brief pre- and post-training surveys that included knowledge of colorectal cancer screening guidelines (4 items), perceived self-efficacy of performing specific tasks (15-item scale, Cronbach's alpha >.90) and satisfaction with the training itself (5 items).
Results: Community health advisors (average age 61 years, 55% had a health care background) had high levels of knowledge and self-efficacy at pre-training, but levels increased significantly immediately after the 6-hour training (percent of knowledge items answered correctly: 63% to 94%; self-efficacy: 8.2 to 8.9 on a 10 point scale, both p<.001). Correlates of self-efficacy at pre- and post-test were high educational attainment, health care background, high level of participation in the organization, being perceived by others as a leader, and frequent participation in research activities in the past.
Discussion: Compared to other studies, we trained a relatively large number of community health advisors but a sizable number had a health care background. Thus, results may not generalize to other populations. Consistent evaluation measuring similar constructs across studies may help to standardize the quality of the training, and may improve the implementation of community health advisor-led programs. Longitudinal analyses should determine which constructs predict successful recruitment and intervention implementation by community health advisors.

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# Friday
# April 13, 2012
# 3:45 PM–5:15 PM

## Symposium 28 3:45 PM–5:15 PM 3092

### IMPLEMENTING COMMUNITY-BASED DISTRESS SCREENING FOR CANCER PATIENTS

Mitch Golant, PhD,[1] Joanne Buzaglo, PhD,[1] Melissa F. Miller, PhD, MPH[1] and Paul B. Jacobsen, PhD[2]

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Distress screening is vital to quality cancer care (IOM 2007). In fact, screening cancer patients for psychosocial distress is a key component of the new accreditation standards released by the Commission on Cancer of the American College of Surgeons. In the US, ~85% of patients are treated in the community not in comprehensive cancer centers, yet distress screening in the community is largely nonexistent. This symposium will address the screening chasm between academic centers and the community. Presenters will (1) discuss screening innovations in a comprehensive cancer center and adaptation of technology to a community setting, (2) report on validity and reliability of a community-based screening tool, and (3) discuss lessons learned from implementing screening in the community. The Cancer Support Community (CSC) Research & Training Institute collaborated with investigators from City of Hope (COH), a Comprehensive Cancer Center, Genesis Cancer Care Institute, a small oncology practice, and Gilda's Club/Quad Cities (GCQC), a community-based cancer support organization, to test a touchscreen technology system that identifies sources of distress, generates referrals and provides tailored educational materials in real time. The touchscreen program content, originally developed at COH and modified for use across participating sites, asks cancer patients using patient-friendly language to rate practical, social, and emotional problems and resource needs and to identify the help they want. In the first phase of a demonstration project, the 53-item COH screening tool was shortened to 36 items, and the validity and reliability tested in a community sample of 319 cancer survivors. Subsequently, the feasibility of implementing touchscreen distress screening in the community was tested at 4 sites nationwide including Genesis Cancer Care Institute and GCQC. Given the current mandate to screen for distress and provide psychosocial care and resources to cancer patients, this symposium will inform next steps of implementing comprehensive cancer screening in the community.

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## Symposium 28A 3093

### VALIDITY AND RELIABILITY OF A 36-ITEM PROBLEM-RELATED DISTRESS SCREENING TOOL IN A COMMUNITY SAMPLE OF 319 CANCER SURVIVORS

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Objective: The purpose of this study was to test the validity and reliability of the Cancer Support Community Screener (CSCS), a 36-item problem-related distress screening tool in a community sample of cancer survivors. Methods: Internal reliability was estimated using Cronbach's alpha coefficient. Test-retest reliability was assessed using the intra-class correlation coefficient (ICC). Concurrent validity was determined by correlations with the Functional Assessment of Cancer Therapy-General well-being scale (FACT-G), the Center for Epidemiologic Studies Depression Scale (CES-D), and the Distress Thermometer (DT). A non-parametric analysis of variance was used to establish discriminant validity. Sensitivity analysis was carried out using receiver operating characteristic (ROC) curve analysis with the CES-D($\geq$16) and DT ($\geq$4) as criterion. Results: Cancer survivors (n=319) recruited across 14 community-based affiliates of the CSC participated in the study. The CSCS demonstrated high internal consistency (Cronbach's alpha=0.91) and strong test-retest reliability (ICC$\geq$0.75). Summary scores of the CSCS correlated substantially with the FACT-G (R-squared=0.58, $p<0.001$), CES-D (R-squared=0.48, $p<0.001$) and DT (R-squared=0.35, $p<0.001$) indicating strong concurrent validity and were able to discriminate several groups of clinical relevance. ROC analyses showed that a cutoff score of 8 for CSCS problem items rated$\geq$3 had optimal sensitivity and specificity. Conclusion: The CSCS shows strong psychometric properties and can be considered a valuable community-based tool to assess psychological distress along with social, physical and other patient-related symptoms and problems. This study is the first to address the chasm between hospital and community-based screening, has validated a community-based instrument, and begun to demonstrate the feasibility of screening in the community.

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## Symposium 28B 3094

### MEETING NEW STANDARDS OF CARE: IMPLEMENTING INNOVATIVE TECHNOLOGY FOR DISTRESS SCREENING ACROSS SETTINGS

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Historically, distress screening was performed using paper and pencil that was time-consuming for staff to review, analyze, and make referrals. Research has shown that automation can decrease resource intensity while creating systems that provide enhanced timely communication, automated and tailored interventions, clinical summaries, and triage—all in real-time. This presentation will outline strategies for implementing innovative technology for distress screening in two comprehensive cancer centers and how implementation strategies were successfully adapted to a community-based setting.

City of Hope has developed and implemented an automated touch-screen system called SupportScreen. Partnering with the Cancer Support Community we tested the feasibility of implementing SupportScreen in the community.

We identified general principals in implementing screening that apply to a community-based setting. For example, implementing screening in a new setting is similar to starting a patient on a trial of anti-depressants, start low-go slow and carefully monitor, especially at first. It is also essential to understand the specific culture in which screening is to be implemented. We learned very quickly that the humanistic culture of the community supports screening innately and is consistent with the interventions provided. Another important lesson learned was that the expectations of academic centers are inconsistent with the resources of community-based organizations where new programs require major investments of Information Technology support, staff education, training and reorientation of staff and then cancer survivors to technology and research.

Patient-centered care can only occur if it is where the patient lives-in the community. It is only through the careful integration of hospitals and community organizations that this is possible. Screening, through this feasibility study, has shown that it can be the connective tissue among academic institutions, hospitals, and community organizations.

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## Symposium 28C 3095

### LESSONS LEARNED: CHALLENGES AND SUCCESSES OF IMPLEMENTING COMMUNITY-BASED DISTRESS SCREENING

Melissa Wright, MSW[1] and Wendy Ballou, RN[2]

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The purpose of this presentation is to discuss the challenges and successes of implementing an electronic distress screening program in a small oncology practice and a community-based cancer support organization. Methods: A hospital-based oncology practice and a community-based cancer support organization were recruited to partner in a larger psychosocial distress screening project. The Nurse Navigator from the oncology practice and the Program Director from the community organization began to meet in person to develop implementation strategies for using the electronic screening tool at their sites. Through their collaboration referral materials and structures were developed. Results: Over a 6 month period the oncology practice screened 13 patients on their second visit to the physician's office, and the community-based organization screened 26 patients for distress. Follow-up and referral was made to a range of hospital disciplines and community support services based on the patient's screening report summary. Conclusions: Implementing electronic distress screening was more difficult at the physician office than at the community-based organization. Patients arriving for their appointment with the physician were often overwhelmed or didn't have time to complete the questionnaire in addition to seeing their doctor or receiving treatment, whereas, appointments for patients at the community based organization were to complete the screening only and meet with the Program Director for follow-up. There were also some challenges with the screening technology that were more prevalent within the oncology practice and integrating it with the electronic hospital records. The partnership between the oncology practice and the community based organization was enhanced by implementing a structured screening, follow-up and referral process for patents, whereby improving patient care.

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## Symposium 29 3:45 PM–5:15 PM 3096

### SKIN CANCER PREVENTION: DIVERSE APPROACHES TO A GROWING PROBLEM

Elliot J. Coups, PhD,[1] Alan Geller, RN, MPH,[2] Carolyn J. Heckman, PhD,[3] David B. Buller, PhD[4] and Jennifer Hay, PhD[5]

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Of the approximately 2.2 million individuals diagnosed with skin cancer annually in the United States, more than 70,000 have melanoma, the most lethal type of skin cancer. Unlike most other cancers, the incidence of melanoma has been steadily rising for the past several decades. The primary cause of all types of skin cancer is excessive exposure to artificial or natural ultraviolet radiation (UVR). Efforts to prevent skin cancer should focus on reducing UVR exposure behaviors and increasing rates of skin protection and early detection behaviors, particularly among at-risk populations. This symposium highlights the results of several large research studies that exemplify the multiple behavior, multi-level, and multifaceted approach that is needed to stem the increasing burden of skin cancer. Routine physician screening for skin cancer remains controversial and nationwide, systematic early detection systems are lacking. Alan Geller will describe the results of a study of pre-diagnosis skin-surveillance behaviors among newly-diagnosed melanoma patients that highlights the value of physician skin examinations and routine skin self-examination. Carolyn Heckman will outline the results of a study suggesting that indoor tanning may represent a substance dependence that is associated with other psychiatric symptoms for some young adult women. Elliot Coups will describe the results of research identifying acculturation and other sociocultural correlates of skin surveillance and protection behaviors among Hispanics. David Buller will describe the adoption and implementation of sun protection policies in public health districts in a randomized controlled trial of a policy promotion intervention. The discussant, Jennifer Hay, will synthesize the presentations and outline priorities for future research.

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## Symposium 29A 3097

### BEHAVIORAL DETERMINANTS OF SUCCESSFUL EARLY MELANOMA DETECTION: ROLE OF SELF AND PHYSICIAN SKIN EXAMINATION

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Reduced melanoma mortality should result from an understanding of modifiable factors related to early detection. We surveyed newly-diagnosed patients to identify differences in pre-diagnosis behavioral and medical care factors associated with thinner versus thicker melanoma. 566 adults with invasive melanoma completed surveys within 3 months of diagnosis on demographics, health care access, skin self-examination (SSE), and physician skin examination (PSE) practices in the year before diagnosis. SSE was measured by use of a melanoma picture aid and routine examination of some/all body sites vs. none. Patient-reported partial or full-body PSE was assessed. Thickness was dichotomized at 1 mm. Patient age ranged from 18 to 99 years; 61% were male. Median tumor thickness was 1.25 mm; 321 (57%) were $>1$mm. Thinner tumors ($\leq 1$mm) were associated with age $\leq 60$ years ($p=0.0002$), female gender ($p=0.0127$), higher level of education ($p=0.0122$), and physician discovery ($p=<0.0001$). Patients who used a melanoma picture aid and performed routine SSE were more likely to have thinner tumors than those who did not. Full-body PSE was associated with thinner tumors (OR 2.51, 95% CI, 1.62-3.87), largely due to the effect of PSE in men $>60$ years (OR 4.09, 95% CI, 1.88-8.89). SSE and PSE are complementary early detection strategies, particularly in men $>60$ years, in whom both partial and full-body PSE are associated with thinner tumors. Given high rates of physician access, PSE may be a more practical approach for successful early detection in this subgroup with highest mortality.

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## Symposium 29B 3098

### PSYCHIATRIC SYMPTOMS OF YOUNG ADULT FEMALE INDOOR TANNERS

Carolyn Heckman, PhD,[1] Susan Darlow, PhD,[1] Jessye Cohen-Filipic, MS,[2] Jacqueline Kloss, PhD,[3] Teja Munshi, BDS, MPH[1] and Sharon Manne, PhD[4]

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Background: Indoor tanning increases risk for melanoma and is particularly common among young adult women. Indoor tanning has also been linked with some psychiatric symptoms, and frequent tanning may indicate tanning dependence related to endorphin release during UV radiation exposure. This is the first study to compare indoor tanners to non-indoor tanners using a comprehensive structured psychiatric interview.

Methods: Participants were 515 women aged 18-25 years who completed an online questionnaire about tanning attitudes and behaviors and a phone-administered Mini International Neuropsychiatric Interview.

Results: History of indoor tanning was reported by 47% of participants. Compared to non-indoor tanners, indoor tanners reported significantly more symptoms of the following disorders: seasonal affective, tobacco dependence, alcohol use, marijuana use, illicit drug use, generalized anxiety, bulimia, tanning dependence measured with three unique scales, as well as appearance concern (all $ps<.05$). Indoor tanners did not differ from non-indoor tanners in terms of symptoms of depression, bipolar disorder, social anxiety, obsessive compulsive disorder, post-traumatic stress, panic, anorexia, body dysmorphic disorder, body image self-efficacy, or emotional coping self-efficacy.

Conclusions: Indoor tanning was consistently associated with addictive disorders, but associations with mood, anxiety, and body image disorders were less consistent. Frequent tanning behavior could be conceptualized as addiction or other psychological disorder. Young women with certain psychological problems may seek relief from their symptoms by indoor tanning. These findings suggest that indoor tanners may benefit from health behavior and other psychiatric interventions.

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## Symposium 29C 3099

### SUN PROTECTION BEHAVIORS AND SKIN CANCER SCREENING AMONG HISPANIC ADULTS

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Compared to non-Hispanic white individuals, Hispanics are more likely to be diagnosed with melanoma at a younger age and with more advanced disease, and they have lower melanoma-specific survival rates. However, Hispanics are understudied in skin cancer prevention research. This study examined the prevalence and correlates of skin cancer protection behaviors in a sample of 4766 Hispanic adults (48% female) drawn from the 2010 National Health Interview Survey. Outcomes of interest included use of sunscreen, staying in the shade, use of sun-protective clothing, and ever having a physician skin examination (PSE). Potential correlates included acculturation (i.e., nativity and language used when speaking), Hispanic origin, demographics, and skin sensitivity to the sun. Overall levels of sun protection behaviors were relatively low (Ms from 2.3 to 3.3 on a 1-5 scale) and 7.2% of participants reported ever having a PSE. In univariate regressions, individuals with higher acculturation reported greater sunscreen use (ps<.001), less use of sun-protective clothing (ps<.001), and a higher rate of PSE (ps<.001). Hispanic origin was associated with each outcome (ps<.05), with for example individuals from the Dominican Republic having low sunscreen use and those from Mexico being more likely to stay in the shade and use sun-protective clothing and less likely to have a PSE. The significant univariate associations were mostly retained in multiple regressions and several demographic factors and skin sensitivity were also associated with the outcomes in expected directions. Greater acculturation among Hispanics may promote some skin cancer prevention behaviors, including use of sunscreen and receipt of a PSE, but hinder use of sun-protective clothing. The existence of behavioral differences across Hispanic subgroups further highlights the importance of developing culturally tailored skin cancer prevention interventions for this rapidly growing U.S. subpopulation.

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## Symposium 29D 3100

### MODERATORS OF ADOPTION AND IMPLEMENTATION OF SUN PROTECTION POLICIES BY PUBLIC SCHOOL DISTRICTS IN A RANDOMIZED TRIAL

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In 2002, CDC recommended that American schools adopt sun protection policies. Sun Safe Schools (SSS), a program promoting adoption of school board-approved policies by public school districts, was evaluated in a randomized controlled trial (n=112 public school districts) in So. California and Colorado. Formal board-approved policies were obtained from 103 districts at pretest and posttest and coded for sun protection content. District administrators and principals completed baseline (n=691) and posttest (n=375) surveys. Using multi-level structural equation modeling, district and respondent variables were tested as potential moderators of policy adoption and implementation of sun protection education and shade. For policy adoption, districts receiving SSS were more likely to adopt policies when respondents had less contact with other districts (p=.043). For implementation of sun safety education, districts receiving SSS delivered education where respondents felt skin cancer was less important for students (p=.019) and themselves (p=.007) and education was less common in districts having a greater pre-post policy change (p=.022). By contrast, shade was present on school grounds more in SSS districts when respondents felt policy/environment changes were more feasible (p=.031) and would favorably affect school staff (p=.049), and in districts with higher policy scores (p=.024). When policy adoption occurred, shade was built in districts with fewer non-Hispanic white students (p=.022), more total students (p=.016) and more credentialed faculty (p=.016), and where respondents felt policies/environments would favorably affect district staff (p=.030). SSS may have done more to motivate policy adoption where administrators were less aware of the need for sun safety. Building shade was the most immediate way districts implemented policies, especially in larger districts and where less staff resistance was expected. Education may take longer to fit into the curriculum.

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## Symposium 30 3:45 PM–5:15 PM 3101

### LESSONS LEARNED FROM IMPLEMENTING WEIGHT RELATED INTERVENTIONS INTO COMMUNITY SETTINGS

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Evidence supports the efficacy of lifestyle interventions for disease prevention and management, yet implementation in real world settings has been slow. Greater insight into the implementation process, including facilitators and barriers, is needed to inform translational research on obesity lifestyle interventions. We will present lessons learned for implementation from obesity effectiveness studies performed in 4 different settings. The first describes the integration of a Diabetes Prevention Program (DPP) for individuals with severe mental illness (SMI) into a community mental health organization. Institutional support and national priorities that advocated for providing lifestyle interventions to individuals with SMI were critical to implementation. Barriers included low staff support and concern that consumers with SMI are incapable of lifestyle change. The second translated the DPP for postpartum weight loss among diverse low-income women in the WIC program. Implementing strategies in the context of participant's chaotic lives was a barrier to larger weight loss. Sustainability strategies include engaging state WIC leadership and systems changes to facilitate screening and referral. The third describes a weight gain prevention intervention for high school employees designed to facilitate implementation and sustainability by having an employee "coach" serves as coordinator, an employee advisory board, integrating strategies into school activities and capitalizing on "school spirit". Barriers relate to competing priorities, particularly academic achievement. The final study implemented a weight management counseling intervention for overweight adolescents delivered by school nurses. Factors facilitating implementation include nurses' accessibility to students, consistency of the intervention with school nurses' mission and their confidence with conducting the intervention. Features to support sustainability include provision of protected time and engaging others in the school to support weight management efforts.

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## Symposium 30A 3102

### BARRIERS AND FACILITATORS TO TRANSLATION OF THE DIABETES PREVENTION PROGRAM INTO A COMMUNITY MENTAL HEALTH ORGANIZATION

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Effectiveness research can lend insights into the challenges and facilitators to the implementation and sustainability of an intervention. We will present the lessons learned for implementation and sustainability in a pilot study that integrated a Diabetes Prevention Program (DPP) for individuals with severe mental illness (SMI) into a community mental health organization. Although weight loss was minimal, participant attendance was high and participants reported continued interest in the program and modifications to increase weight loss. We discovered the following facilitating factors for implementation and sustainability: 1) strong institutional commitment; 2) some albeit minimal financial support for materials and staff training; 3) national health priorities for lifestyle change consistent with the organization's mission and 4) mutual respect between the organization and academic researchers. Barriers to implementation and sustainability included staff turnover, reluctance expressed by some staff to take on a new role, lack of health knowledge among staff, and staff skepticism that consumers with SMI would be incapable of making lifestyle changes. Main weight loss barriers were the participant's cognitive limitations and fixed income. Despite the barriers and staff turnover, the program has been ongoing for x months since the pilot trial. Sustainability required a champion within mid-level management, buy-in from group leaders, and positive feedback from participants about program benefits. Additional features that would support sustainability include ongoing training of staff given the high turnover and enhanced weight loss outcomes. To improve weight loss, more direct assistance for lifestyle changes at the home and in community settings (e.g., grocery stores, restaurants,fitness centers) could enable individuals with SMI to learn through experience and reinforce lessons learned in the program.

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## Symposium 30B 3103

### SCHOOL NURSE-DELIVERED INTERVENTION FOR OVERWEIGHT AND OBESE ADOLESCENTS

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We will present the challenges, facilitators, and lessons learned for implementation and sustainability in an RCT that tested a 6-session weight management counseling intervention for overweight and obese adolescents delivered by school nurses in the school health setting in 6 high schools in Massachusetts (n=84 adolescents) (NIH R21HD053371). The counseling intervention resulted in significantly greater decreases in fast food consumption and soda intake and greater increases in knowledge of recommended diet and physical activity behaviors at 2 and 6 months compared to an attention control condition, but not a significant difference in BMI. The intervention was feasible for nurses to deliver with high fidelity, and adolescents reported high acceptability of the intervention and attended the majority of sessions. The intervention was designed to facilitate implementation and sustainability by using school nurses whose primary role is delivering health care to students and who are easily accessed without transportation or cost; by conducting sessions during non-academic classes during the school day to enhance access; and by securing support of school administration. Potential barriers to weight loss included low counseling intensity and lack of a structured exercise component. Barriers to implementation related primarily to school nurse time and potential conflict with other duties, and engaging overweight and obese students to participate. Sustainability will require committed funds to provide protected time for nurses to conduct sessions (e.g., a floating nurse to cover during intervention delivery), engaging others in the school such as PE teachers to enhance and support the adolescents' weight management efforts; and identifying a process for engaging students in the intervention.

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## Symposium 30C 3104

### IMPLEMENTATION OF A WEIGHT GAIN PREVENTION INTERVENTION AT SCHOOL WORKSITES

Stephenie C. Lemon, PhD, Lori Pbert, PhD, Barbara Estabrook, MSPH, Susan Druker, MA, Robert Magner, MPH and Kristin L. Schneider, PhD

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Effectiveness research has the ability to offer insights into the challenges and facilitators to the implementation and sustainability of an intervention in a target setting. We will present the challenges, facilitators, and lessons learned for implementation and sustainability in a study testing a 2-year weight gain prevention intervention for employees in 12 public high schools in central Massachusetts (R01CA132941). The ecological intervention targets all employees and includes strategies aimed at policy and physical environment change, promoting healthy social norms and improving individual knowledge, skills and behavioral capabilities. The intervention is being compared to a materials only comparison condition in a cluster randomized trial among a representative sample of employees (n=840). The intervention was designed to facilitate implementation and sustainability beyond research funding: 1) The intervention delivery model includes an employee "coach" who serves as a coordinator and program champion. This position is filled by persons whose primary job relates to health or fitness (school nurses and athletic directors) for whom conducting intervention activities is a natural extension; 2) An employee advisory board guides programmatic priorities at each site, with a particular emphasis on school policies related to eating and activity opportunities; 3) Intervention strategies are designed to be integrated into usual school activities and programs and 4) Capitalizing on "school spirit" and the sense of community that permeates schools. Barriers to implementation primarily relate to competing priorities, particularly a focus on student academic achievement. Sustainability of this intervention will require committed funds for coaches, formalization of policy and built environment changes, and recognition of the importance of teacher and staff health in the context of the primary focus of schools, student academic achievement.

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## Symposium 30D 3105

### CHALLENGES AND FACILITATORS FOR IMPLEMENTATION AND SUSTAINABILITY OF A POSTPARTUM WEIGHT LOSS INTERVENTION FOR DIVERSE LOW-INCOME WOMEN

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We will present the challenges, facilitators, and lessons learned for implementation and sustainability in a study that translated the Diabetes Prevention Program (DPP) to be appropriate for facilitating post-partum weight loss among diverse low-income women enrolled in the Women, Infant and Children's (WIC) program. Intervention translation built from considerable qualitative work to identify the needs and preferences of the target population of post-partum women and the opportunities available for intervening within the WIC program. The program implementation involved collaboration with the Worcester Youth Program and the YWCA of Central Massachusetts. Study results showed a significant pre- post-intervention weight change and post-intervention interviews revealed high satisfaction with the program and improved confidence and empowerment among participants. However weight loss magnitude was modest, intervention attendance was limited, and the implementation of the intervention by WIC staff required oversight and ongoing training to enhance fidelity. Barriers to larger weight loss included difficulty of participants implementing behavior change strategies in the context of chaotic, time constrained lives. Future implementation and sustainability will require engagement of commitment from state WIC leadership; attendance incentives; reminder and make-up calls by the intervention nutritionists; and exploration of alternate intervention formats, including phone-based and technology-based interventions. In addition, future implementation and sustainability will require intensive training of the staff and technical assistance, and systems changes for participant identification and referral. Long-term sustainability of the program will require continued monitoring of program implementation and weight loss effectiveness and cost-effectiveness.

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## Symposium 31 3:45 PM–5:15 PM 3106

### NOVEL PERSPECTIVES IN PHYSICAL ACTIVITY RESEARCH: IMPLICATIONS FOR MOTIVATION, BEHAVIOR, AND TREATMENT

Bethany M. Kwan, PhD,[2] Ann E. Caldwell Hooper, MS,[1] Renee E. Magnan, PhD[1] and David M. Williams, PhD[3]

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Exercise is an extremely complex behavior that is influenced by a number of factors including affective, physiological, social-cognitive, and environment factors. In order to successfully promote physical activity, it is important to develop and test theoretical frameworks from multiple perspectives. These talks will explore novel approaches to understanding the initiation and maintenance of physical activity, and implications for how physical activity may promote other health behaviors. Kwan and Williams explore methods to determine a causal relationship between affective response experienced during exercise and exercise behavior. They suggest that long-term training of affect regulation strategies may improve understanding of the causal pathways involved in affect response-exercise relationship in order to design interventions that optimize the subjective experience of exercise. Caldwell Hooper investigates a novel theoretical framework for exercise behavior from an evolutionary perspective in order to better understand the mechanisms underlying physical activity. This integrative approach proposes connections between ecological, genetic, physiological, and psychological factors and has implications for future intervention work. Finally, better understanding the mechanisms of exercise behavior has implications for behavioral prevention and treatment research. As an example, Magnan and colleagues address the potential of physical activity interventions to promote healthy levels of alcohol consumption and to decrease alcohol use among alcohol-dependent individuals. They argue that physical activity could promote a healthy level among non alcohol dependent samples while being a useful treatment adjunct among alcohol dependent samples. Together, these investigations highlight how novel perspectives towards physical activity are warranted in order to better understand the nature of physical activity, as well as the utility of exercise treatment in regard to health-behavior promotion.

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## Symposium 31A 3107

### AN EXPLORATION OF EXPERIMENTAL METHODS FOR ESTABLISHING CAUSAL EFFECTS IN THE AFFECTIVE RESPONSE-EXERCISE BEHAVIOR RELATIONSHIP

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Much of the evidence showing that the affective response to exercise predicts future exercise behavior is correlational, and likely confounded by past exercise experiences and general positive affectivity. Interpretations of this evidence could be that it is increased exercise that causes more positive affective responses, and not the other way around. Experimental tests are needed to improve causal inference and to better understand the direction of effects. The objective for this talk is to explore possible experimental methods for manipulating the affective response to exercise and objectively measuring exercise behavior. Past strategies for manipulating the affective response to exercise have been indirect, and have concerned self-efficacy, exercise intensity and duration, and attentional focus, among others. However, many of these variables themselves are known or suspected to influence exercise behavior independently of the role of affect; it can therefore be difficult to conclude that it is the affective response that is a contributing factor in future behavior and not just a byproduct of the experimental context. Possible psychological manipulations that may help overcome this limitation include affect regulation training and techniques for reducing affective reactivity borrowed from behavioral activation therapy and dialectical behavior therapy (e.g., distress tolerance, mindfulness). These psychological manipulations are expected to require training over time, rather than a brief intervention in a laboratory, in order to supersede past experience and ingrained expectations. Finally, objective measures of both past and future exercise behavior are recommended to reduce systematic reporting biases and measurement error that could confound the affect-exercise relationship. The development of methods for manipulating the affective response to exercise will allow us to better understand the causal pathway and ultimately enhance our ability to create innovative exercise interventions that seek to improve the subjective experience of exercise.

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## Symposium 31B 3108

### TOWARD AN INTEGRATIVE EVOLUTIONARY APPROACH TO UNDERSTANDING PHYSICAL ACTIVITY

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The science of human physical activity and fitness is ripe for a novel, theoretical framework that can integrate the ecological, physiological and psychological factors that influence physical activity participation. Physical inactivity dominates most developed nations around the world, is among the leading causes of disease burden worldwide (WHO, 2008), and contributes to at least 20 of the most deadly chronic disorders (F. W. Booth, Chakravarthy, Gordon, & Spangenburg, 2002). Several researchers have advocated the development of more integrative approaches that take into account evolutionary history (Astrand, 1994; Biddle & Mutrie, 2008), or that consider the connections between ecological, genetic, and physiological factors that influence physical activity (Bryan, 2007; Spence & Lee, 2003). However, such a comprehensive evolutionary framework has yet to be put forward. An evolutionary approach to understanding physical activity behavior in humans is particularly advantageous because it allows for a more integrated examination of behavior at four levels of analysis: ultimate (i.e., functional), proximate (i.e., mechanistic), developmental, and phylogenetic (Tinbergen, 1963). This approach can lead to testable hypotheses across many domains of physical activity that have, thus far, been examined principally in terms of the proximate determinants alone. This presentation aims to lay the foundation for a more comprehensive, theoretically justified application of evolutionary theory to the sciences of human physical activity and fitness; reviewing existing research in exercise psychology and physiology attempting to incorporate human evolutionary history, introducing an alternative evolutionary framework, summarizing research from this framework, and finally outlining a number of applications for this perspective relevant for behavioral medicine.

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## Symposium 31C 3109

### WHAT WE KNOW AND WHAT WE NEED TO KNOW ABOUT PHYSICAL ACTIVITY AND ALCOHOL CONSUMPTION: IMPLICATIONS FOR ALCOHOL TREATMENT AND PREVENTION

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Heavy alcohol use is one of the leading behavioral causes of morbidity and mortality, and is widely associated with multiple deleterious health outcomes. In contrast, physical activity is one of the leading health-promotion behaviors and is associated with myriad health benefits, including among alcohol dependent samples. Across multiple substance use behaviors, exercise is associated with decreased use, and exercise is used as an adjunct to substance use treatment. There is a notable lack of research investigating the use of exercise as an adjunct to alcohol treatment. This is perhaps partially due to epidemiological data which support a positive association between physical activity and alcohol use among non-dependent samples, such that increased physical activity is often associated with increased alcohol consumption. These findings call into question the use of physical activity among individuals who need to decrease their alcohol consumption. We will illustrate the potential benefits of physical activity as an adjunct to alcohol treatment. Key points of the presentation will demonstrate that a) consistent with the effect of exercise on other substances of abuse, exercise may be associated with decreases in consumption among individuals with severe, heavy patterns of consumption, and b) the psychological (e.g., increased self-efficacy, enhanced mood) and physiological (e.g., decreased drinking urges) benefits associated with physical activity may, in part, account for the relationship of decreased alcohol consumption among heavy-drinking populations who are physically active. The presentation will conclude with discussion of the feasibility and utility of integrating physical activity programs into future alcohol treatment research as a health promotion and prevention technique. Using physical activity as an adjunct to alcohol prevention and treatment efforts cannot be successfully and effectively implemented until the relationship between alcohol use and exercise behavior is better understood.

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## Symposium 32 3:45 PM–5:15 PM 3110

### TAILORED MULTIPLE RISK FACTOR INTERVENTIONS FOR ADOLESCENTS

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Project BEST was designed to test the effectiveness of tailored multimedia interventions for preventing the acquisition of substance abuse behaviors (smoking and alcohol) and increasing energy balance behaviors (exercise and diet). In initial studies, tailoring to the individual was difficult since more than 90% of adolescents classify themselves as Acquisition Precontemplation (aPC), e.g., not smoking and not intending to start smoking in the next six months. However, studies have identified four clusters within the aPC stage who vary in their risks for substance use: (1) Most Protected; (2) High Risk; (3) Ambivalent; and (4) Risk Denial. The subgroups have demonstrated the ability to predict future substance use. The profiles were employed as the basis for designing two innovative new computer-based interventions to prevent substance abuse. The interventions were tested in a 2 (Group; treatment vs. comparison) X 4 (Occasions; 0, 12, 24, and 36 months) school-based clinical trial. Both groups received 5 interventions. The comparison group received two previously developed health behavior interventions. A sample of 6th graders from 20 schools (N=4152) were randomly assigned to treatment or comparison. The technology offers many advantages: (1) providing individualized health promotion feedback; (2) systematically addressing multiple risk behaviors; (3) incorporating visual and audio stimuli; (4) it can be used confidentially and may reduce response biases; (5) providing reproducible intervention feedback with high fidelity; (6) easily updated to add new information, new response modalities, and/or new health promotion topics; and, (7) the potential for wide dissemination. This symposium will provide an overview of the project. The first paper will describe the methods that were used to recruit, randomize, and retain the 20 school. The second paper will present the outcome results for the two substance abuse behaviors at the 36 month assessment. The third paper will present the outcome results for the two energy balance behaviors at the 36 month assessment.

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## Symposium 32A 3111

### BREAKING THE BARRIER OF RELUCTANCE: ENGAGING SCHOOLS AS PARTNERS IN RESEARCH AND HEALTH DISSEMINATION

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Despite the need for innovative and individualized substance abuse prevention programs which target an early adolescent population, recent legislation has significantly changed the climate of public school administrators' willingness to participate in research studies that require the use of academic time for the purpose of what may be considered traditionally "non-academic" outcomes. As a result, school-based recruitment has become increasingly more challenging. In spite of this challenge, 20 of Rhode Island's public middle schools were recruited into an extensive (N=4152) NIDA funded project known as "Tailored Interventions to Prevent Substance Abuse", aka "Project BEST". Project BEST tracked the same cohort of students from 6th through 9th grade delivering innovative computer-based interventions individually tailored to each student's particular risk profile and provided both normative and ipsative feedback over multiple timepoints. The strategy used to overcome the prevailing climate of reluctance to participate was to instill an overarching theme of collaboration and partnership within the participating schools' community. Schools were viewed as partners in a collaboration that benefited their student body by delivering standards-based information as part of the intervention process. This strategy led to the successful retention of 100% of all schools over the project's 4 years. Viewing schools as collaborative partners fosters a climate of true collaboration within the educational community, helping to eliminate real-world obstacles that serve as barriers to successful implementation of public health research/intervention programs.

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## Symposium 32B 3112

### 36-MONTH OUTCOMES OF A MULTIMEDIA ENERGY BALANCE BEHAVIOR PREVENTION PROGRAM FOR MIDDLE SCHOOL STUDENTS

Colleen A. Redding, PhD,[1] Andrea Paiva, PhD,[1] Wayne F. Velicer, PhD,[1] Leanne Mauriello, PhD,[2] Kathryn S. Meier, MPH, CHES,[1] Karin Oatley, MA[1] and James O. Prochaska, PhD[1]

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The 36-month outcomes of a computer-delivered, population-based, TTM-tailored, multiple energy balance behavior prevention program delivered to middle school students in schools will be presented. This program was administered to randomized comparison group participants in a substance use prevention program (Project BEST). The multimedia computer program administered TTM-tailored feedback for increasing physical activity (PA), increasing fruit and vegetable consumption (FV) and limiting TV viewing time (TV). Students (N=4152) from twenty middle schools were randomized to either group in an ongoing effectiveness trial. Both groups received three intervention sessions over two years and follow-up assessments at 12, 24, and 36 months. At baseline, most students were White (65%), male (52.3%), and on average 11 years old. At 36 months, progress to Action or Maintenance stages (A/M) was the outcome of success among those in pre-action stages (Precontemplation, Contemplation, and Preparation) at baseline. Significant group differences in movement to A/M at 36 months were seen for PA, Chi-squared(1)=19.74, p<.001, h=.25 (49.4% vs. 37.1%); FV, Chi-squared(1)=18.57, p<.001, h=.19 (24.6% vs. 16.9%); and TV, Chi-squared(1)=11.24, p<.01, h=.17 (46.9% vs. 38.6%). This program effectively moved significant percentages to A/M for all three behaviors (PA, FV, and TV) at 36-months. Additional results for those already participating in healthier energy balance behaviors at baseline and other secondary outcomes will be presented. Findings support this program's effectiveness among middle-school students to initiate and maintain multiple energy balance behavior changes within a cost-effective, science-based, and disseminable platform.

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## Symposium 32C 3113

### 36-MONTH OUTCOMES OF A MULTIMEDIA ADDICTIVE BEHAVIOR PREVENTION PROGRAM FOR MIDDLE SCHOOL STUDENTS

Andrea L. Paiva, PhD, Colleen Redding, PhD, Wayne F. Velicer, PhD, Kathryn Meier, MPH, MCHES, Karin Oatley, MA, Caitlin Burditt, PhD and James Prochaska, PhD

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The 36-month outcomes of a computer-delivered, population-based TTM-tailored,addictive behavior prevention program will be presented. This program was administered to middle school participants randomized to the substance use prevention program. Most students were in the Acquisition Precontemplation stage of change (aPC; not currently using the substance, not planning to start in the next 6 months). Within this group, four clusters have been identified and replicated:(1)Most Protected;(2)High Risk;(3)Ambivalent; and (4)Risk Denial. In addition to TTM variables, these clusters served as the basis for tailored interventions to prevent alcohol and smoking uptake among nonusers. A large sample(N=4151) of 6th graders from 20 schools were randomly assigned to treatment or comparison group. The comparison group received comparable interventions for energy balance behaviors (diet and exercise). Each group got 5 intervention sessions with assessments at 12, 24, and 36 months. Most students were White (65%), male (52.3%), and on average were 11 years old at baseline. At baseline, 96% were in aPC for alcohol use and 97% were in aPC for smoking. Uptake was the outcome to prevent among baseline nonusers. Surprisingly, significant group differences in uptake, favoring the Energy Balance group, were seen for smoking; c2(1)=2.87,p<.01,h=.11 (8.0% vs. 5.3%) and alcohol,c2(1)=9.05,p<.01, h=.11 (13.8% vs. 10.2%). In contrast, among the majority who were in the Most Protected cluster at baseline, significantly more adolescents remained in that cluster, compared to the Energy Balance group, for both smoking, c2(1)=17.69,p<.001 (75.4% vs. 67.2%) and alcohol, c2(1)=12.79,p<.001, phi=.11 (64.9% vs. 57.7%). Additional results for these outcomes and other secondary outcomes will be presented. Findings indicate the program lacked effectiveness to prevent substance use, however, the Energy Balance program may provide an alternative that can also prevent substance use.

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## Symposium 33 3:45 PM–5:15 PM 3114

### RACE, ETHNICITY AND GENDER IN PAIN ASSESSMENT AND TREATMENT

Martin Cheatle, PhD,[1] Frank Sotelo, MA,[2] Eleshia Morrison, MA[3] and Luz Garcini, MA[2]

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The prevalence of chronic pain continues to grow in the United States with an estimated 116 million Americans suffering from chronic 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". There are many barriers to individuals with pain receiving adequate care including racial, ethnic and gender related disparities and biases in assessment and treatment.

This symposium will explore contextual sensitivity in the assessment of pain and treatment considerations in treating pain in minority populations.

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## Symposium 33A 3115

### QUALITATIVE ASSESSMENT OF PAIN IN NONMUSCLE-INVASIVE BLADDER CANCER SURVIVORS

Heather H. Goltz, PhD, LMSW,[1,2] Marc A. Kowalkowski, MS,[1] Gilad E. Amiel, MD,[3] Seth P. Lerner, MD[3] and David M. Latini, PhD[1,3]

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Disease and treatment-related symptom management is a critical component of cancer survivorship. A number of research studies exist concerning pain management among breast and prostate cancer survivors; however, few studies have examined this issue related to bladder cancer survivorship. Twenty-sex males and females previously diagnosed with nonmuscle-invasive disease (NMIBC) participated in one-hour qualitative interviews examining dimensions of quality of life including pain symptoms and self-care strategies. All male NMIBC survivors (n=22) reported transitory low to-moderate-grade pain associated with immunotherapy treatment or cystoscopy (i.e., surveillance procedure for disease recurrence). Only three males (13.6%) reported intermittent or chronic pain associated with NMIBC treatment, including two survivors with persistent low-grade pain post-chemotherapy. All female NMIBC survivors (n=4) reported chronic pain post-cystectomy (i.e., bladder removal) related to pain near their ostomy site or during intercourse. Survivors reported a number of self-care strategies ranging from over-the-counter or prescription medications to reductions in work or hobbies. Our findings indicate that there may be gender differences in experiences and reporting of pain among NMIBC survivors. Future behavioral medicine research efforts should examine pain and management strategies within this population and provide evidence-based interventions.

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## Symposium 33B 3116

### CONTEXTUAL CONSIDERATIONS IN THE ASSESSMENT OF CHRONIC PAIN

Francisco L. Sotelo, BA and Luz Garcini, MA

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Pain is too often seen solely as biological while influential contextual factors are overlooked. A biopsychosocial conceptualization of pain allows for a more comprehensive assessment. Examining pain from a single perspective may only partially explain the situation and could ignore information that may clarify the pain experience. It is important to acknowledge the influence not only of culture, which includes a society's values, beliefs and history, on the pain experience, but more broadly to be contextually sensitive by additionally respecting the role of family, religion, prejudice, and discrimination on health. Context sensitivity to the assessment of chronic pain is especially important in primary care settings since this is usually the first point of health access for all populations. Better understanding diversity at this stage can lead to tailored and more appropriate care throughout the health care process. In order for pain assessment to have adequate context sensitivity, considerations need be addressed in both the clinical interview and in assessment measures. The clinical interview should be sensitive to variations in history and expectations of treatment, differences in a sense of control, as well as variability in the expression of symptoms, both psychologically and physiologically. The interview must also identify potential barriers to the treatment of pain, whether they are cultural, religious, social, or financial, as well as resources that may be valuable to facilitate treatment. Additionally, pain assessment measures need to use appropriate norms, appropriate languages, and take into consideration as many contextual factors as possible in the validation of these measures. Assessing pain using a biopsychosocial conceptualization that values the influence of context on the pain experience will allow patients and practitioners to make treatment decisions that are most appropriate for their given situation. Treatment decisions must utilize both the medical knowledge of the practitioner and be informed by the values, beliefs and attitudes of the patients.

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## Symposium 33C 3117

### CONSIDERATIONS IN THE TREATMENT OF CHRONIC PAIN WITH LATINO AND AFRICAN AMERICAN ADULTS IN PRIMARY CARE SETTINGS

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Disparities in pain care and pain perception among ethnically diverse populations has been widely documented. Nevertheless, adequate implementation of culturally-sensitive interventions for the treatment of chronic pain continues to be challenging, particularly in the primary care setting. This presentation is aimed at providing practical recommendations and guidelines to facilitate the integrated treatment of chronic pain among Latinos and African American adults in medical settings. Included in this presentation will be a discussion of ethnic factors in case conceptualization (e.g., meaning of pain, pain expression), interpersonal dynamics influencing patient-provider interactions, attitudes towards the psychological treatment of pain, adaptation of empirically supported treatments (e.g., delivery modality), and the relevance of alternative sources of treatment. This presentation is intended to complement and expand the knowledge gained from the preceding assessment discussion.

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## Symposium 34 3:45 PM–5:15 PM 3118

### ENGAGING HEALTH PSYCHOLOGISTS IN THE MANAGEMENT AND TREATMENT OF CHRONIC HEPATITIS C

Donna M. Evon, PhD,[1] Jeffrey J. Weiss, PhD, MS,[2] Erik J. Groessl, PhD[3] and Rebecca Cabral, PhD[4]

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Chronic hepatitis C viral (HCV) infection is the most common blood-borne infection in the U.S. and the leading cause of cirrhosis, liver cancer, and need for liver transplant, resulting in over 10,000 deaths annually in the U.S. In 2011, a paradigm shift occurred in the treatment of HCV, with FDA-approval of HCV protease inhibitors, which will dramatically increase treatment efficacy, but also regimen complexity and toxicity. These biomedical advances in antiviral treatment have created an exciting and fertile field for health psychologists. Despite significant advances in drug efficacy, gains in clinical and public health outcomes have yet to be realized, presenting an important public health challenge. The reasons for this discordance are multi-factorial, but include many psychosocial factors. High rates of comorbid psychiatric and addiction disorders, medication nonadherence, stigma, neuropsychiatric medication side effects, and a lack of integrated team approaches are a few of the daunting issues that hinder medical care. The broad goal of this HCV symposium is to increase knowledge of the HCV epidemic and awareness of innovative research being conducted by health psychologists. The first presentation will describe the relationship between depression and antiviral treatment completion and medication adherence. The second presentation will describe the prevalence, patterns, and predictors of medication adherence during treatment. The third presentation will describe findings from two VA-based initiatives to increase patient participation in, access to, and successful completion of, antiviral therapy: The HCV Self-Management Program and the HCV Integrated Care Model. The Discussant, a behavioral scientist from the CDC, will describe how these studies address public health education and strategies related to the management and treatment of HCV.

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## Symposium 34A 3119

### MULTI-METHOD ASSESSMENT OF BASELINE DEPRESSION AND RELATIONSHIP TO HCV TREATMENT ADHERENCE IN HCV-MONO-INFECTED AND HIV/HCV-CO-INFECTED PATIENTS

Jeffrey Weiss, PhD, MS and Jack Gorman, MD

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Background: Depression is a significant side effect of hepatitis C virus (HCV) infection treatment with interferon/ribavirin (IFN/RBV). Using a range of depression measures, some studies have found a relationship between depression levels at time of HCV treatment initiation and treatment adherence whereas others have not. No consensus exists as to which depression measures are most predictive of HCV treatment adherence.
Methods: Prospective study of HCV monoinfected and HIV/HCV coinfected treatment-naïve subjects beginning treatment with IFN/RBV. Multi-method baseline assessment of depression was conducted with Beck Depression Inventory-II (BDI), Hamilton Rating Scale for Depression (HAMD), and Structured Clinical Interview for DSM-IV (SCID). Chi-square and t-tests were used to investigate relationships between these 3 depression measures and (1) early treatment discontinuation (ETD) for reasons other than virologic non-response and (2) cumulative drug exposure (DE) of IFN and RBV (calculated from persistence, dose reduction, and dose adherence) at treatment week 24.
Results: The 78 (46 HCV; 32 HIV/HCV) subjects were predominantly male (76%) and members of minority groups (35% black, 29% Hispanic, 36% white). 26 subjects discontinued by week 24 (21 due to side effects; 5 due to lack of viral response) and one withdrew from study. Those who remained on treatment through week 24 (n=51) were compared to those who discontinued treatment due to side effects (n=21). HIV status was not related to ETD (11/46 HCV subjects and 10/32 HIV/HCV subjects had ETD; p=0.51) or to DE at week 24. BDI and SCID depression diagnoses at baseline were significantly related to ETD and IFN DE at week 24 whereas HAMD was not. The positive predictive values of high BDI score at baseline for ETD by week 24 is 52%; of SCID depression is 54%; and of depression on both the BDI and SCID is 62%.
Conclusions: Depression identified by both the BDI and SCID is most predictive of ETD. Further research is needed to identify specific components of depression that are most predictive of ETD.

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## Symposium 34B 3120

### MEDICATION ADHERENCE DURING ANTIVIRAL THERAPY FOR CHRONIC HEPATITIS C

Donna M. Evon, PhD,[1] Denise Esserman, PhD,[1,2] Carol E. Golin, PhD,[1,3] Tara Rao, MS,[2] Jason E. Bonner, PhD[1] and Michael W. Fried, MD[1]

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BACKGROUND: Taking medication for chronic hepatitis C virus (HCV) has been challenging and will become even more so with the addition of thrice daily dosed protease inhibitors. We sought to identify patient characteristics associated with missed doses and nonpersistence during HCV treatment.
METHODS: Data from a large prospective clinical trial (Virahep-C) were used to analyze missed doses and nonpersistence of peginterferon (PEG) and ribavirin (RBV) from baseline to week 24 (N=401) and from week 24 to 48 (N=242). All patient received adherence support from study coordinators. Missed doses were measured with electronic monitoring pillcaps, and nonpersistence was defined as the time to premature treatment discontinuation. Generalized estimating equations and Cox proportional hazards models were used.
RESULTS: From baseline to week 24, average PEG adherence was 90-94%, and RBV adherence decreased from 93% to 84%. In multivariate models, younger, African American (AA), unemployed, and unmarried patients had greater odds of missing PEG; Younger and AA patients had greater odds of missing RBV. Patients who were younger, less educated, unemployed, unmarried, and had higher baseline headache scores were at greater risk for nonpersistence (11%). From week 24 to 48, average PEG adherence was 85-95%, and RBV adherence decreased from 85% to 73%. Higher baseline depression was predictive of missing PEG. Patients who had public or no insurance and were employed had greater odds of missing RBV. Approximately 7% (n=240) did not persist on PEG/RBV, and no patient variables accounted for nonpersistence.
CONCLUSIONS: Adherence to PEG/RBV was impressive for trial participants who received adherence support. This study identified patients who may require more support to persist on treatment and take medications as prescribed. Factors influencing adherence will be important to recognize as HCV treatment becomes more difficult and complex.

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## Symposium 34C 3121

### PROMOTING HCV ANTIVIRAL TREATMENT COMPLETION VIA SELF-MANAGEMENT AND INTEGRATED CARE

Erik J. Groessl, PhD, Sam Ho, MD, Kim Weingart, PhD and Megan Ward, BA

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A new generation of antiviral medications with much higher rates of sustained viral response are now available. However, the treatment regimen remains challenging and many HCV-infected persons have multiple co-morbidities and lack knowledge, skills, and resources. Thus, interventions that can provide these tools to help HCV-infected individuals prepare for and complete antiviral treatment regimens are needed. Patient self-management (SM) and integrated care (IC) are two approaches to accomplishing this goal.
134 VA patients with HCV were randomized to a 6-week SM workshop or information-only. When compared to the information-only group, SM participants did better at the 6-week follow-up assessment. At the 12-month follow-up, participants attending the SM workshop improved more on HCV knowledge (p=.005), SF-36 energy/vitality (p=.016), and total Quality of Well-being score (p=.036). Non-significant trends were found for physical functioning (p=0.088) and depression (0.087). Positive trends were also seen for reduced inpatient days, increased attendance of HCV clinic appointments and increased medication refill ratio. Preliminary cost-effectiveness data indicate that the mean cost of the SM intervention was $235.00/participant. Dividing this by the mean change in QALYs of 0.068/participant results in an incremental cost-effectiveness ratio of $3456/QALY.
Integrated care (IC) for HCV involves having a mental health provider provide brief interventions and case management to higher risk treatment candidates. 360 VA patients have been assigned to IC or usual care at 3 VA medical centers. Treatment rates increased by over 20% at the central site yet stayed very low in both arms at the other sites (<10%), partially because of people waiting for the new antivirals. Across all 3 sites, all-cause serious adverse events were significantly lower in the IC group.
In summary, patient self-management (SM) and integrated care (IC) models are two promising approaches for helping HCV-infected individuals prepare for and complete expensive antiviral treatment regimens.

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## Symposium 35 3:45 PM–5:15 PM 3122

### HOW INFORMATIONAL GOALS AND UNCERTAINTY AFFECT HEALTH DECISION MAKING: OVERVIEW AND RECENT FINDINGS

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From news reports, to the delivery of medical test results, to discussions with friends, people are exposed to a barrage of health information. This health information influences how people think, feel, and behave. It is a key determinant in many theoretical models of health behavior, and forms the basis of how people make informed decisions about their health. It is also known that people frequently have informational goals, specific preferences or motivations that influence how they communicate and understand information. Yet, little research attention has been paid to how these informational goals influence how, when, and why health-related information is communicated. This symposium provides an overview of how people's informational goals relate to their decision making and health behavior in the presence of uncertainty, and showcases recent finding on the topic. Health-related information often includes an element of uncertainty regarding the accuracy of the information and the potential reactions it might evoke. This uncertainty further complicates how people deliver information and how it is understood and used. Because uncertainty can influence the communication and uptake of emotionally-charged, personally-relevant information, it is critical to explore and better understand as a precursor to health decision making. This symposium highlights research of three scholars in the field. Shepperd gives an overview of people's informational goals and highlights the tendency to purposely avoid important but potentially unwanted health information. Chaudoir examines the impact of approach/avoidance goals on people's decision to disclose a concealable health condition and the effectiveness of those disclosures. Hamilton shows that individual preferences for uncertainty influence emotional reactions to threatening information regarding a medical treatment. This symposium demonstrates that informational goals and uncertainty influence how people communicate, receive and ultimately act on health information.

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## Symposium 35A 3123

### CALCULATED IGNORANCE

James A. Shepperd, PhD

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Although acquiring information can provide numerous benefits, people often opt to remain ignorant. Information avoidance is any behavior designed to prevent or delay the acquisition of available but potentially unwanted information. It is distinct from selective exposure and from inference avoidance. Information avoidance is particularly problematic in health domains where people often have a limited window of time in which they can address a problem before it worsens or becomes irreversible. People are inclined to avoid information that is threatening - it threatens a cherished belief, a current or desired emotion, or how people choose to behave. In several studies I describe factors (e.g., low perceived control, low coping resources, high anticipated regret) that influence when people avoid information as well as simple intervention that can reduce avoidance. Finally, I discuss how avoiding information in some situations is quite sensible.

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## Symposium 35B 3124

### RESPONSES TO MEDICAL AMBIGUITY ARE NOT UNIVERSAL: THE MODERATING ROLE OF NEED FOR COGNITIVE CLOSURE

Jada G. Hamilton, PhD, MPH,[1,2] Paul K. J. Han, MD, MA, MPH,[3] Sadie P. Hutson, PhD, RN, WHNP, BC,[4,5] Sean C. Rife, MA,[6] Sarah C. Kobrin, PhD, MPH,[2] Richard P. Moser, PhD[7] and Blanche P. Alter, MD, MPH[5]

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People's responses to uncertainty are fairly predictable. For example, people presented with uncertain medical information perceive greater risks and fewer benefits, and avoid making decisions - a phenomenon known as ambiguity aversion. However, evidence suggests that individual differences in personality or motivational factors also influence how people interpret uncertain information. Therefore, we investigated whether people's experience of ambiguity aversion depends on their informational goals. We predicted that need for cognitive closure (NFCC), a trait-like preference for stability, would moderate people's experience of ambiguity aversion. Data were collected from parents ($n=188$) of children affected with Fanconi Anemia, a rare, inherited, cancer-prone, bone marrow failure syndrome. All of the parents had considered the use of stem cell transplantation, a procedure with uncertain risks and benefits, as a treatment for their child's Fanconi Anemia. As predicted, although there was little evidence of ambiguity aversion among parents with low NFCC ($r=0.03$), among parents with high NFCC, greater perceptions of ambiguity about stem cell transplantation were strongly associated with increased worry about the treatment ($r=0.43$). Results suggest that responses to ambiguity are not universal as they appear to be influenced by people's informational preferences, and these findings have implications for medical decision making.

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## Symposium 35C 3125

### IT'S NOT WHAT YOU SAY, IT'S HOW (AND WHY) YOU SAY IT: EFFECT OF APPROACH AND AVOIDANCE GOALS ON DISCLOSURE

Stephenie Chaudoir, PhD,[1] Rachel Kallen, PhD[2] and Jeffrey Fisher, PhD[3]

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In the current research, we examine whether approach and avoidance goals affect the likelihood and effectiveness of disclosure of stigmatizing information. In Study 1, we examined the effect of disclosure goals on disclosure likelihood and disclosure negativity in a longitudinal study of HIV disclosure. Avoidance disclosure goals predicted more negative disclosure experiences ($\beta=.31$, $p<.01$, $F(1, 111)=11.64$, $p<.01$) which, in turn, predicted lower disclosure likelihood at a six-month follow-up ($B=-1.04$, $SE=.49$, $p<.05$). In Study 2, we experimentally manipulated approach vs. avoidance goals and examined their effect on disclosure likelihood and the content of mock disclosure letters among undergraduates. Consistent with Study 1, we found that participants with avoidance goals reported lower disclosure likelihood compared to participants with approach goals ($t(73)=-2.22$, $p=.03$). Further, results suggest that individuals with avoidance goals conveyed less emotional content in their mock disclosure letters compared to individuals with approach goals ($t(73)=-2.32$, $p=.02$). Together, these findings suggest that avoidance goals lower the likelihood of disclosure and potential effectiveness of information conveyed about concealable stigmatized identities in interpersonal disclosure.

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## Symposium 36 3:45 PM–5:15 PM 3126

### THE ROLE OF EXERCISE IN THE SECONDARY PREVENTION OF DEPRESSION AND HEART DISEASE

Kenneth E. Freedland, PhD,[1] James A. Blumenthal, PhD,[2] Carl J. Lavie, MD,[3] Richard V. Milani, MD,[3] Robert M. Carney, PhD[1] and David S. Sheps, MD[4]

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Both physical inactivity and depression are associated with increased risks of cardiac morbidity and mortality in patients with coronary heart disease. Aerobic exercise training is the only form of treatment that has been shown to improve both of these behavioral risk factors. This symposium brings together several leading experts in cardiology and cardiovascular behavioral medicine to discuss the latest research on exercise as a secondary prevention strategy for depression and heart disease. Dr. James Blumenthal will review evidence from randomized, controlled trials and meta-analyses of exercise as a treatment for depression, both in psychiatric patients and in those with medical disorders including heart disease. Drs. Carl Lavie and Richard Milani will present recent evidence on the effects of exercise training, within the context of cardiac rehabilitation, on depression, cardiorespiratory fitness, and the secondary prevention of major adverse cardiac events in patients with coronary heart disease. They will also present some outcome data from their internationally renowned cardiac rehabilitation center in New Orleans concerning the effectiveness of exercise in reducing depression and improving survival. Dr. Robert Carney will address the question of whether exercise training is a distinctly beneficial intervention for the highest-risk forms of comorbid depression in coronary heart disease, and discuss what role, if any, that exercise training should have in the next large, multicenter clinical trial designed to determine whether treating depression improves survival in patients with coronary heart disease. The Discussant, Dr. David Sheps, will consider whether the findings presented by the panelists point to the need for a greater emphasis on exercise training in preventive and clinical cardiology, particularly in the treatment of depression as a risk factor for cardiac morbidity and mortality.

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## Symposium 36A 3127

### EXERCISE AS A TREATMENT FOR DEPRESSION: EVIDENCE FROM RANDOMIZED, CONTROLLED TRIALS

James A. Blumenthal, PhD

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Numerous studies have evaluated the effects of aerobic exercise on depression, but depressed mood has been a secondary outcome in many of these studies or has been assessed in non-depressed individuals. In a smaller set of randomized, controlled trials in adults with major depression (MDD), exercise has been compared to either no-treatment controls or to psychotherapy or pharmacotherapy. Most of these trials have enrolled patients who have MDD but who are otherwise healthy; few studies have involved patients with coronary heart disease or other medical co-morbidities. This presentation will review findings from several recent randomized controlled trials as well as the results of recent meta-analyses. There is growing evidence that exercise may be an efficacious treatment for MDD, but inclusion of exercise in guidelines on empirically supported treatments for depression still may be premature at this time. The key limitations of prior studies and suggestions for future research will be discussed.

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## Symposium 36B 3128

### CARDIAC REHABILITATION, EXERCISE TRAINING, CARDIORESPIRATORY FITNESS, AND DEPRESSION

Carl J. Lavie, MD and Richard V. Milani, MD

Cardiac Rehabilitation and Prevention, Ochsner Heart and Vascular Institute, New Orleans, LA.

Substantial evidence has strongly linked psychological risk factors, especially depression, with increased risk of morbidity and mortality in patients with coronary heart disease (CHD). The prevalence of depression is nearly 20% in large cohorts of patients with stable CHD following major cardiac events, and it is slightly higher in women and younger patients. Patients with depression generally have lower exercise capacity and more dyslipidemia (lower levels of HDL cholesterol and higher triglycerides), other psychological risk factors including anxiety and hostility, and lower quality of life scores than those without depression. We have demonstrated 40% to 80% reductions in the severity of depression, as well as improvements in other CHD risk factors, in cardiac rehabilitation and exercise training (CRET) program participants. Moreover, we have shown that CHD patients who remain depressed despite completing CRET have 4- to 5-fold higher 3-year mortality rate compared with patients without depression. Also, CHD patients with depression who do not attend CRET have 3-fold higher 3-year mortality compared to those who attend and complete CRET. Finally, our research has demonstrated that small and moderate improvements in cardiorespiratory fitness (CRF; peak exercise oxygen consumption) following CRET are associated with marked reductions in depression and depression-associated increased mortality. This presentation will review the evidence for the importance of CRET and improvements in CRF in high-risk CHD patients with depression.

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## Symposium 36C 3129

### THE EFFECTS OF EXERCISE TRAINING ON HIGH RISK SUBTYPES OF DEPRESSION IN PATIENTS WITH CORONARY HEART DISEASE

Robert M. Carney, PhD and Kenneth E. Freedland, PhD

Psychiatry, Washington University, St Louis, MO.

Depression is a risk factor for cardiac morbidity and mortality in patients with established coronary heart disease. However, recent studies suggest that only certain subtypes or symptoms of depression increase the risk of cardiac morbidity and mortality in patients with coronary heart disease. After hospitalization for acute coronary syndrome (ACS), somatic symptoms of depression such as insomnia and fatigue appear to be stronger predictors of cardiac mortality than are cognitive or affective symptoms such as dysphoric mood, guilt, or suicidal ideation. Furthermore, patients who have their first episode of depression after ACS seem to be at higher risk than patients with recurrent depression, and episodes that begin after ACS may pose a higher risk of cardiac mortality than ones that begin before the cardiac event. Unfortunately, many patients with these high-risk forms of depression do not respond to antidepressants or psychotherapeutic interventions, and treatment-resistant depression is itself a risk marker for cardiac mortality after ACS. Consequently, there is growing interest in the possibility that exercise may be efficacious for high risk forms of depression in cardiac patients that do not respond to other treatments. This presentation will summarize the evidence for the higher risk for cardiac morbidity and mortality in patients with these symptoms and subtypes, and review the evidence regarding whether exercise is an efficacious way to treat them. It will also consider the role, if any, that exercise training should have in the next multicenter clinical trial designed to determine whether treating depression improves survival in patients with coronary heart disease.

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# Friday
# April 13, 2012
# 7:00 PM–8:30 PM

## Poster Session C

## C-001

### PHYSICAL ACTIVITY AND WEIGHT STATUS: CORRELATES AMONG RURAL BREAST CANCER SURVIVORS

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Obesity and physical inactivity are associated with poorer prognosis and decreased quality of life among breast cancer (BrCa) survivors. Rural women have higher obesity rates and lower physical activity (PA) levels than their urban counterparts, yet research is lacking in this population. This study investigated physical and psychosocial quality of life domains as correlates of current weight status and PA among rural BrCa survivors. BrCa survivors treated ($n$=918; mean age=66.6±13.1 years; 96.4% Caucasian) were recruited from three rural cancer centers throughout the state of Kansas to participate in a needs assessment survey assessing weight, quality of life domains, survivorship needs, and PA from the International Physical Activity Questionnaire (IPAQ; min/week of moderate and vigorous activity). Analyses included those participants with non-metastatic disease who reported their weight ($n$=743; 31.1% overweight; 37.3% obese; 29.1±6.9 BMI) or completed the IPAQ ($n$=405; 337.6±415.8 PA min/week, and 61.0% meeting or exceeding 150 min/week). Chi-square analyses indicated those who met PA recommendations were less likely to report fear of recurrence ($\chi$2 (1, $N$=757)=13.3, $p$<.001). Those who were obese were more likely to report numbness/pain/neuropathy ($\chi$2 (1, $N$=755)=17.7, $p$<.001), depression ($\chi$2 (1, $N$=754)=12.3, $p$<.001), weight gain since diagnosis ($\chi$2 (1, $N$=755)=45.0, $p$<.001), fear of recurrence ($\chi$2 (1, $N$=757)=6.7, $p$<.05), and lymphedema ($\chi$2 (1, $N$=754)=6.2, $p$<.05). Correlational analyses with weight and PA treated as continuous variables revealed similar results with one additional significant inverse relationship between PA min/week and diminished physical strength. However, $r$ values across variables were small ($r$=.09 to .26). Findings indicate weight has a significant but small association with several physical and psychosocial domains. The lack of findings for PA could be due to over-reporting, a consistent problem when collecting self-report PA data. Further research is needed to evaluate whether weight loss and PA intervention improves these experiences among rural BrCa survivors.

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## C-002

### IMMEDIATE AND SUSTAINED EFFECTS OF WORRY ABOUT CANCER PROGRESSION AND LOW PERCEIVED SOCIAL SUPPORT ON QUALITY OF LIFE AMONG WOMEN WITH EARLY STAGE BREAST CANCER

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Worry about cancer progression and perceived social support can affect quality of life (QOL) among long-term cancer survivors. However, little is known about how worry and social support experiences shortly after definitive surgery are related to short-term and mid-term QOL among recently-diagnosed early-stage breast cancer patients.

Women (N=549) with early-stage breast cancer were interviewed over a two year period. A multivariate analysis of covariance (MANCOVA) examined how worry about cancer progression and perceived social support at six months following definitive surgical treatment affected short-term and mid-term QOL as assessed by the RAND 36-Item Health Survey. Covariates included several demographic, medical, and treatment variables.

At six months post-surgery, higher worry was associated with worse QOL for general health, emotional well-being, energy/fatigue, role limitations (emotional), and social functioning, ps<.05. Lower social support was associated with worse QOL for general health, emotional well-being, role limitations (emotional), and social functioning, ps<.005. The detrimental effect of worry dissipated for all subscales except general health by 12 months post-surgery, ps<.05. The effect of social support dissipated for all subscales except general health and emotional well-being by 12 months, ps<.05. Women who worried and were in the lowest two quartiles of social support reported worse emotional well-being than other women. All effects dissipated by 24 months post-surgery except for a slight increase in social functioning at 24 months among women who worried about progression, p<.01.

Recently-diagnosed early-stage breast cancer patients who worry about cancer progression and/or have low social support may experience lower QOL six months after surgery that can take several months to resolve. Clinical and psychosocial interventions should be developed to facilitate the improvement of QOL, especially among vulnerable subgroups of cancer survivors.

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## C-003

### PREDICTING CANCER WORRY: LESSONS LEARNED FROM A SAMPLE OF LATINO YOUNG ADULTS

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Although cancer is the second leading cause of death among Latinos, their engagement in cancer preventive behaviors continues to lag behind other racial/ethnic groups. Cancer worry is identified as an important predictor in the uptake of cancer screening behaviors in the general population, but less is known about the influence cancer worry may have in Latinos. To the best of our knowledge, no studies have examined the cultural and cancer-specific factors that promote or hinder cancer worry among Latinos. Obtaining this information may help tailor cancer prevention programs for this cultural group. The present study addresses this gap in the literature by examining predictors of cancer worry in a sample of Latino young adults. 224 Latinos (mean age=20.9 years, SD=1.7) completed measures of cultural factors, family communication about family health, tobacco and alcohol use, and communication openness. Cancer worry was measured with the 4-item Cancer Worry Scale. 62% were female and 72% were born in the US. In this sample, cancer worry was associated with perceived cancer risk (r=.28, p<.01), tobacco use (r=-.14, p<.05), discussing cancer with mothers (r=.36, p<.01), discussing health risk behaviors with mothers (r=.17, p<.05), and holding a strong orientation for Latino culture (r=.23, p<.01). A hierarchical linear regression revealed that being female (β=-.19, p<.01), using tobacco products (β=-15, p<.05), having a higher perceived cancer risk (β=.22, p<.01), and discussing cancer topics with mothers (β=.21, p<.01) predicted cancer worry in Latino young adults. No significant associations were found between communication openness, alcohol use, and cancer worry. Findings suggest that cancer prevention interventions should include discussions about factors associated with cancer worry (i.e. tobacco use, risk perception, communication with mothers). To bridge the gap between cancer worry and early detection, future studies should examine the effect cancer worry has on screening behaviors in Latino young adults, taking into account the aforementioned factors.

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## C-004

### DISTINCT ASSOCIATIONS OF PHYSICAL ACTIVITY AND EATING PATTERNS WITH WEIGHT GAIN IN YOUNG BREAST CANCER SURVIVORS

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Breast cancer patients who are overweight at diagnosis, or who gain weight after diagnosis, have an increased risk of cancer recurrence and death. However, a large portion of women report gaining weight during and after breast cancer treatment. This study examines health behaviors that are associated with weight gain post-diagnosis in a sample of younger breast cancer survivors (age <50 at diagnosis). Specifically, we compare the exercise and eating patterns of women who by self-report did gain weight and those who did not gain weight after diagnosis. Data come from the After Breast Cancer study which examined health behaviors in breast cancer survivors ($n=164$) who were on average 3.3 years post diagnosis. Women who had been diagnosed with early stage breast cancer before the age of 50 were recruited from the UCLA tumor registry. Participants reported their weight at diagnosis, current weight, typical patterns of physical activity, and completed the Three-Factor Eating Questionnaire which examines dietary restraint, emotional eating, and uncontrolled eating. One-third of women reported gaining more than 5 lb since diagnosis. The overall mean weight change was +3.8 lbs ($SD=12.48$). Participants were categorized into three groups: those who reported losing more than 5 lb, those who remained within 5 lb of their original weight, and those who gained more than 5 lb. Contrary to expectations, the frequency, duration, and intensity of physical activity did not significantly differ between groups. Eating patterns however, were significantly different. Women who gained weight scored lower on cognitive eating restraint, higher on emotional eating, and higher on uncontrolled eating scales ($p<.05$). Our results suggest that disordered eating patterns and not amount of exercise may be a key characteristic differentiating women who gain weight after diagnosis from those that do not. Weight gain in breast cancer survivors is commonly attributed to a decrease in physical activity. Thus, many interventions aim to increase physical activity in this population. Future interventions aimed at preventing weight gain in younger breast cancer survivors should also target disordered eating patterns.

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## C-005

### DEPRESSION AND STRESS APPRAISAL PREDICTING HEALTH BEHAVIOR CHANGES DURING EARLY CANCER SURVIVORSHIP PHASE

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Healthy lifestyle behaviors like exercise and fruit and vegetable consumption can help improve quality of life both during cancer treatment and through survivorship by improving physical functioning and mitigating negative treatment side effects. However, patients' negative affect can stymie efforts to increase these healthy behaviors. This study aimed to determine the impact of depression and cancer stress appraisal on fruit and vegetable consumption and exercise after receiving a cancer diagnosis. Patients with colorectal cancer ($N=93$, age $M=61$) were recruited from community hospitals to complete questionnaires including both predictors and outcomes longitudinally at 2 (T1), 6 (T2), and 12 (T3) months post-diagnosis. Predictors included patients' depressive symptoms measured with the CES-D and stress appraisals pertaining to the impact of cancer on themselves and their family measured with the Cancer Appraisal scale. Daily averages of fruit and vegetable servings consumed (FVC) using the 5-A-Day and minutes of moderate physical activity (ModPA) using the Godin Leisure-Time Exercise Questionnaire served as outcomes. While FVC and ModPA across assessments remained below recommended levels, hierarchical regression analysis showed lower depressive symptoms at T2 related to greater FVC ($\beta=-.38$, $p<.02$) at T2 and lower symptoms at T3 related to greater ModPA ($\beta=-.46$, $p<.03$) at T3, controlling for corresponding T1 values, age, gender, and cancer stage (covariates). In contrast, higher cancer stress appraisal was concurrently related to greater FVC at T3 ($\beta=.31$, $p<.05$), controlling for corresponding T1 values and covariates. Findings suggest that although highly correlated ($.343<r<.686$, $ps<.01$), efforts to reduce cancer patients' depression, as opposed to cancer-related stress, may be beneficial for increasing healthy diet choices throughout cancer treatment and their physical activity during the early phase of survivorship. Patients' appraisal of cancer negatively impacting their own and their family's lives may serve as a "wake-up call" for dietary change during the time of transition to off-treatment.

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## C-006

### ADHERENCE TO COLORECTAL AND CERVICAL CANCER SCREENING AMONG CANCER SURVIVORS

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Because cancer survivors remain at risk for recurrent and new cancers following cancer treatment with curative intent, adherence to screening behavior is of particular importance. Screening can increase early detection and treatment of cancer and thereby decrease morbidity and mortality. Several professional groups and organizations have put forth specific screening guidelines yet, to date, there have been few examinations of cancer survivors' adherence to these guidelines. The purpose of this study was to examine adherence to recommended colorectal and cervical cancer screening among cancer survivors as compared to those without a cancer history. We conducted a secondary data analysis of NCI's Health Information National Trends (HINTS) 2007 Survey. For purposes of our study, we examined single items related to personal cancer history and adherence to endoscopy and Pap screening. Based on U.S. Preventive Services Task Force 2005 guidelines, adherence to endoscopy screening was defined as receiving a 5-year sigmoidoscopy or a 10-year colonoscopy; adherence to Pap screening was defined as receiving a 3-year Pap screening. Of the 7,338 evaluable HINTS participants, 1,001 (13.6%) identified themselves as a cancer survivor, whereas 6,337 participants (86.4%) did not report a personal cancer history and served as the comparison group. Using logistic regression analyses with cancer survivor (yes/no) as the independent variable and cancer screening (yes/no) as the dependent variables for each screening test (i.e., endoscopy, Pap), we found that cancer survivors were twice as likely to report having received recommended endoscopy screening ($OR=2.19$; CI: 1.87 to 2.56) and less likely to report having received recommended Pap screening ($OR=0.72$; CI: 0.60 to 0.88), as compared to those without a personal cancer history. Although cancer survivors are adhering to recommended endoscopy screening, adherence to recommended Pap screening is clearly suboptimal. Additional research is necessary to identify factors associated with poor adherence to recommended guidelines that can be targeted in future interventions with the growing population of cancer survivors.

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## C-007

### DIFFERENTIAL EFFECTS OF PHYSICAL ACTIVITY (PA) AND ADIPOSITY ON FATIGUE DIMENSIONS AND PHYSICAL FUNCTION IN BREAST CANCER SURVIVORS (BCS)

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Persistent fatigue impacts ~70% of BCS, but the etiology of fatigue in BCS remains incompletely characterized. Thus, we aimed to evaluate relationships among PA, adiposity, fatigue dimensions and physical functioning in BCS. Postmenopausal BCS [$N=13$, $age=54.7\pm4.7$ y (range: 49-64 y)] were assessed for: whole body (%Fat) and central (%Fat-AB) adiposity using DXA; PA using Godin questionnaire; fatigue dimensions using the Multidimensional Fatigue Inventory [general (GEN), physical (PHY), mental (MEN), reduced activity (RACT), reduced motivation (RMOT)]; and physical function via the timed Up & Go (UPGO) and Lift & Carry (LC) tests. BCS ($BMI=25.8\pm4.3$ kg/m2; $\%Fat=35.3\pm5.4\%$; $\%Fat\text{-}AB=29.3\pm9.3\%$; $PA=188\pm131$ min/wk) with more PA had less %Fat-AB ($r=-0.59$, $P<0.05$). Time since diagnosis, treatment type and cancer stage were not related to any primary variables. Age was negatively related to UPGO ($r=-0.61$, $P<0.05$). More PA was associated with less fatigue (GEN, PHY, RACT, RMOT; $rs=-0.57$ to $-0.83$, $Ps<0.05$). Greater BMI and %Fat-AB were associated with more fatigue (PHY, RACT, RMOT; $rs=0.59$ to $0.78$, $Ps<0.05$) with no significant relationships between %Fat and fatigue dimensions. PA, %Fat or %Fat-AB were not related to MEN (all $rs<0.18$, $Ps>0.05$). BCS with more PA had better UPGO and LC performance ($r=-0.64$, $-0.75$, respectively, $Ps<0.05$); greater %Fat or %Fat-AB performed worse ($r=0.66$, $0.80$, $Ps<0.05$). Controlling for PA, %Fat-AB remained significantly related to RACT ($r=0.65$, $P<0.05$) but was no longer related to GEN, PHY, or RMOT fatigue; BMI was no longer related to any fatigue dimension (all $Ps>0.05$). Similarly, controlling for PA, %Fat-AB was no longer related to UPGO or LC. PA and adiposity, chiefly %Fat-AB, are associated with multiple dimensions of fatigue and physical function in BCS. However, attenuation of associations with adiposity after adjusting for PA suggests prospective studies are warranted to determine potential mediation by PA on the impact of adiposity on fatigue and physical functioning.

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## C-008

### PHYSICAL ACTIVITY ADDS TO THE EFFECTS OF STRESS MANAGEMENT INTERVENTION ON FATIGUE INTERFERENCE, DEPRESSION, AND FUNCTIONAL QUALITY OF LIFE DURING TREATMENT FOR BREAST CANCER

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Objective: Women undergoing active treatment for breast cancer (BrCa) experience distressing side effects that negatively influence Quality of Life (QoL). Both group-based cognitive behavioral stress management (CBSM) and physical activity (PA) following a BrCa diagnosis are associated with increased functional capacity, less fatigue, and better depression and QoL. However little is known about their combined effects.

Methods: Women ($N=240$) with non-metastatic stage 0-III BrCa were recruited 2-10 weeks post-surgery and randomized to either a CBSM intervention group ($n=120$) or a psycho-educational control group ($n=120$). Physical activity, fatigue, fatigue-related daily interference (FRDI), functional QoL, clinician-rated depression, and depressed mood were assessed at baseline and 3-months post intervention. Structural equation modeling was used to test whether PA added to the effects of CBSM on fatigue, mood and QoL.

Results: Increased PA predicted decreased FRDI. A reduction in FRDI predicted improved functional QOL, and decreased rated depression and depressed mood (all $ps<.05$). There was a significant indirect effect from change in PA to changes in functional QOL, rated depression, and depressed mood via change in FRDI (all $ps<.05$). Finally, PA contributed significantly to the change in FRDI above and beyond the effects of participation in CBSM ($p<.01$).

Conclusions: Women with non-metastatic BrCa who are physically active during treatment may be able to reduce fatigue interference, attenuate depression and depressive symptoms, and enhance their functional QoL. Continued PA during CBSM intervention should be encouraged and investigated in controlled combination trials.

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## C-009

### RELATIONS AMONG PHYSICAL ACTIVITY, DEPRESSION, AND FUNCTIONAL QUALITY OF LIFE AFTER SURGERY FOR NON-METASTATIC BREAST CANCER

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Objective: Women receiving surgery for non-metastatic breast cancer (BrCa) experience side effects that negatively influence Quality of Life (QOL) and psychological adjustment. In other surgical populations, physical activity (PA) postoperatively is associated with increased functional capacity, less fatigue and fatigue-related daily interference (FRDI), and improvements in depressed mood and QOL. Less is known about the correlates of PA in the immediate period following surgery for BrCa.

Methods: We examined the reported PA profile and psychosocial correlates of 240 women with stage I-III BrCa at 2-10 weeks post-surgery. Participants reported duration and intensity of PA, fatigue intensity, FRDI, depressed mood, clinician-rated depression, and functional QOL. Structural Equation Modeling was used to test the direct and indirect pathways by which PA relates to the above psychosocial outcomes.

Results: Mean PA was 158 min ($SD=285$) of moderate intensity and 24 min ($SD=150$) of vigorous intensity per week. The estimated model was a good fit for the data, and interpretation of the direct effects showed that more physically active women reported less FRDI, less depressed mood, lower clinician-rated depression and better functional QOL (all $p's<0.01$). Tests of indirect effects showed that FRDI was an intermediate pathway between PA and QOL, depressed mood, and clinician-rated depression (all $p's<0.01$).

Conclusion: Many women engage in moderate PA post-surgery. More physically active women may better manage BrCa surgery side effects such as fatigue interference and depressed mood, and preserve functional QOL in the initial phases of their treatment.

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## C-010

### VALIDATION OF A MILK CONSUMPTION STAGE OF CHANGE ALGORITHM AMONG ADOLESCENT SURVIVORS OF CHILDHOOD CANCER

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Background: Survivors of childhood cancer are at increased risk for poor bone health due late effects of cancer therapies. Few survivors also meet recommended nutritional guidelines for bone development. Interventions are needed to encourage calcium consumption and other bone health behaviors among survivors.

Objective: To assess the construct validity of a Stages of Change (SOC) algorithm for two and four daily servings of milk (a primary source of dietary calcium) among adolescent survivors of childhood cancer to inform development of SOC-based tailored interventions.

Methods: Baseline assessments from 75 adolescent survivors ages 11 - 21 who participated in the Survivor Health and Resilience Education (SHARE) program included a milk consumption SOC algorithm and theoretical and behavioral predictors of SOC. Associations between milk consumption SOC and hypothesized predictors were examined.

Results: Compared with survivors in earlier SOC for milk consumption, those in later SOC for both two (i.e., Preparation, Action, Maintenance) and four (i.e., > Precontemplation) daily servings of milk reported consuming significantly more milk ($p<.001$) and dietary calcium ($p=.01$), and were more likely to meet age-specific guidelines for daily calcium consumption ($p=.02$).

Conclusions: Results support the validity of the milk consumption SOC algorithm in this population. Research is needed to establish the algorithm's validity with respect to theoretical predictors of SOC.

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## C-011

### CHEMOTHERAPY INDUCED PERIPHERAL NEUROPATHY, A MIXED-METHODS EVALUATION OF THE EXPERIENCE AND IMPACT

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Introduction: This study explored the self-management strategies used by female breast cancer patients to cope with the impact of chemotherapy induced peripheral neuropathy (CIPN) symptoms. We also compared patient-reported quality of life (QOL) and side effects in women with and without CIPN.

Methods: A purposive sample of 25 patients with ($N=14$) and without ($N=11$) CIPN, who were currently receiving docetaxel or paclitaxel or within 6 months of having completed treatment were recruited. This mixed-methods study utilized semi-structured interviews, the Functional Assessment of Cancer Therapy-Taxane (FACT-T), and patient-level electronic medical record data. Interview data were analyzed with the constant comparative method. Descriptive statistics, T-tests, and Chi-square analyses were used for patient-level and FACT-T data.

Results: Participants were aged 24-60 years. CIPN affected routine activities, functions, and behaviors in the areas of domestic, work, and social/leisure life. Self-management and coping strategies to minimize the impact of CIPN focused on movement to reduce symptoms, attitude awareness, logistics to simplify demands, and environmental change. QOL was similar for women with and without CIPN; FACT-T total score (out of 172) did not differ (134 vs. 132, respectively; $p=0.84$). Women with CIPN experienced significantly more of the 16 taxane-specific side effects queried than women without CIPN (7.6 vs. 4.5, $p=0.02$).

Conclusions: While quantitative data did not reveal a difference in QOL in women with and without CIPN, there was a qualitative impact on patients' routine activities, functions, and behaviors, for which they adopted management strategies. This finding suggests current patient-reported outcomes may not be sensitive to factors affecting QOL in patients with CIPN. Efforts to refine these areas for inclusion in QOL instruments would improve measurement, and serve as a useful tool in future research assessing the effectiveness of self-management strategies and other interventions to reduce the impact of CIPN symptoms.

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## C-012

### CONFIRMATORY FACTOR ANALYSIS: COPING AREAS ASSESSED IN CANCER BEHAVIOR INVENTORY

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BACKGROUND: Autologous stem cell transplants (ATP) have grown in prevalence (Pamphilon, et al., 2009) resulting in the need to understand the impact of confidence on coping with treatment (Bandura, 1991). The Cancer Behavior Inventory (CBI) was created to assess self-efficacy for utilizing different cancer coping methods (Merluzzi & Martinez Sanchez, 1997).

METHODS: The current study assessed cancer coping efficiency among 106 ATP patients and caregivers (M=47, F=59) one month after transplant. All participants completed the short version (12 item) of the CBI-B. Factor analysis was utilized to determine whether the short version CBI assesses different components of coping as compared to the original (33 item) version.

RESULTS: A factor analysis was performed using principal components extraction of eigenvalues>.05 and varimax rotation. The analysis yielded three hypothesized factors of cancer coping explaining 64.6% of the variance. Factor 1, "maintenance of activity and independence", explained 45.9% of the variance. The second factor derived, "seeking and understanding medical information", explained 9.9% of the variance. The third factor, "affective regulation", explained 8.8% of the variance.

CONCLUSION: Differing from the original six factors identified in the long form CBI, the current factor analysis derived three factors from the short version. Findings have implications regarding breadth of domains assessed, which is important for clinicians and researchers who seek to use the CBI to understand coping efficacy among oncology patients.

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## C-013

### PROGRESSING THROUGH DECISIONAL STAGES OF THE PRECAUTION ADOPTION POCESS MODEL WITH REGARD TO COLON CANCER SCREENING

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Minorities and those with low income have more late stage colorectal cancer (CRC) diagnoses than middle and upper income whites. These groups receive fewer CRC screening tests and are less likely to be current with screening than the population as a whole. If Precaution Adoption Process Model (PAPM) decisional staging for screening in this subpopulation can be well characterized, interventions can be tailored to improve screening, detection, and survival. We used the PAPM as a framework to assess decisional stage for CRC screening using a computer touch-screen survey in English and Spanish. We predicted that participants who were initially unengaged or undecided would be less likely to complete CRC screening, and that providing tailored instructions to overcome barriers would increase screening completion. Participants (n=470) were low-income, over age 50, not up to date with CRC screening, who were seen at safety-net clinics. We assessed decisional stage and provided education and choice similar to a real-world setting. Half of the participants were randomly assigned to complete tailored implementation intentions. All participants had the option to choose a screening method and were provided access to free screening by FOBT or colonoscopy. Results: Participants who were undecided about testing following education were less likely to complete screening (37%) than those who were decided (52%; p<.05). Those who received implementation print-outs were more likely to complete testing than those who did not (p<.05). Relationships between self-efficacy, decisional stage and screening are explored.

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## C-014

### RANDOMIZED CONTROLLED TRIAL OF AN INTERVENTION TO IMPROVE PATIENT ADHERENCE TO FOLLOW-UP RECOMMENDATIONS FOR ABNORMAL PAPANICOLAOU (PAP) TEST RESULTS

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Socioeconomically disadvantaged and minority women bear a disproportionate burden of cervical cancer. Improving adherence to follow-up recommendations among those who receive abnormal Pap test results may reduce this burden. This study evaluated a theory-based, culturally targeted intervention to improve adherence to follow-up recommendations among low-income and minority women who experience an abnormal Pap test result. A total of 5,303 women met eligibility criteria. Of these, 378 had an abnormal Pap test and 341 (90%) were randomized into one of three message groups: Intervention (I): targeted cultural beliefs+knowledge/skills+salience (perceived importance, memorability); Active Control (AC): non-targeted beliefs+knowledge/skills+salience; or Standard Care (SC). Messages were delivered by telephone at the time of notification of the abnormal result. The primary outcome was adherence to the initial follow-up appointment. Secondary outcomes included delay in care, completion of care, state anxiety (STAI-S) and distress (Cervical Dysplasia Distress Questionnaire, CDDQ). Behavioral outcomes were ascertained by chart review. Anxiety was assessed at enrollment, upon notification of results, and 7-14 days later along with the CDDQ and items assessing the intervention components. In intent-to-treat analysis, adherence rates were 56% (I), 51% (AC), and 53% (SC), P=.81. Thirty-nine percent of women in the intervention group completed their care relative to 35% in the AC and SC groups, P=.77. Delay in care (in days) was (M±SD): 58 ±75 (I), 69 ±72 (AC), and 54 ±76 (SC), P=.47, with a maximum of 318 days. STAI-S and CDDQ scores were highest in the intervention group, however both P>.34. Adherence was not significantly improved by the intervention and <40% of women completed their care. Further analyses explore the theory-based mechanisms through which the intervention was expected to influence behavior in order to fully understand the trial results and inform the use of theory in future behavioral interventions.

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## C-015

### HEALTH LITERACY AND URBANICITY AMONG CANCER PATIENTS

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Background: Limited health literacy is associated with inadequate use of health services and poorer health outcomes among cancer patients.

Purpose: This study examined the relationship between place of residence and health literacy among cancer patients in Wisconsin.

Methods: A cross-sectional survey was conducted with a statewide population-based sample of 1,841 cancer patients in Wisconsin. Participants were ages 18-79 and newly diagnosed with breast, lung, prostate, or colorectal cancer. Information on sociodemographics, place of residence, clinical characteristics, and health literacy was obtained from the state's cancer registry and participants' answers to a questionnaire.

Findings: Cancer patients living in rural areas are more likely to have low levels of health literacy than their counterparts in more urbanized areas of Wisconsin. This relationship is mediated by the availability of personal economic and educational resources.

Conclusions: Rural cancer patients are more likely to experience health literacy barriers, partially because rural areas have a greater concentration of individuals with lower income and education levels. Limited health literacy may translate into poorer health outcomes among rural cancer patients and contribute to disparities in cancer care. Interventions to address the health literacy needs of rural cancer patients are warranted.

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## C-016

### TOWARD A GREATER UNDERSTANDING OF BREAST CANCER PATIENTS' DECISION TO DISCUSS CANCER-RELATED INTERNET INFORMATION WITH THEIR DOCTORS

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While research has examined various aspects of internet health information seeking, little is known about the factors that make a patient more or less likely to discuss the information they have obtained on the internet with their doctor. In the current study we investigated differences between breast cancer patients who do and do not discuss cancer-related internet information (CRII) with their doctors. Participants included 70 breast cancer patients who reported having read CRII within the past month or at some point since their diagnosis. Of the 42 patients who had read CRII within the past month, 19 (45.2%) reported a pre-consultation intent to discuss that information with their doctor and 23 (54.8%) reported they did not intend to discuss it. In comparing these groups, no significant differences were demonstrated across patient, disease, and visit characteristics, physician reliance, or pre-consultation anxiety. 42 patients reported post-consultation that they had discussed the CRII with their doctor. No significant differences were noted between those who had discussed and those who hadn't discussed on satisfaction, trust in physician, or change in anxiety. Finally, all patients were asked to state their reasons for discussing or not discussing CRII with their doctor. Patients were most likely to state that they discussed CRII in order to become more educated (30.7%), appeal to the doctor as expert (23%), or be proactive in improving health (20.5%). In terms of reasons for not discussing, I trust my doctor was the most endorsed item (60.5%), followed by I read the information for my own learning" (58.1%), and the information was consistent with what the doctor told me (44.2%). Patients' decisions about whether to discuss CRII with their doctors are complex. Future research should investigate the impact of patients' perceived role in treatment, the doctor-patient relationship, attributes of CRII, and physician trust.

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## C-017

### ELEVATED RATES OF TANNING DEPENDENCE AND SKIN CANCER RISK BEHAVIORS IN PHYSICALLY ACTIVE INDIVIDUALS

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Higher rates of skin cancer and skin abnormalities have been observed in physically active individuals. Research is needed to understand whether physically active individuals engage in higher rates of skin cancer risk behaviors than their sedentary counterparts, and to understand which active individuals may be at greatest risk of skin cancer. Participants (n=172, Mage=32.88, 68% female) completed an online questionnaire study on physical activity and skin cancer risk factors and were classified as 'Active' (n=90) or 'Inactive' (n=82) using the EPIC physical activity questionnaire. After controlling for traditional skin cancer risk factors (gender, age, family history of skin cancer and skin type), active individuals, compared to their inactive counterparts, reported spending more time outside during peak UV hours (10-4pm; F=13.71,p<.001) and were more likely to meet tanning dependence criteria ($\chi$2=6.81, p=.01). Among active participants, those who met tanning dependence criteria (26%) were more likely to exercise outside ($\chi$2=8.78, p=.003) and during peak UV hours specifically ($\chi$2=8.27, p=.004), more likely to report a sunburn in the past year (F=8.27, p=.005), and reported higher body image importance (F=8.64, p=.004), compared to those who did not meet tanning dependence criteria. Active participants who met tanning dependence criteria reported less sunscreen use during exercise compared to their non-dependent counterparts (F=7.30, p=.008), though they did not differ in general sunscreen use (p=.22). Active individuals who met tanning dependence criteria also had higher skin cancer risk perception (F=6.30, p=.01). About 26% of physically active individuals met criteria for tanning dependence, and while they perceive themselves at risk for skin cancer, they appear to use outdoor exercise as an opportunity to tan. More research is needed to understand this unique group of "tanners" and prevention efforts should emphasize the importance of sun protection during outdoor exercise.

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## C-018

### ASSESSMENT OF FAMILY PSYCHOSOCIAL ADJUSTMENT IN SURVIVORS OF PEDIATRIC CANCER

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The goal of the investigation was to examine the clinical utility of a screening measure for psychosocial risk, the Psychosocial Assessment Tool (PAT 2.0), among pediatric cancer survivors who are being treated in a pediatric Cancer Survivor Program. Caregivers (N=94) completed the PAT 2.0 during their child's yearly survivorship clinic appointment. Participants reported on their family's social stressors and psychological symptoms. Additional diagnostic and treatment data was obtained from medical records.

On average, participants' children were 8.1 years from diagnosis (SD=3.62 yrs). The internal consistency of the PAT 2.0 in this survivorship sample was good (Cronbach's $\alpha$=.95). Consistent with the Pediatric Psychosocial Preventative Health Model and previous research with caregivers of children newly diagnosed with cancer (Kazak, 2006; Pai et al., 2008), 55.3% of families presenting for survivorship care fell into the "Universal" risk category, 31.9% fell into the "Targeted" risk category, and 12.8% fell into the "Clinical" risk category. A behavioral health specialist was consulted to see 58% of participant families. Surprisingly, level of psychosocial risk was not significantly associated with whether or not a behavioral health consult was conducted ($\chi$2(2)=2.33, p=.312). In contrast, presence of parent reported learning difficulties on the PAT was significantly associated with a behavioral health consult ($\chi$2(1)=14.49, p<.001). Data indicate that the proportions of families experiencing universal, targeted, and clinical levels of psychosocial stress stay the same from the time of diagnosis into survivorship care. Results suggest that learning problems associated with neurocognitive late effects, as opposed to psychosocial distress, was a driving force behind behavioral consult initiation. Overall, the PAT 2.0 demonstrates promise as a clinical screening measure to identify psychosocial stressors and facilitate more effective family support in survivorship care.

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## C-019

### HEALTH BEHAVIOR FRAMEWORK CORRELATES OF HEPATITIS B KNOWLEDGE AMONG VIETNAMESE, HMONG, KOREAN AND CAMBODIAN AMERICANS

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Background: Although some studies have examined theoretical constructs that are related to hepatitis B testing, many studies are not theory-guided. In addition, comparing theoretical constructs across studies and populations is difficult because surveys do not always assess the same theoretical constructs. This analysis examines the relationships between Health Behavior Framework factors among 4 Asian American groups in order to advance health behavior theory and the development of theory-based programs to promote testing in these and other high risk populations.

Methods: Data for this analysis were collected during baseline surveys of 4 intervention trials promoting hepatitis B testing among Vietnamese-, Hmong-, Korean- and Cambodian-Americans (N=1,735). Surveys were conducted between 2007 and 2010 and included a common core questionnaire that assessed the following Health Behavior Framework constructs: Demographic characteristics, awareness of hepatitis B, knowledge of transmission routes, perceived susceptibility, perceived severity, doctor recommendation, stigma of hepatitis B infection, and efficacy of testing. Within each group we assessed the associations between our intermediate outcome of knowledge of hepatitis B transmission and other Health Behavior Framework constructs, to assess the concurrent validity of our model and instruments.

Results: While the absolute levels of Health Behavior Framework factors varied among the 4 ethnic groups, the relationships between knowledge and other Health Behavior Framework factors were generally consistent across groups. This suggests similarities rather than differences with respect to posited drivers of health behavior.

Discussion: Findings suggest that constructs of the Health Behavior Framework are applicable to diverse ethnic groups and that valid assessment tools can be developed for different ethnic groups based on this general theoretical framework.

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## C-020

### PERCEPTIONS OF AND WILLINGNESS TO PARTICIPATE IN ORAL CANCER SCREENING AMONG CHINESE AMERICANS IN CHINATOWN IN NEW YORK CITY: A PILOT STUDY

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Objectives: The purpose of this survey was to examine the perceptions of and willingness to participate in oral cancer screening, as compared to other cancer screenings, in Chinese Americans in Chinatown, New York City.
Methods: All participants in this convenience sample each completed a 10 minute face-to-face interview in a Chinatown health center using a structured questionnaire administered by 3 trained, multi-lingual (English, Mandarin, and Cantonese) interviewers. The structured questionnaire primarily focused on knowledge of, past experience with, perceptions of, and willingness to participate in oral cancer screenings. Further questions asked about other types of cancer screenings as well as demographic information.
Results: Among the 120 participants (an 80% response rate of those were asked to interview), 77.5% reported having had any cancer screening, but only 2.5% reported having had an oral cancer screening despite >60% of the participants having heard of oral cancer and >50% being willing to participate in oral cancer screening. Moreover, 96.7% were willing to participate in oral cancer screening if they had symptoms; however, their willingness decreased to 53.3% if they did not have any symptoms.
Conclusion: Having symptoms was an important factor in whether this study population would be willing to participate in oral cancer screening. Despite the observed oral cancer awareness and willingness to participate, there was an extremely low participation rate in oral cancer screening among this convenience sample of Chinese Americans attending this health center in Chinatown in New York City.

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## C-021

### REDUCED SOCIAL SUPPORT IN RECURRENT CANCER: A QUALITATIVE STUDY

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Social isolation and social support have been linked to disease progression and mortality for women facing cancer. Despite this, little is known about social support for women with recurrent cancer. A qualitative study provided an opportunity to explore the unique support challenges of women with recurrence. Semi-structured interviews were conducted with 35 women (89% Caucasian; mean age 61, SD=9) with recurrent breast (n=17) or gynecologic (n=18) cancers. Participants were asked to describe their experience with recurrence, and women compared it to their initial diagnosis. Interviews were recorded, transcribed and coded using Atlas.ti. Cross-case, inductive analysis was used to identify themes. A theme that emerged in analyses was the change in women's social support networks between diagnoses. In general, the size of support networks decreased and women began to rely on a small group of close others for support. The reduced social support network was due to (1) shrinking network size, and (2) network fatigue. Network members were lost due to change in job status (retirement, job loss due to illness) and death or illness of close others. Because of these changes, some people who provided pivotal support at initial diagnosis were no longer present at recurrence. For some women, the quality of support received also decreased. Women described members of their community coming together to help (e.g., cook meals, clean) at initial diagnosis. After their recurrence, women felt that network members had "moved on" and offers of help were more limited. These reductions in social support left women feeling more alone after their recurrence diagnosis. Given the association between social support and disease progression/survival, additional information is needed to understand the effect that decreased network size and support quality have on health outcomes for recurrence patients. Interventions targeting the psychosocial needs of recurrence patients should attend to their unique support needs.

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## C-022

### HEMATOPOEITIC CELL TRANSPLANT (HCT) SURVIVORSHIP: DOES PSYCHOLOGICAL SCREENING MAKE A DIFFERENCE IN MANAGEMENT OF PSYCHOLOGICAL SYMPTOMS?

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HCT recipients are at high risk for psychological distress which, if undetected and not addressed, could contribute to needless suffering, and impact outcomes and quality of life. However, little research has evaluated how screening affects management of psychological symptoms at routine post-HCT outpatient clinic visits. We hypothesized that compared to treatment as usual, the brief, diagnostically focused Patient Health Questionnaire (PHQ), assessing for depressive disorders, anxiety, substance abuse, and problems in occupational or interpersonal functioning (PIF), would differentially identify patients in need of intervention. We randomized 103 HCT survivors to complete the PHQ prior to meeting with their medical provider (n=51; experimental group) or afterwards (n=52; control group). Providers used the experimental group PHQ scores at their discretion during the visits, and reported on psychological interventions initiated for each group. Providers and patients rated their satisfaction with management of psychological concerns. Results indicated more discussion of psychological symptoms occurred in the experimental group (p<.05), but not referral to mental health providers or prescription of psychotropic medication. Logistic regression controlling for group showed discussion of psychological issues was more likely for patients who endorsed PIF (OR=5.45; p=.02). Referral to mental health providers was more likely for patients who endorsed PIF (OR=3.17; p=.08) and higher depressive symptoms (OR=1.18; p<.05). Medical providers were significantly more satisfied with the management of psychological problems for the experimental group (p<.001). Interestingly, patient satisfaction did not differ between groups, yet patients with more depressive symptoms were less satisfied regardless of group. The data from this study are being used to design future research to test whether the PHQ is cost-effective and improves patient outcomes via detection of psychological problems.

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## C-023

### PATIENT ATTITUDES, BELIEFS AND PRACTICES REGARDING THE USE OF MARIJUANA FOR THE MANAGEMENT OF CANCER-RELATED SYMPTOMS

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Cancer patients on chemotherapy often experience debilitating symptoms that disrupt daily activity including chronic nausea, severe loss of appetite, uncontrolled pain and recurrent anxiety. A number of therapeutic utilities of marijuana have been identified and marijuana appears to have potential therapeutic effects. 59 patients undergoing cancer treatment at a large Southeastern cancer center completed an anonymous survey regarding their beliefs, attitudes and behaviors with respect to the use of marijuana for cancer-related issues, as well as their current functioning, pain, and psychosocial concerns (26 females; 61% Caucasian; 9% African American; 15% Hispanic). The median age-range of the sample was 41-50 years. Participants were being treated for cancer of the digestive tract (31%), breast cancer (7%), leukemia (5%), lung cancer (3.4%), skin cancer (5%), genital/urinary cancer (5%), gynecologic cancer (7%), or other cancer (37%) at the time of survey. 71% of the sample indicated that if medical cannabis was legal, they would use it, and 27% indicated that they were currently using cannabis for oncology-related pain and nausea. Most cancer patients in our sample currently using cannabis indicated that it helps with pain (82%), nausea (88.4%), vomiting (77%), sleep (79%), appetite (97%) and anxiety (82%), but significantly fewer indicated that they thought it had detrimental effects on memory (7%) or attention/concentration (33%). Overall, these preliminary findings suggest that many cancer patients (27%) are using cannabis during their cancer treatment to help with cancer-related symptoms, side-effects and complications. Of this sub-sample, the vast majority report significant benefit with respect to pain, nausea, vomiting, appetite, anxiety, and sleep with minimal reports of memory problems. Further work is needed in this area to determine whether these reported benefits are greater than the current standard treatments alone using more sophisticated outcomes measures and controls.

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## C-024

### SUBJECTIVE AND OBJECTIVE SLEEP QUALITY IN MEN WITH PROSTATE CANCER

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INTRODUCTION: Sleep disturbance is approximately three times higher among cancer survivors (Palesh et al., 2010), and sleep difficulty is a common problem for men with prostate cancer (PC; Savard et al., 2005). Assessments of sleep quality can be subjective (e.g., questionnaire) or objective (e.g., actigraphy). Prior studies have reported no or small correlations between measures (Berger et al., 2007). Symptoms following PC treatment (i.e., incontinence) may exacerbate sleep problems, yet no study has compared objective and subjective assessments in PC patients. This study examines congruency of subjectively and objectively monitored sleep quality, and relationships of sleep quality with prostate-specific (i.e., urinary, bowel, sexual) functioning.

METHODS: Participants were19 English-speaking men who were treated for localized PC within the prior 2 years ($M$ age=63.61, $SD$=7.21). Participants completed questionnaires including the Pittsburgh Sleep Quality Index (PSQI) to assess sleep onset latency, sleep duration, and nighttime awakenings; and the UCLA Prostate Cancer Index to measure prostate-specific functioning. Motionlogger Actigraphs (Ambulatory Monitoring, Inc, Ardsley, NY) were worn continuously for 72 hours during sleep and wakefulness which records signals when movement is detected. One-minute epochs were used to measure nighttime awakenings, total sleep time, and sleep latency.

RESULTS: The mean PSQI total score ($M$=9.21, $SD$=3.08) was higher than the proposed cutoff for cancer patients (>8.0; Carpenter & Andrykowski, 1998). Subjective and analogous objective measures of nighttime awakenings, sleep duration, and sleep latency were not significantly related. However, objective sleep latency was negatively related to subjective sleep duration ($r$=-.53, $p$<.05). Only self-reported nighttime awakenings was related to urinary function ($r$=-.48, $p$<.05), and objective total sleep time was related to bowel function ($r$=.50, $p$<.05).

CONCLUSION: Objective and self-report sleep quality parameters represent separable constructs in men with PC and likely have different relationships with physical functioning. More work is needed to guide clinicians and researchers in determining which sleep variables are most influential on quality of life.

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## C-025

### THE SURVIVOR PROGRAM TO EMPOWER ACTION IN CARE (SPEAC): PRE-PILOT TESTING

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Childhood cancer survivors require lifelong medical surveillance because many cancer treatments they received contribute to premature morbidity and mortality. In fact, 67% of childhood cancer survivors will have a chronic medical condition by 30 years of age. Specialized long-term follow-up guidelines have been available through the Children's Oncology Group since 2004; although, the adoption of the guidelines are limited. Approximately 80% of all adult childhood cancer survivors who have healthcare contact are seen by primary care providers who remain largely unaware of the treatment-related risks or recommendations for follow-up. With the goal of increasing the number of survivors who receive recommended care, SPEAC was developed. SPEAC was designed to educate survivors about the potential health risks associated with cancer treatments and empowering them to become active in their survivorship care. Targeted behaviors included requesting a copy of their cancer medical record and talking with the provider about their healthcare needs.

The intervention was developed using an iterative process with collaboration from African American, Hispanic, and White adult survivors. Nine completed the 3 session face to face pre-pilot which was conducted to refine the intervention prior to a randomized controlled trial. Both sexes were represented across three ethnic groups. Four survivors had a High School degree or less. Five had private insurance, one Public Aid, and 3 uninsured. Age of diagnosis ranged from one to sixteen years of age. Two survivors reported current health problems due to the cancer treatments.

Results revealed that the cost of long-term follow-up care and extra tests were major concern. Results on the intermediary outcome measures - knowledge questions, Brief Symptom Inventory, and self-efficacy to communicate with a provider - changed in the desirable directions between baseline and post-intervention.

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## C-026

### CHALLENGING BREAST CANCER TOGETHER; THE EFFECT OF A PSYCHOLOGICAL INTERVENTION FOR WOMEN WITH BREAST CANCER

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This study assesses the impact of a 5 week cognitive behavioural stress management intervention on positive and negative adjustment. The indices include global and cancer specific stress, general and cancer specific coping, emotional adjustment (anxiety, depression, positive and negative affect) social support, optimism and positive growth. Participants were 200 recently diagnosed women who had undergone breast cancer surgery with 95 randomized to the intervention.

Hierarchical regression analysis taking account of age and cancer related variables (disease stage and type of surgery) showed that stress outweighed the impact of coping, social support and optimism in predicting positive and negative adjustment (all $Ps$<.01).

ANOVA results post intervention showed that it was effective in reducing stress and anxiety. It enhanced the use of adaptive (task focused) coping and intervention participants showed greater positive growth or ability to find benefit in the experience (all $Ps$<.01). Follow-up assessment 6 and 12 months later showed that the effects of the intervention had been maintained over time. Results are discussed in the light of long term adjustment.

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## C-027

### ECONOMIC HARDSHIP OF MINORITY AND NON-MINORITY CANCER SURVIVORS ONE YEAR AFTER DIAGNOSIS

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Objective: We know little about the economic hardship associated with a cancer diagnosis. Minority survivors may be more likely to experience such hardship than whites, due to lower average socioeconomic status.

Methods: Surveys were administered approximately 3 and 12 months post diagnosis to lung or colorectal (CRC) cancer patients participating in the Cancer Care Outcomes Research and Surveillance study. Economic hardship at follow up was equal to 1 if participants indicated it was difficult to live on the total household income, or anticipated experiencing hardships (inadequate housing, food, or medical attention) or having to reduce standards of living to the bare necessities of life in the following two months. Racial groups were White, African American (AA), Hispanic and Asian. We used logistic regressions to test if minorities were more likely to experience economic hardship controlling for gender, age, education, stage of cancer, treatment received, comorbidities, economic status and quality of life.

Results: Participants were 2,214 CRC and 1,433 lung cancer survivors. AAs and Hispanics had lower education and economic status than Whites or Asians. Economic hardship was 46% and 52.4% for CRC and lung cancer survivors, respectively (67.3% and 68.7% AA, 58.9% and 58.5% Hispanics, 41.7% and 44.7% Asians, 40.5% and 50.0% whites, respectively). In adjusted analyses, AA CRC patients were more likely than Whites to experience economic hardship. No racial differences were found for lung cancer patients. Factors associated with economic hardship were marital status, education, economic status and quality of life. Stage of disease and treatment received were not associated.

Conclusions: The economic burden of cancer can be significant even one year after diagnosis, especially for African American survivors. Research should evaluate its cause, persistence and implications for quality of life.

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## C-028

### CANCER-RELATED FATIGUE (CRF) AND INTERFERENCE WITH ACTIVITIES OF DAILY LIVING (ADL) AMONG 287 OLDER PATIENTS RECEIVING CHEMOTHERAPY

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Background: CRF is hypothesized to impair quality of life by interfering with patients' abilities to perform ADL. The purpose of this study is to describe the interference of CRF with ADL in older cancer patients. Methods: 287 patients (all >65 yrs; M=72 yrs; N=171 female) with mixed cancer diagnoses were assessed on CRF and its interference with ADL 7 days after their first 2 chemotherapy infusions as part of a large nationwide clinical trial conducted by the URCC CCOP Research Base. CRF and interference with ADL were assessed using questions from the Multidimensional Assessment of Fatigue instrument (10-point Likert Scale; 1=Not at all to 10=A great deal). Results are presented as means and standard errors (M±SE).

Results: Nearly half (145 of 287) of patients reported CRF at cycle 1 (5.67±0.16) and cycle 2 (5.20±0.17). During cycle 1, 59% of patients reported that CRF interfered with socializing (5.39±0.18), participating in recreational or leisure activities (5.34±0.28), household chores (5.32±0.18), and running errands (5.16±0.20). CRF interfered with walking in 56% (5.04+0.20), cooking in 51% (5.17±0.20), bathing in 46% (6.11±0.25), dressing in 45% (6.04+0.26), working in 33% (6.51±1.02) and engaging in sexual activity in 28% (5.35±0.32) of patients. During cycle 2, CRF interfered with household chores in 54% (4.94±0.18), running errands in 53% (5.07±0.20), socializing in 52% (5.11+0.20), walking in 49% (4.73±0.20), participating in recreational or leisure activities in 47% (5.05±0.22), cooking in 44% (4.91±0.21), dressing in 43% (5.91±0.28), bathing in 42% (5.76±0.27), working in 26% (4.94±0.27), and engaging in sexual activity in 27% (4.54±0.28) of patients. CRF was significantly correlated with interference for all ADL at cycles 1 and 2 (all p<0.01).

Conclusion: CRF interferes with older cancer patients' abilities to perform ADL, such as walking, dressing, bathing, performing household chores, working, running errands, participating in recreational activities and leisure activities, socializing, and engaging in sexual activity while receiving chemotherapy.

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## C-029

### MODIFIABLE UNHEALTHY LIFESTYLE BEHAVIORS AMONG PRE-TRANSPLANT HEMATOLOGIC CANCER SURVIVORS: MEETING GUIDELINES

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Modifiable unhealthy lifestyle behaviors are leading preventable causes of death, disability, and disease in the general population. Evidence is building to link these behaviors to cancer survivor outcomes. We examined the baseline prevalence of survivors meeting guidelines for tobacco abstinence, alcohol use, physical activity, and fruit and vegetable consumption among a sample of 303 survivors preparing for Hematopoietic Stem Cell Transplantation (HSCT) in a prospective study of HSCT patient lifestyle. Participants were predominantly married, Caucasian adults seeking HSCT for the treatment of multiple myeloma, non-Hodgkin lymphoma, acute leukemias, and also amyloidosis, representing approximately 90% of a large HSCT program. The percentage meeting individual guidelines ranged from 21% (physical activity) to 83% (alcohol use). Only 5% of survivors met guidelines for all health behaviors combined: physical activity, fruit and vegetable consumption, tobacco abstinence, and alcohol use. Gender and marital status was associated with guidelines met (p<.10). Age, performance status, and time since diagnosis were not associated with meeting guidelines (p>= 0.10 in each case). When BMI guidelines were added, only 1.33% met all five guidelines. The two most common behavioral clusters were: (1) non-adherence to physical activity, fruit and vegetable consumption, BMI, and tobacco use (17%); and (2) physical activity, fruit and vegetable consumption, and BMI (16%). Non-adherence to physical activity and fruit and vegetable consumption guidelines co-occurred in 64% of survivors, thus representing the 2 most commonly linked behaviors. Results highlight the need for behavioral intervention development. Future studies should examine survivor health outcomes in relation to guideline adherence, survivor intervention preferences, multiple versus single behavior interventions, and Survivor Care Plans as intervention platforms.

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## C-030

### THE RELATIONSHIP BETWEEN FATIGUE, ANXIETY AND DEPRESSION IN CANCER PATIENTS UNDERGOING CHEMOTHERAPY

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Background: Fatigue is a common symptom reported by cancer patients undergoing chemotherapy. It is also part of the diagnostic criteria for major depression and generalized anxiety disorder. In order to effectively treat fatigue in cancer patients, it is important to determine whether fatigue is related to the diagnosis of cancer and its related treatments, to psychological state, or a combination of both. The present study examined the relationship between fatigue, anxiety and depression in cancer patients currently receiving chemotherapy.

Methods: A sample of 479 subjects (mean age=56.4; white=89.6%; female=75.8%; breast cancer=54.3%) were assessed seven days following their first four chemotherapy treatments. Anxiety, depression, and fatigue were measured using the Tension and Anxiety subscale from the POMS, the HDI, and the FSCL, respectively. Bivariate correlations were used to determine the associations between fatigue, anxiety and depression. Additionally, a repeated measures ANOVA was used to determine changes of fatigue, depression and anxiety across chemotherapy treatments.

Results: The bivariate correlations showed that fatigue was highly correlated with depression (r=0.73-0.79, p<.05) and anxiety (r=0.66-0.72, p<.05). The repeated measures ANOVA showed that patients reported their highest fatigue levels following their second chemotherapy treatment (p<.05). However, anxiety and depressive symptoms were highest following their first chemotherapy (p<.05), and decreased significantly throughout the course of chemotherapy treatments.

Conclusions: The relationship between fatigue, anxiety, and depression remains unclear. Additionally, the relationship between fatigue and anxiety has been examined on a limited basis. Future studies should examine how anxiety may impact fatigue in cancer patients undergoing chemotherapy. Further studies should examine the interaction of fatigue, depression and anxiety during chemotherapy.

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## C-031

### CHILDREN'S QUALITY OF LIFE SURROUNDING MATERNAL SCREENING FOR HEREDITARY BREAST AND OVARIAN CANCER

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Parents are essential resources to their children, with strong and open lines of communication fostering healthy psychosocial development in families. Maternal and familial experiences with hereditary cancer can alter family communication pathways, and influence the parent-child bond and children's quality of life (QoL). In this study, we examined the contribution of parent-child communication surrounding maternal screening for hereditary breast and ovarian cancer risk on children's QoL. Participants were 122 mothers (M age=44, 76% white, 50% cancer survivors) undergoing assessments for BRCA1/2 gene mutations and raising children 8-17 years (M age=12.5, 53% female). Demographic and maternal clinical characteristics were reported, along with validated behavioral measures of general and cancer-specific parent-child communication and children's QoL. At the bivariate level, younger child age (r=-.20), maternal white race (t=-2.48), problems in parent-child communication (r=-.60), and closed communication about cancer (r=-.21) were related to lower child QoL (all p's<.05). After adjusting for the effects of child age and maternal race, parent-child communication problems remained significantly associated with lower QoL among children (B=-.22, SE=0.03, p<.001, Adj. R2=.40). Less open lines of parent-child communication are adversely related to children's psychosocial well-being in the context of maternal screening for hereditary breast and ovarian cancer risk. As strained communication patterns may affect maternal decisions to inform children about hereditary cancer over time, additional research is needed to understand the impact of genetic risk information on family adaptation and children's quality of life.

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## C-032

### EFFECTS OF CREATIVE ARTS THERAPY ON SYMPTOM CLUSTERS AND QUALITY OF LIFE IN CANCER PATIENTS: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Creative arts therapy is therapeutic modality that has been used in health care settings to reduce symptom clusters and increase quality of life (QoL) in cancer patients. However, there is a lack of empirically evidence regarding its effectiveness despite its growing popularity. In accordance with PRISMA guidelines, we estimated the population effect size for creative arts therapy on symptom clusters and QoL in cancer patients during treatment and follow-up and determined the extent to which the effect was moderated by intervention and study design characteristics.

Articles published prior to August 2011 were retrieved using ERIC, MEDLINE, PILOTS, PsycInfo, PubMed, and Web of Science databases. Twenty-seven studies involving 1,576 cancer patients were identified. Articles included an anxiety, depression, pain, fatigue and/or QoL measure assessed at baseline and post-intervention and randomization to a creative arts intervention or a comparison group. When possible, studies were further divided into investigations that examined post-treatment and follow up outcomes. Random effects models were used to estimate sampling error and population variance.

Creative arts therapy significantly reduced (mean delta $\Delta$, 95%CI) anxiety (0.28, 0.11 to 0.44), depression (0.23, 0.05 to 0.40), and pain (0.54, 0.33 to 0.75) and increased QoL (0.50, 0.25 to 0.74) during cancer treatment. There was no effect on fatigue (0.16, -0.04 to 0.37). The effect of creative arts therapy was significant in pain and QoL during follow up. The effect of creative arts on anxiety and pain was greatest for those studies that did not use a creative arts therapist, utilized multi-session interventions, utilized inpatient hospital settings, used a homogenous sample of cancer patients, and used a waitlist or usual care comparison condition.

Creative arts therapy reduced symptom clusters and increased QoL among cancer patients during treatment, but the effect was significantly reducing during follow up. Creative arts interventions should be considered a potential adjuvant therapy for cancer patients.

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## C-033

### COMMUNITY-TO-CLINIC TAILORED NAVIGATION FOR COLORECTAL CANCER SCREENING

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Background: CRC screening (CRCS) has increased almost 20% nationally, however for minorities and low-income populations' rates remain sub-optimal. For most Americans, primary care is the point of entry into the health care system where referral for CRCS is received, one of the strongest predictors of adherence. The majority of ethnically diverse, under and uninsured less educated patients rarely visit primary care clinics and also show low rates of CRCS (factors converging especially among Latino populations), suggesting a need to locate patients in their communities and refer them to primary care.

Method: In the context of a parent study that provided CRC prevention (dietary changes, physical activity) and screening education classes among Latinos in low income neighborhoods, we recruited 11 community sites to test a Tailored Navigation (TN) intervention. Participants were a subset of each class, including only those aged 50-75 and due for screening. TN consisted of phone contacts up to 5 times over 8 weeks using scripted, tailored responses to a participant's concerns and barriers to CRCS. At an additional 11 sites participants completed classes, but did not receive navigation calls. Navigation and non-navigation sites were matched on type of site (church, school, community center, etc.), distance to closest safety-net clinics, and number of participants aged 50-75 and due for CRCS.

Results: In sites receiving TN, of 34 eligible participants (1 of 35 refused; 23.5% male), 12 (35.3%) proceeded to clinic appointments and obtained CRCS [9 stool blood or fecal immunochemical tests (ST), and 2 colonoscopy]. Matched control sites yielded 34 eligible participants (20.5% male) and 4 (11.8%) obtained CRCS (2 ST, 2 colonoscopy); $\chi 2$ (df=1)=4.0, p<.05.

Conclusion: This pilot study suggests that in low-income Latino communities where CRCS is rare, a TN intervention to encourage scheduling a clinic visit can significantly improve rates of screening.

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## C-035

### CARDIOVASCULAR REACTIVITY AND RECOVERY TO A STRESSFUL TASK FOLLOWING A MINDFULNESS ANALOG IN COLLEGE STUDENTS WITH A FAMILY HISTORY OF HYPERTENSION

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Development of hypertension is partly predicted by cardiovascular reactivity and recovery. This development may be moderated by family history as this population shows greater physiological reactivity in response to stressors. Mindfulness techniques have been shown to reduce perception of stressors and suggest reductions in cardiovascular reactivity. It was hypothesized that a brief mindfulness analog (MA) induction would reduce reactivity and latency to recovery to a stressful task compared to a control induction in a population at risk for hypertension.

Ninety-seven undergraduates (53.6% female) with a family history of hypertension were randomized to either a brief MA induction or control condition. They were then exposed to the cold-pressor task. Readings of heart-rate and blood-pressure were taken during the task to measure reactivity and afterwards to obtain recovery readings.

One-way ANOVAs analyzing reactivity change scores revealed no differences between conditions on heart-rate or blood pressure reactivity To assess recovery repeated measures ANOVAs were performed with condition and time (2x3) as independent variables and blood pressure and heart-rate as dependent variables. Increased latency to recovery was observed for systolic blood pressure after the cold pressor task in the MA group compared to control condition F(1,91)=4.13, p=.04. A similar effect size was present for diastolic blood pressure. There was no effect for heart-rate.

These findings were contrary to what was hypothesized, but learning theory literature may offer an explanation. Participants in the MA condition were potentially primed towards aversive interoceptive stimuli which would be predicted to result in increased and longer duration physiological responding initially, but with decreased responding over time. This suggests a mechanism by which mindfulness may potentially function to reduce latency to recovery over time, namely habituation.

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## C-036

### STRESS IN THE NEIGHBORHOOD AND CARDIOVASCULAR HEALTH: THE ASSOCIATION BETWEEN PERCEPTIONS OF NEIGHBORHOOD PHYSICAL AND SOCIAL DISORDER AND CARDIOVASCULAR DISEASE RISK IN LATINAS

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Purpose: Residents of neighborhoods that evidence high levels of physical (e.g., vandalism, lack of upkeep) and social (e.g., loitering, drug and alcohol use) disorder are exposed to noxious environments that can be sources of chronic stress. The current study investigated the degree to which perceptions of these physical and social contributors to neighborhood stress are related to CVD risk parameters including body mass index (BMI), total to high-density lipoprotein cholesterol ratio (chol/hdl-c), triglycerides, homeostatic model of assessment (HOMA; a measure of insulin resistance), and mean arterial pressure (MAP).

Methods: A randomly-selected community sample of 304 Mexican-American women (mean age=49.8, SD=6.6; 75% born in Mexico) completed questionnaires assessing demographics and perceptions of neighborhood social and physical disorder (i.e., Ross and Mirowsky's Perceived Neighborhood Disorder Scale). Trained assessors measured BP, height and weight. Blood plasma levels of lipids, insulin, and glucose were collected through a fasting venous blood draw. Multiple linear regression tested associations of disorder with CVD risk variables, adjusting for age, socioeconomic status (SES; income, education), menopausal status, medication use, and acculturation.

Summary of Results: In age-adjusted analyses, neighborhood social disorder was not associated with BMI, but was associated with chol/hdl-c ($\beta$=0.13), triglycerides ($\beta$=0.13), HOMA ($\beta$=0.12), and MAP ($\beta$=0.17;all ps<.05). With the addition of covariates, relationships were attenuated (ps<.10), for significant outcomes with the exception of MAP, which remained significant. Physical disorder was associated with MAP ($\beta$=0.11;p=.05) in age-adjusted analyses, but unassociated with any CVD parameters in fully-adjusted analyses. Attenuation of effects in multivariate analyses for CVD parameters appear to be due to confounding with SES. Findings underscore the importance of perceptions of macro-level stress factors on CVD risk associated with sympathetic nervous system activity within the Latino population.

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## C-037

### SUBJECTIVE SOCIAL STATUS AND CARDIOVASCULAR RISK IN MEXICAN AMERICAN WOMEN

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Socioeconomic status (SES) relates to health, including cardiovascular disease (CVD), in a gradient fashion. Subjective social status (SSS) relates to health beyond the effects of objective SES. However, there is limited research examining associations of SSS with health among Mexican Americans in the United States (US). 321 Mexican American women aged 40-65 (M=49.8, SD=6.6) living in a US border region completed questionnaires (English or Spanish) including socio-demographics, psychological (i.e., depression, anxiety, perceived stress) measures and the MacArthur Subjective Social Status ladder assessing SSS relative to others in the community and US. Assessments of systolic and diastolic blood pressure (SBP, DBP) were collected and calculated as the average of the second and third of three readings taken while participants were seated. Hierarchical multiple linear regressions tested the degree to which SSS (US and community) was predictive of psychosocial CVD risk factors and blood pressure beyond SES. To determine the effect of acculturation, analyses were stratified by questionnaire language, a commonly used acculturation proxy. After accounting for SES in the overall sample, community SSS was significantly inversely related to depression ($\beta$=-0.18), anxiety ($\beta$=-0.20), perceived stress ($\beta$=-0.18), and SBP ($\beta$=-0.20; all ps<.05) but no relationships were significant for US SSS. When stratified by language, community SSS was inversely related to depression ($\beta$=-0.24), anxiety ($\beta$=-0.22), perceived stress ($\beta$=-0.21), and SBP ($\beta$=-0.29; all ps<.05) among Spanish but not English respondents. US SSS was significantly, and positively related to SBP ($\beta$=0.20, p<.05) among Spanish respondents. Individuals' perceptions of their social standing have important health implications beyond the impact of objectively-measured SES. Community and US SSS may measure unique constructs and have differing health implications. Differential SSS effects on health may exist by acculturation.

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## C-038

### THE EFFECT OF ACTIVITY RESTRICTION ON THE RELATIONSHIP BETWEEN CHRONIC STRESS AND LEVELS OF PLASMA CATECHOLAMINES IN CAREGIVERS

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Caregivers of demented patients face chronic stresses that may place them at increased risk for cardiovascular disease. However, some caregivers do not experience negative health consequences. Thus, we need to identify factors that may affect health risks in caregivers. This study examined the interactive effects of activity restriction (AR) and numbers of years spent caregiving on plasma catecholamine (CA) levels in a sample of caregivers of individuals with Alzheimer's Disease (AD). We hypothesized that levels of AR would moderate the effect of years caregiving on these levels. A sample of 44 caregivers of patients diagnosed with AD were enrolled in the Pleasant Events Project at UCSD (Mean age=73.3±9.2 years). Of the caregivers, 33 (75%) were female, with a mean of 4.6±3.7 years caregiving. We used multiple linear regression to predict CAs with the following predictor variables: a) years caregiving, b) AR and c) years caregiving-by-AR interaction term. A significant interaction term was followed up with post-hoc analyses by plotting the simple slopes for years caregiving at low vs high levels of AR. Years caregiving was associated with CAs (t=2.56, df=36, p=.015). Meanwhile AR was not related to CAs (t=1.30, df=36, p=.201). However, a significant years caregiving-by-AR interaction was found (t=2.40, df=36, p=.022). Post-hoc analyses indicated that when AR was high, greater years caregiving was associated with higher CAs (t=3.54, df=36, p=.001). However, for low AR, years caregiving was no longer associated with CAs (t=0.53, df=36, p=.601. While chronic care for a loved-one with AD has been linked with negative health outcomes, our findings suggest this may only occur when caregivers restrict activity. Future research could examine the impact of caregiver interventions to help caregivers maintain low levels of AR and avoid or lower the negative biological consequences of caregiving.

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## C-039

### PATIENT FACTORS PREDICT MEDICATION ADHERENCE IN HYPERTENSIVE BLACK MEN

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Purpose: Black men with hypertension (HTN) have low rates of antihypertensive medication adherence. Yet, little is known about the determinants medication adherence in this patient population. The purpose of this study was to determine the patient, provider, and health care system factors associated with medication adherence among hypertensive black men.

Methods: In this cross-sectional study, we conducted a secondary analysis of data collected from black men with HTN (n=252) enrolled in an ongoing randomized controlled trial to evaluate the effectiveness of a multi-level intervention in improving BP control. Medication adherence was assessed via self-report with the Morisky Medication Adherence Scale. Patient factors measured were self-efficacy (Medication Adherence Self-Efficacy Scale), social support (MOS Social Support Survey), depression (PHQ-9) and comorbidity (Charlson Comorbidity Index); the provider factor measured was patient provider communication (Communication Style Questionnaire); and the health care system factor measured was health care discrimination (Schedule of Racist Events). Demographic characteristics were obtained via self-report. Data were analyzed using descriptive statistics and hierarchical linear regression.

Results: Participants were 56.6+ 11.6 years, earned<$20,000 yearly (72.7%), and almost one-half were on Medicaid (44%). Mean SPB was 148.7+15.8 mmHg and mean DBP was 92.7+9.8 mmHg. Over one-half of participants (54.9%) were non-adherent. The final model accounted for 32.1% of the variance (F=7.80, df 10, 165, p <0.001). Patient factors that predicted medication adherence were age, self-efficacy, and depression. Provider and health care system factors did not predict medication adherence.

Conclusions: Study findings may be clinically useful for providing health care to hypertensive black men. Age is a characteristic that will allow clinicians to predict who may be at risk for poor medication adherence. Depression can be screened and treated. Self-efficacy is modifiable and implications for practice would be the development of interventions to increase self-efficacy in black men with HTN.

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## C-040

### DEVELOPING A THEORETICALLY INFORMED MEASURE TO DETECT AND ADDRESS SELF-REPORTED MEDICATION NONADHERENCE

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To address medication nonadherence, two constructs must be considered: the extent to which doses are missed and reasons for missing doses. Existing self-report measures have been criticized for lacking reliability and validity, yet they conflate the two nonadherence constructs. We developed and evaluated a new self-report measure that distinguishes the extent of and reasons for medication nonadherence. Extent of nonadherence was measured with four correlated indicators, whereas reasons for nonadherence were measured with 23 independent indicators in order to provide full coverage of reasons for missing medications. Participants were 202 veterans with a diagnosis of hypertension prescribed at least one antihypertensive medication. At baseline, participants completed the new measure and several comparison measures to inform construct validity. Three to 21 days later, participants completed the new measure again to provide evidence of test-retest reliability. Mean age was 64 years, and 87% were male. Items assessing the extent of nonadherence produced reliable scores, alpha =0.89, test-retest r=0.64. As expected, items assessing reasons for nonadherence were not highly related, average inter-item r=0.28. As reasons for missing medications can change over even short periods of time, test-retest correlations ranged from 0.09 to 0.64; however, the total score was reasonably stable, r=0.62. The two nonadherence constructs were related but distinct, r= 0.55. Supporting convergent validity, nonadherence was associated with medication self-efficacy (extent r=-0.46, reasons r=-0.55). Supporting discriminant validity, the nonadherence constructs were only moderately related to conscientiousness, social desirability, habit formation, and concurrently assessed blood pressure, all rs<0.31. Measuring the two distinct components of nonadherence could help solve some of the problems nonadherence research has faced. Future research is needed to examine longitudinal trajectories in these two nonadherence constructs and to provide further evidence of validity of the measure.

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## C-041

### ESTABLISHING A STANDARD FOR PERI-OPERATIVE ICD EDUCATION: A DEMONSTRATION PROJECT

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Introduction: An implantable cardioverter defibrillator (ICD) administers a shock to terminate potentially life-threatening cardiac arrhythmias. The device saves lives, but perhaps at a psychological expense. The present study examined the impact of a minimal psychosocial intervention on primary endpoints of patient acceptance and quality of life and secondary endpoints of depression and anxiety.
Methods: Sixty-one participants from clinics in NC and CO were recruited for the study 7-15 days post ICD implant. Thirty-three were randomized to the standard of care group (educational video+Q & A session) and 28 were randomized to the intervention group (educational video+Q & A session+ take home psychosocial booklet). Participants completed psychosocial measures prior to treatment and again at six weeks follow-up.
Results: A significant difference was evidenced in anxiety between the control group (n=19) and intervention group (n=12) difference scores, U= 60.5, z=-2.20, p=.03, r=.40. Pre-post anxiety decreased significantly in the standard of care group, z=-2.69, p=.007, r=.34, but did not change significantly in the intervention group. Significant increases in pre-post patient acceptance across groups were also evidenced t(44)=-2.13, p<.04 with a moderate effect (η2=.09). Of note, nearly half the cases were excluded due to missing data.
Conclusions: Minimal treatment created minimal effects and a more intensive intervention is needed for unique impact. Our data suggests that patients may be affectively primed by health information that could hinder a natural improvement in psychological adjustment. Timing, depth, and desire for the provision of health information should be considered in future interventions with ICD patients.

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## C-042

### PATIENTS WITH SUSPECTED NSTEMI OR UNSTABLE ANGINA WHO ARE DEPRESSED WAIT LONGER IN EMERGENCY DEPARTMENTS THAN NON-DEPRESSED PATIENTS

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Background: Emergency department (ED) crowding increases patients' time to be seen by a physician and length of stay (LOS) in the ED, and is associated with adverse clinical outcomes in patients with acute coronary syndrome (ACS). Evidence from the National Hospital Ambulatory and Medical Care Survey (NHAMCS) suggests that patient characteristics (e.g., demographics) may also lengthen ED LOS. Given that depression symptoms have been consistently associated with poor post-ACS medical outcomes, we sought to determine whether depression was associated with greater ED LOS in non-ST elevation myocardial infarction (NSTEMI) and unstable angina (UA) patients presenting to a large metropolitan academic medical center.
Methods: We calculated ED LOS for 123 NSTEMI/UA patients [mean age=62, 36% women, 56% Hispanic, 26% Black/African American, 40% NSTEMI, mean global registry of acute cardiac events (GRACE) score=93.9]. Mean ED LOS in the sample was 12 hours, SD=8.3. We regressed ED LOS on these demographic and clinical variables, as well as dummy-coded variables representing presentation time and depression status, using multiple linear regression.
Results: The model explained 11% of the variance in ED LOS, F (10, 112)= 2.5, p<.01, R2 adj.=.11. Only current depression was a significant predictor of ED LOS, with currently depressed patients spending 4.9 more hours in the ED than non-depressed patients (p=.04). As expected given the defined clinical pathway for STEMI, a parallel analysis in additional 26 STEMI patients showed no differential LOS for any predictor, including depression.
Conclusions: Data from one large urban referral center suggests that depressed ACS patients have longer ED LOS than non depressed ACS patients. Future research should examine mediators of the potential relationship between depression and increased ED LOS for patients classified as ACS, and should examine potential sources of differential medical care for such patients.

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## C-043

### VALIDATING A STRESS INDUCTION RELEVANT TO RELATIONSHIPS AND HEALTH ISSUES

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Life events pertaining to problems in close relationships and health-related concerns have been known to be among the most devastating stressors. Although laboratory-induced acute stress reactivity has been recognized as a reliable marker of development of diseases years later, existing widely used tasks to induce acute stress do not address concerns relevant to close relationships and health. Thus, we sought to develop and validate a task for this purpose. The STress Induction Tool for Close relationships and Health (STITCH) task asks participant pairs to imagine a scenario in which one person is hit by a car and the partner has no means to provide or seek out help for the victim. Young dating couples (N=52) were randomized to two role conditions: speaker (the helper in the scenario) or listener (the victim of the car accident). A 30-minute baseline phase was followed by the task, consisting of 3 minutes of preparation after the scenario is read to the participants and 5 minutes of either speaking about their thoughts and feelings that would occur in the given scenario or listening to the partner's speech. Then 22 minutes of recovery phase was followed. Three types of stress reactivity markers were assessed at each of the 4 study phases: a 3-item self-reported negative affect (NA) measure, cardiovascular activity markers (SBP, DBP, MAP, and HR), and salivary cortisol. Results from general linear modeling with 4 repeated measures per outcome revealed quadratic patterns among cardiovascular activity markers: increases in SBP, DBP, MAP, and HR from baseline to task phases and decreases in these values in recovery (ps<.006). For both NA and cortisol, cubic patterns were found: NA peaked at preparation and decreased at task and recovery phases; cortisol peaked at both the baseline and task phases and was lowest at the recovery (ps<.004). These effects were more pronounced in the speaker group. Results provide preliminary support for validation of the STITCH task, manifested in diverse stress reactivity markers.

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## C-044

### MOMENTARY SOCIAL EXPERIENCES AND AMBULATORY BLOOD PRESSURE LEVELS, REACTIVITY, AND NOCTURNAL DIPPING IN MEXICAN-AMERICAN WOMEN

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Despite the utility of ambulatory blood pressure (BP) in predicting cardiovascular disease (CVD), the observed links between social experiences and ambulatory BP, and the potential relevance of the social environment to health in Latinos, research in this population is lacking. The current study investigated social experiences, categorized according to the interpersonal circumplex axes "affiliation" (friendliness vs. hostility) and "control" (dominance vs. submissiveness), as predictors of ambulatory systolic and diastolic BP (SBP, DBP) reactivity, average levels, and nocturnal dipping in 278 healthy, middle-aged Mexican-American women (mean age 49.56 years, SD=6.58; 73% born in Mexico). Participants completed a 36-hour ambulatory BP assessment, during which social experiences were captured via ecological momentary assessment (i.e., electronic diary). Multi-level models indicated that high affiliation social experiences (i.e., receiving support) predicted momentary increases in SBP (β=0.85, p<.001) and DBP (β=0.64, p<.001), yet greater nocturnal DBP dipping (β=0.16, p<.01). Participants reporting a greater number of social experiences characterized by low affiliation (i.e., conflict; β=0.10, p<.05) and low control (i.e., "bossed around"; β=0.11, p<.05) exhibited higher average 36-hour DBP than individuals who experienced relatively fewer of these interactions. Although social support led to acute increases in BP, in aggregate, having more supportive interactions (and fewer low affiliation and low control experiences) predicted lower CVD risk, as represented by ambulatory BP averages and nocturnal dipping. These findings highlight potentially modifiable factors in the social environment to target with CVD prevention and management efforts in Latinos, the largest ethnic minority group in the US with higher rates of cardiometabolic disorders than non-Latino-Whites.

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## C-045

### ROLE OF ADULT ATTACHMENT IN COUPLES' COREGULATION OF CARDIOVASCULAR REACTIVITY

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Stress in the interpersonal context is regulated at both individual and dyadic levels, yet the latter case remained unclear. This study attempted to test this question from the adult attachment theory perspective using cardiovascular reactivity as stress markers. Heterosexual dating couples (n=26 couples) participated in a laboratory stress study. Stress was induced by a scenario that involves a hypothetical yet serious car accident that the couple was involved in. Cardiovascular reactivity (SBP and DBP) was measured at 3 study phases: before, during, and after the stress task. Individuals' four adult attachment orientations were measured: secure, avoidant, anxious-ambivalent worry (ABW), and anxious-ambivalent merger (ABM). Results showed that stress manipulation was successful by both SBP and DBP peaked at stress phase (Fs>14.0, ps<.001). General linear modeling revealed that levels of baseline DBP related negatively with ABM and positively with ABW; baseline SBP being greater among males (ps<.08); SBP at recovery negatively related to ABM and lower among females (ps <.09). Males' secure attachment was related to higher DBP at stress and lower DBP at recovery (ps<.08). Furthermore, during baseline to stress task, secure and avoidant attachment related to greater similarity in SBP coregulation of the couple, whereas ABM to greater dissimilarity in SBP coregulation (ps<.09). During stress task to recovery, avoidant attachment related to greater similarity in SBP coregulation, which was stronger among females (ps<.08). Findings provide preliminary support that adult attachment plays a differential role in one's cardiovascular reactivity to interpersonal stress not only at the individual but also couple level. Although weak, mainly due to small sample size, findings warrant further investigation for factors accounting for the contrasting effects between attachment merger and avoidant, despite high correlation with each other, on the extent to which the cardiovascular reactivity to stress was coregulated by the couple.

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## C-046

### PSYCHOSOCIAL STRESS IN MIDLIFE MAY MODERATE EFFECTS OF APOE-TOMM40 RS157580 ON METABOLIC TRAITS IN LATE LIFE

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A large GWAS (Aulchenko et al., 2009) found that the APOE-TOMM40 rs157580 G allele was associated with low lipid levels. Jiang et al. (in preparation) found in two independent samples that caregiving stress moderated associations of rs157580 genotype on metabolic traits with the G allele associated with an adverse pattern of traits in caregivers but not controls. We extend this work by using linear and logistic regression to test interactions of rs157580 with eight objective life stressors in predicting a set of seven traits and disorders related to the metabolic syndrome in a subset of 904 subjects in the Cache County Memory Study (CCMS). Having a low birth weight or premature offspring (LBWP)-showed a consistent pattern of interactions with rs157580 in predicting four of the metabolic traits/disorders: HbA1c (P= 0.006) and prevalence of type 2 diabetes (P=0.03), hypercholesterolemia (P=0.05) and hypertension (P=0.0549). The GxE interaction was nonsignificant for the other three metabolic traits (fasting glucose, insulin and HOMA-IR), perhaps due to small sample size with these measures. The other seven life stressors did not interact with rs157580 to produce a consistent pattern of associations between the G allele and metabolic traits/disorders. Genotyping of rs157580 in the ~4000 other CCMS subjects will be completed soon. If results on the 4000 confirm the significant rs157580 x LBWP interaction associations with the same metabolic traits/disorders found in this subset, it will strengthen the case that the stress of having a LBWP child in midlife increases the risk of type 2 diabetes and CVD among G allele carriers at rs157580 in later life.

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## C-047

### USING A TAILORED BEHAVIORAL INTERVENTION TO IMPROVE ADHERENCE TO THE DIETARY APPROACHES TO STOP HYPERTENSION (DASH) DIET

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The Dietary Approaches to Stop Hypertension (DASH) diet is an effective method to lower blood pressure. This complex diet targets multiple nutritional components such as limiting fat and sodium and increasing fruit and vegetable consumption. It can be difficult for patients to follow. Tailored interventions based on the Transtheoretical Model (TTM) are effective in improving adherence in chronic conditions like hypertension. Previous research has shown that tailored interventions can impact patients' willingness to change their diets. However, few have assessed the effectiveness of this model to promote better adherence to the DASH diet.

We evaluated the effects of tailored and non-tailored behavioral interventions on DASH diet adherence in veterans with uncontrolled hypertension. Participants were randomized into a tailored stage-matched intervention (SMI) based on TTM, a non-tailored health-education intervention (HEI), or usual care (UC) with no intervention. We used the validated Harvard DASH score using data from Willett Food Frequency Questionnaires to determine dietary adherence at baseline and 6 months. The score ranged from 8 to 40, with 40 representing perfect adherence. Comparison between groups was by Wilcoxon rank sum tests that controlled for clustering by physicians and baseline DASH scores.

We enrolled and randomized 533 patients into the three study arms. There were no significant differences between the groups at baseline. At baseline, SMI had a mean DASH score of 23.6, HEI 23.8, and UC 24.0 (p>.05). At 6 months, compared to the UC group, SMI was associated with a 1.28 point increase in the DASH score (p=.01) and HEI had a non-significant 0.49 increase in the DASH score (p=.39).

A phone-delivered TTM-based intervention that targeted multiple nutritional components was effective in improving adherence to the complex DASH diet. This provides empirical evidence that TTM-based tailored interventions can successfully increase patients' adherence to the DASH diet.

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## C-048

### COMPARATIVE PSYCHOPHYSIOLOGICAL EFFECTS OF TWO TYPES OF RELAXATION TRAINING

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Relaxation training techniques, which have typically been examined in amalgamated form, may have differential psychophysiological recovery effects post-stressor. Recent literature has also suggested that positive affect may mediate observed cognitive and physiological benefits. The current study thus used a dismantling approach to compare the recovery effects of (and to examine the potential mediating role of positive affect in) two popular relaxation training techniques, diaphragmatic breathing and mantra recitation, to a sitting quietly control. 71 participants, who were new to standardized relaxation exercises, engaged in a 10-minute baseline and a 6-minute math task and were then randomly assigned by gender to a 10-minute recovery. Heart rate variability (HRV), and Digit Span and PANAS Positive Affect scores, captured during or after the recovery period were isolated from baseline to determine comparitive physiological, cognitive, and emotional effects, respectively. Results revealed that diaphragmatic breathing produced significantly greater HRV than mantra recitation and standard control recovery groups. Though no other significant differences were found across groups, the physiological relaxation generated by diaphragmatic breathing highlights its preferential clinical utility as a simple, cost-effective intervention that can serve to expedite cardiovascular recovery.

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## C-050

### TRANSITIONAL DIABETES CARE, HBA1C, AND QUALITY OF LIFE

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A one-year randomized controlled trial to improve self-care behavior, glycosylated hemoglobin, and quality of life in urban people hospitalized with type 2 diabetes mellitus was tested. Adults ($N=107$) received diabetes specialist care linkage (control group) or care linkage plus a Diabetes Transitional Care Coordinator (DTCC). Care linkage included an appointment in the academic diabetes clinic within 2-weeks after discharge.

Pre and post-intervention measures included A1c, Summary of Diabetes Self-care Behavior, Health-related Quality of Life (SF-36). A study-end measure of barriers to receiving routine diabetes specialist care was administered.

Both groups demonstrated a significant improvement in A1c ($p<.00$), with no significant differences detected between groups. Those with more barriers to receiving routine specialist diabetes care during the study benefited from the tailored intervention above care linkage alone in improved quality of life ($p=.001$); improved physical activity ($p=.05$); and decline in A1c ($p=.05$). Significant effects of the intervention on overcoming barriers on optimal self-care behavior (diet, monitoring, medication, foot, dental, and insulin adherence) were not detected.

Urban very low income people hospitalized with diabetes may benefit from prescheduled appointments for diabetes specialist care. Barriers to diabetes care associated with poor quality of life, glucose control, and self-care behavior can be impacted through tailored transitional care coordination by an advanced practice nurse certified in diabetes management and education.

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## C-051

### WEIGHT LOSS EXPERIENCES AMONG AFRICAN AMERICAN WOMEN WITH PRE-DIABETES

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Background: Modest weight loss achieved through a structured program of diet and physical activity has been shown to reduce the risk of diabetes by 58%. African American (AA) women are disproportionately affected by diabetes and lose less weight than Caucasians receiving similar interventions. Effective interventions are urgently needed to prevent the progression of type 2 diabetes among AA women.

Objectives: A qualitative study using focus groups was conducted to explore weight loss experiences of AA women with pre-diabetes and determine the types of support perceived as needed to make and maintain lifestyle changes.

Methods: We conducted 6 focus groups with 29 low-income, overweight AA women who had been participants in the RAPID study, a community-based RCT testing the effectiveness of a group-based adaptation of the Diabetes Prevention Program. RAPID participants were randomly assigned to receive either a 16-week lifestyle intervention delivered by YMCA staff or brief advice (control). AA women participated in focus groups based on their intervention status (control vs. intervention) and weight loss at 6 months (met goal vs. did not meet goal).

Results: Focus group participants had a mean age of 52.3 years and an average BMI of 35. Preliminary content analyses of data using Atlas.ti version 52 has revealed that, before they entered the study, participants who met weight loss goals had experienced a distressing weight-related event that triggered small steps toward behavior change. Women who modified lifestyle behaviors described relatively greater changes in confidence and self-awareness. Consistent with previous research with Caucasian women, successful participants experienced a shift in identity that strengthened the maintenance of behavioral changes.

Conclusions: Identified themes will be used to inform both a conceptual model and a community-based peer support intervention to promote lifestyle change among AA women at risk for developing type 2 diabetes.

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## C-052

### GIVING BACK TO THE COMMUNITY: DISSEMINATION OF RESULTS IN A COMMUNITY BASED PARTICIPATORY RESEARCH STUDY ON DIABETES IN ALABAMA

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Background: Diabetes is a major health problem in Alabama and disproportionately effects many African American communities statewide. Community-based participatory research (CBPR) can facilitate engagement with the community and help identify promising strategies to promote diabetes control and prevention. Dissemination of CBPR findings beyond scientific circles, i.e. back to the community is an essential component. In this report, we describe strategies used to report findings back to stakeholders.

Methods: In partnership with Congregations for Public Health, a community-based organization, a qualitative needs assessment was undertaken to learn significant factors affecting diabetes control and to develop a community-based intervention. Focus group discussions were held among diabetes patients receiving treatment at the county hospital. Interviews were also conducted with health care providers at the same hospital. Coding and analysis of data was done and results were disseminated back to stakeholders through a variety of strategies.

Results: Focus group results were summarized and presented back for feedback to original participants for verification. Community forums were then held in congregations for public comment. Presentations were made at the hospital for health care providers. Each avenue resulted in insights to inform future interventions.

Discussion: We disseminated the results of our formative phase back to our target communities. This process allowed an iterative dialogue to continue, simultaneously strengthening partnerships and informing program development.

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## C-053

### EXECUTIVE FUNCTIONING, TRANSITION READINESS, AND ADHERENCE IN EMERGING ADULTS WITH TYPE 1 DIABETES

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Type 1 diabetes (T1D) management involves daily adherence to a complicated, demanding medical and dietary regimen. Barriers to adherence often include forgetting, being unprepared, and poor organization, suggesting that executive functions (EF; i.e., skills associated with memory, attention, and problem solving) play a significant role in effective disease management. In emerging adults, EF are often underdeveloped but likely crucial for successful transition to adulthood and greater autonomy in T1D management. This study sought to understand the relationships among EF, transition readiness, and disease care. Preliminary baseline data were collected from 25 participants 17-18 years old ($M=18.2\pm.35$ years; 60% female; 88% Caucasian) in an ongoing longitudinal study of cognitive and behavioral predictors of health outcomes in late adolescents with T1D. Adolescents and parents completed the Behavior Rating Inventory of Executive Function (BRIEF) and the Self-Care Inventory (SCI). Adolescents also completed the the Transition Readiness for Assessment Questionnaire (TRAQ). Average number of blood glucose (BG) checks per day and A1c were taken from medical chart review. No significant relationships were detected between EF and transition readiness. Correlations revealed a significant relationship between parent-reported EF domains and parent-reported adherence (Initiate: $r=-.64$, $p<.01$; Working Memory: $r=-.62$, $p<.01$; Plan/Organize: $r=-.53$, $p<.01$; Monitor: $r=-.50$, $p=.02$; GEC: $r=-.57$, $p<.01$) , as well as number of BG checks per day (Monitor: $r=-.54$, $p<.01$; GEC $r=-.44$, $p=.03$). Adolescent report of EF skills revealed a significant relationship between planning/organization skills and HbA1c ($r=.53$, $p<.01$). Preliminary results suggest EF is associated with disease management for emerging adults, including parent-reported adherence and objective markers of disease care. Readiness for transition was not associated with EF, although more sophisticated assessments of transition readiness may be needed. Findings suggest EF may be an important target for interventions aimed at improving adherence in youth with T1D.

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## C-054

### TYPE I DIABETES AND INSULIN OMISSION: A QUALITATIVE LOOK

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While insulin omission is a common behavior in those with type I diabetes, it has been primarily studied within the context of disordered eating behavior. Previous research supports medical providers and patients lack of comfort in discussing insulin omission. This study was designed to answer two questions. Why do young adults with type I diabetes omit insulin? and What factors do the same individuals perceive as facilitating communication regarding insulin omission with their medical providers. A total of 23 college students with type I diabetes (10 male,13 female) were screened and 13 (11 females,2 males) admitted to omitting insulin presently. Each participant completed a qualitative interview focused on insulin omission and communication to medical providers. Also, 10 of the 13 completed a modified EAT-26 (Garner et al., 1982). Using CQR(Hill, Thompson, & Williams, 1997), domains regarding insulin omission included feelings about taking insulin, feelings' effect on taking insulin, emotions/thoughts preceding insulin omission, difficulties/motivators in taking insulin, situations more/less likely to omit insulin, predominant reasons for insulin omission, worry of hypoglycemia, and others' perceived/stated reactions. Domains regarding patient-provider communication of insulin omission included characteristics of the provider that would make the patient more/less comfortable to communicate about insulin omission. Insulin omission as a weight loss behavior was not reported by any of the participants during the interviews. Based on participants' responses on the EAT-26, 3 of 10 individuals scored high risk for eating disorder behaviors. Also on the EAT-26 all participants denied using insulin as a way to control their weight even though all had also previously acknowledged that they do omit insulin. Those involved in the care of patients with type I diabetes cannot assume that insulin omission is a weight loss behavior without collecting more idiosyncratic data. Without knowing the why's behind a behavior, it is difficult to develop individualistic interventions, permanently change behavior, and communicate regarding the behavior.

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## C-055

### HEALTH CARE PROFESSIONALS' PERSPECTIVES ON THE USE OF THE COMMUNITY HEALTH WORKER MODEL FOR DIABETES

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Introduction: The Community Health Worker (CHW) model is increasingly used to promote diabetes management, particularly in underserved communities. However, few studies have examined methods for integrating the work of CHWs with ongoing efforts of Health Care Professionals (HCPs). This qualitative study explored the HCPs' perceptions of the CHW model in supporting low-income patients living with diabetes.
Methods: We conducted key-informant interviews with HCPs caring for patients with diabetes at a local safety net hospital. HCPs included a diabetes educator, a nutritionist, a pharmacist and a social worker. The interviewer guide was based on existing literature related to CHW roles. A trained interviewer conducted all four interviews. Two independent researchers performed content analysis of each of the interviews, and a third independent researcher confirmed the findings.
Results: HCPs had varying degrees of familiarity with the CHW model. Each identified similar roles for CHWs including liaison, educator, and mentor. They identified consistent HCP interaction with CHWs as important to the success of a CHW. They underscore the importance of finding CHWs with the right combination of skills and qualities. HCPs also expressed interest in integrating the CHW into the diabetes team but voiced concerns about the system's ability to support CHWs financially.
Conclusions: Overall, HCPs endorsed a number of roles for CHWs within diabetes management and expressed a willingness to interact with the CHW regularly to provide support. All informants identified barriers related to system support for CHWs. More research is needed to understand how these challenges can be addressed when creating an intervention.

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## C-056

### CONTENT OF DAILY DIABETES STRESSORS AND PERCEIVED SEVERITY AND COPING EFFECTIVENESS IN ADOLESCENTS, MOTHERS, AND FATHERS

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Managing type 1 diabetes can be a stressful experience for adolescents and parents (Helgeson et al., 2010; Seiffge-Krenke & Stemmiller, 2003). However, little is known about the daily stressors that adolescents and parents experience, nor whether diabetes stressors are more distressing than other stressors. Further, diabetes events may vary in severity and effects on well-being, consistent with work on inter-event variability in stressors (Almeida et al., 2011). We examined the daily stressful events that adolescents (N=207), mothers (N=205), and fathers (N=162) experienced through an online 14-day diary. Adolescents wrote open-ended descriptions of the most stressful event of the day (qualitatively coded for content), rated the severity of the event, perceived coping effectiveness, and indicated via a checklist whether they experienced 10 frequently experienced stressors, and confidence in their ability to manage diabetes. Parents completed similar measures describing the most stressful event for the adolescent. The most frequent stressful events across reporters involved problems with management behaviors (eating, testing insulin), metabolic highs and lows, and management behaviors performed away from home. Multi-level modeling analyses indicated that on days that participants indicated that adolescents experienced a stressful event related to their diabetes, they perceived the stressful event as more severe and had less confidence in the adolescent's ability to manage diabetes. The type of diabetes event also affected ratings of severity and coping effectiveness. All reporters agreed that problems with low blood sugar were less severe and that adolescents coped with greater effectiveness for stressors involving low blood sugar than on other types of stressors. Results are interpreted within a contextual model of stressful events and point to the importance of knowing the content of stressors for understanding their severity and impact on families.

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## C-057

### DIABETES KNOWLEDGE AMONG ADULTS WITH SERIOUS MENTAL ILLNESS AND TYPE 2 DIABETES

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People with serious mental illness (SMI) are twice as likely as the general population to have type 2 diabetes. Management of diabetes includes a complex self-care regimen that requires specialized knowledge of the illness. Recent work has shown that adults with SMI have lower diabetes knowledge scores and are less likely to receive diabetes education than the general population. The impacts of SMI characteristics on diabetes knowledge are not clearly understood. The purpose of this study was to explore correlates of diabetes knowledge.
A total of 90 subjects (mean age 52.4, SD=8.93) were selected from the baseline data of diabetes self-management programs conducted between 2002 and 2010. All subjects had diagnoses of SMI and type 2 diabetes. A majority of subjects was Caucasian (68%), female (51%), had a diagnosis of schizophrenia (63%, vs. 20% bipolar and 17% schizoaffective), was not prescribed insulin (72%), and reported prior diabetes education (58%). We analyzed sociodemographic, diabetes, and SMI characteristics (i.e., cognitive functioning, psychotic and depressive symptoms). Alpha was set to $p<.05$. All results were two-tailed.
Diabetes knowledge in this sample was poor (mean percent correct=56.3, SD=18.6). In bivariate analyses, greater diabetes knowledge was associated with more years of education, prior diabetes education, higher cognitive functioning, less severe positive symptoms, less severe negative symptoms, and non-schizophrenia diagnosis. A stepwise linear regression to predict diabetes knowledge yielded a four-predictor model: non-schizophrenia diagnosis ($\beta$=-.359, $p<.01$), higher cognitive functioning ($\beta$=.323, $p<.01$), prior diabetes education ($\beta$=.254, $p<.01$), and lower positive symptoms ($\beta$=-2.12, $p<.01$).
Our results suggest that, although SMI-specific factors are impairing and can negatively affect diabetes knowledge, educational services may be beneficial for members of this population. While encouraging, this and other work suggests that specially tailoring interventions for SMI may help optimize intervention outcomes.

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## C-058

### A BEHAVIORAL INTERVENTION TO INCREASE ADHERENCE TO NUTRITIONAL AND EXERCISE GUIDELINES IN ADULTS WITH TYPE 2 DIABETES

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Type 2 diabetes mellitus (T2DM) is a chronic disease that affects 25.8 million people in the United States and decreases quality of life, increases functional disability, and reduces life expectancy.1 People with T2DM are often prescribed medication and/or insulin to control their blood glucose levels and manage their disease. Proper diet and exercise are also recommended for diabetes management, with associated health benefits including improved glycemic control, reduced risk of developing long-term diabetes complications, reduced risk of worsening existing complications, and improved quality of life.2 Despite the benefits of exercise and diet, patients typically underutilize this treatment in diabetes management,3,4 likely because of competing lifestyle demands, poor self-efficacy, and lack of information.5 Thus, it is crucial to investigate strategies to increase engagement in these self-care activities. The present study implemented behavioral strategies to increase adherence to healthcare provider recommendations for exercise and nutrition in low-income adults (xage=50.5 years, range 37-70) with prediabetes and T2DM. Graduate level therapists individually tailored treatment over five weekly at-home sessions by providing psychoeducation and addressing behavioral and contextual factors related to diet and exercise. Participants (N=9) set weekly, manageable goals, problem solved potential barriers, and identified reinforcers to increase desired behaviors. Diet and exercise behavior were assessed using participant self-report with the Summary of Diabetes Self-Care Activities (SDSCA)5 and self-monitoring of behavioral goals. Data were analyzed using a series of changing criterion designs, and results suggest clinically significant and ecologically valid improvements in self-reported diet and exercise behavior. Results support the use of this individually tailored intervention for adults to address contextual factors related to behavior change in diet and exercise for diabetes management.

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## C-060

### INCREASING THE CAPACITY OF ORAL HEALTH STUDENTS TO DELIVER SECONDARY PREVENTION OF DISORDERED EATING BEHAVIORS: EVALUATION OF A THEORY-BASED ONLINE TRAINING PROGRAM

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Disordered eating behaviors are considered major public health issues given their high prevalence and association with inadequate intake of essential nutrients, mental health issues, and progression to long-term physical, mental, and psychosocial health consequences. Dentists (D) and dental hygienists (DH) have a clinical opportunity for early detection of oral signs of disordered eating behaviors followed by referral for treatment (i.e., secondary prevention) as they are often the first health professional to observe overt health effects. Unfortunately, existing research indicates that the majority of D and DH don't engage in secondary prevention with noted barriers including lack of training in their respective educational preparation. Building upon extensive formative research, a web-based interactive training program was developed based the Information-Motivation-Behavioral Skills Model, Health-Belief-Model, and Brief Motivational Interviewing. The evaluation employed a two group randomized controlled trial involving 18 classes (7 D; 11 DH) randomized to either the training program or to instruction-as-usual. The total number of participants included 314 students (n=182 Intervention; n=132 Control). Post-assessment analyses reveal statistically significant improvements among Intervention participants as compared with Control participants regarding the following variables: knowledge of eating disorders and oral findings; perceived susceptibility; perceived barriers; procedural knowledge; and self-efficacy. All p<.001; effect sizes ranged from .39 to 1.00. This project promotes the timely transfer of oral-systemic health research into practice, and is expected to impact the number of persons with disordered eating behaviors who are identified in the context of oral health care, and referred to care.

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## C-061

### ACHIEVING INTERDISCIPLINARY HEALTH CARE FOR OLDER ADULTS: QUALITATIVE INSIGHTS FROM PRIMARY CARE TRAINEES

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Older adults have the highest rate of illness, disability and activity restrictions when compared to other age groups (Keuthen & Wisocki, 1991). Research shows that of those over age 65, 85% have at least one chronic medical condition, and more than 50% have two or more chronic illnesses (Black, Garcini & Baker, 2008). As the health and functional ability of older adults with chronic medical conditions decline, the risk of mental disorders increases (Ikes, 1998). Achieving the collaborative care model in the primary care setting is of importance because primary care is usually a constant source of health access and continued care among geriatric populations. Integrating collaborative care services into primary care also provides an effective way to reduce morbidity, improve quality of life, and promote successful aging (O'Donohue, Byrd, Cummings & Henderson, 2005). This study examined qualitative data regarding the attitudes toward collaborative care in non-physician clinician students. Of the 61 students who participated in the study, 35 students provided qualitative information regarding their experiences with interdisciplinary teams. The students were currently enrolled in either physician assistant (PA) or nurse practitioner (NP) programs in Missouri, Oklahoma, Arkansas, and Kansas. Four themes were identified: multiple approaches leading to new knowledge, improved patient outcomes, team communication, and accountability. Overall, the information provided in this study indicated positive attitudes towards collaborative care teams. These findings have important implications regarding the interdisciplinary team experience students receive during training and how this can impact the future practice of collaborative care. Additionally, the following issues are discussed regarding older patients: a proposal of ways in which providers may collaborate with other medical and behavioral health professionals to provide services and assist in case conceptualization, a brief overview of the advantages and challenges of collaborative care, and ethics involved in the practice of collaborative care.

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## C-062

### FACTORS ASSOCIATED WITH ATTITUDES TOWARD PATIENT-PROVIDER COMMUNICATION AND COLLABORATIVE CARE IN A SAMPLE OF NON-PHYSICIAN CLINICIAN TRAINEES

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This study examined whether or not attitudes toward collaborative care could predict on attitudes toward patient-provider communication in non-physician clinician students. Sixty-one students currently enrolled in either physician assistant (PA) or nurse practitioner (NP) programs completed the Physician Belief Scale (PBS) and the Attitudes Toward Health Care Teams Scale (ATHCTS). Results indicated that attitudes toward collaborative care did not significantly predict attitudes toward patient-provider communication (R2=.005, R2adj=-.014, F(1,52)=.274, p=.603) and that there was no difference between PA and NP students. Results did not show significant difference in attitudes toward collaborative care between nurse practitioner and physician assistant students (F(1 , 55) = , p=.165) or attitudes toward patient-provider communication (F(1,52)=.008, p=.930). ANCOVA results indicated a significant main effect for program type (F(1,51)=4.34, p=.04, partial η2=.08) and a main effect for prior interdisciplinary experience approaching significance (F(1,51)=3.54, p=.07, partial η2=.07). The covariate of hours of direct patient care per week did not significantly influence the dependent variable of attitudes toward collaborative care (F(1 ,51)=1.06, p=.31, partial η2=.02). ANCOVA results did not indicate a significant main effect for program type (F(1,48)=.032, p=.86, partial η2=.001) but a significant main effect was found for prior communication skills training (F(1,48)=4.53, p=.04, partial η2=.07). The covariate of hours of direct patient care per week did not significantly influence the dependent variable of attitudes toward the patient-provider communication (F(1 ,48)=.314, p=.58, partial η2=.007). These findings have important implications regarding interdisciplinary team members' attitudes toward collaborative care and patient-provider communication.

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## C-064

### 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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## C-065

### DEPRESSION AND VIRAL SUPPRESSION IN PREGNANT WOMEN DIAGNOSED WITH HUMAN IMMUNODEFICIENCY VIRUS

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OBJECTIVES: Pregnant women newly diagnosed with human immunodeficiency virus (HIV) are vulnerable for depression. Depression may hinder a woman's ability to follow a complex medical regime aimed at management of HIV during pregnancy. This study aims to describe and compare depression and its association with viral load (VL) suppression and attainment among pregnant women who are diagnosed with HIV.

METHODS: Using retrospective data from 2005 to 2008, women were identified to be HIV positive during or before pregnancy and received prenatal care at a special immunology obstetrics clinic with integrated mental health services. The outcome measure was viral load suppression (VL>1,000). Post-hoc power analysis showed that all tests had sufficient power (> .8) to detect medium-size (d=.5) differences.

RESULTS: Of 265 eligible participants, 90 (34%) were diagnosed with HIV during pregnancy and 175 (66%) were diagnosed before pregnancy. Women did not differ on any demographic variables (age, ethnicity, marital status, and nativity). At initial mental health screening the women newly diagnosed with HIV were more likely to have a positive depression screen than those previously diagnosed (38% versus 24%, p<.05), but not after controlling for which trimester women first came to the clinic (p=.12). Both groups were equally likely to have VL suppression (VL<1000) at the first prenatal visit (36% and 43%, respectively, p=.22) and at their last prenatal visit (92% newly diagnosed versus 87% previously diagnosed, p=.19). There was a significant interaction between depression and time of HIV diagnosis on third trimester VL suppression, B=2.69, SE=1.24, p<.05. Among women who had a positive depression screen, those who had been previously diagnosed with HIV n=33 (79%) were less likely to achieve VL suppression than women who were newly diagnosed n=33 (97%), $\chi^2$ (1, N=76)=5.62, p<.05.

CONCLUSION: Clinicians should be particularly sensitive to the risks for depression in pregnant women diagnosed with HIV and plan to incorporate psychological interventions as part of obstetric care.

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## C-066

### TOWARD A BROADER ASSESSMENT OF LITERACY

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Objective: Most published articles related to health literacy focus on reading comprehension and a few on numeracy skills. However, being able to "understand health information and to use that information to make good decisions about your health and medical care" (U.S. Department of Health and Human Services, 2011) is the important component of health literacy. The purpose of the current study is to examine whether nurses' ratings of patients' learning level, a global rating of auditory comprehension based on interacting with the patient, is associated with reading level and cognitive functioning.

Method: Data were obtained from 173 HIV+patients seeking medical treatment at a community interdisciplinary clinic. Participants: 53.2% male and 92.5% African-American. Mean (SD): age was 36.69 (11.83), years of education were 11.35 (2.12), and CD4 count was 382.06 (323.15). Age-based WRAT4 word reading standard scores were used to measure reading literacy. Cognitive functioning was measured by the Modified HIV Dementia Scale (MHDS; Skolasky et al., 1998). Nurses assigned a global rating of each patients' learning level based on ability to communicate their understanding of the information presented. Patients' understanding is rated on a 4-point Likert Scale (Very Low, Low, Medium, and High). Ratings are assigned after nurses interact with the patient for approximately 30 minutes.

Results: Nurses' global ratings were significantly correlated (p<.001) with reading literacy (r=.51), years of education (r=.68), and cognitive functioning measured by the MHDS (r=.32).

Conclusion: These data suggest that simple global ratings have validity as indices of broader literacy in that they correlate with reading ability and cognitive functioning. These nurse ratings may also provide a tool for a broader assessment of health literacy than just reading levels. Cross disciplinary cooperation can enhance assessment of patient literacy which may improve patient care.

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## C-067

### LITERACY OF HIV+PATIENTS AT A PUBLIC CLINIC: READING MATERIAL MAY BE HAZARDOUS

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Assessment of literacy is an important issue in medical settings. Poor health literacy has been related to a variety of adverse health outcomes. Assessing literacy is especially important in an HIV clinic where it may mediate outcomes for HIV+ patients in the HAART era. Individuals with lower education levels have poorer appointment attendance, adherence to antiretrovirals, and CD4 responses to antiretroviral regimens. Lower intelligence predicts more rapid HIV progression. Patients with low literacy are 3 times as likely to be non-adherent to antiretroviral programs. It is important to examine literacy, education level, and premorbid intelligence in HIV clinics to understand potential roadblocks to HIV treatment. The project was conducted at a public HIV clinic in the South that serves primarily ethnic minority uninsured patients from disadvantaged backgrounds. Patients presenting for initial appointments are screened by master's-level providers (N=376). Screening includes demographics (education level), the NAART-R and, for a subset (N=173), the WRAT4 Word Reading subtest. Educational levels were very low, as nearly half did not complete high school. Mean (SD) education level was 11.4(2.2) years. Estimated intelligence and reading levels were low (NAART 89.5[8.7], WRAT4WR 78.8[13]), with most reading at or below the 6th grade level. Patients in a public HIV clinic face tremendous barriers. The 'typical' patient has less than a high school education, could probably be diagnosed with borderline intellectual functioning, and reads at the 6th grade level, well below the reading level of most educational material. Indeed, most patient education materials are written well above the estimated average 8th grade U.S. reading level. The low literacy and educational attainment of our patients demands that interventions be adapted to this at-risk group. Simplifying instructions and incorporating pictures in the delivery of health information is very important for this low-literacy population. These techniques have been used to improve such patients' recall of and compliance with health instructions.

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## C-068

### DO ANGER EXPRESSIONS, COPING STRATEGIES, AND INTERPERSONAL SUPPORT DYNAMICS RELATE TO CD4 COUNT IN HIV+ADULTS?

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The expression of anger is associated with positive health outcomes (Iyer, Korin, Hiffingbotham, & Davidson, 2010). Health is salient for people living with HIV (PLH) and has been studied vigorously over the past few decades (Weeks & Alcamo, 2010). Suppression of anger has been known to lead to negative mental health outcomes for PLH (Daniel, Goldston, Erkanle, Franklin, Mayfield, 2009); therefore, finding alternative ways to express anger is critical for mental health professionals. The aim of this investigation is to examine the relationships between expression of anger, active coping, social support, and CD4 count, hypothesizing that these variables contribute to the health of PLH, specifically via a physiological marker.

The best predictor of immune function decline for this population is CD4 T-helper cell count (Kelly, 1992); as CD4 count decreases, disease symptoms increase. Social support, however, is related to decreased distress (Blaney, Goodkin, Feaster, Morgan, Millon, Szapocznik, Eisdorfer, 1997) and less self reported HIV-related health symptoms over time (Ashton et al, 2005). Active coping is a commonly accepted method to ameliorate negative consequences of anger (Lohr, Olatunji, Baumeister, & Bushman, 2007) possibly via a tangible social support system. For our analyses, we measured anger with the State-Trait Anger Expression inventory (STAXI; Spielberger, 1983). Active coping was measured using Brief Cope (Carver, 1997) and tangible social support was measured using the Interpersonal Support Evaluation List (ISEL; Cohen, Mermelstein, Kmack, & Hoberman, 1985). Lastly, CD4 count was self-reported from the participants' most recent medical assessment.

Our gender balanced sample (n=63) included HIV-adults from the Dallas/Fort Worth area. Our sample was primarily African American (69%) with a mean age of 47 (SD=8.87). After controlling for age, gender, and time since last CD4 assessment; state anger expression, active coping, and tangible social support explained 33% of the variance in CD4 cell count (Adj. R^2=.33, F(6, 57), p<.001). Our findings suggest that anger expression within tangible support systems promotes improved health in PLH.

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## C-069

### PILOT RCT OF A GROUP-BASED HIV RISK REDUCTION INTERVENTION FOR HIV-UNINFECTED URBAN MSM ATTENDING SEX PARTIES

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Background: Across studies, as many as 25% of men who have sex with men (MSM) report meeting male partners at sex parties and sex party attendance is associated with increased number of partners, unprotected anal sex (UAS), and HIV infection. Despite the need for effective HIV prevention interventions, no risk reduction interventions have been tested to reduce HIV sexual risk among this group.

Methods: This pilot randomized controlled trial (RCT) (n=14) assessed the feasibility and acceptability of an HIV risk reduction intervention to reduce unprotected anal sex among urban MSM reporting sexual risk while attending a sex party in the prior 12 months. The intervention arm received 4 group sessions focusing on HIV risk reduction, education and skills building. The intervention (N=8) and control (N=6) conditions each received HIV testing and counseling and a sexual risk/psychosocial assessment at baseline and 3 months (post-intervention).

Results: Mean age was 37 (SD=7.04); more than 40% were racial/ethnic minorities. At follow-up, the intervention group reported greater reductions in sexual risk behavior in the past 3 months including number of UAS episodes [intervention mean change (IMC)=-6.13 (9.61); control mean change (CMC)=-2.67 (2.25); Cohen's d=0.50]; partners at sex parties [IMC=-0.81 (0.65); CMC=0.42 (2.91); Cohen's d=0.58] and UAS episodes at sex parties [IMC=-3.63 (7.96); CMC=-0.83 (0.98); Cohen's d=0.49] - suggesting moderate effect size estimates. The intervention group also reported reduced sexual compulsivity [IMC=-1.63 (2.50); CMC=0.17 (5.98); Cohen's d=0.39], increases in HIV disclosure [IMC=0.75 (3.01); CMC=-0.67 (2.35); Cohen's d=0.53] and reduced drug use at recent sex parties (13% reduction vs. no change in control). Exit interviews revealed overall project acceptability.

Conclusion: Findings indicate the feasibility and acceptability of a group-based HIV risk reduction intervention for at-risk MSM who regularly attend sex parties and warrant further testing in a larger RCT.

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## Meritorious Poster

## C-071

### PARENTING IN THE CONTEXT OF CHILDHOOD CANCER: THE RELATION BETWEEN PARENTAL PSYCHOLOGICAL CONTROL AND INTERNALIZING PROBLEMS FOR SURVIVORS OF LEUKEMIA

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Parental psychological control has been consistently associated with increased internalizing behavior problems in children. Although this relation has been observed in normative populations, this may not hold in families faced with medical problems. Childhood medical illnesses, such as cancer, place unique demands on parents that may necessitate the use of psychological control for the child's welfare (e.g., to take medication). Thus, it is particularly important to determine whether parental control behaviors operate differently in populations of medically ill children. In this paper, we test whether cancer survivorship moderates the relation between directive parenting - one aspect of psychological control - and children's internalizing problems.

Methods: Twenty-five 7-12 year old survivors of acute lymphoblastic leukemia (ALL) and their mothers were compared with 26 healthy, matched controls and their mothers. On average, survivors were 4.55 years (SD=1.96) post-diagnosis. Children and their mothers participated in parent-child conflict interactions, which were coded using the Parent and Child Coding System. Directive parenting behaviors were coded when mothers controlled the way their children approached common issues in the family. Mothers also completed the Child Behavior Checklist, and the Anxiety/Depression subscale was used in analyses.

Results: Results indicated that ALL survivorship significantly moderated the relation between psychological control and child adjustment (F=4.38, p=.03). As expected, directive parenting was positively associated with children's internalizing problems for controls (t=2.27, p=.03). For survivors of ALL, the relation was not statistically significant (t=-.67, p=.50). Results suggest that demands associated with the childhood cancer experience may alter the context in which directive parenting behaviors are received by children. Implications for advising parents and practitioners about parenting strategies will be discussed.

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## C-072

### THE RELATIONSHIP BETWEEN COGNITIVE DISTORTIONS AND PSYCHOLOGICAL AND BEHAVIORAL FACTORS IN A SAMPLE OF INDIVIDUALS WHO ARE AVERAGE WEIGHT, OVERWEIGHT, AND OBESE

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The current study was designed to investigate the relationship between the frequency of cognitive distortions, as measured by the Inventory of Cognitive Distortions (ICD), and psychological and behavioral factors, as measured by the Millon Behavioral Medicine Diagnostic (MBMD), which includes negative health habits, psychiatric indications, and treatment prognostics among a sample of individuals who were average weight, who were overweight, and who were obese. The sample of 385 men and women was recruited primarily from a health and fitness center. The results of this study indicated that negative health risk behaviors such as inactivity and overeating, as well as depression were associated with increased obesity rates. The findings of this study did not suggest that individuals who are obese engage in higher levels of distorted thinking. Instead, the results confirmed previous research indicating that there was a relationship between the frequency of cognitive distortions and psychological and behavioral factors, such as negative health habits, psychiatric indications, and treatment prognostics. It is possible that distorted thinking impacts individuals' abilities to manage psychological problems and behavioral problems, which, in turn, impact the course of medical conditions such as obesity. Gaining further evidence that there is a strong relationship between cognitive distortions and psychological and behavioral factors that impact medical conditions and influence the course of treatment lends support for the utilization of cognitive behavioral treatments in medical settings. Utilization of tailored cognitive behavioral interventions in medical settings may produce more successful management of mental and physical health conditions, resulting in more positive treatment outcomes, decreased rates of morbidity and mortality, and reduced health care costs.

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## C-073

### THE EFFECTS OF PRESENCE OF ALZHEIMER'S DISEASE AND PARTNER STATUS ON THE LIKELIHOOD OF HIRING A HEALTH CARE ADVOCATE

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Previous research identified divorced and widowed individuals as the most likely to use health services. In this study the presence of Alzheimer's disease and the effect of relationship status on the likelihood of hiring a health care advocate (HCA) were examined. Participants were randomly selected (N=846) and asked to read one of two vignettes describing a parent who either did or did not have Alzheimer's disease, and were asked to rate how likely they would be to hire an HCA. The corresponding survey asked about the participant's relationship status; married, domestic partner, single, widowed, divorced, or other. Participants were categorized as either having a partner (married or domestic partner), or not having a partner (single, divorced, or widowed). A 2 (Alzheimer's Vs. No Alzheimer's) by 2 (Partner Vs. No Partner) between subjects ANOVA was performed on the likelihood of hiring an HCA. Alzheimer's condition was not significantly related to the likelihood of hiring an HCA [F(1, 826)=2.862, p=.091]. Those without a partner (M=5.86, SD=.14) were significantly more likely to hire an HCA [F=(1, 826) 6.616, p=.010], than those with a partner (M=6.61, SD=.15). The interaction between Alzheimer's condition and having a partner was significant [F(1, 826)=5.981, p=.015]. Simple effects test revealed that, within the Alzheimer's condition, there was no significant difference in the likelihood of hiring an HCA between individuals with and without a partner [F(1, 826).008, p=.927] However, among individuals in the no Alzheimer's condition, people without a partner (M=6.48, SD=.15) were more likely to hire an HCA than people with a partner [M=6.5, SD=.15; F(1, 826)=11.918, p=.001]. Partner status does have an effect on the likelihood of hiring an HCA, but more research needs to be conducted to determine why likelihood of hiring an HCA was not affected by the presence of Alzheimer's disease.

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## C-074

### JUSTICE-INVOLVED YOUTH: THE EFFECT OF ORIENTATION ON SELF-ESTEEM AND RELATIONSHIP SATISFACTION

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Research shows a significant relationship between self-esteem and problem behavior, a factor which can result in delinquency among youth. Low self-esteem is associated with lower life satisfaction, and increased sense of loneliness, and greater self-deprecation. High self-esteem is thought to enable adolescents to make more positive judgments and evaluations about themselves, which may lead to more satisfying, and longer lasting relationships. Belonging to a stigmatized minority group, sexually oriented minorities are believed to face additional stressors to those of more traditional heterosexual couples. The goal of this study was to compare measures of self-esteem and relationship satisfaction among heterosexual and non-heterosexual Justice-involved youth. Self-esteem and relationship satisfaction was measured among 667 diverse justice-involved youth. Of those in a relationship, 84.4% identified as heterosexual, 4.4% as homosexual, and 11.2% as bisexual. Independent samples t-test indicated that heterosexual participants had greater self-esteem, t (665)= 3.67, p<.001 (heterosexuals, M=27.04, SD=3.81 and homosexual/bisexuals, M=25.50, SD=3.98); non-heterosexual participants felt more relationship satisfaction, t (662)=-2.56, p<.05 (homosexual/bisexuals, M=1.99, SD=.53 and heterosexuals, M=1.86, SD=.45). Self-esteem was found to be significantly, positive bivariate association with relationship satisfaction (r=.15, p<.001) and there was a significant interaction between self-esteem and sexual orientation (β=.089, p<.05, rsp2=.006).

Heterosexual participants high in self-esteem were more likely to feel more relationship satisfaction than non-heterosexuals. Non-heterosexual participants had lower self-esteem than heterosexuals and had higher relationship control, a finding that clearly warrants further investigation. These findings highlight the importance of developing interventions for justice-involved youth that take into consideration the effects of self-esteem on relationship status and sexual orientation

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## C-075

### BEHAVIORAL HEALTH TELECENTER ASSESSMENT: UTILIZATION AND OUTCOMES

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Primary care is increasingly becoming recognized as being on the frontline of mental health assessment and treatment. Providers find themselves faced with addressing mood disorders, substance use, and trauma within the confines of time-limited encounters. The integration of mental health into the primary care setting is being implemented with a variety of methods. One strategy is to utilize tele-psych assessment services for Veterans referred by their primary care providers. The Behavioral Health Telecenter (BTC) utilized by Veterans Affairs (VA) is a care management model that uses evidence-based strategies to assess, triage, and provide brief interventions. The present abstract/analysis describes how the BTC is being utilized and who is using it. We also report findings regarding the effect of the initial BTC assessment on future primary care-based screens for alcohol use, depression, and PTSD.

Pre and post-BTC assessment data from 1820 primary care patients were analyzed. Veterans from all service eras utilized the BTC with Gulf War (Desert Storm, OEF/OIF) veterans consisting of 15% of the sample. The two most common reasons for referral were alcohol use (88%) and depression (10%). Interestingly, only 60% of participants had a documented screening for PTSD in their chart in comparison to the much higher rates of screening for alcohol (98%) and depression (95%).

Participants mean score on the AUDIT-C (alcohol) prior to the BTC assessment was 4.5. Participant's mean score on the first AUDIT-C following BTC assessment dropped to 2.9, representing a difference that is both statistically (t=16.6, p≤.01) and clinically significant. Decreases in the PHQ-2 (depression) were also statistically significant (t=3.52, p≤.01). A more complete understanding of who is utilizing telephone-based behavioral health services and the benefits derived from doing so can inform the development of future intervention and prevention efforts.

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## C-076

### OPTIMISM MODERATES THE RELATIONSHIP BETWEEN FATIGUE AND DISTRESS AMONG COLLEGE STUDENTS

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College students experience stressors that can contribute to feelings of fatigue and distress, which could have serious implication for interfering with academic demands and well-being. Optimism is a protective factor against distress and contributes to successful adjustment. This study predicts that optimism will be negatively associated with distress, fatigue will be positively associated with distress, and optimism will moderate the relationship between fatigue and distress. Negative affect (NA) is used as the distress measure in this study.

Two hundred and five students (49.8% male; 50.2% female) enrolled at a mid-size university in California completed a demographics survey, the Life Orientation Test (LOT-R), the Positive and Negative Affect Scale (PANAS), and the Multidimensional Fatigue Symptom Inventory-Short Form (MFSI-SF). Zero-order correlation between optimism and NA was significant (r=-.37, p<.001). Correlations between NA and fatigue revealed significant associations for general fatigue (r=.46, p<.001), physical fatigue (r=.34, p<.001), emotional fatigue (r=.69, p<.001), mental fatigue (r=.40, p<.001), vigor (r=-.35, p<.001), and total fatigue (r=.60, p<.001). Multiple moderated regression analyses were conducted using optimism as a moderator. Significant moderator effects were found for general (b=-.034, t(187)=-2.16, p=.032), physical (b=-.058, t(183)=-2.59, p=.010), emotional (b=-.030, t(187)=-1.99, p=.048), and total fatigue (b=-.014, t(174)=-3.05, p=.003) and vigor (b=.060, t(188)=2.91, p=.004). Follow up analysis with simple slopes revealed there was a stronger positive association between fatigue and negative affect for students endorsing low optimism, and there was a greater negative association between vigor and negative affect for those low in optimism.

These results suggest that students who experienced higher fatigue also experienced higher levels of negative affect, and the presence of optimism led the strength of the relationship to differ. These findings emphasize the protective role of optimism and how it has the potential to moderate the relationship between fatigue and distress, such that, highly fatigued students could maintain lower levels of distress when higher in optimism.

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## C-077

### STIGMA AND SOCIAL NETWORK CONSIDERATIONS IN ESTABLISHING PEER SUPPORT FOR DEPRESSION MANAGEMENT IN CHINA

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Recent evidence and reviews indicate the value of peer support interventions in mental health and depression. However, extending peer support approaches from other prevention and disease management areas to mental health and depression encounters several challenges. This includes stigma surrounding many psychological problems, including depression that is especially pronounced in China. Additionally, Chinese culture includes a reluctance to "burden" ones family social network with one's own problems. This leaves the individual with depression in a difficult situation, reluctant to share concerns with friends because of stigma and reluctant to burden family with those concerns. Structured interviews with depressed patients in a psychiatric hospital in northeast China confirmed these impressions. Examples of stigma included exclusion from the workforce and community and difficulties in finding potential spouses. Examples of reluctance to burden family are evident in a rhetoric of self-reliance and self-discipline vis a vis depression "I just need to …" that encourages the individual to refrain from expecting help from family, and in reports that patients receive encouragement to work to get better because they pose a burden to their families. Programmatic approaches to providing peer support might be especially helpful for this group. To address these stigma and network challenges, approaches to organizing peer support programs for this group might include:

a. Group peer support offered in confidential settings such as psychiatric hospitals
b. Individual peer support provided by volunteers, carefully trained to assure confidentiality
c. Integration of peer support programs for depression into services provided by community health clinics as part of more general support programs for healthy living or stress management

Consideration of stigma and other social influences surrounding problems and of how social networks structure social support may guide tailoring of peer support to specific cultures, settings and systems.

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## C-078

### A COMMUNITY PARTNERSHIP PROVIDING BEHAVIORAL HEALTH SERVICES TO CAREGIVERS OF ALZHEIMER'S PATIENTS TO REDUCE PROBLEM BEHAVIORS AND THEIR IMPACT

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Caring for patients with Alzheimer's Disease (AD) takes a toll on caregiver health, leading to $7.9 billion in additional health care costs for caregivers in 2010 (Alzheimer's Association, 2011). Partners in Caring (PIC) was formed to provide services to combat the physical and emotional strain put on older adult caregivers of patients with AD. The partnership between behavioral health and service organizations (Southern Caregiver Resource Center, The Alzheimer's Association, The George G. Glenner Alzheimer's Family Centers, Jewish Family Services, Elder Law and Advocacy, and Casa Familiar) provide referrals and no-cost services to caregivers including case management, care planning, counseling, support groups, respite, home modifications, legal consultation, training, and education. PIC aimed to change caregiver behavior and competencies to decrease caregiver depression, stress, and anger, and improve self-care, social support, and care giving abilities. This was expected to delay institutional placement of patients, decrease problem behaviors, and improve quality of life for both caregivers and patients. Between October 2009 and July 2011, 203 clients completed pre and post assessments to capture quality of life, including care giving conditions, mental and physical health, and the frequency and burden of patient memory and behavioral problems. After receiving services, caregivers rated their health better (t(96)=-2.571, p=.012), indicated that their health stood in the way less (t(86)=-2.755, p=.007), and had lower scores on the caregiver burden and depression scales (t(199)=8.985, p<.001, t(199)=7.835, p<.001, respectively). The overall frequency of patient problems was also reduced (t(17)=2.102, p=.051, marginal significance). Results indicate that the multiple perspectives and services provided through a collaborative partnership may improve mental and physical health outcomes for older adult caregivers and their patients.

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## C-079

### PERCEIVED CONTROL AS A MEDIATOR OF THE EFFECT OF PRIOR EXPOSURE TO VIOLENCE ON DELINQUENCY, VIOLENCE INVOLVEMENT, AND SUBSTANCE USE AMONG ADOLESCENT GIRLS

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Exposure to violence in childhood and adolescence presents a pervasive public health concern in the US (Buka et al., 2001). An estimated 70% to 97% of school-aged children are exposed to violence in their homes, schools, and communities, as both victims and witnesses. Long-term effects of violence exposure have been linked to a variety of negative risk profiles (Repetti et al., 2002). The aim of the study was to explore how perceived control influenced the relations between exposure to violence and three risk-taking behaviors (delinquent behaviors, violence involvement, substance abuse) in a sample of adolescent females. One hundred and fifty-nine adolescent girls (age M=11.8 years, SD=1.95) were recruited from a local after school program operated at multiple sites. Data were collected as a part of a study evaluating the effectiveness of the program. Mediation was established by hierarchical multiple regressions and a Sobel test statistic. Prior exposure to violence, characterized by direct or indirect exposure to violence, accounted for significant variance in delinquent behaviors (R2=.195, F (1,142) =34.29, p<.01), violence involvement (R2=.127, F (1,139) =20.25, p<.01), and alcohol use (R2=.028, F (1,143) =5.12, p<.05). Using separate regression equations, it was noted that perceived control significantly mediated the relationship between exposure to violence and delinquent behavior (β=-.26, p<.05), violence involvement (β=-.28, p<.05), and alcohol use (β=-.09, p<.05). The indirect effects of exposure to violence on tobacco and marijuana use were not significant. Exposure to violence leads to a decreased sense of perceived control, further resulting in an increase in delinquent behaviors, violence involvement, and alcohol consumption. The study highlights the need for early assessment of violence exposure and targeted family intervention aimed at decreasing exposure to violence and increasing adolescent levels of perceived control.

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## C-080

### SOCIODEMOGRAPHIC AND PSYCHOSOCIAL PREDICTORS OF SELF-INJURIOUS BEHAVIORS, SUICIDAL IDEATION, AND SUICIDE ATTEMPTS AMONG ADOLESCENT GIRLS

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Suicidal ideation, attempts, and completed suicide continue to occur at alarming rates, especially among adolescents (World Health Organization [WHO], 2005). The purpose of the current project is to identify sociodemographic and other psychosocial factors that differentiate adolescents who engage in self-injurious behaviors, endorse suicidal ideation, and attempt suicide, from those adolescents who do not. One hundred and ninety-one adolescent girls (age M= 11.9 years, SD=1.98 years) were recruited from a local after school program operated at multiple sites. Data were collected as a part of a study evaluating the effectiveness of the program girls. Adolescents who reported self-injurious behaviors (10.6%), suicidal ideation (11.9%), and suicide attempts (10.3%), and those adolescents who did not endorse such behaviors/thoughts, were compared on several key sociodemographic and psychosocial variables. Maternal marital status and parental monitoring significantly distinguished adolescents who engaged in self-injurious behaviors from those that did not. Specifically, adolescents whose parents were divorced, who did not talk to their parents about next day plans, did not know how to get in touch with their parents if they weren't at home, and had parents who did not know who the adolescent was with when not at home, were more likely to engage in self-injurious behaviors. Girls who endorsed suicidal ideation and attempted suicide reported more sexual partners than those that did not. Additionally, adolescents who reported thinking about committing suicide reported greater negative body image, and both adolescents who endorsed suicidal ideation and suicidal attempts had fewer parental monitoring controls. Findings underscore the need for parental education and family intervention aimed at addressing adolescent self-injurious behaviors and suicidal ideation and attempts.

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## C-081

### POSITIVE AFFECT PREDICTS IMPROVED DEPRESSION OUTCOMES

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Background: Early predictors of depression outcomes may inform treatment algorithms. As complex measures of positive affect (PA), which aims to measure an individual's levels of happiness, joy, and enthusiasm, may not be feasible in busy clinical settings, we explored associations between shortened, modified measures for PA and depression outcomes.
Methods: Our sample consisted of individuals beginning a new treatment episode for depression (n=100) receiving care at an urban community health system. We measured depressive symptoms and remission at 6- and 12-weeks with the patient health questionnaire-9 (PHQ-9) (remission defined by PHQ-9 score <6). PA and negative affect (i.e.,by asking an inverse question) were measured at baseline and 2 weeks post-baseline by asking, how often the patient "How often in the last 2 weeks have you felt up, happy, or hopeful" using a 4-anchor Likert scale ("not at all"=0 to "almost all the days"=3). Linear and logistic models were adjusted for baseline PHQ-9 and clustered by clinic.
Results: We analyzed data for 6-weeks (n=100) and 12-week (n=89) analyses. PHQ-9 scores improved from moderately severe at 16.1 (standard deviation [SD] 4.2) to 11.3 (SD 5.7) and 11.5 (SD 5.6), with 17.1% and 17.8% of the participants reaching remission, at 6- and 12-weeks, respectively. The 2-week PA score averaged 1.3 (SD 0.9) indicating PA on several days over 2 weeks was a significant predictor of later depression improvement. Linear regression estimates were -2.4 and -2.0 and adjusted odds for remission were 3.8 (95% CI 1.7, 8.5) and 3.4 (95% CI 1.7, 7.0) at 6- and 12-weeks, respectively, for 1 SD increase in PA from median (all p-values<=0.001).
Conclusion: Early improvement in PA was associated with better depression outcomes at 6- and 12-weeks. Measuring PA may inform a clinical decision to continue or change depression treatment after 2 weeks, important given the resource and time constraints on urban clinics.

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## C-083

### THE TREATMENT OF NEURALLY MEDIATED SYNCOPE USING SPECTRAL EEG NEUROTHERAPY: A SINGLE CASE DESIGN

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Neurally Mediated Syncope is primarily a disorder of autonomic dysregulation, resulting in sudden losses of blood pressure and consequent loss of consciousness. Usually this reflex arc is seen in the context of blood, injection, and injury phobias, but certain variants are contextually independent. The current study is a single case reversal design resulting in the successful amelioration of syncoptic episodes through the operant conditioning of spectral EEG bandwidths. The subject was a 46 year old female with a 20 year presentation of syncope. Presenting symptoms were frequent and severe, and comorbid diagnoses were ruled out through extensive diagnostic testing. Initial EEG telemetry indicated Z score deviations from normative functioning in the prefrontal and insular cortex. A bipolar (frontal cortex and insula) montage suppressing the 7 to 14 Hz spectrum was implemented. The methodology employed a baseline, intervention, reversal, and follow up (ABCB) intervention phase, tracking both spectral output and subjective symptom ratings. The subject was blind to all conditions. The intervention and reversal phases resulted in both statistically and clinically significant changes from baseline. By the end of the last intervention phase, the subject was experiencing no syncoptic episodes and minimal prodromal symptomology. Clinical improvements persist to 12 month follow up.

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## C-084

### PSYCHOMETRIC PROPERTIES OF THE FILIPINO HEALTH BELIEFS AND VALUES SCALE

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Traditional Filipino values, such as maintaining harmony and having close family ties, have been postulated to influence Filipino Americans' preventive health care behaviors. However, there is a dearth of quantitative data to support this hypothesis. A new quantitative scale measuring traditional health beliefs and values was developed. Filipino American (N=405) over 21 years old participated. Ages ranged from 21-83 years (M=44, SD=15). Women were recruited through community-based organizations, local Asian grocery stores, and through word of mouth. Items measuring health beliefs (e.g., illness is caused by supernatural beings) and traditional Filipino values (e.g., utang ng loob or debt of gratitude) were generated by the author through one-on-one interviews, review of the literature and items from an existing questionnaire. Total scores ranged from 36 - 198, with M= 124 (SD=21.48). An initial principal components analysis (PCA) suggested that a two-factor solution best explained the 44-item FHBVS: 1) Filipino beliefs about health and illness (22% of variance) and 2) traditional Filipino values (10% of variance). There was a significant positive correlation between the two components (r=.30). and significant negative correlations with number of years in United States (r=-.16) and acculturation (r=-.25). In contrast, total scores were significantly positively correlated with the God Locus of Control Scale, indicating that those who endorsed traditional health beliefs and Filipino values also endorsed higher locus of control on God. The FHBVS is a promising quantitative scale to measure traditional Filipino values and health beliefs, and may be a useful screening tool to predict different health behaviors and coping with illness.

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## C-085

### DUMMY VERSUS EFFECT CODING IN ANALYSIS OF VARIANCE: DO THEY CODE THE SAME EFFECTS?

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Although it is commonly written in textbooks, in practice researchers sometimes forget that how a categorical variable is quantified for an Analysis of Variance (ANOVA) determines the interpretation of its associated beta coefficient in regression analyses. Focusing on the effects in a hypothetical 2^3 factorial experiment, we compare and contrast the two most common approaches for quantifying categorical variables: dummy coding and effect coding. The two coding schemes yield the same omnibus F. However, they yield different estimates, F statistics, and p-values for the individual effects, except for the highest order interaction. The interpretation of the effects for the effect-coded model is identical to the classical definition of main effects and interaction effects, i.e., an effect averaged across the levels of all other factors. However, the interpretation of effects for the dummy-coded model is different from the classical definition. When dummy coding is used, an effect is interpreted as the effect when all of the other factors in the model are set to zero. This difference has important implications in the analysis of factorial experiments, and more generally, in analyses of experimental and non-experimental data that include interaction terms. While neither coding scheme is right or wrong, it is important to understand exactly which effects are being estimated when a categorical variable is quantified. In addition, it is helpful to understand what estimates are being provided by different statistical software packages.

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## C-087

### CHANGING EATING BEHAVIOR IN UNIVERSITY DINING HALLS USING AN ITERATIVE DESIGN PROCESS

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Objective: Determine the effect of a dining hall-based intervention developed using an iterative design process (IDP) on college students' eating behavior and perceived importance of healthful eating.
Participants: 458 college students (52.6% Female, age M=19.6±1.5) completed pre- and post-intervention surveys.
Methods: A cluster-randomized controlled study comparing changes in eating behavior among students in 4 university dining halls (2 intervention, 2 control) was conducted. Data were collected in Feb 2011 (pre-survey), followed by a 4-week intervention and again in May 2011 (post-survey). The short-term, multifaceted, point of selection intervention was developed via an IDP approach (e.g., frequent prototypes & user feedback) and included sample vegetarian plates, healthy choice indicators, large signs, table tents, flyers and colorful photographs with benefit-based (e.g.,"brain" foods) messages for promoting targeted food (i.e., more vegetables, less meats, less processed/junk food). Dietary intake was assessed with items adapted from the Harvard Food Frequency Questionnaire and scored as servings per week within food categories. Students also rated the perceived importance of eating a healthful diet. Mixed effect modeling was used to analyze the effect of the intervention on eating behavior and values. Three-level multilevel modeling was fitted to account for repeated measures nested within subjects and subjects nested within dining halls. All models were adjusted for gender and age.
Results: Students in the intervention dining halls significantly decreased junk food (F[1,494]=4.22, p=.04) and high-fat meat (F[1,494]=5.74, p<.02) intake and increased their perceived importance of eating a healthful diet (F[1,493]=4.61, p=.03) relative to the control group.
Conclusion: IDP may be valuable for the development of behavior change interventions as the intervention developed resulted in more healthful eating behavior among students in university dining halls.

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## C-088

### PSYCHOSOCIAL CORRELATES OF BEHAVIORAL STRATEGIES FOR HEALTHY EATING AMONG LATINAS IN IMPERIAL COUNTY, CALIFORNIA

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Introduction: Over the past two decades the rates of overweight, obesity, and chronic disease within the U.S. Latino population have risen substantially, surpassing the rates for non-Latino whites. Though studies aimed at improving dietary practices among Latino families have identified many barriers to healthy eating, little information is available regarding the relative contributions of various psychosocial factors to the use of behavioral strategies for healthy eating. This study examined the psychosocial correlates of behavioral strategies used to improve dietary practices among Latinas.
Methods: Participants included 355 Latinas. Survey data included measures of demographics, acculturation, family support for fruit and vegetable (FV) consumption, family interactions regarding household dietary habits, spousal interference of healthy eating, and perceived barriers to obtaining and consuming FV. A 30-item dietary behavioral strategies scale was used to assess strategies to increase fiber and decrease fat consumption, which were analyzed independently.
Results: Multiple linear regressions identified several psychosocial factors significantly associated with behavioral strategies related to both fiber and fat intake. Family interactions regarding dietary habits ($\beta$=.224, p<.001) and financial status ($\beta$=.148, p=.028) were associated with the use of strategies to decrease fat consumption. Family interactions regarding dietary habits ($\beta$=.225, p<.001), barriers to obtaining FV ($\beta$=-.202, p<.001), and family support for vegetable consumption ($\beta$=.064, p=.049) were associated with the use of strategies to increase fiber consumption.
Conclusions:In all analyses, family interactions regarding household dietary habits was the leading correlate of use of behavioral strategies for healthy eating. This finding highlights the importance of incorporating activities to increase family communication and support for healthy eating in future interventions.

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## C-089

### PRELIMINARY RESULTS FROM A PILOT EVALUATION OF A COMMERCIALLY AVAILABLE DIET-TRACKING APPLICATION

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The proliferation of smartphone applications (apps) focused on health is astounding. A recent search for "diet" on 9/10/2011 in Google's Android MarketTM revealed 2783 apps. Few have been tested empirically. We examined if a commercially available smartphone app focused on diet promotes improved healthful eating relative to smartphone apps focused on physical activity. Data were from a recently completed pilot study in which 36 inactive adults ages 45 years and older (57.7±7.2 years of age) were randomized to 1 of 4 Android smartphone apps, a highly rated commercially-available app (4 out of 5 rating from 4,040 Android users) focused on promoting improved healthful eating (i.e., Calorific) or 1 of 3 focused on increasing physical activity. For purposes of these analyses, the physical activity applications were collapsed into one comparison group (n=27) for the Calorific intervention group (n=9). Healthful eating was assessed at baseline and after completion of the intervention (8 weeks). Servings per week of food categories (i.e., vegetables, fruits, high fat dairy high fat meats, processed foods, and sweets) were classified from a Food Frequency Questionnaire. RMANOVA analyses revealed no significant timeXgroup interactions for any food category (ps>0.63), with eta squared estimates <0.004. This was found despite self-report results suggesting 87.5%, n=7, felt the app helped them track their eating and 75%, n=6, reported that it motivated them to eat healthier. As this study was not properly powered, additional research is required before any firm conclusions can be drawn. Nonetheless, the preliminary results, particularly with no observable trends in the anticipated directions, suggest that a commercially available application, Calorific, may not be effective at promoting changes in healthful eating after 2 months among some groups of inactive mid-life and older adults. The app's utility will be further tested in a larger planned randomized study.

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## C-090

### LONGITUDINAL ASSESSMENT OF PARENTING BEHAVIORS AS PREDICTORS OF CHILDREN'S SUGARY BEVERAGE CONSUMPTION

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Sugary beverage (SB) consumption contributes to childhood obesity. Specific parenting practices may influence children's SB consumption. This study examined parenting behaviors as predictors of children's SB consumption over a two-year period. Participants were 270 parent-child dyads in the control group of a 2-year randomized controlled child obesity prevention trial (MOVE/Me Muevo). Parents completed a self-administered survey, providing information on their parenting practices and their child's diet. Children's SB consumption was assessed using five beverage categories including non-diet soda, non-carbonated sugary drinks, sports drinks, yogurt or flavored milk drinks, and 100% fruit juices. Household food rules and parent modeling of food rules were evaluated with seven items each. Parent-mediated behaviors, including children's screen time, were assessed with four items. Parent support consisted of five items. Parents were 37±6 years old, 93% female and 44% Latino. Children were 6.7±0.7 years old and 56% female. At baseline, 1-year post-baseline, and 2-years post baseline, children consumed an average of 0.85, 0.76, and 0.76 daily servings of SB, respectively. Mixed effects analysis tested baseline variables adjusting for parent education, as predictors of child SB consumption at 2-years. Eating in front of the TV was the only baseline variable positively associated with children's SB consumption at 2-years. Mixed effects analysis examined associations between change in all predictor variables (over the three time points), and child change in SB consumption. Greater screen time (std $\beta$=0.000402) and eating fast food at least once per week (std $\beta$=-0.06795) were associated with increased children's SB consumption over 2-years. Future child obesity prevention interventions should focus on reducing children's screen time and fast food consumption.

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## C-092

### HOPE AND THE USE OF BEHAVIORAL STRATEGIES RELATED TO DIET AND PHYSICAL ACTIVITY

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Use of specific behavioral strategies related to diet and physical activity is important for successful weight management. Identification of psychological correlates to strategy use is helpful for planning and evaluating behavioral interventions. Little is known about the concept of hope and its association with use of these strategies. Through a telephone survey, this association was studied among 178 adult, low-income, men and women attending a primary care clinic in the Midwest. All participants were overweight or obese. Hope was measured through two subscales representing "agency" (level of determination in meeting goals) and "pathways" (perception of ways available to meet goals), and a total scale score. Diet and physical activity-related strategies were measured with 5 and 2 scales, respectively. Multivariate analysis controlling for gender, education and BMI showed a statistically significant ($p<.05$) association between both the total hope score and the agency subscale and all behavioral measures. The pathways subscale was significantly associated with physical activity related strategies, and a subset of diet-related strategies. The findings suggest that the hope scale and subscales may be useful tools in assessing the process of diet and physical activity behavior change and should be explored further in the context of a weight loss intervention.

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## C-093

### BINGE EATING, RESTRAINT, AND WEIGHT CONCERNS: COMPARISON OF BABY BOOMERS' AND MILLENIALS' DATA

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In 1977 the Binge Scale was normed on female and male students at a large university in the southwestern US. Sixty-eight percent of females and forty-nine percent of males endorsed some binge eating in data published in 1980. A recent follow-up survey ($n=161$) conducted in the same college setting revealed that only 42% of females now endorsed some bingeing on the Binge Scale, as did only 22% of the males. The mean total scores on the Binge Scale likewise decreased from 5.6 to 3.0 for females, and from 1.9 to 1.2 for males. Despite these decreases in the occurrence of bingeing and decreases in the mean scores on the Binge Scale, mean total scores on the Restraint Scale did not change appreciably between 1977 and 2005, nor did the average body weight or percentages of female and male students endorsing concern about their body weights. To explain these effects, we present a social ecological life contextual model that considers the possible contributions of both person factors (e.g.,biological factors related to weight history and undergraduates' changed attitudes about disordered eating as coping behavior) and contextual factors (e.g., changes in availability of nutritious food choices, eating environments, culture, and exercise options, particularly for women students).

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## C-094

### A SYSTEMATIC REVIEW: RELIABILITY AND VALIDITY OF CHILD/ADOLESCENT FOOD FREQUENCY QUESTIONNAIRES THAT ASSESS FOODS AND/OR FOOD GROUPS

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Objectives: Certain foods have been implicated in child/adolescent obesity and therefore it is important to have reliable and valid ways to measure dietary intake of these foods. We summarized and evaluated the validity and reliability data of child/adolescent food frequency questionnaires that assess food and/or food groups.

Methods: We performed a systematic review of child/adolescent food frequency questionnaire studies published in the last 10 years that assessed reliability and/or validity using PubMed and Web of Science. Correlation coefficients for the main foods implicated in childhood obesity and food groups from the United States Department of Agriculture's My Plate were reported (i.e., fruits, vegetables, sugar sweetened beverages, fast food, grains, dairy, and protein). The range of correlations and means were also reported.

Results: Sixteen studies were selected, 12 of which included validity data and 13 that included reliability data.

Conclusions: For validity, there were higher correlations for the studies which were administered with assistance from parents and/or teachers, included>50 items, did not measure portion sizes, focused on all foods and/or foods groups in the diet, and assessed the time span of "usual intake" or "24 hours." For reliability, there were higher correlations for those studies with low test-retest periods and those that were parent and/or teacher assisted. There were low reliability correlations for the questionnaires that were administered via the web. There are design and administration features of child/adolescent food frequency questionnaires that should be considered to obtain reliable and valid estimates of dietary intake in this population.

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## C-095

### A TEXT-MESSAGE BASED WEIGHT LOSS PILOT STUDY FOR ENGLISH AND SPANISH-LANGUAGE SPEAKERS

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Previous research has found that text-message based weight loss interventions were effective. This pilot study evaluated the feasibility of measures and methods of a text-message based weight loss program that used theory-driven logic rules for automated English and Spanish message tailoring.

In a one-group pre-post design, 20 overweight and obese participants (40% male; 50% Spanish speakers) were sent 3-5 scheduled, interactive, tailored text-messages a day for 8 weeks. Participants also received printed weight loss materials and brief weekly counseling calls. Measures included weight (kg), BMI (kg/m2), and weight management behaviors as measured by the Weight Behavior Inventory (WBI). Differences between pre-post measures were analyzed with a one-way repeated measures ANOVA. Pre-post differences between gender and language type were analyzed with independent sample T-tests.

Eighteen participants completed all measures. On average, participants lost 1.9 kg ($p<.01$, 95% CI$\Delta$ 0.7 to 3.0), decreased BMI by 0.1 kg/m2 ($p<.01$, 95% CI$\Delta$ 0.29 to 1.1), and increased WBI scores by 41% (1.5 points)($p<.01$, CI$\Delta$ 1.1 to 1.8). At baseline, there were no differences in WBI scores ($p=.48$, CI$\Delta$ -0.3 to 5.8) by gender. There were no differences in weight, BMI, or WBI scores by language type. At 8 weeks, there were no differences in WBI scores ($p=.47$, CI$\Delta$ -0.7 to 0.3) by gender, but Spanish speakers had higher WBI scores ($M=3.8$) than English speakers ($M=3.3$) ($p=.02$, CI$\Delta$ -0.96 to 0.08). There were no differences in weight ($p=.95$, CI$\Delta$ 19.1 to 20.5) or BMI ($p=.72$, CI$\Delta$ -0.5 to 3.8) by language type. Lastly, 94% of participants reported satisfaction with the program and said they would recommend it to a friend.

Findings suggest that the intervention components promoted modest weight loss with high satisfaction among participants. Quantitative and qualitative information from this pilot study has been invaluable for preparation for the full-scale randomized trial.

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## C-096

### RANDOMIZED COMPARISON OF MESSAGES FOR RECRUITING MEN INTO A WEIGHT GAIN PREVENTION TRIAL

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In the US, the prevalence of obesity is similar in men and women. However, only 27% of participants in clinical trials for weight control are men. Initial attempts to recruit men into a weight gain prevention trial yielded even lower rates of participation. To overcome this disparity, this study investigated the effect of recruitment message framing on male recruitment.

This study was conducted during recruitment for the SNAP (Study of Novel Approaches to Weight Gain Prevention) trial. This trial is testing two approaches to weight gain prevention in young adults (part of the EARLY Consortium). The mailing addresses of 30,000 individuals were randomized to receive one of two postcards; a generic weight gain prevention message or a targeted message that included the word “men” in the headline text. Postcards directed recipients to separate, but identical, websites with unique web addresses. The screening process included an initial online screening and a telephone screening.

The postcards yielded a 1.5% visit rate to the websites (N=452). The website for the generic postcard received more hits than the website for the targeted message (250 vs. 202, p=.01). There were no significant differences between the websites in the proportion of visitors who clicked through to view or complete the online screening form (generic 56% vs. targeted 61%; p=.22). Among respondents who completed the phone screen (mean age=29.3, BMI M=25.3, 44% normal weight), there was a trend toward men representing a greater proportion of respondents to the targeted message than the generic message (41% vs. 22%; OR=2.43, 95% CI=.94, 6.29; p=.06). Of the men who completed the phone screen, 31% were randomized into the SNAP trial compared to 34% of women. There were no differences in randomization rates by postcard or gender (p’s=.95 and .74).

The initial results of this study suggest that the inclusion of the word “men” in recruitment materials may increase male interest in a weight gain prevention study. Further studies are needed to test the effect of message framing on male recruitment.

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## C-097

### MIRANOS!: A PRESCHOOL OBESITY PREVENTION PROGRAM

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Background: Obesity rates amongst young Hispanic children in the U.S. continue to escalate. MIRANOS! was designed to assist low-income children, their parents and teachers in preventing obesity by testing the effects of a 6-month multi-faceted program in childcare centers(N=356; 91% consent rate; 88% retention rate).

Methods: Miranos! used a quasi-experimental comparison group pre-test/post-test design with two treatment groups: Treatment 1 (T1), in-school and at-home intervention; Treatment 2 (T2), in-school intervention and a comparison group. The in-school intervention featured 1) adoption of health education activities from Sesame Street Workshop, 2) health literacy using physical activity and nutrition themed children books, 3) daily 60 minutes of structured gross motor activities and free play, 4) food tasting activities, 5) training of classroom teachers and paraprofessionals in health topics 6) a staff wellness program. The at-home intervention included health education sessions, take-home activity bags and newsletters.

Results: From pre- to post-test, T1 gained less in weight z-score (p<.04), BMI z-score (p<.09) and body weight (p<.08) than the control. Using plate waste, T2 increased intake of fruits, vegetables (p<0.05) and low-fat milk (p<.006) than the control. Both treatments showed greater gain of gross motor development (p<.005) than the comparison. Parents of T1 reported their child did not drink soda in a typical week compared with the comparison children at posttest. Over 70% of staff in the staff wellness program reported improvement in health conditions based on health screening results. The average participation rate of parents in the peer-led parent education sessions was relatively high (M=80%, SD=7.9).

Conclusions: MIRANOS! showed great promise in reducing weight gain, promoting physical activity and healthy eating.

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## C-098

### CORRELATES OF MINDFULNESS AMONG PARTICIPANTS IN A BEHAVIORAL WEIGHT MANAGEMENT PROGRAM

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Obesity is a major public health concern in the United States today with over 65% of Americans considered overweight or obese, as defined by a BMI equal to or greater than 25. Maladaptive thoughts and behaviors may impede long-term weight loss, but mindfulness-based techniques may help ameliorate maladaptive influences on weight loss. The aim of this exploratory study was to assess the relationship between mindfulness and maladaptive behaviors that have been implicated in poor weight loss treatment outcome. A sample of overweight individuals (n=42) participating in a university-based behavioral weight management program completed assessments of trait mindfulness, the five facets of mindfulness, emotional eating, eating self-efficacy, and avoidant coping. Data were analyzed with correlational analyses and hierarchical regression analyses. Results indicated that trait mindfulness was negatively associated with emotional eating (r=-.41, p<.01), eating self-efficacy (r=-.44, p<.01), and avoidant coping (r=-.54, p<.01). Two of the facets of mindfulness (‘act with awareness’ and ‘nonjudge’) were correlated with avoidance (r=-.53, p<.01; r=-.59, p<.01, respectively), low eating self-efficacy (r=-.44, p<.01; r=-.44, p<.01, respectively), and emotional eating (r=-.38, p=.01; r=-.41, p<.01, respectively). Thus, low trait mindfulness was associated with psychosocial factors that may contribute to poor treatment outcome, and this relationship was most evident in the facets of ‘act with awareness’ and ‘nonjudge’. This indicates that among participants in university-based weight management, performing tasks in ‘auto-pilot’ and negatively judging inner experiences is associated with greater emotional eating, low eating self-efficacy, and avoidant coping. These results are consistent with theory suggesting the importance of mindfulness for behavioral weight management programs.

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## Meritorious Poster

## C-099

### HEALTH AND POLICY: THE IMPACT OF HEALTH INFORMATION ON RESTAURANT MENUS ON ORDERING BEHAVIOR

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As a provision of the 2010 Affordable Care Act, it will be mandatory for all restaurants with 20 or more locations to display calorie information on their menus. While this policy clearly intends to combat the obesity epidemic, several studies have reported contradictory results about the efficacy of this strategy (Harnack & French, 2008; Roberto et al, 2010). Two studies examined the effect of nutritional information on restaurant menus on simulated ordering behavior. It was hypothesized that participants given health information would select items with fewer calories than those given no health information. Participants in the first study (n=54) were randomly assigned to one of three different menus: one contained no nutritional information, a second disclosed calories, and a third displayed a simplified “traffic light” system that indicated the health level of each menu item. Participants then “ordered dinner” followed by a demographic survey. Preliminary findings indicated that women and participants with a lower BMI ordered fewer calories when given health information, while men and participants with higher BMI actually ordered more calories when given health information [Gender: t(48)=1.82, p=.07); BMI: t(48)=2.18, p=.03]. A second study was designed to test a hypothesized mechanism to explain these results. The second study (n=89) repeated the ordering exercise, followed by a questionnaire testing the idea that participants that were more interested in “tasty eating” would order more calories compared to those more interested in “healthy eating” when health information was available. Eating style did in fact predict calories ordered [t(86)=3.1, p=.002] and was also correlated with gender [t(85)=-2.63, p=.01]. Though the BMI effect was not seen in the second study, the previous gender trend remained when taking into account participants' health vs. taste eating preferences [t(82)=-1.83, p=.07]. Findings are discussed in relation to the potential impact on public health of the mandatory display of calorie information on restaurant menus nationwide.

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## C-100

### COMMON GENETIC FACTORS INFLUENCE ADIPOSITY AND CEREBRAL WHITE MATTER IN MEXICAN-AMERICANS

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Abdominal adiposity increases risk of metabolic diseases and cognitive deficits in Mexican-Americans (MA). The genetic influence of measures of obesity risk (body mass index (BMI; kg/m$^2$) and waist circumference (WC)) to cerebral white matter (WM) integrity has not been studied in a large sample of MA. Using high-resolution diffusion tensor imaging (DTI; 1.7×1.7×3 mm; 55 directions) in 576 MA (40% male) from the Genetics of Brain Structure and Function Study (ages 18-85y; 44.8±13.8), we found that elevated BMI and WC were genetically linked to reduced WM integrity. Shared genetic variance between BMI and WC with WM integrity (fractional anisotropy (FA) of axonal water diffusion) was calculated in three major WM tracts: corpus callosum (CC), cingulum (Cg), and superior longitudinal fasciculus (SLF). Overall, 51% of the sample was obese (OB), 33% overweight (OW), and 16% normal weight (NW). OB was lower in males than females ($p$=0.004) with no gender differences in BMI across weight groups ($p$>0.05). OW were older (45.6±13.8) than NW (41.8±16.2) and OB (45.1±12.9) ($p$=0.076). FA in the CC was lower among OB than OW ($p$=0.046). Genetic overlap between adiposity measurements (BMI, WC) and whole-brain/regional FA values was calculated with bivariate genetic correlation analysis. Additive genetic factors help explain intersubject variance in BMI (heritability, $h^2$=0.35) and WC ($h^2$=0.26). BMI shared a significant proportion of genetic variance with FA in the genu of the CC (genetic correlation, r=-0.20, $p$=0.038). Even stronger evidence for pleiotropic genetic effects were observed for WC and FA in the splenium (r=-0.88, $p$=0.005). Results suggest that shared genetic factors pleiotropically influence measures of obesity risk (WC, BMI) and WM integrity. Variations in region-specific relationships imply a possible role in development that provides insight into obesity-by-age cognitive deficits.

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## C-101

### UNDER-REPORTING OF CALORIC INTAKE AMONG OBESE WOMEN WITH DEPRESSION

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Accurate self-reported caloric intake is critical for nutrition and obesity research. Elevated depressive symptoms have been associated with more accurate reporting of caloric intake, but this association has not been explored in a clinically depressed sample. More accurate reporting among depressed individuals could result in their diets appearing higher in caloric intake than groups who tend to under-report. We investigated reporting accuracy using three 24-hour phone-delivered dietary recalls at baseline among participants in a randomized trial of weight loss treatment for obese women with major depression (N=161; mean age=45.9, SD=10.8; mean BDI-II=21.05, SD=5.8; mean BMI=35.4 kg/m2, SD=3.3 kg/m2). Reporting accuracy was defined as the ratio of reported energy intake to total energy expended. Energy expended was estimated using the Mifflin-St. Jeor equation incorporating height, weight, and age, and adjusting for physical activity level. Participants were categorized as under-reporters or adequate reporters based on the revised Goldberg method. Reporting accuracy was positively correlated with depressive symptom severity (r=0.25, p=0.002) after controlling for established predictors (BMI and education level). A quarter (25.2%) of women under-reported their dietary intake; these women reported consuming 717 fewer calories (SD=645) than accurate reporters, which is low relative to studies of non-depressed obese samples. We demonstrate that depression severity is associated with more accurate dietary reporting among obese women with major depressive disorder. Studies characterizing diets of depressed persons relative to those without depression should account for possible differences in reporting accuracy.

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## C-102

### EXPLORING THE ROLE OF FAMILY, FRIEND, AND NEIGHBOR SOCIAL TIES AND SUPPORT ON DIETARY AND PHYSICAL ACTIVITY BEHAVIORS AMONG LOW-INCOME RESIDENTS

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Background: A growing number of studies suggest that the social context is associated with healthier lifestyle factors, such as the intake of nutritiously-rich diets and the initiation of physical activity—key determinants of obesity and cancer outcomes. The goal of this study was to assess the impact of social ties and support from family, friends, and neighbors on obesogenic behaviors among low-income residents.

Methods: We used data from the Health in Common study that examined cancer risks among low-income housing residents in Massachusetts. Linear regression models with log-transformed dependent variables were used, adjusted for demographics.

Results: Residents indicating more social ties to friends were more likely to consume higher servings of fruits and vegetables and engage in more vigorous physical activity. Conversely, having more social ties to family was associated with an increased intake of sugary drinks and fast food; more social support from a combined measure of all three sources was associated with an increased intake of red meat. While we found some statistically significant associations, many of our results were not significant and of those that were, several were in the opposite direction than hypothesized.

Conclusions: Different sources of support and/or ties play a distinct role in dietary and physical activity patterns and some may in fact be associated with the uptake or maintenance of unhealthy lifestyle factors. More research is needed to uncover these differential relationships that exist between family, friend, and neighbor ties and support and diverse obesogenic behaviors. Doing so will help identify important contributing factors that may help shape public health interventions aimed at reducing cancer risk.

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## C-104

### EXAMINATION OF SELECT DEMOGRAPHIC, BEHAVIORAL AND PSYCHOSOCIAL FACTORS ASSOCIATED WITH BIAS IN SELF-REPORTED HEIGHT, WEIGHT, AND BMI AMONG ADOLESCENT GIRLS

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Background: The accuracy of self-reported height and weight among adolescents is subject to bias.

Purpose: To examine factors associated with over and under-reporting of self-reported height and weight among adolescent girls.

Methods: Height and weight of 589 healthy 11th grade girls, mean age of 16.7±0.4 years were self-reported and measured by trained technicians. Participants were classified as overweight or obese using CDC criteria. Demographic variables examined included ethnicity and receiving free or reduced priced lunch. Behavioral factors included physical activity, smoking, and trying to lose weight. Psychosocial factors included depression and perceived body size. Multiple regression models were used to determine factors associated with over- or under-reporting of height, weight, and body mass index (BMI, kg/m2) and least squares means (LSM).

Results: Participants under-estimated their weight (mean -1.5±4.3 kg) and over-estimated their height (mean 0.35±2.5 cm). Hispanic girls over-reported their height compared to White and African American girls (LSM=0.92 vs. -0.14 and -0.18 cm, respectively; p-values <0.02). Compared to those trying to gain weight, girls trying to lose weight under-reported their weight (LSM=-1.8 vs. 1.0 kg; p<0.01) and BMI (LSM=-0.70 vs. 0.27 kg/m2; p<0.02). Girls reporting they were very overweight under-reported their BMI compared to girls reporting they were slightly overweight (LSM=-1.2 and -0.03 kg/m2; p<0.04).

Conclusions: Girls' perceptions of their body size and weight loss behaviors are associated with under-reporting of BMI and weight. Socioeconomic status, physical activity, smoking, and depressive symptoms are not associated with under- or over-reporting.

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## C-105

### PRE-SURGICAL WEIGHT IS ASSOCIATED WITH PAIN, FUNCTIONAL IMPAIRMENT AND ANXIETY AMONG GASTRIC-BYPASS SURGERY PATIENTS

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Chronic pain and obesity are public health concerns in the United States, with costs related to obesity estimated at $118 billion annually, and chronic pain at $70 billion a year in health-care expenses and lost productivity. Research suggests that obesity is a risk-factor for chronic pain, mainly due to excessive weight placed on the joints. Pain is a common medical co-morbidity of obesity. Both pain and obesity significantly impact quality of life, level of functioning, and mood. Behavioral factors may play a role in obesity and pain. Depressed people are often sedentary, which is associated with obesity and may exacerbate chronic pain. Little work has focused on the relationship between weight and pain among patients undergoing gastric bypass surgery for weight loss. 115 patients scheduled to undergo bariatric surgery for weight-loss at a southeastern academic medical center completed the Brief Pain Inventory (BPI), the Center for Epidemiological Studies 10-item Depression scale (CESD), and the Beck Anxiety Inventory (BAI) at the time of their pre-surgical psychosocial evaluation. The sample was 80% female, 63% White, and 37% Black. The mean of the pain-on-average ratings from the BPI was 4.70±2.75, the mean of the CESD scores was 7.03±4.75 and the mean of the BAI scores was 7.59±8.09. The average BMI of the sample was 50.73±11.61 and the mean pre-surgical weight was 310.21±76.01 lbs. Higher pre-surgical weight was associated with higher pain-on-average ratings (r=.23, p=.02), higher functional impairment due to pain across the domains of physical activity (r=.19, p=.04), mood (r=.19, p=.05), walking ability (r=.26, p =.005), relationships (r=.23, p=.02), and enjoyment of life (r=.29, p=.002). Higher pre-surgical weight was associated with higher BAI scores 2(r=.22, p =.05). Weight was not related to depression (r=-.09, ns). Findings suggest that pre-surgical candidates experience moderate pain on average, and that higher weight is associated with increased pain, functional impairment and anxiety.

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## C-106

### RELATION OF EATING-RELATED MOTIVES TO THE BIG FIVE PERSONALITY DIMENSIONS

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Motivation theories suggest distinct systems underlying approach and avoidance behavior (Gray, 1994) and individual differences in their relative strength or sensitivity (Fowles, 2006). Although scales assessing “behavioral inhibition” and “behavioral approach” systems (BIS and BAS) exist (e.g., Carver & White, 1994), researchers have recently developed instruments assessing individual differences in specific domains, most notably eating and physical activity (Palacios et al., 2010).

This study examined the validity of the Eating Motives Inventory (EMI)—a recently developed instrument assessing four dimensions of behavioral approach (Reward, Positive Emotion, Escape Punishment, and Sensation Seeking) and three dimensions of behavioral inhibition (Punishment, Negative Emotions, and Eating Anhedonia) specific to eating behavior. College students (N=244) completed the EMI as well as the Goldberg (1992) Five Factor Inventory.

All but one dimension of the EMI showed good internal consistency with alphas ranging from .74 to .86; Sensation Seeking was .51. Analyses showed reliable associations among EMI subscales and the major personality dimensions. For example, neuroticism predicted eating to escape punishment (r=.45*, *p<.05), as well as anticipation of positive (.18*) and negative emotions (.28*) from eating. Extraversion, in contrast, negatively predicted eating to escape punishment (-14*), experience of eating as punishing (-.15*), anticipating negative emotions from eating (-.21*), and general eating anhedonia (-.20*). Conscientiousness also negatively related to eating to avoid punishment (-.21*) and anticipating negative emotions from eating (-.21*). Finally, Openness was the only personality dimension to predict eating sensation seeking (.19*).

Overall, the EMI subscales showed good convergent and discriminant validity with major dimensions of personality. Moreover, the relative strength of these associations suggests similarity of process without redundancy of content. Scales to assess eating-related motivations should inform a variety of research topics from obesity to disordered eating.

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## C-107

### EFFECTS OF A TAILORED WEB-BASED INTERVENTION ON PROMOTING FRUIT AND VEGETABLE INTAKE IN AFRICAN AMERICAN FAMILIES

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This study tested the feasibility of integrating constructs from Social Cognitive Theory (self-monitoring, goal-setting, skill building), Self-Determination Theory (autonomy-support) and Family Systems Theory (positive communication) into a web-based health promotion intervention. The web-based program was individually tailored for African American parents to promote positive parenting skills for increasing fruit and vegetable (F&V) intake in their adolescents. Twenty-two African American parents (age M=37+5 yrs), who had an adolescent (60% female; age M=12+1 yrs) enrolled in the study. Most parents were obese (75% BMI≥30; M=38+11) and had an annual household income below $24,000. The web-based program consisted of three phases: a pre-test survey; viewing of tailored web-based messages and resources for developing a family action plan, and a 1-week post-test telephone survey. Parents were given tailored feedback on their communication skills, autonomy-support skills and their behavioral skills related to F&V intake and were asked to develop an action plan with their adolescent using one of these three skills. Planned comparisons revealed that parent’s vegetable intake significantly increased from pre-test (M= 1.76, SD=0.66) to 1-week follow-up (M =2.24+0.90; t=-1.92, p<.05); and their combined F&V intake significantly increased from pre-test (M= 3.70+1.53) to 1-week follow-up (M=4.53+1.12; t=-1.72, p=.05). Although self-reported adolescent intake of F&V also increased from pre-test to 1-week follow-up, these effects were not significant. Overall, parents reported that they were highly satisfied with the web-based program (M= 4.0+0; range 1=low to 4=high for all scales) and enjoyed using the program (M=4.0+0). These preliminary data provide initial support for the feasibility of a web-based intervention for promoting positive parenting skills and eating habits in African American adolescents and their parents.

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## C-108

### USABILITY TESTING OF THE ENGAGED SMARTPHONE WEIGHT LOSS APP

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More than two-thirds of American adults –190 million people– are obese or overweight, foreshadowing an epidemic of diabetes. Consequently, there is growing interest in low-cost mobile health technologies that can assess health parameters in real-world contexts, deliver ecologically responsive interventions, and remotely monitor behaviors and outcomes. A 2011 PEW Research Group survey of 3001 people indicated that 7% of Whites, 15% of African Americans, and 11% of Hispanic or Latinos use an “app” on their phone to track or manage their health. By 2015, 500 million people are expected to use at least one e-health application (Research2Guidance.com, 2011). We conducted an mHealth usability pilot study of 6 overweight/obese adults [(67% female, mean age=46.5 years (SD=14.8), mean BMI=32.8 (SD=1.1), mean weight=199.5 lbs. (SD=19.2)]. Participants were recruited via community flyers, loaned an Android smartphone, asked to self-monitor diet and physical activity using our custom-designed ENGAGED application for one week, and qualitatively interviewed after having used the device. Mean duration of use was 5.3 days (SD=2.0). Even though participants were not asked to change their diet or physical activity, 66.7% lost some weight, averaging 1.7 lbs. (SD=1.4). Overall, participants found the application easy to use and understand. They reported liking the immediate feedback the app provided on caloric and fat intake, and physical activity. They initially felt burdened by entering their information but habituated quickly: “putting food became a lot easier once you become comfortable with it.” They continued to have difficulty finding recipes: “It was hard to find things that I cooked,” The modal strategy to solve this problem was to: “…find something comparable. I found whatever was close.” Promising pilot results suggest that although the ENGAGED application requires a short learning or acquisition period, participants habituate and find its feedback mechanisms persuasive enough to change their behavior and produce modest weight loss.

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## C-109

### THE RELATIONSHIP OF ALCOHOL CONSUMPTION AND SOCIAL SUPPORT WITH WEIGHT GAIN OVER THE FIRST YEAR OF COLLEGE

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The "freshman 15" is a common myth about the weight gained during the first year of college. Lifestyle behaviors that are engaged in during early adulthood, such as sedentary behavior, excessive drinking or consumption of high-fat foods, can have long-term effects on health including obesity. In this prospective study, we sought to examine the average amount of weight gained over the first year of college and to determine which psychosocial factors are associated with weight gain. Participants were recruited from a college campus in the northeast. Their first session was conducted during the first few weeks of school and they returned for a session at the end of the spring semester. Participants were (59 females, 12 males) between the ages of 17-22(M=18.1, SD=.58) and predominantly Caucasian (85%). At both time points they completed a survey of health behaviors as well as the Center for Epidemiological Study of Depression, Perceived Stress Scale, Multidimensional Scale of Perceived Social Support, and had their weight taken. After completion of the questionnaires, participants received a $5 gift card. The average weight gain after the first year of college was 5.40 lbs. (SD=12.09), with males gaining more weight(M=10.25, SD=12.92)than females (M=4.41, SD=11.79). Hierarchical multiple regression analyses controlling for depressive symptoms, stress, social support from friends and family, demonstrated a significant effect of romantic partner support and drinking behavior on weight gain. Higher levels of alcohol consumption and lower levels of support from romantic partners were associated with more weight gain among college freshmen ($p<0.01$). Findings from this study provide evidence that alcohol consumption and support from romantic partner may be factors in weight gain among college students.

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## C-110

### ACTIVITY AND EATING BUILT ENVIRONMENTS INFLUENCE CHILD WEIGHT LOSS OVER TWO YEARS

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A substantial body of research suggests that aspects of the built environment can influence child activity and eating. Aspects of the built environment such as parkland, street connectivity and housing density have been related to physical activity or obesity. Similarly, aspects of the food environment are related to childhood obesity; density of convenience stores and supermarkets. These built environment characteristics were hypothesized to moderate the effects of standardized family-based behavioral treatments on child short and long-term weight loss.

The built environment of 212 children who had participated in four randomized trials to treat obesity in 8-12 year-olds was studied to investigate its effects on weight loss. Aspects of the built environment studied included housing density, parkland and recreational land, average size of residential neighborhood blocks, number of grocery, supermarket, and convenience stores as well as total number of food eating and purchasing establishments. A mixed model ANOVA showed that parkland ($p=0.025$), larger average block size ($p=0.001$) fewer supermarkets ($p=0.006$) and convenience stores ($p=0.019$) were associated with greater zBMI change at 2 years. Parkland interacted with block size ($p=.0002$), supermarkets ($p=.018$), convenience stores ($p=.008$) and street connectivity ($p=.003$) to predict benefits at 2 years. There was a negative impact of low access to parkland and high number of supermarkets on long-term zBMI change ($p<.001$). Child sex ($p=.034$) and age ($p=.014$) interacted with convenience stores to influence zBMI changes. Girls and older children with low access to convenience stores showed greater zBMI reduction.

These results show that aspects of the built environment are related to child success in standard behavioral treatments for obesity.

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## C-111

### REDUCING DELAY DISCOUNTING WITH FUTURE EPISODIC THINKING IN LEAN AND OVERWEIGHT/OBESE INDIVIDUALS

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Inter-temporal decision-making is a part of life; people make decisions constantly negotiating immediate gratification and future outcomes (Epstein, Salvy, Carr, Dearing and Bickel, 2010). Delay discounting (DD), the extent to which a person values an immediate reward over future consequences is considered an index of impulsivity (Epstein et al, 2003). High DD rates have been associated with suboptimal health behaviors such as substance dependence and obesity (Bickel et al, 2010, Epstein et al, 2003, Weller, 2008). Future episodic thinking has been demonstrated to reduce DD rates (Peters and Buchel, 2010). This study investigated the efficacy of future thinking in reducing DD when compared to a control thinking and imagery task in both lean and overweight individuals.

Methods: Forty-nine participants attended two sessions. In one session, participants generated future events with vivid episodic imagery and thought about these events while completing a DD task. In the other session, participants read an excerpt from a story and generated positive events with vivid imagery and thought about these events as they completed a DD task. The DD task required participants to make choices between immediate and delayed rewards.

Results: A mixed-design ANOVA revealed that participants significantly discounted less in the future-oriented session ($P<.05$). There were no differences in the impact of future thinking on DD between lean and overweight individuals ($P>.05$).

Conclusion: These results suggest that future episodic thinking may be efficacious in reducing delay discounting. Future research should focus on its use in populations known for high rates of delay discounting and study its effect on risky health behaviors.

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## C-112

### A CHILD WEIGHT MANAGEMENT PROGRAM TARGETING PARENTS IN PRIMARY CARE: INSIGHTS FROM PLAN FOR HEALTHY LIVING PHONE FOLLOW-UPS

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Childhood obesity is an important public health concern warranting additional attention in rural areas. Rural children have a 25% greater chance of being overweight than urban children, especially in Southern Appalachia. Primary care settings are well positioned to address this concern. Additionally, the Expert Committee Recommendations suggest the use of motivational interviewing (MI) and parent involvement in these efforts. Sixty-seven overweight or obese children 5-11 years (58% Female) and their parents/caregivers were recruited from 4 primary care clinics in Southern Appalachia. Two pediatric and two family practice clinics were randomized to either control or intervention groups. Parents assigned to the intervention (n=28), Parent-Led Activity and Nutrition (PLAN) for Healthy Living, received 2 brief visits utilizing provider-delivered MI, 4 provider-delivered group sessions utilizing the National Institutes of Health We Can! (Ways to Enhance Children's Activity and Nutrition) curricula, and 4 follow-up phone calls with research study staff. The phone calls utilizing a brief MI approach assessed progress on We Can! Eat Well and Move More goals, addressed barriers to achieving goals, and facilitated generation of solutions. The objective of the current qualitative study was to evaluate information obtained via phone follow-up visits emphasizing common barriers and solutions. Identified common barriers included time, difficulty accepting new foods, eating away from home and unsupportive others. Common solutions included increasing exposure to novel fruits and vegetables, educating the child and unsupportive others, and emphasizing small changes in diet and activity levels. Phone follow-up visits may offer insight and a valuable supplement to parent-targeted interventions for child overweight or obesity. Data from PLAN for Healthy Living highlight common barriers and solutions in need of being addressed as part of future interventions.

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## C-113

### PERCEPTIONS OF THE ROLE OF THE MEDIA IN PROMOTING POOR BODY IMAGE AND SUPPORT FOR A HEALTHY BODY IMAGE CHARTER

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Government or non-government organizations throughout the world have recently implemented advocacy actions to reduce exposure to images promoting excessively thin body ideals. In Quebec, Canada, the Ministry of Culture, Communications, and Status of Women, created a Charter or health promotion tool that outlines consensual actions and principles that can be undertaken by organizations and citizens to reduce media pressures favoring thinness. The impact of such a Charter hinges at least in part on population support for its principles and actions. We explored how beliefs about the causes of poor body image were associated with willingness to personally adhere to the body image Charter by analyzing data from a population-based survey of Quebec adults (n=810, 54.2% female). Respondents reported on support for the Charter and perceptions about the proportion of adult women and teenage girls that had low body image because of images presented in the media. Overall, 36% of respondents indicated being very favorable to adhering to the Charter and more teenage girls (71.3%±19.9; 68.5%±21.0) than adult women (57.8 %± 19.9; 54.6%±21.0) were thought to have poor body image because of media images or beauty ideals based on extreme thinness, respectively. Logistic regression showed that stronger beliefs about the media being a cause of poor body image were associated with greater likelihood of being very favorable to adhering to the Charter (OR=1.51, 95%CI: 1.04, 2.19) as were being female (OR=1.64, 95%CI: 1.20, 2.25) and having a male child aged 0-12 year (OR= 1.81, 95%CI: 1.18, 2.80) or female child aged 13-17 years (OR=2.17, 95%CI: 1.28, 3.71). Having no more than a high school education (OR=0.43, 95%CI: 0.29, 0.62) or being born outside the country (OR=0.48, 95%CI: 0.25, 0.90) were associated with lower likelihood. We conclude that believing that excessively thin body images in the media promote poor body image is associated with support for a healthy body image Charter.

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## C-114

### AN ETHNOGRAPHIC STUDY OF WOMEN'S HEALTH ACROSS THE LIFESPAN

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Objective: To use ethnographic interviewing techniques to study adult women's health habits specific to weight management throughout their lifetimes.
Method: Ethnographic interviews were conducted with 55 Hispanic and non-Hispanic white women using traditional semi-structured techniques advocated by Kleinman (1980) to study culture and health. Women were recruited using purposive sampling to include a variety of ages, physical activity levels, body weights, and socioeconomic status (SES). Each participant was also asked to complete a health habits questionnaire. All interviews were taped, transcribed verbatim, and subjected to qualitative thematic analyses.
Results: Women ranged in age from 17 to 61 years, were mostly overweight or obese (69%), ranged in SES from unemployed without high school diplomas to professionals with doctoral degrees. Although 83% indicated that they engaged in aerobic exercise in the last month, only 39% were active at recommended levels. Interviews were an average of 60+23 minutes long. Interview findings confirmed many of the determinants of health, weight gain, and physical activity that have been published previously including lack of time, life changes such as pregnancy and marriage, the influence of both positive and negative social support, and the impact of cultural norms. However, our findings provided new insight into the importance of early life experiences in the adoption and maintenance of a healthy lifestyle as adults. For example, the importance of male family members and male friends in childhood for the development of lifetime physical activity habits. Unlike previous findings with similar interview techniques, we found that mental health had a substantial impact on a number of health-related behaviors, especially dietary intake.
Conclusions: This study provides an in depth understanding of how women's health habits develop from early childhood and are influenced by life events and mental health. This knowledge can be used to develop programs to promote healthy eating and physical activity specific to women of different ages and from different cultures.

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## C-115

### INCREASED ENVIRONMENTAL RESOURCES FACILITATE HIGHER PHYSICAL ACTIVITY LEVELS AMONG ADOLESCENTS RESIDING IN HAWAII: THE HEALTH ACTION AND RESEARCH TRAINING (HART) PROJECT

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Youth obesity has spread to epidemic proportions, becoming a severe concern in the state of Hawaii. Although physical activity (PA) contributes to decreased risk of obesity and associated diseases, only a small percent of adolescents meet national recommendations. Previous research reports a positive association between PA and accessibility to supportive resources, demonstrating higher PA levels among youth living in close proximity to resources (e.g., gyms, green spaces, sports fields, etc.). However, similar minority examinations remain a high research priority. The current study examined adolescents' perceived accessibility to supportive environmental resources and the potential influence on their PA level. Participating adolescents were 11th (85%) and 12th grade (15%) students who were recruited from five high school classrooms in Hawaii. Participating adolescents were 75% female, 68.4% Filipino, 20.2% Filipino/mix, and 11.4% with a mean age of 17.0 (standard deviation (SD) =7.7). Data were collected via surveys and corresponding focus groups, whereby adolescents self-reported their daily PA levels and the number of supportive PA resources within walking distance of his/her home. Multiple linear regression models were used to estimate mean differences in the metabolic equivalents (METs) of adolescents' walking, moderate, and vigorous PA for residing in an area with additional supportive resources. Significance was considered at a 95% alpha level. The mean number of environmental resources within walking distance was 2.27 (SD=1.40). Accessibility to greater resources was positively associated with adolescents' MET walking minutes (n=94; β=0.25, p=0.01, CI=33.65-236.44) and MET minutes of moderate PA (n=104; β= 0.23, p=0.01, CI=73.0-559.78). The current association between supportive environmental resources and PA among ethnic minority adolescents should be considered in future intervention development. Further research is needed to determine whether creating more accessibility to PA resources will increase activity levels.

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## C-117

### MINDFULNESS, STRESS, AND COPING: RESULTS FROM A DAILY DIARY STUDY ON FIREFIGHTERS

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Although research has found mindfulness to be negatively related to mental health problems among firefighters (Smith et al., 2011), little is known about the effects of mindfulness practice on individual coping behaviors in this population. The goal of the current study was to understand the relationship between daily mindfulness, stress, and negative coping behaviors among urban firefighters (N=84; 74% male, 69% Non-Hispanic Caucasian) who completed a 21-day daily diary study. Items were selected and administered daily from the MAAS (Brown & Ryan, 2003) to measure the degree to which participants practiced mindful thinking and behavior and the Brief COPE (Carver et al., 1997) to assess the degree to which participants used different categories of both positive and negative coping behaviors. Negative coping categories included distraction, venting, denial, alcohol use, blame, and behavioral disengagement. Overall stress was measured using a Likert scale. Hierarchical linear modeling (HLM) was used to test study hypotheses that more daily mindfulness would predict less negative coping behaviors. Demographics and firefighter-related variables were included in the model as Level 2 control variables. Level 1 predictors (stress, mindfulness, stress x mindfulness) were centered within individuals. Daily mindfulness exerted main effects on distraction coping (B=-.08, p=.010), venting to cope (B=-.05, p=.048), and blame coping (B=-.09, p<.001). Significant mindfulness by stress interactions were found for distraction coping (B=-.06, p=.002) and blame coping (B=-.09, p<.001) such that under high stress, the relationship between mindfulness and less negative coping was stronger. Results are consistent with literature on the benefits of mindfulness for emotion regulation and stress management and suggest that mindfulness-based interventions may be important for firefighters as a means to reduce negative coping behaviors.

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## Citation and Meritorious Poster

## C-118

### DAILY DIARY FINDINGS ON SOCIAL RESILIENCE VARIABLES, MINDFULNESS, AND TRAUMA DISTRESS AMONG URBAN FIREFIGHTERS

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The purpose of this study was to understand the relationship between social resilience indicators and mindfulness among a population that is at risk for stress-related disorders. The sample consisted of 84 urban firefighters (74% male, 69% Non-Hispanic Caucasian) who were asked to answer questions about social variables at work, mindfulness, responding to work-related calls, and PTSD symptoms for 21 consecutive days. Because mindfulness may impact mood regulation (Chambers et al., 2009) and decrease the likelihood of dissociation (Follette et al., 2006), we wanted to see whether (1) mindfulness was related to distraction level while on calls and (2) whether mindfulness was related to level of distress from traumas. Additionally, because this population is difficult to access clinically, we wanted to see whether social resilience indicators among the firehouse were related to mindfulness. Hierarchical linear modeling (HLM) was used to test study hypotheses. Demographics and firefighter-related variables were included in the model as Level 2 control variables. Level 1 predictors (mindfulness and social resilience variables) were centered within individuals. Results from HLM suggest a significant effect of mindfulness on level of distraction while on call (β=-.46, p<.001) and distress from same day trauma (β=-.53, p=.004). A trend was found between mindfulness and distress from past trauma. Supervisor support (β=.08, p=.037) was related to mindfulness. A trend was found for crew cohesion. The relationships between social resilience variables, mindfulness, call distraction, and PTSD variables suggest that interventions working with pre-existing firehouse variables may help combat stress-related disorders and help firefighters manage distress and maintain focus during emergency calls. Results support the emphasis of mindfulness and social resilience in interventions such as the Mind-Fit Program (Coulter et.al, 2010; Hufford et.al, 2010).

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## C-120

### PREDICTORS OF LIKELIHOOD OF HIRING A HEALTH CARE ADVOCATE FOR AN ILL PARENT

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The increased life expectancy in the US has resulted in an increase in the number of adult children who are caregivers for their aging parents. Caregiving has been increasingly viewed as a team effort; however, more than half of caregivers do not receive outside assistance. A Health Care Advocate (HCA) may serve as a valuable resource for aging adults who are ill and need assistance with navigating the health care system. HCAs are paid professionals who coordinate the patient's health care and provide supportive assistance. Little is known about the factors that predict the likelihood of hiring an HCA for an ill parent.

In the present study, the characteristics of adults who reported a high or low likelihood of hiring an HCA for their ill parent (N=314) were examined, using discriminant function analysis. The predictors were age, income, education, distance one lived from parent(s), level of responsibility one felt for his/her parent(s)' welfare, and confidence in his/her understanding of an HCA's role. The discriminant function maximally separated individuals who would hire an HCA (M=.377) and those who would not (M=-.328). The standardized discriminant function/structure coefficients were as follows: age (-.267/-.114), income (.026/.025), education (-.196/-.176), distance from parent(s) (.130/.033), responsibility for parent(s) (.567/.570), and comprehension of HCA (.766/.792). These values suggest that the best predictors for distinguishing between those who would hire an HCA and those who would not were level of perceived responsibility for the parent(s)' welfare and confidence in the understanding of an HCA. Those with a higher likelihood of hiring an HCA were more likely to feel responsible for their parent(s)' welfare and were more likely to report a better understanding of an HCA's role. Overall, 64.3% of the sample was correctly classified into the appropriate groups. Further research is needed to better understand the factors that predict the likelihood of hiring an HCA for an ill parent.

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## C-121

### PERCEIVED QUALITY OF LIFE AS A MEDIATOR OF ANXIETY FOLLOWING MILD TRAUMATIC BRAIN INJURY

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PURPOSE: Mild Traumatic brain injury (mTBI) can influence longstanding neurological and emotional functioning. The aim of the current study was to examine perceived quality of life (QOL) as a mediator between mTBI status and anxiety symptoms.

METHODS: mTBI (n=18) and control (n=12) subjects were given the Beck Anxiety Inventory (BAI) to assess anxiety and the World Health Organization Quality of Life (WHO QOL) questionnaire to examine QOL across a variety of psychosocial domains. Overall QOL along the subscales were examined as a mediator between mTBI status and anxiety using Baron and Kenny's (1986) steps for establishing mediation.

RESULTS: Overall QOL, as well as several constituent domains, was found to significantly mediate the relationship between mTBI status and anxiety. Step 1) mTBI status significantly predicted anxiety (R2=.30, β=-.55, p<.01). Step 2) mTBI status predicted overall QOL (R2=.32, β=.57, p<.01). Step 3) QOL predicted anxiety (R2=.46, β=-.680, p<.01). Step 4) When QOL was entered as a mediating variable, overall QOL significantly predicted anxiety outcome (R2=.50, β=-.54, p<.02), while mTBI status became a non-significant predictor (β=-.23, p=.23).

CONCLUSIONS: These findings suggest that treatment interventions for mTBI that focus on improving perceived QOL may lead to reduced levels of anxiety after injury. Understanding the relationship between psychosocial factors and emotional health can inform treatment strategies for individuals with mTBI. This may involve incorporating psychosocial and psychological interventions to aid in rehabilitation following injury.

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## C-122

### DOES MEDICAL TRUST INFLUENCE PATTERNS OF HEALTH INFORMATION SEEKING?

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Data show that medical trust is associated with a range of health behaviors. However, previous work has not addressed the association between trust and use of the most common sources of health information: the internet and physicians. The current study examined the association between medical trust and patterns of health information seeking. Participants were 2764 adults age 18 and older recruited through a quota sampling strategy in Queens, NY (mean age=44.9 years; 27% Latino, 32% Black, 15% Asian, and 26% White). Participants completed interviews that assessed demographics and healthcare access. They also responded to a brief measure of trust of doctors and hospitals. Participants who reported ever looking for health information completed a checklist of potential health information sources. Based on these responses, participants were categorized as using multiple sources except for formal medical resources (20.1%); multiple sources except for the internet (29.9%), and multiple sources including both medical resources and the internet (50.0%). The relatively small number who used neither was excluded from analyses. Multivariable logistic regression was conducted adjusting for demographics and healthcare access. Results showed that as medical trust increased, so did the likelihood that one was a non-user of the internet rather than a non-user of medical resources (OR=1.212, CI:1.039-1.414, p<.01), suggesting that those with higher trust were more likely to obtain health information through medical resources rather than the internet. Furthermore, as trust increased, so did the likelihood of use of both medical resources and the internet versus non-use of medical resources (OR=1.255, CI: 1.097-1.435, p<.0009). Results are consistent with previous work suggesting that online health information seeking increases a patient's reliance on healthcare providers and settings for help interpreting that information, thereby providing more opportunities to build medical trust.

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## C-123

### THE CONSEQUENCES OF NEWS ORDER IN BAD NEWS CONVERSATIONS

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Health professionals who communicate bad news to patients often include good news during the bad news conversation. Research on improving sequences indicates that ending on a high note may buffer recipients against negative emotional reactions to the news. However, this reassurance can subsequently undermine patients' motivation to make positive changes to their health-related behavior. In this study we examined how news order influenced participants' emotions and behavior. Participants (N=152) completed a health knowledge test assessing competence in areas such as cardiovascular health, cancer awareness, disease symptoms and were randomly assigned to one of three conditions to determine how they would receive the (ostensible) results of their test: bad news only, good news-bad news, or bad news-good news. Following receipt of the test results, participants completed measures assessing their emotional (ratings of mood, disappointment, and concern) and behavioral (viewing the test key) responses to the news. Analysis of variance and planned contrast analyses revealed that news order condition influenced emotional responses to the news, Fs>8.32, ps<.01, such that participants in the bad news only condition reported the most negative emotional responses and participants in the bad news-good news condition (who ended on a "high note") reported the most positive responses. In contrast and also as predicted, chi-square analyses revealed that participants in the bad news-good news condition were most likely to look at the test key to improve their health knowledge, $\chi^2$ (2, N=150)=4.54, p=.05 one-tailed, φ=.17. These results suggest that the best way for health professionals to give bad news depends on the goals of news delivery. If they wish to mitigate patients' negative emotional reactions, incorporating good news and ending on a high note may well serve this purpose. However, this strategy of buffering negative affect may reduce patients' motivation to engage in behavior change. Our findings provide support for the role of one important aspect of bad news delivery, news order, which has consequences for the success of news delivery.

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## C-124

### IMPORTANCE OF FULL-TIME WORK FOR URBAN ADULTS' MENTAL AND PHYSICAL HEALTH

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AIMS: Unemployment and underemployment have negative mental and physical health consequences, such as increased stress and depression. Health damaging behaviors like smoking, alcohol use, and unhealthy eating may be used to cope, contributing to chronic disease risk. In this adverse economic climate, the health implications of un- and under-employment as well as the mechanisms involved are vital to understand.
METHOD: A community health needs assessment was conducted in New Haven CT. Randomization of households from six low resource communities yielded 1205 interviews (73% participation) with racially diverse adults (61% Black, 20% Latino, 12% White) ages 18-65 (61% women). We used ANOVA to test group differences and regression to test mediation.
RESULTS: 14.5% were unemployed and looking for work, 18.4% worked part-time, 38.2% worked full-time. Those unemployed reported the most smoking and drinking, the least healthy and the most unhealthy eating, the least physical activity, and the highest levels of stress and depression. Those employed part-time fell in the middle, and those employed full-time on the healthy end of all behavioral and psychological factors (all ANOVA, p<.05, controlling for age and sex). Depression significantly mediated the association of employment status with frequency of healthy eating. Stress significantly mediated the association of employment status with amount of cigarette and alcohol use, as well as frequency of unhealthy eating.
DISCUSSION: Compared to <10% nationwide, rates of unemployment in this sample were high. Both un- and under-employment resulted in adverse health behaviors, in part mediated by heightened levels of stress and depression. Increases in unhealthy coping strategies and chronic disease may follow national increases in unemployment. It is vital for the health and well-being of the nation to increase not simply employment, but specifically full-time employment. Provision of mental health services to those un- and under-employed should be a priority to promote healthier lifestyles and prevent future chronic disease.

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## C-125

### BARRIERS RELATED TO THE IMPLEMENTATION OF AN INFORMATICS INTERVENTION INTO REGULAR CLINICAL PRACTICE: A LEADERSHIP PERSPECTIVE

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The importance of studying real world implementation of efficacious interventions and the roles of key players for implementation success, such as leadership, is highly recognized. This study explored clinical managers' experiences and perceptions about the implementation of an informatics intervention called Choice into regular clinical practice. Choice is designed to support patient-provider communication and had shown to be efficacious in a previous RCT.
6 nurses and 3 physicians in leadership positions at the 5 units in which Choice was implemented were interviewed post-implementation according to a structured interview guide. The following barriers emerged from the transcribed interviews: In spite of extensive preparation and training prior to implementation, more was needed; there was still resistance to change practice and a lack of motivation among some care providers. Also, time pressure and high turn-over rates required continuous re-training that hampered intervention use. Managers perceived sustained support from and collaboration with the interventionists as vital for the integration of Choice into routine practice.
This study confirms that attitudes, established practices and clinical cultures are deeply rooted and hard to change. More research is needed to identify strategies for overcoming these barriers, and how leadership may be better supported to utilize the key role they play for implementation success.

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## C-126

### QUALITY OF LIFE, DEPRESSIVE SYMPTOMS, AND FUNCTIONAL LIMITATION IN ADULTS WITH ARTHRITIS

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Background: Individuals with arthritis often report worse quality of life (QOL) than the general population and adults with other chronic conditions. Pain and/or functional impairment most often account for the lower QOL ratings, although poorer mental health may also play a role. Arthritis has a high attributable risk of co-morbid depression, and functional limitation may be the largest contributing factor. The relationship between depression and functional limitation may be a self-perpetuating cycle by which increased depressive symptoms (caused by initial function limitation) contribute to more functional limitation, which may worsen QOL.
Purpose: The purpose of this study was to examine the associations between QOL and depressive symptoms with both perceived disability and measured physical functioning in a diverse sample of adults with arthritis.
Methods: Adults with arthritis (n=361) completed the Center for Epidemiological Studies Depression Scale, short form (CES-D), the CDC QOL measure of unhealthy days, and the Health Assessment Questionnaire (HAQ) Disability Index. Measures of physical functioning were the 30-sec chair stand, 6-min walk test, grip strength, and seated reach test. Separate linear regression models tested the associations between QOL and each functional measure, controlling for age, gender, race, body mass index, and self-reported health status. Models were repeated for depressive symptoms.
Results: Participants averaged 56.1 (± 10.6) years; 86.4% were women; 64.8% white and 34.4% African American. More depressive symptoms and poorer QOL were associated with fewer chair stands (ps<.01) and poorer ratings on all 8 domains of the HAQ (ps<.01). Poorer QOL, but not depressive symptoms, was also associated with poorer performance on the 6-min walk test (p=.03). Depressive symptoms and QOL were unrelated to grip strength and seated reach.
Conclusions: In adults with arthritis, co-morbid depressive symptoms and poorer QOL were associated with poorer physical function and perceived disability. Both mental and physical health should be evaluated (and treated) in this population.

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## C-127

### PREVENTION OF TRAUMATIC BRAIN INJURY IN YOUTH AND ADOLESCENTS

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BACKGROUND. 70-80% of bicycle casualty deaths are caused by traumatic brain injury, a leading cause of death and disability. Current rates of helmet use in the Southeastern US are 1-2%. The Safe Kids East Central injury prevention program was customized for hospitalized patients and their caregivers. The overarching goal of this project was to reduce traumatic brain injury in children and adolescents by promoting bicycle helmet use via an inpatient educational program. We hypothesized that this program will be feasible and increase bicycle helmet use.
METHODS. 120 subjects with history of regular (>1x per week on average) bicycle riding, (mean age 10.0±3.6 years; 67M, 53F; 57W, 59B, 4 other) who were inpatients on the wards of the Children's Medical Center, Augusta, GA, were randomized to treatment ($n=58$) or control ($n=62$) groups. The intervention employed visual aids, i.e., gelatin-molded brain, eggs, and a clock-face mirror, to demonstrate the unfamiliar consequences of severe head injury. All participants received a bicycle helmet.
RESULTS. At pre-test, 40/120 subjects already owned a bicycle helmet and 11/40 wore his/her helmet regularly. 80% of the subjects indicated that they do not ride alongside an adult. Those that did ride with an adult claimed that of those adults, 16 wore a helmet while riding. 54 subjects (45%) had been involved in some type of bicycle-related accident; 2 of those subjects had required hospitalization as a result of their accidents. At one month post-intervention, 50 (92.6%) of the intervention group and 48 (82.8%) of the control group reported wearing a helmet every bike ride ($p<.07$). At 3 months follow-up, 50 (96.2%) of the intervention group and 44 (80%) of the control group reported wearing a helmet with every bike ride ($p<.03$).
DISCUSSION. The study proved feasible, although it required trained personnel to deliver the intervention. Providing a helmet without the intervention was effective in 80-83% of cases with respect to helmet wearing compliance. The intervention achieved a statistically significant 16.2% improvement in helmet wearing at follow-up.

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## C-128

### COPING MODERATES THE RELATIONSHIP BETWEEN PERCEIVED STRESS AND PATIENT-REPORTED SURGICAL OUTCOMES

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Although distress and maladaptive coping have been independently associated with poorer surgical outcomes, little research has examined whether coping plays a role in the relationship between distress and surgical outcomes. This pilot study examined whether denial coping moderates the relationship between perceived stress and surgical outcomes among 23 women (M age=49.8 years, SD=10.9) who underwent hysterectomy for either endometrial cancer (52.2%) or benign gynecologic disease (47.8%). Perceived stress, denial coping, and patient-reported surgical outcome were assessed 5-10 days post-surgery. Moderation testing used hierarchical linear regression, covarying for age and surgery method (minimally invasive versus open), followed by the Johnson-Neyman moderation test. There were no significant differences on any variables of interest by diagnosis. Greater use of denial coping significantly moderated the relationship between greater perceived stress and: greater pain impact ($b=-.18$, $p=.0448$, 95% Confidence Interval[CI]=-.351 - -.005); greater pain quality ($b=-.24$, $p=.0417$, 95% CI=-.474 - -.010); greater fatigue ($b=-.21$, $p=.0440$, 95% CI=-.413 - -.006); and greater negative impact on cognitive functioning ($b=-.18$, $p=.0378$, 95% CI=-.353 - -.012). Although preliminary, the results suggest that women who use greater denial coping have worse patient-reported surgical outcomes when they also have higher perceived stress in the early post-surgical recovery period. Future research is needed to explore strategies for enhancing adaptive coping during the peri-operative period, with the goal of optimizing patient-reported post-surgical outcomes.

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## C-129

### HEALTH-BASED SOCIAL COMPARISONS: EFFECTS OF INSTRUCTIONS TO FOCUS ON SIMILARITIES OR DIFFERENCES

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Comparisons to others can impact mood and motivation for healthy behavior. Identification (finding similarities) with healthy others and contrast (finding differences) with unhealthy others may be beneficial, but has not been experimentally tested. We examined responses to instructions to focus on similarities or differences (vs. no instruction) to healthy or unhealthy targets, and effects of instruction/target combinations on mood and motivation for healthy behavior. Participants ($N=116$) read one of two vignettes describing targets with healthy (e.g., regular exercise) or unhealthy (e.g., eating junk food) habits. Participants received one of three reading instructions: 1) focus on similarities, 2) focus on differences, or 3) no instruction. Participants reported their reading focus, mood, and motivation for healthy behavior. Group differences in focus on similarities ($p=.07$) and focus on differences ($p<.01$) showed divergent responses to instruction/target combinations. Groups instructed to focus on similarities focused more on similarities (vs. differences) with healthy targets ($p=.01$), but focused more on differences (vs. similarities) from unhealthy targets ($p<.01$). Instructions to focus on differences showed the opposite pattern. No-instruction controls focused somewhat more on similarities (vs. differences) with healthy targets, and more on differences (vs. similarities) from unhealthy targets. Motivation for healthy behavior was higher for instruction groups (vs. no instruction; $p<.05$), but did not differ by instruction type. Stress decreased from pre- to post-comparison in all groups ($p<.01$). Instructions to focus on similarities (or differences) to a target appear to amplify participants' natural (positive) focus. It may be ineffective to instruct identification with unhealthy targets or distinction from healthy targets; such instructions appear to be ignored in favor of self-enhancing comparisons. Superior motivation to engage in healthy behavior due to instruction (vs. no instruction) may result from greater engagement. Instructing focus on similarities or differences, dependent on the target, may be an opportunity for health interventions.

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## C-130

### INCREASING ADOLESCENT IMMUNIZATION: A BRIEF PROVIDER INTERVENTION AT FEDERALLY-QUALIFIED HEALTH CENTERS

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Objective. To evaluate brief, low cost intervention to increase uptake of adolescent vaccinations.
Method. In April 2010, clinical coordinators from seventeen federally-qualified health centers (serving 7,800 patients ages 12-17) participated in an intervention designed to increase uptake of recommended adolescent vaccines: tetanus, diphtheria, and pertussis booster; meningococcal conjugate; and human papillomavirus (HPV). Coordinators attended a webinar that reviewed provider-based changes recommended by the CDC's Assessment, Feedback, Incentives, and eXchanges (AFIX) program and received follow-up weekly emails.
Results. Uptake of targeted vaccines increased during the intervention period by about 1-2% (all $p<.05$). These increases were greater than those observed for non-targeted vaccines (measles, mumps, and rubella; hepatitis B; and varicella) ($p<.0001$).
Conclusion. This provider-based competition to increase vaccination rates using AFIX methods led to small increases in adolescent immunization for targeted vaccines over a one-month period. Short-term interventions at healthcare facilities, including federally-qualified health centers that function as "safety net" providers for medically underserved populations, could help decrease racial, ethnic, and regional disparities in vaccination uptake and morbidity and mortality associated with vaccine-preventable diseases.

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## C-131

### ROLE OF SELF-EFFICACY IN TASK AND DEFAULT NETWORK ACTIVATION IN OLDER ADULTS

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Self-efficacy (SE) has been identified as an important predictor of an array of health behaviors including cognitive performance. However, little empirical evidence exists that has examined the underlying sources of SE relative to executive control. The purpose of this study was to examine the contribution of activity in particular regions of the brain to SE independent of pre-existing SE expectations and actual performance on a challenging cognitive task. We were interested in the role played by brain regions, which have been associated with self-reflection including medial parietal cortex (MPC), middle frontal gyrus (MFG), anterior cingulate and the default network. Older adults(N=96; Mage=65.74) completed a dual task paradigm while lying in a 3 Tesla fMRI. SE for performance accuracy was assessed prior to and following the cognitive task. In order to compare groups based on levels of SE, we used the top(N=35, high SE, HSE) and bottom(N=31, Low SE, LSE) thirds of the sample for all analyses. Correlations showed all brain regions, task performance, and pre-task SE to be significantly associated with post-task SE. Results from a repeated measures ANOVA revealed that SE significantly differed by SE group, F(1,64)=57.25, p=.000. Hierarchical linear regression showed that individuals in the HSE group made fewer errors than those in the LSE group when fitness, education, and reaction time were statistically controlled, F(1,66)=4.56, p=.04. SE post-task, for those individuals in the HSE group only, was significantly predicted by increased activation in the MFG($\beta$=.438, p=.04) and decreased activation in the MPC($\beta$=-.416, p=.05); F(6,34)=2.59, p=.04, R2=.36. Similarly, being in the HSE group hand having decreased activity in the default network($\beta$=-.331, p=.04) was significantly related to SE post-task. These findings support a social cognitive perspective relative to the independent contribution of past performance in the formation of SE expectations. Additionally, they provide support for a social cognitive neuroscience position that particularized regions of the brain are instrumental in the process of efficacy formation.

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## C-132

### BEHAVIOURAL MANIFESTATIONS OF SOCIAL DESIRABILITY

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To secure social acceptance, individuals may describe themselves in socially desirable ways or behave in ways that are not congruent with their values or wishes. However, the behavioral manifestations of social desirability (SD) in day to day interactions have not been examined.

Method: 199 healthy working men (n=81) and women (n=118), aged 20 to 64 years (M=41; SD=11.45) reported on their interpersonal behavior and affect following social interactions up to 10 times a day over 21 days. Interpersonal behaviors were selected from the Interpersonal Circumplex. Social desirability was evaluated using the Marlowe-Crowne Social Desirability Scale.

Analyses: Multilevel regression models were constructed to test whether SD predicted event-level affect and interpersonal behaviour. Additional multilevel models were constructed to examine whether SD moderated event-level relations between affect and behaviour.

Results: Participants who endorsed more socially desirable traits evinced less submissive (p=.03) and more agreeable behavior (p=.03) across all interactions as well as greater dominant behaviour when at work (p=.006). SD predicted less anger and frustration (p<.05) and higher levels of positive affect following work interactions (p<.01), but lower levels of perceived bonds with others in non-work relationships. SD also interacted with both positive and negative emotions to predict behaviour, such that SDs were particularly dominant when they felt criticized, angry, or worried (p<.01), and less so when they felt respected (p<.05). In events with high levels of perceived criticism [p<.001] and resentment [p<.01], high SD participants reported lower levels of quarrelsome behaviour than low SD individuals did. No sex differences emerged.

Discussion: These results suggest that the association of social desirability with interpersonal behavior is sensitive to the contextual cues such as concurrent affect and work/nonwork events.

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## C-133

### WHAT IS BEING PERCEIVED? EXAMINING THE CHARACTERISTICS OF PERCEIVED DISCRIMINATION

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Perceived discrimination [PD] is associated with important health outcomes including stress responses, negative health behaviors, and disease risk. Despite considerable research across various populations and age groups, several gaps exist. First, individual studies are often homogeneous on some aspects of their sample (e.g., diverse regarding race, but limited on age). Second, most studies report the prevalence of PD, but do not examine the perceived source of discrimination. We addressed these limitations by recruiting a demographically diverse community based sample of 346 participants (50% white, 50% male, mean age=49 [range 19-83]), as part of a larger study, that completed self-report measures of PD. In addition, participants provided perceived reason (s) for reported PD (e.g., due to race/ethnicity, age, gender, religion, etc.). There was great variability in both reported PD and specific reasons cited for PD. African American participants reported significantly more PD than did Caucasian participants (p<.001), and were significantly more likely to identify race, financial standing, gender, education, occupation, language/accent, and appearance as sources of PD (all p's<.001). Surprisingly, women reported slightly less overall PD than did men (p<.02). As expected, women were more likely to identify gender (p<.0001) as a source of PD, but were no more likely than men to report other PD sources. Age predicted less report of overall PD (r=-.19, p<.0009). Older participants were more likely to report age as a source of PD (p<.0003), but less likely to report race, finances, occupation, or mental health conditions as sources (p's<.05). Socioeconomic status, indexed by education and income, was related to less overall PD (r=-.20, p<.0003), and less frequent identification of most sources of PD (p's<.01). This study highlights both the richness and complexity of PD. Understanding not only the prevalence but also the sources of discrimination may lead to improved risk estimation and the development of tailored and more effective treatments.

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## C-134

### IMPROVING ADHERENCE IN ADOLESCENTS ON HEMODIALYSIS WITH END-STAGE RENAL DISEASE: A FEASIBILITY STUDY

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End-stage renal disease (ESRD), an incurable condition where both kidneys function at <15%, affects 7,216 children yearly in the U.S. Treatments include dialysis and kidney transplantation. Patients are prescribed diet changes, fluid restrictions, and multiple daily medications. Nonadherence is common and related to medical complications and death. Only 40% of children on dialysis are adherent to their regimen and adolescents are the least adherent age group. This is the first study to evaluate the feasibility of an adherence intervention with adolescents on hemodialysis (HD) for ESRD. A case study design was used with an African American adolescent male (P1) and female (P2) and their mothers. The manualized, six-module intervention included barrier identification, problem solving, clarification of adolescent and parent responsibilities for adherence, cognitive restructuring for illness- and treatment-related thoughts, and emotion regulation strategies. The intervention was administered while participants were undergoing HD. Participants completed weekly adherence and responsibility measures to assess outcomes. Results indicated that P1 was adherent during the first half of baseline due to total maternal assumption of responsibility. His mother became frustrated during baseline and abdicated responsibility to her son who previously assumed no responsibility. His non-adherence steadily increased along with high weight gain due to water retention. However, after the cognitive restructuring module, his responsibility and adherence improved, and he had less water retention between HD sessions. P2 was adherent to medications she considered vital to her health throughout the study. However, for medications she considered non-vital, adherence ranged from 10% to 54% during baseline but improved to 80% to 100% by the end of treatment. The study demonstrates the feasibility of implementing an adherence intervention during adolescents' HD sessions and tailoring the treatment to meet individual needs.

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## C-136

### IMPROVED PSYCHOLOGICAL DISTRESS AND FUNCTIONING IN ADOLESCENTS WITH CHRONIC PAIN

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Chronic non-cancer pain is common in children and adolescents. The impact of chronic pain in this population can be significant and affect the individual's ability to participate in school, interact socially with their friends, and engage in enjoyable activities. Only recently have research efforts focused upon multidisciplinary pain rehabilitation in the treatment of pediatric pain despite extensive literature supporting its effectiveness in adults. The purpose of this study was to determine the efficacy of a 3-week Pediatric Pain Rehabilitation Program in reducing pain-related disability and affective distress in children with chronic pain. Participants included 133 children 11-18 years of age with chronic pain referred for participation in a hospital-based outpatient multidisciplinary pain rehabilitation program. Baseline measures of opioid use, pain severity, physical functioning, functional disability, school attendance, and psychological distress, as well as demographic information, were collected upon admission and measures were repeated at discharge from the 3-week program. Patient satisfaction with the program was assessed at discharge. Ninety-six (95.7%) percent of the children completed the 3-week program. Seventeen (17.3%) percent of the participants were taking opioids at admission to the program and all but two (1%) patients were completely tapered off of these medications at the end of the three week program. Significant improvements were observed in pain severity, physical functioning, functional disability, level of depression, and pain catastrophizing at the end of the program suggesting that a multidisciplinary pain rehabilitation program can achieve significant improvements in functioning in children with chronic pain while successfully discontinuing their use of chronic opioids. Patient satisfaction measures suggested that a multidisciplinary approach to chronic pain management is viewed as acceptable and beneficial.

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## C-137

### EMOTION REGULATION MODERATORS OF EMOTIONAL AWARENESS AND EXPRESSION TRAINING AND RELAXATION TRAINING FOR CHRONIC HEADACHES

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Stress exacerbates chronic headaches (HA), and interventions that down-regulate emotions and arousal, such as relaxation training (RT), are moderately effective. Both stress and pain, however, are exacerbated by suppressing negative emotions, particularly anger. We have reported that an innovative 3-session, group-based anger awareness and expression training (AAET) was comparable to group RT in improving outcomes in HA, and both treatments surpassed no intervention. Young adults (n=149; 87.9% female; 38.3% European American, 24.8% African American, 12.8% Middle Eastern, 10.7% Asian) with chronic HA were randomized to 1 of the 3 conditions, and we assessed headaches, physical symptoms, and affect at baseline and 6-week follow-up. Because individuals likely respond differentially to these interventions, we now test whether baseline emotion regulation abilities (Toronto Alexithymia Scale-20: difficulty identifying feelings, difficulty describing feelings, and externally oriented thinking) moderated the effects of AAET, RT, and control on residualized outcomes. Significant regression interactions between emotional regulation and treatment condition indicated that greater baseline levels of both difficulty identifying feelings and difficulty describing feelings predicted reductions after AAET in pain severity (r's=-.41, -.35) compared to RT (r's=.18, .13), and reductions in physical symptoms (r=-.19, -.21) compared to control (r=.44, .35). Interactions predicting reduced anxiety were marginally significant with the same pattern. In contrast, the opposite pattern occurred for externally oriented thinking, which predicted greater physical symptoms after AAET (r=.31) compared to RT (r=-.11). Thus, as hypothesized, the novel AAET intervention was more appropriate for people who have difficulty identifying and expressing their feelings, but not for those who lack psychological insight who did better with RT. Emotional expression and RT interventions for HA (and likely other pain conditions) should be targeted to appropriate patients.

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## C-138

### GENDER DIFFERENCES IN EMOTION-FOCUSED COPING AMONG OSTEOARTHRITIS PATIENTS

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Gender differences in coping goodness-of-fit (match between coping style and perceived control) and depression for older individuals with osteoarthritis (OA) has not been examined. For the present study, coping was categorized as problem-focused, emotion-focused, or meaning-focused. Participants (N=363; 233 women and 130 men) were health maintenance organization members who were participating in a larger intervention study. Hierarchical linear regression was used to test the effects of coping, control, and gender on depression. Demographic variables were entered on the first step. On the second step, main effects for coping strategies, perceived control, and gender were entered. On the third step, two-way interactions were entered. On the fourth step, 3-way interactions were assessed.

The main effect terms accounted for a significant amount of the variance in depression, after controlling for demographic variables (ΔR2=.130, F(8, 230)=4.150, p<. 001). Control was related to lower depression (b=2.288, p<.001). Gender was significantly related to depression (b=1.977 p=.044). On average women had higher depression scores than men. Two-way interactions did not account for significant additional variance in depression. The 3-way interaction between emotion-focused coping, control, and gender was significantly related to depression scores (b=-10.290, p=.016). The final model accounted for 22.3% of the variance in depression scores. The relationship between control and depression varied as a function of emotion-focused coping differently for women than for men. Women who reported low perceived control and less use of emotion-focused coping were more depressed than women who reported high perceived control and less use of emotion-focused coping. Men who reported high perceived control and high use of emotion-focused coping were more depressed than men who reported high perceived control and less use of emotion-focused coping. The results indicate that interventions targeting older adults with OA should consider gender difference in coping behavior and outcomes.

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## C-139

### PREDICTORS OF OPIOID MISUSE AMONG PATIENTS WITH CHRONIC NON-ALCOHOLIC PANCREATITIS PAIN

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Over the past two decades, there has been a dramatic expansion in the use of prescribed opioid analgesics. At the same time, prescription opioids have surpassed cocaine and heroin as the leading drugs of abuse. Physicians have the difficult task of predicting which patients might be at risk for developing opioid misuse problems, and this has not been studied in the chronic pancreatitis population. This cross-sectional study assessed psychosocial variables that may be associated with chronic pain and potential opioid misuse in a sample of individuals with chronic pancreatitis. Self-report data was collected from 307 patients (39% female) with non-alcohol-related, intractable pancreatitis, who were all engaged in chronic opioid therapy for pancreatic pain. Participants completed the Current Opioid Misuse Measure (COMM), Brief Pain Inventory (BPI), SF12 Quality of Life Measure, Center for Epidemiological Studies 10-item Depression Scale (CESD), and a single item asking about current alcohol use. The mean CESD score of the sample was 11.23 (SD=6.66). Mean scores on the COMM, BPI pain-on-average item, and the SF12 physical and psychological quality of life factors (t-scores) were: 8.53 (SD=7.25), 4.81 (SD=2.78), 39.74 (SD=6.92), and 44.96 (SD=9.02), respectively. Descriptive analyses revealed that 54.5% of participants scored above the clinical cut-off for depression on the CESD and 39.1% scored above the cut-off for opioid misuse concerns. Exploratory regression analyses indicated that several factors were unique predictors of opioid misuse measure scores among pancreatitis patients including depression score from the CESD (β=.38, p<.0001), pain rating at the time of the office visit (β=.16, p=.03), psychological quality of life (β=-.27, p=.001) and endorsement of the current use of alcohol (β=.16, p=.03). These factors accounted for 37% of the variance in current opioid misuse scores. This exploratory study suggests that depression, quality of life, pain intensity and alcohol use may be good candidate variables for more prospective studies to determine psychosocial risk factors for opioid misuse among pancreatitis patients.

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## C-140

### PSYCHOLOGICAL COPING STYLES AS POTENTIAL INDICATORS OF OPIOID MISUSE

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Prescribing pain medications, especially opioids, requires psychological assessment and risk stratification as a routine part of screening for appropriateness for treatment.

Evidence supports the link between substance abuse disorders and psychopathology, but less is known about the characteristics of abusers of opioids specifically. We hypothesized that maladaptive coping styles would relate to opioid-based aberrant behaviors.

Million Behavioral Medicine Diagnostic (MBMD) data using 172 chronic pain outpatients were analyzed. The Screener and Opioid Assessment for Patients with Pain Revised (SOAPP-R) indicated potential aberrant behavior. Hierarchical regression analysis compared psychiatric indicators' and coping styles' ability to predict total SOAPP-R score. Analyses adjusted for number of pain sites and coping styles that may foster medication misuse. Model (1) indicated that Number of Pain Sites ($b=1.22$, $p<0.01$) significantly predicted opioid misuse, and accounted for 6% of variance. Model (2) ($R2=36\%$, $p<.001$) indicated that Dejected ($b=0.09$, $p<0.01$) and Oppositional ($b=0.16$, $p<0.01$) coping styles significantly predicted opioid misuse. Oppositional Coping style was the variable of greatest impact in the model ($\beta=.28$, $p<0.01$).

Opioids are a leading cause of ER visits and drug treatment admissions, and are the current focus of urgent national public health initiatives. This data suggests that negativistic and depressive coping styles have the potential to significantly increase risk of prescription opioid misuse. This information can potentially aid prescribers in the risk stratification process. Patients with these characteristics may require increased pharmacovigilance.

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## C-141

### PSYCHOSOCIAL PREDICTORS OF HEALTH CARE UTILIZATION IN CHRONIC PAIN PATIENTS IN RURAL ALABAMA

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Chronic pain affects an estimated 116 million American adults. Patients with pain are high consumers of health care resources. Most of the studies examining health care utilization (HCU) in chronic pain patients have been conducted in large urban settings. There is little research examining HCU patterns and predictors in rural areas, where low socioeconomic status is a common issue. This study examines psychosocial factors affecting HCU in patients residing in rural AL who participated in psychosocial treatment for chronic pain. Based on previous literature, it was hypothesized that depression, disability, education, and quality of life would predict the number of visits and interval between visits in 3 months prior to pain management groups . HCU data was gathered from medical records at two AL rural health centers and included number of visits, interval between visits, prescription analgesics, and comorbities. Participants completed Pain Catastrophizing Scale, Roland Morris Disability Scale, Quality of Life Scale and Center for Epidemiologic Studies Depression Scale. Medical records for 64 participants were available for review. Participants were predominantly African-American (67.2%) females (73.4%) with an average age of 49.34 years and mean duration of pain of 18.5 years. Multiple regression revealed that higher depression, higher pain catastrophizing, and lower quality of life [$F(3,59)=3.77$, $p=0.015$] predicted greater number of visits with depression accounting for most of the variance ($\text{beta}=0.355$). A similar analysis revealed that pain catastrophizing predicted the average interval between visits [$F(3,30)=3.09$, $p=0.042$, $\text{beta}=0.416$]. Thus, although rural patients in this study shared some common predictors with urban patients, catastrophizing predicted HCU in our rural study, not frequently found in urban patients. Further, contrary to urban pain population, disability and education did not predict visits in this rural sample. To conclude, rural populations are understudied and require additional research.

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## C-142

### PAIN REFERENCES USED IN A TRAIT CATASTROPHIZING MEASURE

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Pain catastrophizing is a robust predictor of adverse pain-related outcomes. Pain Catastrophizing Scale (PCS) is widely used; standard instructions ask participants to think about their painful experiences and the thoughts and feelings they have when they are in pain. Yet, it is not really known what types of pain participants are referring to when endorsing the PCS items. In this study, we asked 47 patients with chronic pain as well as 182 undergraduates to complete PCS, thereafter asking what pain they were thinking of when completing the measure. In addition, they were asked their primary pain (chronic pain in case of patients with pain and worst pain experience in case of undergraduates). It was hypothesized that most patients with chronic pain would report thinking about their ongoing chronic/recurrent pain condition whereas majority of the undergraduates would refer to their worst historical pain experience. 83% of the patients with chronic pain referred to their pain while only 46% of the undergraduates referred to their worst pain ($p<0.001$). Patients with chronic pain scored higher ($M=22.39$) on PCS than the undergraduates ($M=14.62$) [$t(229)=4.962$, $p<0.001$]. Patients with chronic pain endorsed low back pain (34%), arthritis (13%), and pelvic pain (11%) as the most common referents while the undergraduates most commonly endorsed acute pain episodes due to injuries/accidents (29%), headaches (22%), and menstrual pain (15%) as referents. The number of referents predicted PCS scores in patients with chronic pain, with higher number of referents associated with higher catastrophizing scores [$F(1,46)=5.055$, $p=0.029$, $\text{beta}=0.315$]. In contrast, no such association was found between in the undergraduates. Further analyses revealed that 43.9% of the undergraduates reported having chronic pain ($n=80$). Higher number of undergraduates reporting pain (69%) referred to their worst historical pain compared to the undergraduates not reporting pain (53%) ($p=0.024$). Clinical implications of these results will be discussed.

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## C-143

### COMPONENTS OF DENTAL FEAR AND PHOBIA AND RELATION TO PAIN OVER TIME

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Introduction: Fear of dental procedures is linked to exaggerated recall of dental experiences, including pain and anxiety (Kent, 1985). There is, however, a paucity of research on how particular components of dental fear may influence report of pain at different time points. This study examined how three components of dental fear and phobia predicted pain reported immediately before the dental procedure, the patients' expected pain, post-procedure pain, and recall one month later.

Methods: Participants included 157 outpatients undergoing surgical tooth extraction who were recruited from the West Virginia University School of Dentistry Oral and Maxillofacial Surgery Clinic. Participant age ranged from 19 - 80 ($M=37.95$ years, $SD=13.66$ years); 55.4% ($n=87$) were female and 44.6% ($n=70$) were male. Participants completed the Dental Fear Survey, yielding subscale scores across the three major components (i.e. behavioral avoidance, fear of dental stimuli, and physiological arousal). Prior to the onset of the procedure, participants rated their current pain using a numerical rating scale from 0 to 100; they also rated their expected maximal pain during the procedure. With the same scale, immediately post-procedure, participants rated the pain they endured during the procedure and 1-month later reported their recall of the pain during the procedure.

Results: Regressions revealed that behavioral avoidance significantly predicted in current pain, $\beta=.72$, $p<.05$, and expected pain, $\beta=1.28$, $p<.001$. Fear of dental stimuli significantly predicted expected pain, $\beta=1.16$, $p<.005$. Lastly, physiological arousal during dental procedures significantly predicted all four reports of pain.

Conclusion: Results suggest that there are differences between components of dental fear that are significant in initial, expected, reported, and recalled pain. Discerning the specific aspects of patients' dental fear may allow for interventions to be more tailored and, thus, more effective.

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## C-145

### EARLY MATURATION AND PHYSICAL ACTIVITY IN ADOLESCENT FEMALES: CAN "A LITTLE HELP FROM YOUR FRIENDS" MAKE A DIFFERENCE?

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Background: Using Petersen and Taylor's Model of Biopsychosocial Development as a conceptual framework, we examined the main and interactive effects of biological maturity status and perceived peer acceptance on physical activity (PA) and health-related quality of life (HRQoL) in adolescent females.
Methods: A cross-sectional design was used. 349 female British students in years 7 to 9 (mean age=13.2 years, SD=0.83) completed the Physical Activity Questionnaire for Adolescents, and the KIDSCREEN-10, the measure of HRQoL. Self-reported perceptions of peer acceptance were measured by items from the National Longitudinal Study of Adolescent Health. Maturity status was estimated as the percentage of predicted adult (mature) height attained at the time of observation. Analyses of co-variance testing for main and interaction effects of biological maturity status (early, 'on time' and late) and peer acceptance (high and low) on PA and HRQoL, controlling for chronological age, were employed.
Findings: Our findings suggest that maturity status meaningfully contributes to the differences in PA F(2,342)=6.77, p=.001, η2=.04, and that this relationship is moderated by perceived peer acceptance F(2,342)=7.92, p=.000, η2=.04. Both early and 'on time' maturing girls reported higher levels of PA. Peer acceptance was the only meaningful and positive contributor to HRQoL F(1,342)=24.47, p=.000, η2=.07.
Conclusions: Our study suggests that peer acceptance may counter some reductions in physical activity associated with early maturation in adolescent females. Accordingly, an emphasis on fostering positive relationships among peers may go a long way in encouraging early and on time maturing adolescent girls to remain active.

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## C-146

### RELATIONSHIP OF CRIME AND PHYSICAL ACTIVITY RESOURCE INCIVILITIES TO PHYSICAL ACTIVITY IN MINORITY WOMEN

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Women and ethnic minorities report the lowest levels of physical activity (PA). Women's PA is influenced by neighborhood safety and the quality of neighborhood places to do PA. This study examined relationships between 1) neighborhood crime and PA resource incivilities, 2) neighborhood crime and PA, and 3) PA resource incivilities and PA. African American and Hispanic or Latina women (N=311) in Houston TX (M Age=44.7 yrs; M BMI=34.8 kg/m2) completed the IPAQ long form, and trained assessors evaluated number and degree of incivilities using the Physical Activity Resource Assessment. Census block group (CBG) median household income for participant neighborhoods was obtained from the 2000 U.S. census. CBGs corresponding to participant addresses were given a crime index score, based on the FBI Uniform Crime Report. Bivariate correlations showed that CBG income was negatively correlated with crime index score r=-.453, and incivilities r=-.245, (ps≤.01). Path analyses showed that crime had a direct effect on incivilities (B=.201, p<.001), moderate PA (B=.141, p=.015), walking PA (B=.140, p=.016), and total PA (B=.149, p=.010), but there was no direct association between incivilities and PA, after adjusting for CBG income. Increases in crime index scores may lead to increases in the degree of PA resource incivilities. Crime index scores were associated with increases in PA. Perhaps resident perceptions of crime may be more likely to reduce PA than measured crime. Other neighborhood factors may have a more profound influence on PA in minority women; high crime neighborhoods are often urban areas with greater population density, street connectivity and land use mix.

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## C-147

### SOCIAL COGNITIVE PREDICTORS ACROSS PHYSICAL ACTIVITY STAGES OF CHANGE AMONG MULTIETHNIC CHILDREN

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Effects of Social Cognitive Theory (SCT) predictors on the Transtheoretical Model's (TTM) stages of behavior change for physical activity (PA) may inform intervention efforts. However, not much is known about SCT predictors and stages of PA change among multiethnic children. Therefore, this study examined the effect of SCT predictors (self efficacy, social support, and PA enjoyment) across the TTM's stages of change among largely Hispanic and multiethnic children. We hypothesized that children in the action and maintenance stages would have higher SCT variable scores than those in the pre-contemplation, contemplation, and preparation stages. A self-report questionnaire was administered to 4th and 5th grade children (n=257; mean age=10.2 [±.8]; 49.4% female; 46.5% Hispanic, 26.6% White, 26.9% other) from 4 elementary schools in Denver, Colorado. Overall, the self-efficacy mean was 3.18±0.76 (range=1-5); social support was 6.20±1.53 (range=0-8); and PA enjoyment was 4.31±0.73 (range=1-5). The stage of change distribution was pre-contemplation=3.57%, contemplation=4.76%, preparation=13.89%, action=27.38%, and maintenance=50.40%. Self-efficacy scores by stage were: pre-contemplation=3.07±0.79; contemplation=2.99±0.69; preparation=2.94±0.91; action=3.18±0.70; maintenance=3.30±.77. Social support scores by stage were: pre-contemplation=5.11±2.15; contemplation=5.83±1.03; preparation=5.79±1.80; action=6.13±1.45; maintenance=6.53±1.31. PA enjoyment scores by stage were: pre-contemplation=3.62±0.97; contemplation=4.18±0.92; preparation=4.16±0.79; action=4.29±0.69; maintenance=4.45±0.62. Social support by stage was significant (F(4,244)=3.80, p<.01) with pre-contemplation stage<maintenance stage. PA enjoyment by stage was also significant (F(4,246)=3.95, p<.01) with pre-contemplation stage<maintenance stage. Self-efficacy by stage was not significant (F(4,247)=1.85, p>.05). Interventions addressing Hispanic and multiethnic children's PA should consider the role of PA enjoyment and social support as they relate to stages of behavior change.

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## C-148

### UNDERSTANDING PERCEPTIONS AND EXPERIENCES OF CELLULAR PHONE USAGE IN LOW SOCIOECONOMIC YOUTH

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The ubiquitous nature of mobile technologies within the adolescent population provides opportunities to develop and test promising strategies to increase physical activity (PA). The purposes of this study were to examine the perceptions of, and experiences with, smartphones in low socioeconomic youth and to determine the potential of integrating smartphone features to promote PA. All youth in this qualitative study attended an afterschool program in a local Boys and Girls Club in Virginia. Three youth focus groups (n=14; mage=13.4 years) were conducted, each with questions guided by social cognitive theory and a social ecological model. Prior to focus groups, the children used smartphone applications that encouraged PA. All discussions were recorded and transcribed verbatim. Three researchers coded the data independently, met to review codes, and reconciled disagreements. The following results were consistent across focus groups. The children identified phone features that could potentially promote PA, such as texting, the ability to have frequent interaction and opportunities for social networking. Further, phone features such as the GPS, mapping, and camera tools were all identified as possible components of an approach to increase PA through smartphone use. Applications that encouraged walking or running were preferred to those that used only a discrete movement (e.g., shaking the phone). Children also indicated that they were most likely to download smartphone applications that were games and to use text messaging. Students responded favorably to most of the prototype activity games supported by the smartphones. Children wanted the ability to compete against others and majority wanted a positive and negative point system. These data represent the first step in the development of theory-based smartphone applications to increase PA in youth. Our findings suggest that interventions to promote PA in youth should include, but expand upon, features like text messaging and social networking.

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## C-149

### PREDICTORS OF PHYSICAL ACTIVITY AND FALLS RISKS AMONG DIVERSE OLDER ADULTS

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Physical activity (PA) is one important way to prevent falls, a severe, health-related risk of older adults (ACSM, 1998). However, only 26% of those between 65 and 74 years old and 10% of those over 85 years of age exercise regularly (USDHHS, 2000) due to low PA motivation (Grodesky et al., 2006). The stages of change (SOC; PA intention and behavior) are stipulated to mediate the relation between the theory of planned behavior (TPB) constructs and PA among adults with physical disabilities (Kosma et al., 2006). This study extended the aforementioned framework by exploring the effects of the TPB constructs and the SOC on, not only PA, but also falls risks among diverse older adults. Specifically, the first purpose was to examine the effects of attitude (perceived consequences of PA), subjective norm (SN; perceived social pressure to be active), and perceived behavioral control (PBC; self-efficacy and controllability) on PA through the SOC. The second purpose examined the effect of the TPB constructs and SOC on falls risks through PA. 173 ethnically and economically diverse, community-dwelling older adults (M age=72.21±8.6 years, females=68.8%, Caucasian=44.5%, Black=53.8%) were interviewed at different community settings (e.g., retirement centers and Council of Aging offices) using self-report standardized scales, which measured attitude, SN, PBC, SOC, PA and falls risks. Based on the path analysis, the hypothesized, integrative framework fit the sample data well (e.g., RMSEA<.001). The SOC and PBC had significant direct effects on PA ($\beta$s=.49 and .40, respectively). PA also significantly predicted falls risks ($\beta$=-.54). The most important predictor of the SOC was SN (.26) followed by attitude (.21) and PBC (.17). The variance explained in the SOC, PA, and falls risks by the model were 27%, 56%, and 30%, respectively. Health promoters should emphasize social support to be active (SN), the benefits of PA (positive attitudes), and ways to overcome PA barriers (PBC) in order for the SOC and PA to increase, while falls risks can decrease.

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## C-150

### PSYCHOSOCIAL PREDICTORS OF PHYSICAL ACTIVITY AMONG ADULTS WITH MULTIPLE SCLEROSIS

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Although physical activity (PA) participation has numerous benefits, only 18% of adults with disabilities participate in PA of moderate or higher intensity compared with 33% of adults without disabilities (USDHHS, 2000). Therefore, it is important to identify theory-based, PA motivational factors among people with disabilities, such as adults with multiple sclerosis (MS) (Kosma & Ellis, 2010). The study purpose was to examine the application of the Health Belief Model (HBM) for PA among adults with MS. Participants (N=384; Mean age=50.32±11.01 years; females=291) completed online self-report, standardized questionnaires, which measured PA and the HBM constructs: perceived susceptibility and seriousness of inactivity, perceived benefits and barriers to PA, cues to action, and self-efficacy. Two stepwise, multiple regression analyses were conducted to examine the most important predictors of PA based on the constructs of the HBM (1st regression) and the constructs of the HBM in addition to socio-demographic variables (i.e., gender and disability level) (2nd regression). In the second regression, the socio-demographic variables were entered first followed by the HBM constructs. Based on the first regression, the most important HBM predictors of PA were self-efficacy (p<.001; R2change=11.8%; $\beta$=.29) and perceived benefits of exercise (p<.001; R2change=4.5%; $\beta$=.22). The total variance explained by the two variables was 16.4%. Based on the second regression, the most important predictors of PA were disability level (p<.001; R2change=14.3%; $\beta$=-.31), self-efficacy (p<.001; R2change=7.4%; $\beta$=.24), and perceived benefits (p<.001; R2change=3.1%; $\beta$=.11). The total variance explained by the predictors was 24.8%. Health promoters should accommodate for the exercise needs of people with MS based on disability level. Positive exercise experiences (self-efficacy) and PA benefits for adults with MS should also be reinforced.

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## Citation Poster

## C-151

### EXAMINING THE RELATIONSHIP BETWEEN PHYSICAL ACTIVITY AND QUALITY OF LIFE IN ADULTS WITH SPINAL CORD INJURY

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Adults with spinal cord injury (SCI) generally report lower levels of quality of life (QoL) than individuals without disabilities (Migliorini & Tonge, 2009). Although leisure time physical activity (LTPA) has been recommended as a strategy to improve QoL, mixed evidence exists regarding the effects of LTPA on QoL in adults with SCI. These mixed results may be due to LTPA having a stronger effect on intermediary variables linked to QoL, rather than on QoL end-points per se (McAuley et al., 2006). Using a prospective design, this study examined potential mechanisms linking LTPA and QoL in people with SCI (n=342). Drawing on results from a similar study involving people with multiple sclerosis (Motl et al., 2009), a longitudinal partial structural equation model tested whether functional independence, barrier self-efficacy, social integration and depression explained the LTPA-QoL relationship. All participants were at least somewhat active, and responded to questionnaires at baseline, 6 months and 18 months. Latent variables consisted of baseline LTPA (moderate and heavy intensity) and 18-month QoL (overall life satisfaction and health-related QoL) while the 6-month intermediary variables of functional independence, barrier self-efficacy, social integration and depression were entered as manifest variables. Results revealed good model fit (chi square=40.12, p>.05; RMSEA=.07; CFI=.85; SRMR=.05). Baseline LTPA predicted functional independence ($\beta$=.21, p>.05) and barrier self-efficacy ($\beta$=.30, p>.05) at 6 months. All 6-month variables - functional independence ($\beta$=.16, p>.05), barrier self-efficacy ($\beta$=.23, p>.05), depression ($\beta$=-.58, p>.05) and social integration ($\beta$=.19, p>.05) - significantly predicted 18-month QoL (R2=.47). These results suggest that LTPA may improve QoL in adults with SCI through its influence on functional independence and barrier self-efficacy.

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## C-152

### MODERATING FACTORS OF CHILDREN'S PHYSICAL ACTIVITY ON PLAYGROUNDS

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The environment influences children's physical activity behavior; however, whether this influence is moderated by children's demographic characteristics is less clear. Therefore, this study examined how age (grade level) and sex were related to physical activity on playgrounds. During Spring 2010, Children were observed during 4 days of recess at 12 Denver, Colorado area schools (69.9% free and reduced lunch, 61.7% Hispanic) using the SOPLAY time sampling observation method. During each scan of the playground, boys and girls were counted and their activity level (sedentary, moderate (walking), vigorous) was recorded. The average energy expenditure (EE) per child (by sex) was estimated by weighting these counts by the appropriate constant (kcal/kg/min) and dividing by the number of children. For each school, EE was averaged by sex and grade level for each day of observation, excluding observations when multiple grades were present during recess. A hierarchical linear regression model was performed adjusting for repeated observations within schools. Results showed EE to be in the moderate range [0.09-0.11 (SD=0.01)] for all sex by grade levels. The model showed EE was greater for boys than girls (F(1,365)=6.3, p=.01) and that EE was smaller in higher grade levels (F(1,365)=14.86, p=.0001). There was a marginal trend suggesting that EE was similar for boys and girls for grades K and 1, and that the sex difference in EE was more evident from grades 2 through 5(F(1,365)=3.12, p=.08). These results indicate that sex differences in EE on playgrounds are evident in early elementary school children highlighting the need to promote physical activity, particularly for girls, throughout elementary school.

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## C-153

### THE RELATION BETWEEN PHYSICAL ACTIVITY, INACTIVITY, AND BMI IN WOMEN WITH INFANTS

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The relation between BMI, sedentary time, and physical activity (PA) is not well understood in mothers of infants, particularly considering that breastfeeding and sedentary time may be related. Therefore, this study examined how BMI was related to three levels of accelerometer-measured PA in a sample of mothers of infants, controlling for breastfeeding and baby's age. Participants were 311 women (age M=31.9 years±5.7; 15% Caucasian, 34% Asian, 32% Hawaiian/Pacific Islander; 79% currently breastfeeding, BMI M=27.9±5.3 kg/m2) with infants 2-12 months old (age M=5.6 months±2.8), screened as inactive [≤30 min. of moderate-to-vigorous PA (MVPA) per week] at the time of enrollment in a study to increase physical activity. Participants' height and weight were measured, and they were instructed to wear a Suzuken Lifecorder Plus accelerometer for the following 7 days. Accelerometer data including 5-7 valid (10+ hours) days were obtained from 195 participants and minutes of three levels of PA were averaged across days [sedentary minutes (<1.8 METS) M=680.8±44.1; light PA minutes (1.8-2.3 METS) M=51.8±15.0; and MVPA minutes (≥3.6 METS) M=12.0±7.5], normalizing sedentary and light PA to a 14 hour day of wear. A model regressing BMI onto activity levels, baby age, and breastfeeding status accounted for 11% of the variance in BMI. Controlling for the other variables in the model, a 10 minute increase in MVPA was related to a 0.85 point decrease in BMI (b=.085, p=.107) while a 10 minutes increase in sedentary time was related to a 0.28 point increase in BMI (b=.028, p=.003). The effect of sedentary time was slightly stronger when not controlling for breast feeding (b=.033, p=.0004). Current breastfeeding was associated with a lower BMI (2.69 points, p=.006). These results suggest that, although breastfeeding and physical activity are important determinants of BMI, BMI is also related to sedentary time in inactive women with infants. Interventions that reduce sedentary time may improve BMI independent of increasing MVPA.

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## C-154

### IDENTIFYING INDIVIDUALS AT HEALTH RISK: A BACKPROPAGATION MULTILAYER NEURAL NETWORK APPROACH

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Objectives: To (a) develop a preliminary computer program (using a backpropagation multilayer neural network approach) to automatically identify individuals at risk of being not sufficiently physically active and (b) validate the accuracy of the developed neural network in correctly identifying and classifying individuals at risk of being not sufficiently physically active.
Participants: One hundred part- or full-time male and female students from a large southwestern university in the U.S. with a large Hispanic enrollment.
Methods: Besides various demographic questions, students completed the International Physical Activity Questionnaire (IPAQ) (Booth, 2000), the Exercise Goal-Setting Scale (EGS) and The Exercise Planning and Scheduling Scale (EPS) (Rovniak et al., 2002), the Family and Friend Support for Exercise Habits Scale (Sallis et al., 1987), the Self-Efficacy for Exercise Behavior Scale (Sallis et al., 1988), and the Outcome Expectations and Expectancies scale (Steinhardt & Dishman, 1989).
Results: To validate the accuracy of the developed neural network, we performed 5-fold cross-validation with 80 data points used for training and 20 data points for testing. The results of all five runs in cross-validation indicated that the developed computer program (using a backpropagation multilayer neural network approach) identified and classified individuals at risk of being not sufficiently physically active into right categories (at-risk individuals or not at-risk individuals) 77% of the time.
Conclusions: Even though the results are not 100% perfect (predicting accurately 77% of time), they show a great potential for quick identification of individuals at health risk due to physical inactivity. Collecting a larger amount of data as well as collecting data from wider variety of collegiate population could improve already promising results of the proposed approach.

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## C-155

### WHAT TYPES OF PERSONAL BARRIERS THWART MODERATE-TO-VIGOROUS PHYSICAL ACTIVITY AND HOW OFTEN ARE EXERCISE GOALS ACHIEVED OVER THE COURSE OF A 12-MONTH INTERVENTION?

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Over 60% of women don't meet national guidelines for Moderate-to-Vigorous Physical Activity (MVPA) following childbirth. A detailed process evaluation tracked participants' personal exercise barriers and their achievement of specific exercise goals over the course of a 12-month intervention tailored to new mothers. Problem solving barriers and setting safe, incremental, realistic goals for minutes of MVPA/wk were key components of the intervention. Healthy, sedentary women (N =154; aged 31±5years; baby aged 5.5±3months; 80% ethnic minorities) received personalized telephone counseling calls from a health educator who problem solved barriers and set goals for minutes of MVPA. Calls occurred weekly for 1 month, biweekly for 2months, and monthly for 9 mo(17 calls total). An analysis of the percentage of goals a participant met was based on the minutes of MVPA reported for their current goal relative to minutes of MVPA achieved for their previous goal. Over 12 months, 25% of moms reported being "too busy" as the most common barrier for not meeting their MVPA goal. More moms reported "child sick" as a barrier over time (from 6.1% to 13.2%). "Mom sick" also became a more prevalent barrier over time (4.7% to 11.7%). For anticipated barriers, initially "too busy, bad weather and too tired" were key barriers to achieving their next MVPA goal; however, in the 3rd period this changed to "too busy, mom sick, and child sick", at 22.1%, 15.2%, and 6.8%, respectively. Moms achieved or surpassed their MVPA goal minutes 44% of the time during weekly calls, 42% during biweekly calls and 48% during monthly calls, and these percentages were not significantly different over these 3 intervention periods [F(2,843)=1.35, p=.26]. These results are consistent with previous studies of the common barriers to MVPA reported by new mothers. Over the year participants struggled with how to fit MVPA into their busy lives, particularly if their baby was sick. Nevertheless, over 12 mo about half the moms consistently achieved their goal for minutes of MVPA.

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## C-156

### MOBILE PHONE APPLICATIONS TO PROMOTE PHYSICAL ACTIVITY INCREASES: PRELIMINARY RESULTS

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Mobile devices are a promising channel for providing just-in-time guidance and support for key health behaviors such as physical activity (PA). Despite an explosion of mobile phone applications (apps) aimed at PA and other health behaviors, few are based on theoretically derived constructs and empirical evidence. A major objective of the current research is to explore the efficacy of smartphone apps reflecting different motivational domains to promote initial PA adoption. 30 inactive adults ages 45 years and older were randomized to receive 1 of 4 motivationally distinct Android smartphone apps: a Cognitive app, Social app, Affective app, or Control (dietary information) app. All apps drew from learning theory and its derivatives, and involved tailoring of information in response to participants' daily PA, assessed using the smartphone's built-in accelerometer. The Cognitive app focused on individualized goal setting, feedback, and problem solving. The Social app focused on social comparisons within the context of a virtual 'group'. The Affective app promoted attachment to an animal avatar whose behavior was determined by the participant's own PA levels. An interdisciplinary team developed the apps using an iterative design process. PA was measured using continuous data from the smartphone's accelerometer. Smartphone accelerometry readings were verified against Actigraph accelerometry (R-square=0.83).
ANOVA indicated significant between-group differences across the 2-month period in daily light to moderate PA (LMPA) for the Affect app (mean daily LMPA=76.9 minutes more than Control) and Social app (mean daily LMPA=46.8 minutes more than Control) (Ps<0.01). The Cognitive app produced a mean of 24.0 daily minutes of LMPA more than Control (p=0.14). The next steps in this iterative design and evaluation process involve a second experiment with refined versions of the apps, and exploring moderators of behavioral success for each app.

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## C-157

### RELATIONSHIP OF WEEKLY ACTIVITY MINUTES TO METABOLIC SYNDROME IN PREDIABETES: THE HEALTHY LIVING PARTNERSHIPS TO PREVENT DIABETES

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Rates of diabetes, hypertension and cardiovascular disease, complications of overweight or obesity and metabolic syndrome (MetS), a condition characterized by insulin resistance, dysglycemia, dyslipidemia and high blood pressure, are on the rise. Although physical inactivity is related to MetS, the relationship between physical activity (PA) and MetS in those at risk for diabetes has not been well studied. The purpose of this study is to describe baseline PA and its relationship to MetS in individuals with pre-diabetes enrolled in the Healthy Living Partnerships to Prevent Diabetes (HELP PD) Study. HELP PD is testing a community-based translation of the Diabetes Prevention Program. 301 overweight or obese pre-diabetics completed the International Physical Activity Questionnaire (IPAQ) at baseline, providing total walking minutes/week (WM) and total moderate to vigorous activity minutes/week (AM). Individuals had MetS at baseline if they exhibited 3 or more of: waist (men$\geq$102 women$\geq$88 cm), triglycerides ($\geq$150 mg/dl), BP ($\geq$130/85 mmHG), glucose ($\geq$100 mg/dl) and HDL (men<40, women<50mg/dl). Generalized Estimating Equation models were used. WM and AM were analyzed continuously and categorically (met goal or not). Participants were 57.5% female and 26% non-white, 57.9 ±9.5 years and BMI=32.7±4 kg/m2. 60% had MetS. 14% with MetS and 23% without MetS met goal for AM (180min/wk). MetS was lower with greater activity (AM (p trend=.049),WM (p trend =.057)). Odds of MetS with no walking was 2.12 (p=0.045, unadj) times those meeting goal for WM (150 min/wk). Odds of MetS with no AM was 2.07 (p=0.048, unadj) times those meeting AM goal. One additional hour of walking per week was associated with 17% lower odds of MetS. Those meeting PA goals had lower odds of MetS in this high risk population. This finding supports current literature and the need for PA in persons with pre-diabetes, particularly those at greatest risk for MetS.

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## C-158

### EXAMINATION OF THE HIERARCHICAL SELF-ESTEEM MODEL IN CHILDREN: INFLUENCE OF AEROBIC FITNESS, BODY MASS, AND SELF-EFFICACY

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Self-esteem is often identified as a vital construct in understanding the health and well-being of children, yet the development of this multidimensional construct is still not fully understood. The purpose of this study was to test the structural relations of the hierarchical self-esteem model in children over time, including an examination of the underlying structure of physical esteem and its determinants. Children (N=147; M age=8.84 (.57)) enrolled in an exercise trial examining the influence of an after-school physical activity program on cognitive and psychosocial function. Participants completed measures of physical self-perceptions and self-efficacy for physical activity at baseline and follow-up. In addition, aerobic fitness was assessed by peak oxygen uptake obtained during a maximal graded exercise test and body mass index (BMI) was calculated. Data were analyzed using structural equation modeling to test the fit of the hypothesized model. This model proposes that changes in self-efficacy, fitness, and BMI directly influence changes at the subdomain level (i.e., perceptions of sport competence, physical conditioning, body attractiveness, and physical strength), as well as changes in physical self-worth (PSW) at the domain level; changes at the subdomain level directly effect changes in PSW; and changes in PSW directly influence global self-esteem. The hypothesized model provided a good fit to the data ($x^2$=12.67, df=7, p=.08; CFI=.98; RMSEA=.08; SRMR=.03). Changes in fitness and BMI did not significantly influence any part of the model. Paths from self-efficacy, however, significantly influenced all four physical subdomains, but had no direct effect on PSW. Of the four subdomains, only conditioning and attractiveness significantly influenced PSW, while PSW had a direct and significant effect on global self-esteem. These findings enhance our understanding of physical self-esteem in children and suggest that changes in objective physical parameters may not be as important as changes in one's self-efficacy for physical activity.

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## C-159

### EXTRACURRICULAR ACTIVITY, PHYSICAL EDUCATION, ACTIVE TRAVEL AND OVERWEIGHT AMONG ADOLESCENTS

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Introduction: This study compared the association between overweight and different forms of physical activity among adolescents.
Methods: We conducted telephone surveys with 1,718 New Hampshire and Vermont high school students and their parents as part of a longitudinal study of adolescent health. We surveyed adolescents about their participation in team sports, other organized extracurricular physical activity, physical education, and active travel – as well as their recreational activity for fun, sedentary activity, diet quality, and demographics. Overweight (BMI-for-age>85th percentile) was based on self-reported height and weight. Baseline weight-for-age z-scores (measured 5-6 years earlier) were based on parent report of child's weight.
Results: Overall, 28.8% (n=495) of the sample was overweight. After adjusting for demographics, sedentary activity, and diet quality, team sports participation (RR=0.55, 95% CI: 0.45, 0.67 for three sports compared to none) and other organized extracurricular activity (RR=0.83, 95% CI: 0.69, 0.99 for>2.5 hours/week compared to none) were inversely associated with overweight. Active travel and physical education were not associated with overweight. Only team sports participation remained significantly associated with overweight (RR=0.67, 95% CI: 0.56, 0.80 for 3 sports compared to none) after adjusting for baseline weight-for-age. Attributable risk estimates suggest overweight prevalence would decrease by 19.6% (95% CI: 10.1%, 29.0%) if adolescents played at least three sports per year, and would increase by 19.8% (95% CI 9.0% to 30.6%) if they stopped playing sports entirely.
Conclusion: Increasing team sports participation could have a greater impact on decreasing adolescent overweight than other forms of physical activity.

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## C-160

### ETHNIC DISPARITIES IN PHYSICAL ACTIVITY FOLLOWING A WEIGHT GAIN PREVENTION PROGRAM: LA HEALTH

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Decreasing physical activity and increasing sedentary levels in adolescents significantly impact the risk for developing childhood obesity and related comorbidities. Reversing these trends is especially important for African American children. The study, entitled Louisiana Health, compared a weight gain prevention intervention to a no-treatment control group on dietary, physical activity, and sedentary habits in African American and Caucasian adolescents. Children in the 4th - 6th grades throughout Louisiana were enrolled in this cluster randomized trial from 2006-2009. A randomly selected subsample of students wore ActiGraph GT1M accelerometers for three consecutive weekdays at baseline and 28-months. Of the original subsample of 272 students, 165 (61%) had data at the end of the study. At 28-months, the children were an average age of 12.8 (1.1) years with a mean BMI at the 71.0st percentile (26.6) and a median BMI at the 81.3rd percentile. African Americans comprised 75.8% of the sample. The reliability of daily counts was 0.73 (95% CI: .67 to .78) when derived from 2 days of monitoring, 0.80 for 3 days (95% CI: .75 to .84), and 0.79 overall. When controlling for gender and baseline values, the decline in physical activity and increase in sedentary behavior was not significantly different between the intervention and control groups (all p values >.498). However, African American children had smaller decreases in activity compared to Caucasian children, as measured by counts per minute (p=.03), light intensity activity (p=.01), and a trend for MVPA (p=.058). The results are one of few showing better maintenance of activity in African American adolescents, though additional longitudinal investigations are needed to confirm our findings. The results also indicate that altering out-of-school and overall activity levels solely through a school-based intervention is very difficult, suggesting a need for multicomponent interventions.

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## C-161

### EXAMINING THE WITHIN-DAY AND NEXT-DAY ASSOCIATIONS BETWEEN PHYSICAL ACTIVITY EXPERIENCES AND SATISFACTION DURING PHYSICAL ACTIVITY INITIATION

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Satisfaction with health behavior change is known to be a critical factor in maintenance (Rothman et al., 2011), including the decision to maintain physical activity (Fleig et al., 2011). Yet, evidence is lacking regarding how people's experiences during physical activity initiation (e.g., enjoyment, perceiving exercise as a chore) influence people's satisfaction with it. The purpose of this research was to determine whether various positive and negative experiences with physical activity are associated with within-day and next-day satisfaction during the weeks after people initiate a physical activity regimen. Participants (N=119) were previously sedentary adults who initiated a self-directed physical activity regimen and reported their experiences and activity levels for 28 days via online daily diaries. Using multilevel models controlling for physical activity levels, positive (e.g., enjoyment) and negative (e.g., perceiving exercise as a chore) experiences were associated with higher and lower within-day satisfaction, respectively (ps<.0001); they also predicted increases and decreases in next-day satisfaction, respectively (ps<.004). Within-person changes in positive experiences and perceived progress toward goals were the strongest predictors of changes in next-day satisfaction (ps<.001). Results indicate that changes in people's satisfaction during physical activity initiation is influenced most by their positive experiences with physical activity and perceived progress toward goals, suggesting these experiences may be particularly critical to physical activity maintenance.

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## C-163

### THE EFFECTIVENESS OF AN INTERVENTION GROUNDED IN THE HEALTH ACTION PROCESS APPROACH ON PREGNANT WOMEN'S OBJECTIVELY MEASURED PHYSICAL ACTIVITY BEHAVIOR

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Despite the benefits of regular physical activity (PA) during pregnancy, many expectant mothers are inactive. The purpose of the present study was to examine whether augmenting a Protection Motivation Theory (PMT; Rogers, 1975) intervention with a Health Action Process Approach (HAPA; Schwarzer, 2003) can positively change PA behavior among pregnant women. Sixty inactive pregnant women (M age=30.64, SD=4.78; M weeks pregnant=22.36, SD=5.30) were randomly assigned to one of three treatment groups: PMT+attention-control, PMT+HAPA action-planning, and PMT+HAPA action-and-coping-planning. Week-long objective (accelerometer) and subjective (self-report) measures of PA were collected at baseline, and at 1 and 4-weeks post-intervention. The main variables of interest for the accelerometer data were total raw activity counts and bouts of 30-minute moderate-to-vigorous PA. Analyses were by intent-to-treat and repeated-measures ANOVAs demonstrated that while all participants increased PA from baseline to week 1, participants in both planning groups were significantly more active (p<.001) than those in the attention-control group by week 4 ($\eta 2$=.30 & .23 for objectively-measured 30-minute bouts and self-report data, respectively). Although scores were in the expected direction, there were no significant group differences for total raw activity counts. In conclusion, augmenting a PMT intervention with action or action-and-coping-planning leads to longer lasting PA behavior change in pregnant women.

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## C-164

### PREVALENCE AND CORRELATES OF PHYSICAL ACTIVITY AMONG PREGNANT WOMEN IN ONTARIO, CANADA

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Physical activity during pregnancy is associated with numerous physical, psycho-social and emotional benefits and impacts health throughout the lifespan. Inactive women are at an increased risk for musculoskeletal problems, mood disorders, excessive weight gain, gestational diabetes, pre-eclampsia, preterm birth, longer labor and the need for obstetric interventions. Although current Canadian guidelines recommend regular exercise for all healthy pregnant women, little is known about the leisure-time physical activity patterns of this population. The purpose of this study was to assess and compare the prevalence of meeting physical activity guidelines among pregnant and non-pregnant women and to examine socio-demographic correlates of exercise participation during pregnancy. Data examined pregnant (N=623) and non-pregnant (N=20, 392) women aged 15-49 years in Ontario as part of the Canadian Community Health Survey from 2005-2008. The prevalence of regular physical activity (>15 minutes, ≥ 3 sessions per week) was 58.3%, [95% CI 52.9, 63.4], among pregnant women and 66.9% [95% CI 65.8, 68.0] among non-pregnant women. However, the prevalence of meeting Canadian guidelines for physical activity during pregnancy (>30 minutes, ≥ 4 sessions per week) was only 23.3%, [95% CI 19.4, 27.7] among pregnant women and 33.6% [95% CI 32.7-34.6] among non-pregnant women. The most commonly reported forms of exercise among pregnant women meeting guidelines were walking, gardening, swimming, and home exercises. Pregnant women were more likely to be meeting guidelines if they were married or living with a common-law partner, white, had completed high school but not post-secondary education, earned under $19,999 or over $80,000 and were in excellent or very good health (p<0.05). Results indicate that approximately three quarters of pregnant Ontario women did not meet physical activity guidelines. Future research should explore barriers and facilitators to physical activity during pregnancy, particularly among at-risk populations. Understanding behaviors during pregnancy remains a public health priority.

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## C-165

### PREGNANT, TIRED AND MOODY? TRY EXERCISE

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Many women experience negative psychological states such as depression, fatigue and anxiety at some point during their pregnancy. While previous research has shown that pregnant women who exercise report more positive mood than their inactive counterparts, it is unknown whether starting an exercise program during pregnancy improves psychological well-being. The present study examined whether 4 weeks of exercise participation could improve mood and decrease anxiety in pregnant women. Fifty-nine inactive pregnant women (≤2 exercise sessions per week; M age=30.65, SD=4.72; M weeks pregnant=22.36, SD=5.28) were randomly assigned to either a control or action-and-coping-planning exercise intervention group. The Profile of Mood States (POMS), State Trait Anxiety Scale (STAI) as well as objective (accelerometer) and subjective (self-report) measures of exercise were collected at baseline and at 4-weeks post-intervention. The main variable of interest for the accelerometer data was bouts of 30-minute moderate-to-vigorous PA. Week 4 exercise scores were used to classify participants as meeting vs. not meeting Canadian guidelines for physical activity during pregnancy (>30 minutes, ≥ 4 sessions per week) and analyses were conducted separately for objective and self-report exercise data. Repeated-measures ANOVAs for objective exercise data demonstrated that participants who met guidelines at week 4 (n=17) experienced significant decreases in tension (p=.03, $\eta 2$=.08), depression (p=.006, $\eta 2$=.13), anger (p=.03, $\eta 2$=.08), fatigue (p=.01, $\eta 2$=.10), state anxiety (p=.01, $\eta 2$=.11), and increases in vigor (p=.001, $\eta 2$=.19) compared to those who were not meeting guidelines (n=42). Similar results were found for self-report exercise data. From a psychological health perspective, these findings highlight the importance of continuing to promote physical activity during pregnancy.

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## C-166

### MENTAL HEALTH LITERACY: CONTENT ANALYSIS OF POSTPARTUM FOCUS GROUPS

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Lower-income postpartum women may be vulnerable to mental distress resulting in negative health consequences for the family. The concerns of lower-income women may not be clearly communicated to healthcare providers, and providers may not recognize the unique cultural and ethnic wording of women's mental health concerns. Jorm's (2000) modified Mental Health Literacy (MHL) framework consists of categories (e.g. signs and causes, self-help strategies, and help-seeking resources), that may allow providers to recognize mental health literacy needs as verbalized by postpartum women during healthcare visits. Our aim was to use Jorm's framework to understand how lower-income women describe instances of mental distress during postpartum. Interviews were completed with 25 healthy African-American (n=9), Anglo (n=6), and Hispanic women (n=10) who participated in 6 ethnic specific focus groups as part of a larger study of weight retention and psychosocial changes in postpartum. Women with a mean age of 24.3 years were from 12 to 24 months postpartum. Through a systematic qualitative content analysis, categories aligned with Jorm's framework were identified. Causes of distress comprised two categories: Organic (hormonal imbalance) and psychosocial (loss of self and overwhelming parental responsibility). Signs of distress manifested as Body image changes ("…not my real body"). Help-seeking resources manifested as Perceived barriers to resources (e.g., lack of childcare). Self-help strategies manifested as Negative life style adaptations (self-medicate through smoking, increased alcohol; overeating). In conclusion, this analysis provided an initial framework for understanding how mental distress may be communicated by lower income postpartum women.

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## C-168

### IMPACT OF INTERGENERATIONAL MENTORING ON INTERNAL ASSETS OF AT-RISK RURAL YOUTH

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PURPOSE: The purpose of this study was to determine the effect of an intergenerational, school-based mentoring program on internal developmental assets of at-risk rural youth.
METHODS: Participants (n=85) were identified through local schools as at-risk students and parental active consent was granted to participate. A total of 61 participants completed one year in the mentoring program, while 24 completed two years. Each participant was matched with an adult mentor trained in promoting developmental assets. Weekly mentoring sessions occurred at the participant's school in addition to monthly group events at local community centers. A survey was developed to measure four domains of internal assets: Commitment to Learning (CL; $\alpha$=.685), Social Competency (SC; $\alpha$=.700), Positive Values (PV; $\alpha$=.855), and Positive Identity (PI; $\alpha$=.687). Repeated measures analyses were used to measure change among the four domains at baseline, one-year, and two-year follow-up.
RESULTS: From baseline to first follow-up, participants showed improvements ($p<0.05$) in CL (1.49 - 1.53), SC (1.24 - 1.31), and PI (1.32 - 1.38), while PV remained constant (1.63; p=0.455). School-related measures of grades, behavior, and attendance were also collected. After one year in the program, 78% of participants maintained a 2.0 grade point average and/or improved their grades, 66% of participants had reduced discipline referrals, and 70% improved their school attendance. Among those participants who completed two years in the program, the second follow-up showed improvements in CL (1.62) and SC (1.32) although changes were not significant at $p<0.05$. School-related measures were not made available to the researchers at the second follow-up.
Conclusions: While significant improvements were seen after one year in the program, continued measurement for longitudinal differences may indicate more accurate behavioral change in each of the four domains. However, results indicate that intergenerational mentoring programs can have positive impact on internal development assets of rural at-risk youth. Rural communities should seek opportunities to implement mentoring programs within the school setting.

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## C-169

### PERCEIVED GENETIC CAUSE AND RECURRENCE RISK OF AUTISM SPECTRUM DISORDERS AMONG PARENTS OF AFFECTED CHILDREN IN TAIWAN

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Purpose: This study examined Taiwanese parents' perceptions of the genetic component of Autism Spectrum Disorders (ASD), the etiologies of their children's ASD, and their recurrence risk of having another child with ASD.
Background: ASD have a genetic link. For parents of one child with ASD, the r risk of having another affected child is 3-13.5%. The risk increases to 32.2% for parents with more than two children with ASD. Given that parents of children with ASD are susceptible to having another affected child, examining their perceptions of the etiology and recurrence risk of ASD is important for providing genetics services, education, and counseling.
Methods: We conducted in-depth interviews with 39 parents of children with ASD in Taiwan.
Results: Preliminary results showed that less than half of the participants believed genetics played a role in ASD. Additionally, nearly all participants could not correctly state their recurrence risk.
Conclusion: Our findings indicated that Taiwanese parents of children with ASD in this study had inadequate knowledge regarding the genetic causes of ASDs and their recurrence risk. Genetic education and counseling for this vulnerable group is needed to help parents to make informed reproductive decisions.

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## C-170

### FACTORS RELATED TO DECISION MAKING AND SUBSTANCE USE IN ADOLESCENT SURVIVORS OF CHILDHOOD CANCER

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Adolescent survivors of childhood cancer are a medically at-risk group facing high-risk choices related to late effects of their disease and treatment. Their choices are more crucial due to their adolescent age in which initiation of substance use is common. This analysis explored factors affecting decision making and substance use behaviors (smoking, alcohol use, drug use) of adolescent survivors of childhood cancer. A sample of 243 teen survivors participated at 3 cancer centers (St. Jude; Hackensack; Long Beach). In addition to a medical record review and cognitive testing, psychosocial measures were administered in a semi-structured interview with teen survivors using online data entry. Nine antecedent factors were examined in a regression model to predict quality decision making. These factors, in addition to poor-quality decision making, were examined by logistic regression to predict lifetime substance use. In the model to predict decision making, gender (p=0.021) and resiliency ($p<0.001$) were significant predictors; a trend was seen for age (p=0.103). As non-resiliency increases, quality decision making decreases. Boys were more prone to poor-quality decision making. Significant predictors of lifetime substance use were resiliency, age, school problems and negative modeling ($p\leq 0.005$). A clinical profile for adolescent survivors at annual evaluations can be helpful to health professionals counseling teen survivors using the Long-Term Follow-Up Guidelines of COG. While all teen survivors need counseling related to late effects and substance use, high-risk survivors need to be identified for focused intervention. An effective diagnostic decision-making scale is needed to identify teens who overestimate their decision-making ability at baseline.

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## C-171

### A WHITE COAT EFFECT: AGE, EDUCATION, AND SHARED DECISION MAKING BETWEEN PATIENTS AND PROVIDERS

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Shared decision making between healthcare providers and patients reflects conversation and agreement about medical treatment. Sharing decision making promotes optimal treatment as patients active in decision making may be more adherent to medical regimens they discussed with their physician and believe can fit into their lifestyle. Some patients may be less comfortable with shared decision-making and identifying such patients creates opportunities for intervention. A survey of 812 patient participants receiving care in primary care clinics in rural communities was conducted to understand patient perspectives on care provided by their physician and satisfaction with communication in these areas. Patients with at least one chronic illness (75% of sample) were heavily recruited for the questionnaire to ensure that the participants had a need for regular follow-up care and interaction with their provider. The participants, who were largely female (62%, 38% male) and aged 55 or older (64%), completed a telephone interview relating their experiences with their physician over the preceding twelve months. Participants reported the extent to which responsibility for determining the best treatment was shared with their physician. Regression analyses revealed that older patients and patients with less education were more likely to report that decisions about treatment were left mostly with their physician (age B=.09; education B=-.21, p's<.01) whereas having a chronic illness and female gender were not associated with shared decision making. Analyses testing moderators of the effect of age on shared-decision making revealed that talking with your doctor about stressors or worries in the past year attenuated the effect of age on shared decision making (B=-.09, p<.05). Results suggest that physicians who express interest in their patients' well-being may build quality relationships and promote shared decision making. Potential for intervention will be discussed.

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## C-173

### A COLLABORATION TO EVALUATE THE IMPACT OF A TEEN DATING VIOLENCE (TDV) INFORMATION PROGRAM ON HIGH SCHOOL STUDENTS' TDV KNOWLEDGE

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"How will I know if I am in an abusive relationship?" is the unspoken question in TDV situations. Unhealthy relationships often begin during adolescence and are linked to physical, emotional, sexual, or psychological abuse referred to as teen dating violence (TDV) that serves as a precursor to domestic violence. The purpose of our collaboration between a university and community agency was to evaluate the agency's TDV program delivered to inner city high school students. We were interested in assessing the impact of the program on students' TDV knowledge, one arm of our skills, knowledge, and attitude (SKA) framework. The 40-minute didactic/interactive program conducted by the agency's education specialist was held in health class and focused on TDV risk factors and signs, and available community resources. Data were drawn from 335 freshmen/sophomore students in two waves in the 2010-2011 school year in four schools located in the Northeastern United States. Wave one was comprised of only girls; wave two girls and boys. Using a pre-post test design, students completed an 11-item multiple choice knowledge tool 7-14 days before/after the program. Descriptive statistics and T-tests were generated with PSAW 19. The sample was comprised of 56 % African American, 43.8% Caucasian, and .02% Hispanic/other students. Approximately 83.7% of the students were female; 16.3% male. The mean pre-test score significantly differed from the post test score for wave 1 (14.6+-2.8 versus 16.6+-2.6,p=0.000) and wave 2 (13.5+-3.6 versus 16+-4,p=.000). African American girls' mean pre test to post test score significantly differed from their Caucasian counterparts (p=0.039)(Wave 1). The community based program did increase knowledge about TDV. Further research is needed to assess the impact of the program on TDV knowledge among high school students by gender, and racial group.

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## C-174

### FACTORS INFLUENCING SEXUAL RISK AND CONDOM USE BEHAVIORS AMONG HIV-POSITIVE MEN AND WOMEN IN HAWAII

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One purpose of this study was to explore intrapersonal, social and contextual factors associated with sexual risk behavior among an ethnically diverse sample of HIV-positive persons from Hawaii. Framed in Social Action Theory, HIV-positive persons are viewed as being challenged with limiting the transmission of HIV to others, and that intrapersonal psychosocial and environmental factors moderate perceptions and health-related behaviors including condom use. Based on a literature review, factors considered to influence condom use included demographics (age, gender, ethnicity), intrapersonal mediators (self-efficacy for condom use, self compassion, treatment optimism), and contextual factors including recent alcohol, and substance use, and number of sex partners (SPs). Using a cross sectional design, a convenience sample (n=100) was recruited from Hawaii that included mostly Caucasian (47%) and Asian Pacific Islander (28%) men who have sex with men (72%). Results: Forty percent of the respondents reported engaging in sex within the past 3 months and 30 percent reported engaging in sex without condoms. Nearly one fifth (17%) of the participants reported having multiple SPs. Using multiple logistic regression (backward selection model), condom use self-efficacy and marijuana use were the two significant redictor variables for sex without condom use. Higher condom use self-efficacy scores were associated with more condom use (p=0.031). Marijuana use had a marginal significant effect with more marijuana use associated with less condom use (p=0.064). HIV care providers need to incorporate strategies that strengthen efficacy beliefs for condom use to reduce transmission risk among sexually active persons living with HIV.

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## C-175

### SEXUAL HEALTH OF EARLY MATURING AFRICAN AMERICAN GIRLS

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Purpose: To learn family-based sexual health strategies used by African-American mothers to manage the sexual behavior of their 9- and 10-year-old daughters who have reached puberty and are menstruating.

Background: Peer contact and experimental sexual interaction are increased in children of 8 to 12 years of age. Girls initiating menarche, their first menstrual flow, by age 9 or 10 years are more likely to experiment with oral sex and engage in intercourse than girls starting menarche at a later age. An increasing number of African-American girls are starting to menstruate by 9 and 10 years of age and their teen pregnancy rate remains higher than any other racial-ethnic group of girls. Previous studies have identified effective sexual health strategies that are family-based and used by nonAfrican-American parents to cease and/or prevent sexual activities in daughters of school age. However, there is limited information about family-based sexual health strategies used by African-American parents to manage the sexual behaviors of daughters who begin to menstruate by ages 9 and 10 years.

Methods (Design, Participants, Setting, Data Collection, Analytic approach): Data were collected through the qualitative interview approach at participants' (n=15) homes. Participants were African-American women with an average age of 38.4 years and 12.7 years of education. Robert K. Yin's five-step, cross-case comparison method was used to analyze the data. Herbert Blumer's symbolic interaction theory was used to describe participants' interview responses.

Results: Five family-based sexual health strategies were identified from participants' interviews, which include: (1) Gender sexuality scripting, (2) cross-sex segregation, (3) parental supervision, and (4) selecting good company.

Conclusions and Implications: Sexual health strategies that are family-based were identified by and are being used by African-American mothers to cease and prevent sexual activities in daughters who recently initiated menstruation at 9 and 10 years of age. These strategies can be used to foster sexual absence in girls who have a high rate of participating in sexual activities, contracting sexually transmitted diseases, and becoming pregnant prior to reaching adulthood.

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## C-177

### NONLINEAR LONGITUDINAL ASSOCIATIONS OF SLEEP DURATION WITH BLOOD PRESSURE

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Reduced sleep duration has been associated with hypertension or increased blood pressure (BP), but results are inconsistent for older adults. Here we examined prospective relations of coincident trajectories of sleep duration with BP among 1,868 participants from the Baltimore Longitudinal Study of Aging (aged 19 to 97; 51% male; 71% White) who were free of stroke, heart failure, and dementia. Participants underwent clinical assessment of BP, reported average nightly hours of sleep categorically, and completed the Center for Epidemiological Studies-Depression (CES-D) scale on up to 7 occasions (M=1.8, SD=1.1) over up to 20 years (M=5.9, SD=7.2) of follow-up. Mixed-effects regression models were adjusted for age, sex, race, education, body mass index, smoking, alcohol use, depressive symptomatology, cardiovascular diseases, diabetes, sleep apnea, antihypertensive medication use, and antidepressant medication use. Average nightly sleep duration was dichotomized into>6 hours and<= 6 hours. Also examined were interactions of sleep duration with sex, linear age, and quadratic age. Results revealed a significant longitudinal association between sleep duration and quadratic age for systolic BP (p<.001) and diastolic BP (p<.02). Results indicated that those with less sleep had relatively greater prospective increase in SBP until about age 65 after which they displayed a decrease in SBP. In contrast, those with longer sleep duration had lower SBP until about age 75 but continued to show steady increase over time. Next, those with less sleep had relatively greater increases in DBP until about age 50 after which they displayed a more pronounced decrease in DBP. Conversely, those with more sleep had lower BP until about age 75 and showed lesser decline over time. Thus, short sleep duration may confer risk for high blood pressure or even hypertension for the middle aged and young-old, but longer sleep duration may do so for the middle-old and oldest-old.

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## C-178

### PERCEIVED SLEEP QUALITY AND PROBLEMATIC INTERNET USE AMONG COLLEGE STUDENTS

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College life is often accompanied by changes in sleep patterns and decreased sleep quality. The college environment is also associated with increased opportunities to engage in unhealthy behaviors, such as alcohol and tobacco use, which are commonly linked to sleep-related problems. Researchers posit that problematic Internet use (PIU) has an “addictive” quality that can put students at risk for associated psychological and behavioral problems. It is therefore reasonable to assume that PIU may also play a role in sleep quality; however, a lack of research exists explicitly examining this link.

This study sought to explore the relationship between facets of PIU with sleep quality in a sample of college students. Undergraduates (130 women, 96 men) completed an anonymous survey, which included valid and reliable measures of PIU (Chinese Internet Addiction Scale, CIAS), sleep quality (Pittsburgh Sleep Quality Index, PSQI), and substance use (CORE). Descriptive analyses found a significant positive relationship between the PSQI and CIAS total score (r=.15, p<.05), CIAS tolerance subscale (r=.19, p<.01), and the CIAS compulsion subscale (r=.17, p<.01). These correlations suggest that those who are unable to resist the lure of the Internet and show signs of tolerance and compulsive use also manifest poorer sleep quality.

A two-step hierarchical regression analysis was employed to examine whether PIU uniquely predicts perceived sleep quality above and beyond substance use. The first-step included reported usage (i.e., never, once a month, weekly, almost daily) of alcohol (B=.15, p<.05) and tobacco (B=.15, p<.05), both of which significantly predicted global scores of perceived sleep quality (Adjusted R2=.059, F=7.89, p<.001). The second step introduced the CIAS total score (B=.18, p<.05), which explained a significant amount of variance in sleep quality beyond substance use (Adjusted R2=.086, ΔF=7.433, p=.007). These results suggest that excessive Internet use, particularly if the online behavior takes on an addictive quality, may have an impact on sleep quality and overall health among undergraduates.

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## C-179

### NOCTURNAL NOISE POLLUTION IN RURAL AREAS AND SMALLER TOWNS/CITIES

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Noise pollution during sleep has been linked to adverse health outcomes in larger cities; however, the prevalence of nocturnal noise pollution in smaller towns/cities and rural areas has not been well investigated. In a cross-sectional study of 308 sedentary adults (mean age=50.3, 62% female, 92% White) living in rural areas and small towns/cities who were recruited for a fitness walking program, we assessed the prevalence of self-reported exposure to noise during sleep. Of the participants who indicated that their sleep had been disturbed by noise in the past month (36.5%), more than half (56.3%) indicated that their sleep had been disturbed by noise one or more times per week. The most common sources of noise exposure were household pets (42.9%), a household member getting up in the middle of the night (33%) or having a different sleep schedule (28.6%), a household member snoring (25.9%), and traffic noise (25.9%). Participants indicated that the most common strategies they used to reduce nocturnal noise included talking to the person producing the noise (41.8%), taking care of the baby/child producing the noise (36.4%), using ear plugs (16.4%), changing the room used for sleep (12.7%), and using a sound/noise machine (9.1%). About half of the participants (49%) reported that these noise-reduction strategies helped most or all of the time, while the remainder indicated lesser effectiveness for these strategies. The frequency of exposure to noise, and the total number of noise sources experienced within the prior month were unrelated to objectively measured blood pressure, resting pulse, body mass index, waist circumference, and aerobic fitness capacity. These findings suggest that adults in rural areas are more likely to be exposed to domestic, rather than industrial, sources of nocturnal noise pollution, and that behavioral modifications may reduce noise exposure. Future investigations of nocturnal noise pollution should use objective noise assessments to determine the stability and intensity of noise exposure, and include longer-term assessments of changes in health status.

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## C-181

### LONGITUDINAL INFLUENCE OF HOME SMOKING RESTRICTIONS ON ADOLESCENT SMOKING INITIATION IN A NATIONAL SAMPLE

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Background: Home smoking restrictions (HSR) reduce passive smoking; less is known about their relationship to adolescent smoking. There is contention about the extent of familial influence as young people age and competing influences such as the peer group increase. Longitudinal data is needed.

Study Question: Are complete home smoking restrictions in early adolescence longitudinally associated with adolescent cigarette experimentation?

Methods: We explore the association between HSR and adolescent smoking experimentation in a diverse group of parent and teens, using data from the national (2003-2010) UCSD Parenting Project (N=704). We employ chi-square, bivariate and multivariate regression to analyze the association between baseline predictors and adolescent experimentation five years later.

Results: The absence of complete HSR at baseline is associated with increased adolescent smoking(OR=1.633, 95%CI=1.074-2.484, p=0.0218), adjusting for covariates. Household smoking influences this relationship; among households with 1+ smoker HSR were suggestive of an effect. In households without smokers the absence of complete HSR was associated with a 1.804 (95% CI=1.033-3.151, p=0.0381) increased odds of experimentation at five year follow up.

Adolescents who reported a complete ban were less likely to experiment with smoking at five year follow up. When dyads agreed there was a home ban 17.2% of adolescents in households without smokers had experimented versus 26.1% in homes with smokers. The results were intensified when only the adolescent reported a complete ban (12.5% versus 38.7%). Approximately 40% of adolescents had experimented with smoking if the adolescent did not report a complete ban.

Conclusions: Adolescents reporting a complete HSR are at decreased risk for smoking experimentation, particularly strong when there are no household smokers or when parent and teens are in agreement.

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## C-182

### RECRUITMENT LESSONS LEARNED FROM THREE WEB-BASED TOBACCO CESSATION STUDIES

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We have conducted three recent NCI-funded tobacco cessation RCTs which involved the recruitment of a large numbers of smokeless tobacco users. In our first study, ChewFree.com, we recruited 2523 adult chewers and completed this study in 2006. We reported on our recruitment methods which largely depended upon earned media and stories on our free cessation program. We also built two databases to help us promote the program: (1) a list of media outlets for sending faxes and (2) a list of tobacco control advocates with whom we could correspond and share news about our program. In the 5 years since completion of the original ChewFree.com trial we started two more large RCTs that involved Web-based ST cessation programs. In the first, MyLastDip.com, we recruited 1708 young chewers between the ages of 14-25 who completed screening and provided consent to participate. Concurrently, we initiated our second ChewFree.com study, ChewFree II, which compared the relative efficacy of Web-based cessation with telephone counseling through a helpline. For both of these trials we initially used recruitment methods that we proven to be successful in our previous study. However, we soon discovered that the landscape had changed such that more traditional media (e.g., newspapers, radio and TV) no longer picked up and promoted stories about our program. We describe the process of evaluating various recruitment methods including use of mailings, radio, newspapers, brochures and materials to tobacco control advocates, and Web-based marketing including the use of social media. We present data and describe our use of successive recruitment approaches (including relative cost per recruited participant). In the end, the Web-based marketing using Google Ad words was far and away the most effective and cost effective recruitment approach. We discuss the implications of our findings for recruitment for research studies seeking a nationwide sample.

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## C-183

### COMMUNITY AND INDIVIDUAL LEVEL SOCIAL CORRELATES OF SMOKING TRAJECTORIES FROM ADOLESCENCE TO ADULTHOOD

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Although smoking prevalence has declined in the past decades, a significant proportion of the population has initiated and continued smoking since adolescence. Given the considerable societal and personal costs of smoking, characterizing the various typologies of smoking behaviors among adolescents is critically important in order to inform etiologic models and target prevention efforts. The purpose of this study was to describe temporal patterns and correlates of smoking patterns from early adolescence to adulthood.

The study sample consisted of a longitudinal cohort of 9,780 youth from the National Longitudinal Study of Adolescent Health (Add Health), a nationally representative study of adolescents, who completed in-home surveys on four separate occasions from 1995 to 2009. A cohort sequential design where developmental age is the repeated measure was employed. This allowed for examining trajectories of smoking typologies from age 13 to 32 years. A two-part zero-inflated Poisson growth curve model was applied to identify smoking patterns based on number of cigarettes smoked. Five smoking patterns were identified based on chronicity of smoking and loosely labeled as: non-users, chippers, late onset users, early users, and late onset heavy users.

Females, African Americans, and Hispanics were less likely to be in the group of late onset heavy users. The probability of being in one of the four smoking groups (vs. non-users) increased if persons lived in a state with higher rates of smoking, had friends who smoked, or had a mother figure who smoked, suggesting strong influences of social norms on adolescent smoking patterns including peer, parental, and environmental norms. By examining correlates that distinguish smoking patterns of this population, we gain better understanding of the underlying causes of smoking initiation and persistence of smoking into adulthood.

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## C-184

### ASSOCIATIONS BETWEEN CHRONIC PAIN AND USE OF PHARMACOTHERAPY FOR SMOKING CESSATION

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Greater than 100 million adults experience chronic pain, and the prevalence of smoking among persons in pain may be greater than twice that of the general population. Smoking is a suspected causal agent in the onset of chronic pain, and there is reason to believe that pain may present a significant barrier to smoking cessation. Initial evidence indicates that although smokers in pain tend to report less confidence and greater difficulty in quitting, they also tend to rate their desire to quit smoking at a level commensurate with that of pain-free smokers. However, these findings are derived from relatively small samples of smokers who did not necessarily have chronic pain. We are not aware of any studies that have tested how comorbid chronic pain may influence the likelihood of either attempting to quit, or using pharmacotherapy for smoking cessation. We examined smokers' responses ($N=1948$) to the National Comorbidity Survey-Replication (2003). Separate linear and logistic regressions were conducted with chronic pain status as the fixed factor, and either number of past quit attempts, or past use of pharmacotherapy as the respective dependent variables. After adjusting for sociodemographic factors and lifetime substance misuse, we observed no association between pain status and past quit attempts ($p=.13$), suggesting that smokers with and without chronic pain are equally likely to engage a quit attempt. Results of a similar analysis, further controlling for number of past quit attempts, indicated that smokers with chronic pain were more likely to utilize pharmacotherapy for smoking cessation ($OR=1.57$, $p<.001$). Specifically, smokers were more likely to endorse past use of NRT if they also endorsed a history of chronic back/neck pain ($OR=1.54$, $p<.001$), medically unexplained chronic pain ($OR=1.73$, $p<.01$), or arthritis ($OR=1.60$, $p<.001$). Smokers with a history of medically unexplained chronic pain were also more likely ($OR=1.80$, $p=.02$) to have utilized prescription cessation medications. Discussion will address potential mechanisms, clinical implications, and future research directions.

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## C-185

### SMOKERS IN THE GENERAL POPULATION ARE MORE LIKELY TO MISUSE OPIOIDS

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The misuse of prescription pain relievers is on the rise in the United States, and health professionals are becoming increasingly reluctant to prescribe opioid medications. Tobacco smoking has been implicated in the onset of painful conditions, and the prevalence of smoking among persons with comorbid pain disorders may be greater than twice that of the general population. Smokers are more likely to misuse a variety of substances, and there is evidence that pain patients who smoke are at increased risk for aberrant opioid use. However, we are not aware of any studies that examined whether smokers in the general population (relative to nonsmokers) are at increased risk for misusing prescription pain medications. We examined smokers' responses ($N=38{,}067$) to the National Survey on Drug Use and Health (2009). Separate logistic regressions were conducted with smoking status as the fixed factor, and either (1) past-year prescription pain medication abuse/dependence, (2) lifetime nonmedical use of prescription opioids, or (3) past-year treatment for pain medication misuse, as the dependent variables. Results indicated that current smokers (relative to nonsmokers) were more likely to meet DSM-IV criteria for past-year prescription pain medication abuse ($OR=1.43$, $p<.001$) and dependence ($OR=2.99$, $p<.001$). Smokers were also more likely to endorse lifetime nonmedical use of prescription opioids ($OR=1.92$, $p<.001$), including morphine ($OR=3.02$, $p<.001$), oxycontin ($OR=2.41$, $p<.001$), hydrocodone ($OR=1.84$, $p<.001$) and codeine ($OR=1.95$, $p<.001$). Finally, smokers were found to be greater than three times more likely to have undergone treatment for pain medication misuse in the past year ($OR=3.19$, $p<.001$). This study provides the first evidence that smokers in the general population may be at increased risk for misuse of prescription pain medications, including opioids. Findings are discussed with regard to clinical implications and directions for future research.

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## C-186

### ATTENDANCE OF TOBACCO CESSATION COUNSELING CLASS AND LONG TERM 90 DAYS SUSTAINED ABSTINENCE RATE AMONG LOWER-INCOME POPULATION

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Background: Group behavioral counseling and medications increase quit rates. The Louisiana Tobacco Control Initiative (TCI) provides evidence-based treatments among the state's public hospitals and clinics in which the majority of patients are of a lower-income and under-or uninsured. The purpose of this study was to compare the long term quitting rate of smokers who attended the cessation class and those who did not attend. This study also explored the utilization of behavioral counseling class within a public hospital system.
Methods: There were 3,107 smokers scheduled to but did not attend counseling class (control group), and 1,792 smokers who attended at least 1 in a series of 4 group sessions (intervention group) between January 2005 and December 2007. Their tobacco uses after two years as of the first class attendence/scheduled dates were tracked through electronic data repository system. Analyses compared demographics, and 90-day sustained abstinence rate of the two groups.
Results: Approximately 30% (27.5% vs 31.8%) of smokers who were successfully tracked and included in the quit rate comparison. Adjusted for demographics and insurance status, Smokers who attend behavioral counseling had significantly higher long term quit rates (21.5%, versus 15.4%). The results of multivariate regression analysis showed that after two years participants who attend behavioral counseling had greater odds (OR=1.42 95% CI= 1.07-1.88) of 90 day sustained abstinence than those who did not attend.
Conclusion: The findings of this study suggest that the TCI smoking cessation counseling class provides short term and a long term cessation effect among lower-income participants. In addition, older, female, and white smokers utilized the services more often than their younger, male, and non-white counterparts. Future research is needed conducted to identify barriers to and accessibility of cessation services for those smokers who did not attend the class with the goal of increasing the impact of tobacco cessation counseling.

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## C-187

### MULTILEVEL PREDICTORS OF SMOKING INITIATION

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The vast majority of adult smokers start smoking prior to age 18. Once initiated, smoking persists well into adulthood increasing the public health importance of preventing adolescents from starting. The purpose of the present study is to understand the influence of factors at multiple levels on adolescent smoking initiation. Adolescents in Minnesota were recruited from randomly selected areas across the state. At baseline, participants were ages 12 or 13 (n=1,953); they were surveyed every six months until the age of 18. Logistic regression was used to analyze the effects of individual (demographic), proximal (home and peer environment), and distal socio-environmental (area-level aggregated characteristics) factors measured at baseline on smoking initiation. Initiation was defined as smoking more than a whole cigarette. Hierarchical linear regression was used to analyze the effects of these factors on age of initiation (n=603). Overall, 50.9% were female, 83.8% were white, 34.4% were living with smoking parents; for 33.7% smoking was allowed at home. At the individual and proximal levels, parent education, living with parents and siblings who smoke, living in homes that allow smoking, and having friends who smoke at baseline were associated with smoking initiation and earlier initiation (p<.05). Among the distal factors, medium proportion of the population completing high school was associated with smoking initiation, and a higher proportion of 15-16 year-olds who smoke at the GPU area level was associated with earlier initiation (p<.05). At the GPU level, higher proportion of the population employed and higher median household income were associated with initiating at an older age (p<.05). Findings support that proximal and distal environmental factors such as smoking by older age peers and lower SES predict earlier smoking. This study indicates the importance of area-level factors for adolescent smoking initiation.

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## C-188

### PROMOTION OF CIGARETTES AMONG CHILEAN MAGAZINES FOR FEMALES: WHAT ARE THE MESSAGES ABOUT SMOKING?

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Although Chile has been part of the tobacco free initiative and passed a law in 2006 that prohibited the tobacco marketing, restricted sales to minors and limited the spaces where smoking is allowed. Despite the fact that these restrictions were put into place, data shows that Chilean youth and overall the population continue to smoke at high rates (MINSAL, 2010). Moreover, data from 2009-2010 collected in Chile suggest that females have increased smoking over time. For that reason studies that examine factors that may account for these high rates. Some researchers have proposed that messages about tobacco in printed media may have an influence on this behavior (Lohen et al., 2007) and in Chile may explain why cigarette use continues to be high. In the present study we examined all magazines for female audience in two periods of time may through june 2008 and september through November 2010. We examined all written and photographs related to cigarette use during that period of time and the content associated, coding all photos and content associated using a focused coding method. We found more than 50 images related to tobacco use during both periods. All images were positive and showed a popular person smoking. We found only two mentions, in a text, to the negative consequences of smoking in health. We also found most messages associated with smoking to being relaxed, being a powerful woman, and as a strategy to cope with negative affect. Other findings suggest that other beliefs about the benefits of smoking may be depicted through these images. Discussion focuses on implications for prevention of cigarette smoking and how may influence this behavior among females in Chile.

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## C-189

### THE IMPACT OF SOCIAL SUPPORT ON THE EFFECTIVENESS OF AN ONLINE CESSATION PROGRAM

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To harness the ability of the internet to deliver evidence-based cessation information to consumers, Legacy created BecomeAnEX.org, a free branded smoking cessation website designed to engage smokers through videos, interactive content, a personalized quit plan, and an online community. With over 400,000 registered users, we sought to evaluate the effectiveness of the website's effect on quit behavior and the influence of social support. An online study system recruited 1035 new registrants to the BecomeAnEX.org (bex) website beginning in January 2011. Social support and quit behavior was assessed through surveys at baseline, 1-, 3-, and 6-months follow-up. Logistic regression was used to measure whether visits to the website promoted quit behavior and how this was modified by social support, measured using a three-point scale that quantifies the positive to negative balance of support. Results for the first 3 months of the study are presented here. The sample consisted primarily of daily smokers (93.1%) who smoked an average of 16.4 cigarettes per day. This was a highly motivated group of individuals; at baseline, 72.3% endorsed having made at least one quit attempt in the past 12 months and 71.6% intended to quit in the following 30 days. When asked who would follow their quit attempts most closely, 52.9% said a spouse or partner, 21.6% said a family member, and 21.8% said a friend or co-worker. The mean value for social support from this individual was 2.3, suggesting a strong skew towards positive social support. At the 3-month follow-up, there was a 7-day abstinence rate of 18.1% and a 30-day abstinence rate of 14.9%. Adjusted regression analyses show that each additional visit to the bex website increased both 7-day and 30-day abstinence by 2% (p=0.002 and p=0.003, respectively). While a negative balance of social support decreased quit attempts by roughly 8% (p=0.007), this did not affect abstinence directly nor did it modify the effectiveness of the website. Further understanding how an online intervention impacts cessation and the role of social support in this process is essential in order to maximize quit rates.

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## C-190

### DYNAMICAL SYSTEMS ANALYSIS OF SMOKING CESSATION DATA

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Traditional longitudinal data typically consist of relatively few observations per individual with longer lags. However, for studies yielding many repeated observations, the data do not conform to this expectation. Further, such data are not appropriate for standard application of system identification approaches, which use many repeated observations from a single individual. Data involving frequent, comprehensive longitudinal data for a sample of individuals can be considered intensive longitudinal data. Functional data analysis (FDA) is an ideal approach to analyzing such data; this technique models the data as smooth functions of time, rather than analyzing discrete data points. Unlike methods for traditional longitudinal data such as growth curve analysis, with FDA we do not need to assume that the response over time has a parametric form or that the relations between time-varying covariates and the outcome are constant over time. The success of many smoking cessation programs depends on the ability to mitigate nicotine cravings, especially in the initial post-quit period. In a recent smoking cessation study, 403 adults were randomized to receive bupropion, an anti-depressant and smoking cessation aid, or a placebo. Participants provided intensive assessments of withdrawal symptoms, including craving and negative affect. We used FDA methods to smooth the data and a local linear approximation technique to estimate the rates of change of nicotine craving. Conceptualizing each participant as a "system," we modeled the system dynamics of nicotine craving. That is, we estimated how the rate of change in craving varies as a function of treatment, negative affect, and level of craving. Results showed that (1) treatment is associated with a 3.34 and .78 unit long-term decrease in post-quit craving for drug and placebo, respectively and (2) a unit increase in negative affect is associated with a .3 unit long-term decrease in craving. These results could potentially be used by tobacco researchers to design a more effective tobacco intervention that would optimally reduce post-quit craving.

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## C-191

### IMPACT OF WEIGHT ON SMOKING CESSATION AND WEIGHT GAIN IN QUITLINES

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Background. Cessation related weight gain is common and can lead to early relapse to smoking. Research suggests that obese smokers are less successful quitting, are more concerned about weight gain and gain more weight after quitting, suggesting that more intensive or tailored treatment may be needed. Reasons for the poor outcomes are unknown and there is no information on whether similar outcomes occur in obese smokers seeking treatment via quitlines. This study evaluates the use and effectiveness of state quitlines across the BMI spectrum.

Methods. Smokers who called one of 5 state quitlines who were 18+, not pregnant, smoked 5+ cigarettes per day and were ready to quit were invited to participate. We conducted purposeful recruitment to obtain roughly equivalent numbers of normal weight, overweight and obese smokers. Follow-up phone interviews occurred at 3 and 6 months. We conducted bivariate and multivariate analyses to determine if baseline weight predicts cessation outcomes and weight gain in quitters.

Results. Data come from 595 participants; 34.4% normal weight, 30.5% overweight, 34.9% obese. Weight groups did not differ on demographics, baseline tobacco use or intensity of treatment, but obese smokers had more weight concerns ($p<.001$) and less confidence in quitting compared with normal weight and overweight ($p<.05$) smokers. Weight was not associated with post treatment changes (baseline to 3 months) in confidence or weight concerns. Contrary to prior research, quit rates did not differ significantly among weight groups at 3 months (30-day abstinence, $p=.066$) or at 6 months (30-day abstinence, $p=.074$). Weight gain among quitters also did not differ by baseline weight. We will present cessation rates, amount of weight gain and mediating effects of weight concerns.

Discussion. This is the first known data on use and effectiveness of quitlines across weight groups. Although obese smokers were less confident and had more weight concerns, baseline weight did not affect treatment engagement or smoking and weight outcomes lending support to the robust effects of quitlines.

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## C-193

### DIGNITY IN THE BETWIXT AND BETWEEN OF LIFE AND DEATH: RITUAL ACTIONS FOR ESTABLISHING STRUCTURE AND FINDING MEANING AMONG CHINESE TERMINAL CANCER PATIENTS

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Background: As death and dying are prolonged and institutionalized in the era of biomedicine, terminal cancer patients feebly enter a social realm of betwixt and between where confusion and disorientation reign. Drawing upon ethnographic data, this paper systemically links the rubric of liminality with the concept of dignity in an effort to shed new lights on palliative care practice and policy.

Methods: Meaning-oriented interviews were conducted with 14 Chinese terminal-cancer patients to elicit the narratives of their illness experience. All interviews were digitally recorded, transcribed verbatim were analyzed using the grounded theory approach. Ethnographic methods including observation, field notes and researcher reflectivity were also used to illuminate the meaning and the context of the interviews.

Results: The analysis revealed two major themes and relevant processes adopted by patients to maintain dignity at the end-of-life and to make sense amidst suspended space and time. (1) Personal Autonomy; encompasses the need to regain control over their lives through altering living environments to reflect personal choice, make informed care decisions to reduce the sense of burden to others, and plan for the future to create lasting memories self and families. (2) Family Connectedness; encompasses the need to maintain close-ties with family members in hopes to express appreciation, achieve reconciliation, fulfill family obligations, and establish a continuing bond with future generations.

Conclusion: Terminally ill persons often lack 'formal' rites of passage to navigate the liminal state of separation marked by the transition from living to dying. However, findings from this study show such tools already exist in our societies. Advanced care planning and life review interventions mirror the many facets of personal autonomy and family connectedness, and can both function as ritual actions to provide structure and meaning for terminal patients and their families during the final margin of life.

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## C-195

### SOMATIC COMPLAINTS AMONG WOMEN: EFFECTS OF FEMININE GENDER ROLE STRESS

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While stress and gender role have been separately implicated in the increased prevalence of somatic symptomatology among women, the two have not been studied as a single component. This study sought to examine the combination of stress and gender, via feminine gender role stress (FGRS), and to compare the predictive abilities of FGRS versus femininity regarding somatic complaints.

A total of 155 women from two local universities completed an adequate amount of data for analysis. Participants ranged in age from 18 to 23-years-old (M=18.86, SD=1.10). Multiple regression analyses were conducted to predict somatic symptoms. The regression equation with traditional femininity as a predictor was not significant (R^2=.00, adjusted R^2=-.01, F [1, 153]=.05, p=.82). However, the regression equation with FGRS was significant (R^2=.04, adjusted R^2=.03, F [1, 153]=6.37, p=.01). The linear combination of the two predictors was significantly related to somatic symptoms (R^2=.04, adjusted R^2=.03, F [2, 152]=.05, p=.03). The traditional femininity measure did not predict over and above the FGRS measure (R^2 change=.00, F [1, 152]=.66, p=.42), but the FGRS measure did predict significantly over and above the traditional femininity measure (R^2 change=.04, F [1, 152]=6.96, p=.01).

Regression analyses confirmed FGRS, but not traditional femininity, as a significant predictor of somatic complaints. These results expand findings from previous literature, which suggests that in general, FGRS is a stronger predictor of negative outcomes compared to traditional femininity. In fact, it seems that femininity may actually be a protective factor.

As a post-hoc analysis, normative comparisons were computed to evaluate the mean scores observed in our study on the MSPQ to those reported elsewhere in the available literature for (a) a normative sample, (b) women with back pain, and (c) individuals with clinical pain. Results indicated that women in the present study were different from the normative sample, but were clinically equivalent to the samples of women with back pain and individuals with clinical pain.

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## C-196

### THE APPRAISAL OF STRESSFUL EVENTS SCALE

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The transactional model of stress and coping is one of the most widely used applications for measuring individual's response to a stressor (Lazarus & Folkman, 1984). Stress responses are defined by how events are viewed and appraised; specifically, Lazarus and Folkman suggest that stress is a function of primary appraisal of demand and threat, whereas secondary appraisal is the ability to cope. Existing stress appraisal scales suffer from conceptual and methodological problems and have been criticized as being limited or confounded with stress reactions and coping responses (Peacock & Wong, 1990; Skinner & Brewer, 2002). Measures that more directly assess both dimensions of appraisal have only been used in laboratory settings (Tomaka et al., 1997, 2002).

The Appraisal of Stressful Events Scale (ASES) is a recently developed measure of cognitive appraisal representative of Lazarus and Folkman's stress appraisal model. The ASES assesses individual differences in the tendency to appraise events as threatening or challenging.

A scale that asked participants to appraise thirty-eight potentially stressful life events across six content domains was developed. Participants (N=244) completed the ASES, as well as ten other scales including the Brief COPE Questionnaire (Carver, 1997), Cognitive Appraisal Scale (Skinner & Brewer, 2002), and the Perceived Stress Scale (Cohen, et al., 1983).

The aim of the current study was to assess the factor structure of the ASES via confirmatory factor analysis (CFA) as well as further examine the scale's reliability. Results of CFA indicated that there are six distinct subscales; conflict situations, unexpected events, public speaking, transportation, social anxiety, and financial concerns. Results supported the six factor model for the ASES and confirmed reliability with total appraisal ($\alpha$=.94), as well as for each of the factors (i.e. $\alpha$=.77 - .86). These recent data confirm the factor structure and reliability of the scale, as well as provide additional evidence for its validity.

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## C-197

### DOES RELIGIOUS INVOLVEMENT BUFFER THE DELETERIOUS EFFECTS OF ACUTE STRESS? GENDER SPECIFIC ASSOCIATIONS

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Introduction. Results from several observational studies suggest that religious involvement buffers the deleterious effects of chronic stress and may promote health. However, it is not known whether religious involvement is protective under situations of acute stress. Therefore, we examined the association between religious involvement and blood pressure response to stress (a robust measure of cardiovascular function) in a laboratory setting, and if associations differed for males and females.

Methods. Hypotheses were tested in healthy men and women (n=151) recruited from the community. Stress was induced via the Trier Social Stress Test. Several measures of religious involvment were examined: public religious participation, religious/spiritual salience (R/S), religious coping and religious meaning. Change in systolic and diastolic blood pressure from baseline to stress, and stress to recovery were examined as outcomes.

Results. Among males, greater public religious participation, R/S, religious coping and religious meaning were associated with a significantly smaller change (less reactive) in systolic blood pressure from baseline to stress (all p<0.03), and a trend was evident for R/S and religious coping with smaller change in diastolic blood pressure in response to stress (all p<0.14). Among females, greater public religious participation was associated with more change (higher) systolic blood pressure from baseline to stress (p<0.02), and a trend for greater religious coping and more change in diastolic blood pressure was also evident for the same time period (p=0.08). Religious involvement was not associated with changes in systolic or diastolic blood pressure from stress to recovery for either males or females.

Conclusion. Religious involvement buffered the deleterious effect of stress on blood pressure for males but not females in situations of acute stress.

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## C-198

### EXPOSURE TO BORDER VIOLENCE AND ITS RELATIONSHIP TO PTSD SYMPTOMS AND COPING STRATEGIES AMONG COLLEGE STUDENTS IN A BORDER COMMUNITY

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Post-traumatic stress (PTS) can result from exposure to many forms of violence including combat, sexual assault, and physical assault (e.g., bullying, mugging). Recently, investigators have examined how exposure to ongoing drug-cartel-related violence along the US-Mexico border has contributed to symptoms of PTSD among student residents of a large college in El Paso, TX (Taylor, 2011). The present study replicated and extended this research by examining the relationship in a cross-validation sample, using a different measure of violence exposure, and examining how variation in coping styles relates to such experience. College students (N=244) completed a survey that included a three-item measure of exposure to violence from the ongoing drug war in Cd. Juarez, the Civilian version of the PTS Check List (PCL-C; Weathers, 1993), and the Brief COPE Scale (Carver, 1997). Regression analyses indicated a significant association between violence exposure and post-traumatic stress symptoms (beta=.17, p<.01) and moderator analyses showed this association to be significantly stronger among men (b=.26, p<.05) than women (b=.12, ns). Across all participants, coping strategies accounted 32% (F=28.37, p<.001) of the variance in PTSD symptoms with unique contributions for self-distraction (b=.28, p<.05), self-blame (b=.21, p<.05), behavioral disengagement (b=.15, p<.05), and substance use (b=.13, p<.05). Results suggest that exposure to border violence relates to PTSD symptoms and that PTSD symptoms are associated with less adaptive forms of coping.

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## C-199

### THE SEX SPECIFIC EFFECTS OF SOCIAL PRIMING ON SALIVARY CORTISOL

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Both social relationships and positive emotions have been previously shown to aid the physiological stress response, however they have not been contrasted in the same study to determine their relative effects. Similarly, the possibility that these buffers of stress might influence the sexes differentially has been ignored. Given that recent theories of stress have proposed that women seek out support in times of stress, it may be that social priming is especially advantageous for them as compared to men. This study contrasted the impact of social, non-social positive and neutral priming (using both subliminal cues and a writing paradigm) on cortisol. Participants were 87 undergraduate students (mean 19.40 years; 54% female). Following priming, participants gave a speech in front of an evaluator, followed by a resting period. Salivary cortisol samples were drawn at five points over the study. Demographic, behavior, and health variables were tested as possible covariates, but were not associated with cortisol. A repeated measures analysis controlling for baseline cortisol and time of day revealed that there was a between-subjects effect on cortisol levels (F=5.70, p<.01). Specifically, the social condition showed a cortisol increase from priming but no increase during stress while those in the positive condition did show a stress increase. A three-way interaction testing sex (prime X sex X cortisol level) revealed that while females benefited from the social prime (decreased during stress), males had an increase in cortisol that continued through stress and recovery (F=3.181, p<.05). These results indicate an overall greater benefit of social priming versus non social positive priming on the cortisol stress response, however, in the case of males, social priming was harmful supporting past theories suggesting that social factors may be more beneficial in times of stress for females.

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## C-200

### MINDFUL ACCEPTANCE CAN COUNTERACT THE DELETERIOUS RELATIONSHIP BETWEEN HOSTILITY AND PERCEIVED STRESS

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Hostility is a mistrustful disposition positively associated with perceived stress. Mindfulness is both a trait and attentional state that can influence coping strategy selection towards stressors through metacognitive awareness. This study investigated the relationship between hostility and perceived stress and assessed mindfulness' effect on this relationship. 84 undergraduate college students completed measures of hostility, trait mindfulness, and coping strategies. As expected, high hostility predicted high perceived stress (Rsquare=.22, β=.47, p<.01) while mindful acceptance without judgment predicted low perceived stress (Rsquare=.16, β=-.31, p<.01). Both hostility and mindful acceptance without judgment were independently predictive of stress. Importantly, when included with hostility and their interaction in predicting perceived stress, mindful acceptance without judgment explained an additional 8% of the variance in stress, after controlling for hostility, R squared change=.08, F change (1, 81) =9.74, p<.01, but their interaction accounted for none. This finding indicates that mindful acceptance without judgment effects hostility at all levels and essentially reduced the overall impact of hostility on stress. Thus, this research replicated findings that hostility is positively associated with perceived stress, and has discovered that high mindful acceptance without judgment reduces the strength of the hostility and perceived stress relationship. Therefore, stress-management programs for hostile individuals should strongly consider simultaneously teaching mindfulness techniques and encourage them to accept and acknowledge their thoughts and feelings in the present.

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## C-201

### CO-OCCURRENCE OF STRESS MANAGEMENT WITH OTHER HEALTH RISK BEHAVIORS IN A PARENT SAMPLE: IS STRESS MANAGEMENT A GATEWAY BEHAVIOR?

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Little is known about the mechanisms driving successful multiple behavior change interventions. This study examines the role of stress management as a potential gateway behavior by evaluating co-occurrence between poor stress management and four other behavioral risks established as leading causes of premature death (smoking, poor diet, lack of exercise, and alcohol use). Baseline data were collected via telephone survey from a sample of 426 parents with a history of smoking of public high school students in Rhode Island as part of a larger study (female=53.3%; M age=43.6, SD=5.7; married=86.6%; White=96.5%). Stage of change for stress management and other health behaviors was assessed and a binary variable reflecting risk status was created whereby individuals in preaction stages of change were at risk. Based on a stress and coping model of health risk behaviors, it was hypothesized that individuals reporting poor stress management would endorse more other health risk behaviors. Findings supported this hypothesis. Individuals who met criteria for poor stress management (39.7%) reported significantly more health risk behaviors (M=2.49) than those who reported managing stress effectively (M=2.03, F(1,424)=17.46, p<.01, η2=.04). Chi-squared analyses showed significant associations between stress management and diet (X2(1)=6.60, p<.05), exercise (X2 (1)=23.17, p<.05), and smoking (X2(1)=5.68, p<.05) such that participants reporting poor stress management were more likely to be at risk for three out of four other behaviors (not alcohol) than those who reported effective stress management. Findings provide preliminary support for linking stress management to individuals' behavioral health risk profile as well as a substantial link between stress management and three of the four health behaviors that are leading causes of premature death. As such, results pave the way for future evaluation of whether and how effective stress management may facilitate multiple behavior change.

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## C-202

### CAUSAL ATTRIBUTIONS MEDIATE THE LINK BETWEEN RESIDENCY AND HEALTH IN KOREAN IMMIGRANTS

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Koreans constitute one of the most rapidly growing immigrant groups in the US, and exhibit relatively high levels of pathology. But unlike other immigrant groups, newly arrived Koreans suffer more illness than their established counterparts. The current study sought to verify this health disparity, and offer a psychosocial explanation.

It was hypothesized that new immigrants make quite different attributions for the bad things that happen to them, blaming pervasive and uncontrollable forces like the American culture. Such maladaptive attributions have been directly linked to stress and illness, and also to ineffective coping. A sample of 400 Korean immigrants living in California, well variegated in demographics such as residency (md=10 years), was used to test this hypothesis. All completed surveys assessing recent stressors, attributions for those stressors, coping strategies and health at two time-points spaced two months apart.

Structural equation modeling verified the link between length of residency and health. However, as hypothesized, this link was mediated by attributions: Residency was inversely related to the use of maladaptive Attributions (standardized coefficient=-.154, p<.01), which in turn related to greater levels of subsequent Physical (.133, p<.05) and Mental (.216, p<.001) Illness. The link between attributions and health was itself partially mediated by coping: Bad Attributions were associated with greater use of both Support Seeking (.172, p<.01) and Avoidance (.150, p<.01), which in turn had conflicting effects on subsequent health. Support Seeking led to less Physical (-.110, p<.05) and Mental (.213, p<.001) Illness; while Avoidance led to more (.300 and .365, respectively, ps<.001). Overall, the fit of this mediation model was excellent [CFI=.986; RMSEA=.04; χ2 (19)=27.42, n.s.].

These results suggest that psychotherapeutic interventions, whether cognitive (targeting maladaptive attributions) or behavioral (targeting coping choices), might be effective in easing the suffering of recent Korean immigrants.

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## C-203

### MULTIDIMENSIONAL MEASUREMENT OF RELIGIOUS PRACTICES, DEPRESSION, AND SUBSTANCE USE AMONG RURAL AFRICAN AMERICAN COCAINE USERS

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Despite the importance and relevance of religion due to its links with health in non-drug-using populations, it is often poorly assessed through one-dimensional measures in addiction research. Moreover, commonly-used religion-health measures have not been well-validated among vulnerable drug-using populations. Data from a sexual risk reduction intervention analyzed the links between dimensions of religion, depression, and substance use among African American cocaine users living in the rural South (n=223). Religious support subscales (God-based, congregation-based, or clergy-based), religious participation subscales (private or public), and religious coping subscales (positive or negative) all exhibited good reliability (Cronbach α≤0.60). Except for negative religious coping, subscales had strong convergent validity. Mean differences in religion subscale scores were found based on religious preference, which supported construct validity. Older participants and women reported greater religiosity, which is consistent with non-drug-using populations. Several religion subscales were negatively correlated with substance use (i.e., alcohol use, marijuana use, multiple drugs), but none were related to cocaine use. Only negative coping was significantly related to depression (p<0.0001). Multivariable linear regression controlling for age, gender, and employment status further examined significant links. Negative coping was a significant predictor of depression (p<0.0001). Public religious participation, positive coping, and support from God and congregation were significant predictors of less alcohol use. Future addiction research should use increased specificity in its description and measurement of individual heterogeneous dimensions of religion, avoid collapsing separate religion variables, and examine these measures and relationships in diverse study populations.

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## C-204

### TALK WITH OTHERS AND NORM PERCEPTIONS AS DISTINCT INFLUENCES ON MARIJUANA USE

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Health decisions are subject to social influence, but exactly how social forces have an influence and how best to measure social influence remain open questions. Perceived norm has been dominant in social influence research, but recently investigators have begun to test other sources of social influence. E.g., conversation (talk) between people has been found to affect health decisions. Talk reflects interaction with other people that might spark or reinforce ideas beyond shaping perceptions of others' opinions. In this study, we tested the idea that while associated with perceived norm, talk also uniquely explains marijuana use decisions.

Method: 224 young adults indicated how often they had talked with the three most important members of their social network about good things and about bad things related to marijuana. Responses were used to create two separate measures: pro-marijuana talk and anti-marijuana talk. Respondents also indicated whether others important to them would approve of their future marijuana use (perceived norm), and their intention to use marijuana.

Results: The talk measures were correlated ($r=.69$), yet behaved differently. Controlling for the other talk measure, pro-marijuana talk correlated with perceived norm ($r=.50$) but anti-marijuana talk was not strongly correlated with perceived norm ($r=-.08$). The two talk measures added 10% to the variance in intention after perceived norm (total $R2=.46$), supporting our hypothesis. Intention was better explained by pro-marijuana talk ($\beta=.45$) than by anti-marijuana talk ($\beta=-.12$). Inclusion of the talk measures attenuated but did not eliminate the effect of perceived norm on intention (from $\beta=.61$ to $\beta=.39$).

Conclusion: Our findings suggest that perceived norm and talk are related but distinct constructs that both contribute to prediction of health decisions. Because talk with people may reinforce, introduce, or activate pro-marijuana beliefs over and above shaping perceptions of what others think, health decision researchers should attend to talk and not just norms.

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## C-205

### FEMALE ALCOHOL USE AS A COPING RESPONSE TO INTERPERSONAL CONFLICT

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People's expectations about the effects alcohol will have on their moods, emotions, and behaviors have been found to be important factors in their drinking decisions, and are increasingly investigated under the construct of "alcohol outcome expectancies". Specific kinds of alcohol outcome expectancies may be more common in women, a traditionally under-examined population in the literature on the etiology of alcohol use disorders. Women have been found to drink more heavily for the purpose of emotional regulation than men, and those women who do drink for emotional regulation may be at increased risk of alcohol-related problems. Additionally, women who are more sensitive to emotional distress and anxiety are more likely to drink for negative reinforcement reasons. One major source of anxiety and emotional distress in women is interpersonal conflict. The purpose of this study was to examine the utility of reported drinking in response to interpersonal conflict for predicting drinking increases in women. The Inventory of Drinking Situations (IDS-42) measured how often participants reported drinking in response to various emotional and social situations. Participants also recorded alcohol consumption in number of drinks per day over the past month at an initial laboratory session, and at a two month follow-up. In a sample of college women, the interpersonal-conflict subscale score of the IDS-42 was uniquely predictive of overall alcohol consumption, and additionally of increases in drinking at the two-month follow-up. Those who reported drinking more often in response to interpersonal conflict had higher levels of alcohol consumption overall. Moreover, this particular subscale predicted more variance in increased drinking at follow-up than other measures of explicit outcome expectancies. This finding supports the idea that women who drink for emotional coping may be at greater risk for increasing drinking, and that this aspect of women's drinking should be evaluated in order for effective treatment interventions to be delivered.

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## C-206

### RURAL WOMEN IN DRUG TREATMENT: INCREASING RECOVERY CAPITAL THROUGH PHOTOVISION

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Women recovering from drug addiction experience social isolation, discrimination and stigma. Feelings of anxiety, depression, loneliness, and boredom increase the likelihood of relapse. This CBPR study utilized photo-voice methodology to aid rural women in their recovery from methamphetamine addiction by increasing their personal recovery capital. Two groups (N=8 and N=13) of women between 19 and 54 years of age participated in the project between March and August 2010. The groups ran for 2 months with photography training and bi-weekly discussions of the photographs. Using an intent-to-treat model, participants self-rated self-efficacy increased significantly from pre (M=30.28, SD=6.19) to post project (M=33.19, SD=6.32, t (20)=-2.87, p=.009). The women cited relationship issues, anger, and boredom as their reasons for drug use and relapse. Participants generated more than 1200 photographs, and developed their themes and presented their captioned photographs in two exhibits to the board of directors, treatment staff, and other residents of Wyoming Volunteers of America (VOA). The first group, "Project Recovery" focused on the recovery process in included three themes, "your past", "your present", and "your future." Photographs from the category "Past" showed a dead mouse and read "Frank says "Meth is Death" while another showed cracked mud and was captioned "Spiritually Drained". In the "Future" category a photo of an elongated human shadow read "Standing Tall" and 2nd photo of green grass growing up through the ice read "Breaking Free". The second group the women titled: "Project Relapse-Stop it!" focused on triggers for relapse. One woman's photo of a knot hole in a purple picnic table, stated "Addiction is like a dark hole with the outside purple. Just like a bruise that never heals." A 2nd photo of a cross in a cemetery was captioned "Asking for it?" A photo of a gaping tennis shoe was captioned "Walk the Walk Talk the Talk." One woman's exit comment was: "Anxiety is easy for me to get wrapped up in and will lead to relapse….When I'm taking photographs I have a greater sense of peace and acceptance."

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## C-208

### COGNITIVE AND PSYCHOSOCIAL PREDICTORS OF MORTALITY IN VETERANS WITH END STAGE RENAL DISEASE

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Psychosocial factors such as depressive symptoms, avoidant coping and personality characteristics have been associated with all-cause mortality in patients with end stage renal disease (ESRD); however, findings have been inconsistent. The following study explored bivariate relationships among psychosocial variables and mortality in veterans with ESRD (n=147, 98% male) who lived an average of 95 months following initial psychological assessment for renal transplantation. The assessment involved a battery of self-report measures and neuropsychological assessments used to evaluate candidacy for renal transplantation. Veterans self identified as White/European-American (53%), Black/African-American (27%), and Hispanic/Latino (20%). Independent samples t-tests revealed that those who were deceased at follow-up reported greater reliance on instrumental social support ($t=2.07$, $p<.05$), restraint coping ($t=2.07$, $p<.05$) and internal locus of control ($t=2.43$, $p<.05$) at the time of the assessment than those who were still living at follow-up. Mortality was also associated with poorer memory, as measured by lower short ($t=-2.43$, $p<.05$) and long delayed recall ($t=-2.00$, $p<.05$) and long delay cued recall ($t=-2.53$, $p<.05$) on the CVLT. Correlations revealed that powerful others health locus of control ($r=-0.25$, $p<.05$) and behavioral disengagement as a coping strategy ($r=-0.23$, $p<.05$) were negatively associated with longevity. Number of months since initial assessment to end point (i.e., longevity) was positively associated with reading achievement ($r=0.28$, $p<.05$), and memory as measured by short delayed free recall ($r=0.30$, $p<.01$) and long-delay free recall ($r=0.23$, $p<.05$). These findings suggest that survival time is associated with higher cognitive functioning, use of more adaptive coping strategies and reliance on others for control of health issues. Additional research is needed to determine if interventions aimed toward improving cognitive and psychosocial variables may enhance health outcomes for individuals with ESRD.

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## C-209

### COMMON BUT UNDERTREATED CHRONIC PAIN AMONG INDIVIDUALS WITH END-STAGE LIVER DISEASE CONSIDERING LIVER TRANSPLANTATION

Wendy Balliet, PhD,[1] Alok Madan, PhD,[1] Kelly Barth, MD,[1] Jeffrey Borckardt, PhD,[1] Robert Malcolm, MD,[1] Ira Willner, MD,[2] David Koch, MD[2] and Adrian Reuben, MD[2]

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Despite anecdotal evidence that suggests individuals with end-stage liver disease (ESLD) experience chronic pain, little systematic research has been conducted to understand pain in this population. Analgesics in patients with ESLD carry significant risk of adverse events some of which can lead to death. Thus, pain management is an important area of consideration as treatment options are limited. The purpose of the present study was to understand the prevalence of pain and the relationship between pain and disease etiology in a group of individuals with ESLD, to what extent pain impaired daily level of functioning, and how well pain was being controlled. Data was collected from 108 participants with ESLD during a pre-surgical liver transplant evaluation. The majority of participants (77 %) reported experiencing some form of bodily pain within 24 hours of their evaluation. Patients rated their average pain in the past 24 hours (scale of 0-10) at a moderate amount of intensity (M=4.25, SD=2.85). One-way ANOVA revealed a significant effect for disease etiology on average level of pain (F (3,87)=3.90, p=.01), with individuals diagnosed with alcoholic cirrhosis only reporting significantly less pain (M=1.90, SD=2.56) compared to individuals diagnosed with both hepatitis C virus (HCV) and alcohol induced cirrhosis (M=4.00, SD=2.87, p=.03), NASH (M=4.71, SD=3.55, p=.04), and only HCV (M=5.15, SD=2.56, p=.00). Patients reported that pain interfered significantly with normal work activities, sleep, and life enjoyment. However, only 33% of patients indicated experiencing pain relief based on their current medication treatments. The present study underscores the high prevalence of chronic pain experienced by individuals with ESLD and the relative under-treatment of patients with pain undergoing pre-surgical evaluation for liver transplantation. There is a need to further understand the etiology of pain with this population as well as how to safely and effectively evaluate and treat such medically complicated patients.

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## C-210

### DEPRESSION AMONG INDIVIDUALS WITH END-STAGE RENAL DISEASE CONSIDERING KIDNEY TRANSPLANTATION AND ADHERENCE TO SPECIFIC HEALTH BEHAVIORS AND MEDICATION COMPLIANCE

Wendy Balliet, PhD,[1] Jeffrey Borckardt, PhD,[1] Alok Madan, PhD, MPH,[1] Kelly Barth, MD,[1] Eva Serber, PhD,[1] Sarah Galloway, PhD,[1] Sharlene Wedin, PsyD,[1] Prabhakar Baliga, MD[2] and John McGillicuddy, MD[2]

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Non-adherence to treatment has been associated with unfavorable health outcomes among individuals with end-stage-renal disease (ESRD). There is a high prevalence of depression among patients with ESRD which has been associated with increased morbidity and mortality. Although there is growing evidence that indicates depression may be related to poor medical adherence in general, little systematic research has investigated the relationship between depression, specific health behaviors and medical adherence among patients with ESRD. The purpose of the present study was to understand how depressive symptoms were related to a variety of health behaviors and compliance among individuals with ESRD. In the present study, 762 patients undergoing a psychosocial evaluation for kidney transplantation completed the Center for Epidemiological Studies 10-item Depression Scale (CESD), the CAGE-D 4-item alcohol and drug screener, and 17 questions about recent health behaviors including medication adherence and appointment attendance, prescribed diet and exercise adherence, and substance use. The mean CESD score was 7.20 (SD=5.42) with 34% of patients exceeding the CESD cut-off for clinically significant depression. Patients exceeding the CESD cut-off for clinically significant depression reported significantly greater difficulty with adherence and poorer health behaviors with respect to: Diet (t(754)=4.93, p<.0001), Exercise (t(741)=4.64, p<.0001), Appointment Attendance (t(759)=2.79, p=.005), Illicit Drug Use (t(750)=2.74, p=.008), and Alcohol Use (t(759)=2.79, p=.008). However, no difference was observed between groups with respect to medication adherence (t(760)=0.07, p=.94). These findings suggest that depression may be associated with specific patterns of non-adherence across several important health behavior domains, other than medication use, that might warrant attention in future studies and at the levels of clinical intervention and patient education.

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# Saturday
# April 14, 2012
# 8:30 AM–10:00 AM

## Poster Session D

## D-001

### BARRIERS AND BENEFITS OF HUMAN PAPILLOMAVIRUS (HPV) VACCINATION AMONG MATERNAL CAREGIVERS OF CHILDHOOD CANCER SURVIVORS

K. P. Preeti Rao, Doctoral student, Jason R. Hodges, MA, Rebecca H. Foster, PhD, Karen Martin-Elbahesh, MA, Michael J. McDermott, BA, Courtney J. Peasant, MS and James L. Klosky, PhD

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Human papillomavirus (HPV), the most common sexually transmitted infection, is a cause of cervical and other cancers. Although HPV vaccination is available as primary cancer prevention, vaccination rates remain low. HPV vaccine is particularly important for survivors of pediatric cancer, who are at higher risk for HPV-related complications due to late effects of cancer treatment. The aim of this study was to better understand perceived barriers and benefits influencing mothers' decisions to vaccinate their daughters against HPV following treatment for childhood cancer. Data were collected as part of a study investigating prevalence and predictors of HPV vaccination among female survivors of childhood cancer. Maternal caregivers were asked an open-ended question: "Are there other things which did/would influence your ability to get your daughter vaccinated for HPV? If so, what?" Sixty-three caregivers (M age=40.6 years, SD=6.8) provided a qualitative response. No significant sociodemographic differences were identified between caregivers who did/did not respond. Latent coding was used to derive general themes from the responses. Two raters independently sorted each response based on predetermined themes. Interrater reliability was κ=.81 (p<.001), 95% CI (.71, .92), indicating good agreement. Barriers to vaccination, reported by 57% of caregivers, included lack of vaccine knowledge (27.0%), worry about vaccine safety (14.3%), and financial concerns (7.9%). Factors conducive to vaccination, reported by 41% of caregivers, included daughter's cancer history (20.6%), physician recommendation to vaccinate (9.5%), and future disease prevention (6.3%). Findings from this study suggest several important perceived barriers and benefits influencing mothers' abilities to vaccinate their daughters against HPV. Health education interventions are needed to increase HPV awareness, counteract perceived barriers, and increase perceptions of vaccine benefits.

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## D-002

### UNDERSTANDING PSYCHOSOCIAL OUTCOMES AMONG INDIVIDUALS WITH CANCER OVER TIME: THE ROLE OF UNSUPPORTIVE INTERACTIONS

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Facing a cancer diagnosis is a stressful event that can affect interpersonal relationships. Although an increase in social support is often observed in those diagnosed with cancer, some network members might withdraw or act in unhelpful ways. An emerging trend in the social support area, but still underrepresented, is to study the effect of negative responses from others during stressful life events. The current study assessed interpersonal variables that have rarely been investigated in relation to one's experience with cancer over time (i.e. received support and unsupportive interactions) and their association with depressive symptoms, positive emotion, and posttraumatic growth (PTG) in a sample of men and women recently diagnosed with cancer. The research design was longitudinal and self-report data were collected from 30 participants diagnosed with cancer on average 5.68 months prior to data collection (Time1; SD= 3.34) and again three months later (Time2). Contrary to hypotheses, hierarchical regression equations indicated that received social support at Time1 was not related to any of the outcome variables at Time2. However, after controlling for depressive symptoms at Time 1, hierarchical regression equations indicated that unsupportive responses from a main support person at Time1 was significantly and positively related to participants' reports of depressive symptoms at Time2 [$\Delta F=(3,26)=14.78$, $p=.001$], though not related to reports of PTG or positive emotion at Time2. The present study highlights the importance of studying unsupportive interactions separately from received social support. Although received social support was unrelated to any of the outcome variables across time, the more unsupportive interactions participants received from their main support person near the time of diagnosis the more depressive symptoms were reported 3 months later. Important research and clinical implications for understanding the relationship between unsupportive interactions and psychosocial outcome variables among individuals diagnosed with cancer were addressed.

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## D-003

### ADHERENCE TO A HEALTHY LIFESTYLE IMPROVES HEALTH OUTCOMES IN ELDERLY PROSTATE CANCER SURVIVORS

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Introduction and Objectives: Treatment of prostate cancer (PrCa) with radiation therapy (RT) provides excellent cancer control, but is associated with decreased quality of life (QOL). Physical activity is often recommended to patients to counteract the detrimental side-effects of RT and has been found to minimize functional and emotional impairments. However, the potential for physical activity to improve patients' QOL may be age dependent. This study describes physical activity and adherence to a healthy diet among younger (< 68 years) and older PrCa survivors (> 68 years) and explores associations among physical activity, adherence to healthy diet, QOL, depressive symptoms, and fatigue by age group.

Method: About 500 men diagnosed with localized PrCa completed baseline questionnaires before RT and at 24 and 36 months thereafter. The majority of participants (M(age)=67.53 Years) were Caucasian (90.08 %) and married (86.4%). Physical activity (exercised>3 times a week) and healthy diet adherence (self-recorded diet per day) were measured at 24 months. Fatigue, overall health status, depressive symptoms (CES-D), and disease specific QOL (FACT-P) were measured at 36 months.

Results: About 40% of participants were physically active and 58% reported high levels of adherence to a healthy diet at 24 months. Structural Equation models examining associations among physical activity and healthy diet adherence at 24-months and health outcomes at 36-months showed that among older survivors, higher levels of physical activity were significantly associated with lower levels of depressive symptoms and fatigue and higher levels of functional QOL. A healthy diet was significantly associated with higher levels of functional QOL. Examining the same model among younger survivors showed that only higher levels of physical activity at 24-months were significantly associated with lower levels of fatigue at 36-months.

Conclusion: The study supports the importance of exercise and a healthy diet among an older cohort of PrCa survivors.

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## D-004

### PRE-TREATMENT NEGATIVE AFFECT INFLUENCES TREATMENT DECISION PROCESSES AND POST-TREATMENT QOL AMONG NEWLY DIAGNOSED PROSTATE CANCER PATIENTS

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Background and Objectives. Treatment decision in localized prostate cancer (PrCa) is a complex process as each treatment option can cause devastating side effects that influence patients' quality of life (QOL). Research has shown that uncertainty in deciding among diverse PrCa treatment options can increase the patient's negative affect both at diagnosis and after treatment. The importance of affect with regard to health information processing and decision making has recently been recognized. This study examines differences in treatment decision making-related variables and QOL between PrCa patients with low and high levels of pre-treatment negative effect.

Methods. About 986 patients completed questionnaires after diagnosis and at 6 and 12 months thereafter. Baseline and 6-month measures include negative affect (CES-D), multiple-item scales assessing beliefs about treatment efficacy, seriousness of disease, perceived vulnerability, values and attributes, worries about treatment side effects and cancer recurrence, and decisional regret. QOL (FACT-P) was measured at 12 months.

Results. At baseline, patients with higher levels of negative affect were significantly less informed about treatment options, more worried about treatment side effects and cancer recurrence, and had less strong beliefs about treatment efficacy than patients with lower levels of negative affect. The degree of the importance of avoiding incontinence and erectile dysfunction was significantly higher among patients with higher levels of negative affect than patients with lower levels. At 6-month, patients with higher levels of negative affect reported more difficulty making a treatment decision, were more distressed and regretful about the treatment decision, and had lower QOL at 12-month than patients with lower levels of negative affect.

Conclusions. This study confirms the importance of affect for health information processing, decision making, and QOL. Heath care providers should evaluate and address pre-treatment negative affect among newly diagnosed prostate cancer patients.

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## D-005

### EVALUATION OF THE EFFICACY OF NCI'S FACING FORWARD BOOKLET IN THE CANCER COMMUNITY SETTING

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Introduction: The NCI developed the print-based educational brochure, Facing Forward, to fill a need in helping cancer patients meet the challenges of transitioning from active treatment to survivorship; however, little research has been conducted on its efficacy. The study objectives were to evaluate Facing Forward's efficacy in promoting the uptake of recommended behaviors (e.g., ways to manage physical changes and feelings) and explore its usability.

Methods: Upon completion of active treatment, early stage breast, prostate, colorectal, and thoracic cancer patients (N=340) completed baseline assessments and were randomized to receive either Facing Forward or an attention control booklet. Patients were surveyed at the last treatment appointment (baseline) and at eight-weeks and six-months post-baseline.

Results: At eight-weeks post- baseline, African American intervention participants reported greater uptake of recommended stress management behaviors than African American control participants ($p<0.003$); at six-months post-baseline reported uptake was greater among both white and African American intervention patients ($p<.02$). At eight-weeks post-baseline, intervention participants were more likely to attend a cancer support group than control participants ($p<.02$). The majority of intervention participants expressed a high level of intention to try Facing Forward's behavioral recommendations and reported Facing Forward as understandable and helpful.

Conclusions: Facing Forward can enhance survivors' ability to manage stress and promote support group use during the re-entry period. Further, early stage cancer survivors can benefit from print materials that provide education with action strategies to help them meet the challenges of the re-entry period.

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## D-006

### COMMUNITY-BASED DISTRESS SCREENING: FINDINGS FROM AN ONLINE REGISTRY BREAST CANCER SURVIVORS

Joanne S. Buzaglo, PhD, Melissa Miller, PhD, Kasey R. Dougherty, MA and Mitch Golant, PhD

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The IOM, the NCCN, and the American College of Surgeons have recognized that screening for emotional, physical and social concerns is critical to ensuring quality cancer care. Yet, distress screening in community settings, where up to 85 % of cancer patients are treated, is largely non-existent. The Cancer Support Community, the largest network of providers of psychosocial support to cancer patients in the US, recruited breast cancer survivors from the Breast Cancer M.A.P. (Mind Affects the Physical) Project, an online registry designed to examine the psychosocial impact of breast cancer, to identify top causes of distress among breast cancer survivors. In November 2010, registrants (N=1043) were asked to evaluate 25 psychosocial issues on a 5 point scale (not at all a problem-severe problem) from a validated community-based screening tool. The sample was 99% female, 88% Caucasian, the mean age was 55, and the average time since diagnosis was 5.5 years. 63% had at least a college degree. 58% were initially diagnosed with at least Stage II disease; 13% reported having had a recurrence. 87% rated at least one of the issues as a moderate or greater problem. 57% rated at least one item as a severe or very severe distress-related problem. The average number of problems rated as severe or very severe was 2.5 (on a range from 0-19). The most common problems that cause severe or very severe distress were: fatigue (22%), sexual function (21%), sleeping (18%), weight gain or loss(18%), and worry about the future (15%). Several other socio-demographic and clinical variables were independently and significantly (n=931; $p<0.05$) associated with greater overall distress. Those variables included: Younger age ($p<0.001$); less time since diagnosis ($p=0.009$); higher stage of cancer ($p<0.001$); self-reported depression ($p<0.00$); recurrent cancer ($p<0.001$). The findings validate other research in this area that show survivors struggle with several distress-related factors with high severity and affirm that survivors should be closely monitored for distress and provided appropriate resources to address distress-related problems throughout the continuum of care.

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## D-007

### SUPPORTIVE CARE INTERVENTION FOR LATINA BREAST CANCER SURVIVORS

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Purpose: Test the effects of a Bilingual Breast Cancer Education Intervention (BBCEI) on outcomes of Latina breast cancer survivors (LBCS). The BBCEI is an individualized, multidimensional quality of life (QOL) program designed to provide LBCS with stage I, II, and III breast cancer with structured information that was linguistically and culturally appropriate about high incidence QOL concerns and strategies to reduce the problems.
Design: A two-group, prospective longitudinal randomized controlled trial.
Setting: A comprehensive cancer center in LBCS.
Methods: Women were randomly assigned to the experimental or attention control group. Patients' outcomes were assessed at baseline, three, and six months for both groups. The BBCEI was delivered in four face-to-face sessions and five monthly follow-up sessions (three by telephone and two in person). After the final evaluation data was collected, subjects in the control group were offer the BBCEI. Primary endpoints were overall QOL and physical, psychological, social, and spiritual well-being, Uncertainty, Distress and Acculturation. Descriptive statistics and ANOVAs were conducted.
Findings: While uncertainty drops quite a bit in the experimental group, it also drops somewhat in the control group, and the group by time interaction, controlling for acculturation, is not significant. Distress also decreases in both groups, remaining in the moderate range, and the group by time interaction is not statistically significant. For Total QOL, although the group by time interaction was not statistically significant, the post hoc difference between time 2 (5.40) and time 3 (5.71) in the experimental group approached significant ($p=.052$), with a slight increase in total QOL.
Conclusions: The BBCEI was an effective intervention in improving QOL during the first year of breast cancer survivorship. Treatment effects were durable over time. Culturally tailored interventions are necessary because Latinos have unique values, beliefs, behaviors and histories that directly impact survivorship health and the efficacy of the interventions.

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## D-008

### INDIVIDUAL COUNSELING IS THE PREFERRED THERAPY FOR DEPRESSION AMONG CANCER PATIENTS

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Estimates of depression in cancer patients exceed 20%. Despite the high prevalence and grave consequences without treatment, depression is under-recognized and many patients go untreated. Cancer patients' preferences and interests in depression treatment are unknown. We asked breast cancer patients their preferences. Breast cancer patients were chosen for study as they have an increased risk of suicide for as long as 25 years after diagnosis.
Methods: In partnership with surgical and medical oncology clinics at an NCI CCC, breast cancer patients (N=134) completed an anonymous survey while waiting for an appointment. Patients were asked to rate their interest in each treatment from 1 (not interested) to 5 (extremely interested). The average participant was 57 years old (SD=11) and 5 years post-diagnosis (SD=6). Rates of previous cancer therapies were as follows: surgery (87.3%), chemotherapy (72.4%) and radiation (51.5%).
Results: Individual counseling was ranked as the top choice by 41%, antidepressant medication by 16% and support groups by 15%. Interest in individual counseling was higher than antidepressant medication ($p<.01$) and a breast cancer support group ($p<.01$). Interest in a support group and antidepressant medication did not significantly differ ($p=.07$). A minority (22%) had no interest in treatment. Among women interested in treatment, 53% were very/extremely interested in individual counseling while only 27% had similar interest in antidepressant medication and 40% had similar interest in a support group. Demographic and disease variables were not related to treatment interest.
Discussion: Women with breast cancer were significantly more interested in individual counseling for depression than antidepressant medication or a support group, supporting similar findings from primary care patients diagnosed with depression. This study is the first to rate breast cancer patients' interest in mental health care services. Matching patients' preferences for depression treatment may engage patients in treatment and improve outcomes.

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## D-009

### ADHERENCE TO CYSTOSCOPIC SURVEILLANCE AND QUALITY OF LIFE AMONG NONMUSCLE-INVASIVE BLADDER CANCER SURVIVORS

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Consistent adherence to cystoscopic surveillance is an important disease management strategy for nonmuscle-invasive bladder-cancer (NMIBC) survivors. SEER data suggest adherence is low in this population. We conducted this study to assess differences between non-adherent (NA) and adherent (AA) survivors and to evaluate associations between adherence and health-related quality of life (HRQOL).
We administered a cross-sectional phone-based survey to NMIBC survivors (n =109). Adherence to cystoscopic surveillance was determined by measuring time between diagnosis and interview date; number of cystoscopies received was then compared to the number suggested by American Urological Association (AUA) guidelines. The European Organization for Research and Treatment of Cancer Quality of Life Questionnaire (EORTC QLQ-C30) measured HRQOL. Data were analyzed using non-parametric tests and linear regression. Participants averaged 65 years (SD=9.3) and were primarily male (75.2%), married (75.2%), and reported Ta- or T1-stage bladder tumors (82.7%). Over one-half (55.0%) were non-adherent with surveillance. AA and NA survivors were similar across demographic and clinical characteristics. Multivariable regression analyses revealed NA survivors reported lower physical ($\beta=-5.01$) and social ($\beta=-6.51$) functioning and more financial problems ($\beta=9.93$) than AA survivors ($p<0.05$).
Many NMIBC survivors were non-adherent with surveillance. Non-adherence was associated with reduced physical and social functioning and financial problems. NMIBC surveillance is costly and invasive. Financial constraints may cause survivors to forego recommended surveillance. Individuals with poor physical and social functioning may not be equipped to overcome this burden, further impacting HRQOL. Future research should evaluate potential interventions, e.g., comprehensive cancer survivorship services, to increase access and education and enhance HRQOL.

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## D-010

### MUSCULOSKELETAL INJURIES IN WEIGHT LIFTING AMONG WOMEN WITH OR AT-RISK FOR BREAST-CANCER-RELATED LYMPHEDEMA

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Background: Weight lifting (WL) is an efficacious modality for risk reduction and management of lymphedema associated with breast cancer (BrCa). Previous evidence suggests healthy women who engage in WL experience musculoskeletal injuries at a rate of 2.6 (95% CI: 1.5-3.6) per 1000 WL sessions. The risk of musculoskeletal injury among BrCa survivors performing WL is unknown.
Method: Participants were BrCa survivors with or at-risk for lymphedema that were randomized to one year of WL or standard care (n=295). All study participants received an educational lecture about lymphedema at the beginning of the intervention. The WL group received 3-months of supervised exercise, and then participated in 9-months of unsupervised exercise. An injury survey was administered after one year to all study participants. Musculoskeletal injury was defined as an event related to WL that impaired activities of daily living for $\geq 1$ week. We calculated the cumulative incidence, rates, and odds of musculoskeletal injury.
Results: The cumulative incidence of musculoskeletal injury among BrCa survivors with or at-risk for lymphedema was 10.2 (95% CI: 9.4-11.1), and 3.4 (95% CI: 2.9-3.9) per 100 BrCa survivors, respectively. The rate of musculoskeletal injury among BrCa survivors with or at-risk for lymphedema was 2.3 (95% CI: 2.0-2.6), and 0.3 (95% CI: 0.2-0.5) per 1000 bouts of WL, respectively. BrCa survivors with lymphedema who engaged in WL were at significantly higher risk for musculoskeletal injury compared to standard care, OR=19.9 (95% CI: 5.1-77.1), BrCa survivors at-risk for lymphedema were not at higher risk for musculoskeletal injury OR=5.6 (95% CI: 0.3-118.8).
Conclusion: Although this study provides additional evidence supporting the safety of WL, musculoskeletal injuries did occur. This underscores the need for systematically collected injury data, and appropriately trained intervention staff prepared to encounter events related to musculoskeletal injury and lymphedema, particularly among women with lymphedema.

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## D-011

### DEPRESSIVE SYMPTOMS IN AFRICAN-AMERICAN AND HISPANIC CANCER PATIENTS: A COMPARATIVE ANALYSIS

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This study aims to describe the depressive symptoms in a sample of African American and Hispanic cancer patients and examine differences in specific symptoms between the two groups.
The study used a nested cohort from the "Cancer Portal Project" which addresses the socioeconomic determinants related to cancer treatment adherence. The sample included African-American (n=46) and Hispanic (n=78) underserved cancer patients recruited from four hospitals. Participants completed a questionnaire comprised of measures of depression (Patient Health Questionnaire-9), health-related quality of life (EuroQol 5D), sociodemographic, and health related questions.
The sample of African-American and Hispanic patients did not differ on age, gender, and stage of cancer, but African-American (M=3.72, SD=1.05) patients had a higher level of education than Hispanic patients.
African-American cancer patients (M=4.78, SD=5.10) were found to have higher total scores on the PHQ-9 than Hispanic patients (M=2.99, SD=3.03, t=-2.15, p=.04). However, when fatigue was controlled for during analysis, the small difference in depressive symptoms between the two ethnic groups was no longer significant (F=.20, p=.65). Moreover, when compared on specific symptoms, African-American patients reported significantly more somatic symptoms, such as lack of energy or little energy, poor appetite and speaking and/or moving slowly. On the other hand, Hispanics reported significantly higher difficulty with their depressive symptoms (M=1.18, SD=6.35) and more problems with anxiety and depression (M=1.66, SD=.76), measured by a single item from the EQ5 than African-American patients (M=.69, SD=.85, t=-2.72, p=.01; M=1.36, SD=.48, t=2.56, p=.01, respectively).
Different ranges of symptoms associated with depression are expressed by African-American and Hispanic cancer patients. Close attention should be devoted when screening for and diagnosing depression in cancer patients from different ethnicities. More research is necessary to establish the validity and psychometric properties of this measure (PHQ-9) with the various cultural groups.

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## D-012

### EFFECTS OF UNIQUE SOURCES OF SUPPORT ON QUALITY OF LIFE IN PROSTATE CANCER DYADS

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(1) Objective: There is a growing population of prostate cancer (PC) survivors and their spousal caregivers who are at risk for experiencing significant physical and mental quality of life decrements as a result of challenges associated with the disease. Although social support in general has been associated with positive adjustment to PC survivors, the impact of unique sources of social support on quality of life in the PC dyad remains unknown.
(2) Methods: 93 dyads of localized PC survivors and their spousal caregivers provided valid data for the study variables. Utilizing structural equation modeling, an actor-partner interdependence model (APIM) valuated the relationships between individuals' unique sources of social support (significant other, friends, and family) and the physical and mental quality of life of the individual and the partner, while controlling for the individual's own age and number of medical (co-) morbidities.
(3) Results: The PC survivor and his spousal caregiver reported lower than normative levels of social support. Results of APIM revealed actor effects of friend support on better mental quality of life (ps<.05).
(4) Conclusions: The PC dyad is at risk for experiencing low levels of social support. However, friend support can have positive implications for their adjustment. This provides a valuable target for future psychosocial intervention work designed to enhance the quality of life of PC survivors and their spousal caregivers.

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## D-013

### FEAR OF RECURRENCE IN MEN UNDERGOING TREATMENT FOR PROSTATE CANCER

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Fear of cancer recurrence (FCR) is a major concern among men diagnosed with prostate cancer. To date, no studies have examined FCR in men receiving androgen deprivation therapy (ADT) for prostate cancer, who are at risk of disease progression and reduced quality of life (QOL). The purpose of the current study was to compare FCR and QOL in patients undergoing ADT (ADT+) and patients who had radical prostatectomy (ADT-) as treatment for prostate cancer. In addition, we examined QOL as a predictor of FCR in prostate cancer patients.
The sample included 43 ADT+and 52 ADT- men recruited as part of a larger, longitudinal study of quality of life during ADT. ADT- participants were matched to ADT+participants by age, education, and time since diagnosis. Participants completed the Fear of Cancer Recurrence Inventory (FCRI) and the Medical Outcomes Survey Short-Form (SF-12).
The ADT+group had significantly higher total FCRI scores (p<.02) and lower QOL on all SF-12 subscales (ps<.03) than the ADT- group. Total FCR in both groups was predicted by all SF-12 subscales (ps<.01). Mediation analyses indicated that QOL (i.e., physical functioning, role-physical, general health, social functioning, role-emotional, and mental health) mediated the relationship between receipt of ADT and total FCR.
This is the first study of our knowledge to document that prostate cancer patients treated with ADT are at higher risk of FCR than patients treated with surgery only. Higher levels of FCR in the ADT+group were mediated by worse QOL across multiple domains. Patients receiving ADT should be screened for high levels of FCR and referred for psychosocial evaluation and intervention if necessary.

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## D-014

### ACCULTURATION, AGE, EDUCATION, RELIGIOSITY, AND SUBJECTIVE SOCIAL STATUS AS PREDICTORS OF CANCER FATALISM

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Cancer fatalism is the belief that death is inevitable when cancer is present. It has been recognized as a barrier to cancer screening, detection, and treatment, especially among individuals of low SES, and ethnic minorities, although most research has been on African Americans (AAs). Prior research with AAs has shown that demographic characteristics are associated with fatalism (e.g., age, education), but less is known about Hispanic Americans (HAs). Because cancer fatalism has also been shown to be a barrier to cancer screening, identifying variables that predict cancer fatalism is of particular importance. In the present study, a community based sample of HA women (N=503) provided demographic information and completed standardized measures (in English or Spanish) of acculturation, religiosity, subjective social status (SSS) within the US and one's community, and cancer fatalism. Overall, these women had an average fatalism score of 4.62 (SD=3.31). The bivariate relationships between cancer fatalism and acculturation, age, education, religiosity, and SSS were evaluated; significant associations between cancer fatalism and acculturation, education, and SSS within the U.S. emerged. Variables with statistically significant bivariate relationships with fatalism were entered into multiple regression models to investigate which variables were most predictive of cancer fatalism. The general patterns that emerged showed that HA women with less education and lower perceived SSS reported more fatalism. Results concerning education are consistent with previous research on the AA community; SSS has not previously been examined as a predictor of fatalism, but suggests a potentially modifiable covariate. Fatalism may be an important mediator explaining lower rates of screening in less educated women and those who perceive themselves to have less status; future research should explore this relationship, especially in HA women.

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## D-015

### UNMET SUPPORTIVE CARE NEEDS IN LUNG CANCER ACROSS SMOKING GROUPS

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Introduction: It is evident that lung cancer survivors have a high level of unmet supportive care needs, yet it is unclear whether levels and types of unmet supportive care needs differ by smoking status in lung cancer. In light of studies finding that either never or quitting smoking has a positive effect on survival, current and former smokers may have more unmet supportive care needs compared to lung cancer survivors who never smoked.
Method: Lung cancer survivors over 18 years of age were recruited from two medical centers (Loma Linda University Medical Center and City of Hope Medical Center) in southern California. Participants consented via telephone and received questionnaires that contained the Supportive Care Needs Survey, which includes one overall factor (Total Supportive Care Needs; TSCN) and four factors: History and Systems Information Needs (HSI), Psychological Needs (P), Physical and Daily Living Needs (PDL), and Patient Care Needs (PC).
Results: Smoking groups in the study sample (N=209) did not significantly differ on TSCN, HIS, P, and PC scores, but current and former smokers reported significantly more unmet PDL needs compared to never smokers (p's<.02). Significant bivariate correlates of high PDL needs included low general health (r=-.32), high trauma (r=.36), high distress (r=.35), high depression (r=.45), low satisfaction with healthcare (r=-.24), high symptom burden (r=.47), and more avoidance coping (r=.29; all p's<.002). Significant independent correlates of PDL needs included higher depression ($\beta$=.21), higher symptom burden ($\beta$=.40), a diagnosis of small-cell lung cancer ($\Delta$R2=.07), and currently or formerly smoking ($\Delta$R2=.05; all p's<.006).
Discussion: These results suggest that lung cancer survivors differ in unmet PDL needs depending on the severity of depressive symptoms, physical symptom burden, lung cancer type, and smoking status. Future studies should investigate how supportive care services may be effectively delivered to address lung cancer patients at higher risk for unmet needs.

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## D-016

### DEPRESSION AND INFLAMMATION IN THE SERUM AND TUMOR MICROENVIRONMENT

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Background: Depression has been found to be associated with increased mortality in cancer patients, however the underlying biological mechanisms associated with this link has not been elucidated. The aims of this study were to examine the association between depression and pro-inflammatory cytokines in the serum and High Mobility Group Box-1 (HMGB1), and related receptors (TLR4 and RAGE) in the tumor microenvironment.
Methods: A total of 320 patients diagnosed with hepatobiliary carcinoma completed a Center for Epidemiological Studies-Depression (CES-D) scale prior to receiving treatment. In a subsample of these patients, pro-inflammatory cytokines (IL-1-alpha and TNF-alpha; n=113) in the serum and HMGB1 and related receptors (TLR4 and RAGE, n=14) were measured in the normal and tumor tissue. Descriptive statistics, t-tests, chi-square, and Cox regression analyses were performed to test hypotheses.
Results: A total of 45% of patient reported clinical levels of depression on the CES-D (>16) prior to treatment. After adjusting for sociodemographic and disease-specific factors, depressive symptoms significantly predicted survival [Chi-square=34.3, p<0.001]. A CES-D score >16 was associated with abnormal levels of IL-1-alpha in the serum [Chi-square=5.1, p=0.02] when compared to those with a CES-D<16. Depressed patients also had an upregulation of HMGB1 t(12)=3.1, p=0.01], TLR4 [t(12)=2.2, p=0.05] and RAGE [t(12)=1.9, p=0.09] in the tumor microenvironment when compared to the normal tissue.
Conclusions: The findings may have important clinical implications. Prior research has found that treatment of depression reduces IL-1-alpha and TNF-alpha in the serum thus reductions of these pro-inflammatory cytokines may also downregulate HMGB1, TLR4 and RAGE in the tumor microenvironment. Downregulation of HMGB1, TLR4, and RAGE may result in slowed tumor growth and development of metastases.

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## D-017

### HOT FLASHES AND INTEGRATIVE MEDICINE (IM) USE IN FEMALE BREAST CANCER PATIENTS

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Background: Hot flashes (HF) are common in women with breast cancer (BC) and reduce their quality of life. Currently available pharmacologic agents are moderately effective but associated with bothersome side effects; non-pharmacologic treatments, including IM, are commonly used and could be potentially effective, but have not been adequately tested. This study examines HF in women with breast cancer during treatment (TRx) and six months following the end of treatment (TFu), and their relation with IM use.
Methods: In a longitudinal study of a nationwide sample of cancer outpatients on chemotherapy or radiotherapy, 378 women with BC were studied. Women rated their HF at TRx and at TFu responding to a question about HF "at its worst" on a scale of 0 (not present) to 10 (as bad as you can imagine) and reported on their use of 13 IM techniques (yes/no) during treatment and six months post-treatment.
Results: Seventy nine percent women reported HF at TRx and 73% at TFu. Mean age was 54.4 years (range: 31-82). The range of IM use (exercise, prayer, relaxation, chiropractor, massage, imagery, spirituality, diet, herbs, vitamins, group therapy, hypnosis, and acupuncture) during treatment was 8-84% and 2-84% in six months thereafter. A linear mixed model analysis to study HF and its relation with IM use adjusted for significant demographic variables (age and education), showed a significant time effect, (p=0.0001), with less severe HF at TFu (M=4.65, SE=0.27) compared to TRx (M=5.70, SE=0.28), (p=0.0001). A significant association of HF with age (p<0.0001), chiropractor use (p<0.03), and vitamin use (p<0.02) was observed. Younger women and vitamin users reported more severe HF, while those using chiropractor reported less severe HF.
Conclusions: Hot flashes in women with breast cancer decreased over time but were more severe in younger women. Vitamin use was associated with more severe HF while chiropractor use was associated with less severe HF; future clinical trials are needed.

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## D-018

### AGRICULTURE STREET, NEW ORLEANS: A CASE STUDY OF HEALTH IMPACTS AND ENVIRONMENTAL INJUSTICE

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This study presents the journey of a neighborhood from American dream to Superfund site. Through documentary sources and interviews with residents, attorneys, government officials and scientists, as well as health data collected by earlier investigators, the study evaluates a troubling convergence of health with the environment, economics and policy.

From the early 1900's to 1958, the Agriculture Street Landfill took in both residential wastes and hazardous materials from the maritime, chemical and oil and gas industries. No records of the identities or volumes of materials disposed of at the site were kept. Called "Dante's Inferno" by locals, the landfill was known to catch fire and smolder. After its initial closure, it was reopened in 1965 to accommodate debris from Hurricane Betsy, with as many as 300 truckloads per day burned on site for nine months. In the late 1960's, the Housing Authority of New Orleans (HANO), in partnership with a private firm, began redeveloping the site as a residential community. No environmental testing or remediation preceded the construction. HANO drew residents through a "turnkey" program in which a portion of rent was directed toward ownership of the home. From the 1970's into the 1990's, development continued with the construction of homes, a senior community and an elementary school. At its height, the neighborhood had 900 residents, 100% of whom were African-American, with a working class median income.

The present study explicates the case by examining data from the eventual testing of the site by the EPA, which found 50 known carcinogens and led to accelerated designation of the area as a Superfund site. Also discussed are the role of community organizing and activism in drawing attention to potential health impacts and the disposition, after 25 years, of a lawsuit filed by area residents. The study further reports on the destruction of the site by Hurricane Katrina and attempts to homestead the area after the storm, despite a lack of recovery funds. Most central is an examination of health data, which shows the difficulty of evidencing a causal relationship between health impacts such as cancer and respiratory conditions and environmental contamination.

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## D-019

### MATERNAL INFLUENCES ON TEEN TANNING: FINDINGS FROM A NATIONALLY REPRESENTATIVE STUDY

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Recent epidemiologic data support a link between indoor tanning (IT) and melanoma. Adolescent females exhibit the highest rates of IT, and the incidence rates of skin cancers among 15- to 29-year-old females are alarmingly high. Previous research suggests that teen girls whose mothers engage in IT or express permissiveness toward IT typically begin tanning at a significantly earlier age and are more likely to become regular, habitual tanners by young adulthood. Therefore, they represent a population at significant risk. This study explored, in a nationally representative sample, whether maternal IT use, as well as permissiveness and monitoring of their teen's behavior, were predictors of teens' IT intentions. Teen participants from 48 states were enrolled through Knowledge Networks and surveyed on the extent to which their mothers used, monitored and permitted IT using standardized questions and reliable scales (i.e., Cronbach's $\alpha>0.90$). Seven hundred and twelve girls (N=712) ranging in age from 12 to 18 years (mean=14.96 yrs, sd=1.7) completed the baseline survey in May 2011. Linear regression analyses were performed to establish the significance of maternal influences in predicting teens' IT intentions. Maternal IT use ($\beta$ =.173, p=.000), permissiveness ($\beta$=.572, p=.000), and monitoring of IT behavior ($\beta$=-.061, p=.031) were significant predictors of teens' IT intentions in this sample (R2=.445). Examining the unique effects indicates that teens who report their mothers IT and are permissive toward IT are more likely to intend to IT themselves. Those who report their mothers monitor their IT behavior report lower intentions to IT. This study builds on earlier work by showing a relationship with mother's IT behavior, permissiveness and monitoring of IT in teen daughters and self-reported current IT intentions. Future work should examine predictors of mothers' tanning, monitoring and permissiveness and explore using mothers as potential change agents of their teen's tanning behavior.

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## D-020

### CHEMOTHERAPY-RELATED COGNITIVE IMPAIRMENT (CRCI) AMONG CANCER PATIENTS AFFECTS QUALITY OF LIFE (QOL): A UNIVERSITY OF ROCHESTER CANCER CENTER CLINICAL COMMUNITY ONCOLOGY PROGRAM (URCC CCOP) STUDY OF 439 PATIENTS

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Background: CRCI, including impairments in memory and concentration, affects up to 75% of cancer patients during chemotherapy, and can linger for years after chemotherapy has ended. The extent to which CRCI affects QOL is not well-understood.

Methods: Levels of memory and concentration impairments were measured in 439 patients undergoing chemotherapy who were enrolled in a nationwide URCC CCOP randomized trial. Memory and concentration were assessed via the Fatigue Symptom Checklist (FSCL) from those that completed the measure at cycles 2, 3, and 4 of chemotherapy. QOL (i.e., general activity, mood, normal work, and enjoyment of life) items were assessed by the Brief Fatigue Inventory (BFI). Spearman's rho correlations were used to determine the strength of the relationship between cognitive function and QOL. Logistic regression was used to predict associations between memory and concentration at cycle 2 and 3 with cycle 4 and was also used to predict associations between memory and concentration difficulty at cycle 2 with interference in QOL at cycle 4.

Results: Concentration and memory impairments at cycles 2 and 3 were both significant predictors of concentration and memory difficulty at cycle 4 (OR range=1.94 to 9.08; all $p < 0.05$). At cycles 2, 3, and 4, problems with memory and concentration were significantly correlated with interference in all QOL items assessed (r values range=.16 to .37, all $p < 0.05$). Concentration difficulty at cycle 2 was significantly predictive of interference in all QOL items at cycle 4 (OR range=2.23 to 3.34; all $p < 0.05$). Memory difficulty at cycle 2 was only significantly predictive of interference in mood at cycle 4 (OR=2.05, $p < 0.05$) and not other items (OR range=1.33 to 2.13; $p > 0.05$).

Conclusion: Our results suggest that memory and concentration impairments in cancer patients receiving chemotherapy are associated with reductions in QOL. Further research on the long-term effects of CRCI on QOL is needed. NCIR25CA01618

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## D-021

### A QUALITATIVE ANALYSIS OF PERCEIVED STIGMA IN A MULTIETHNIC LUNG CANCER PATIENT POPULATION

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Preliminary data suggest that stigma perceived by lung cancer patients influences psychosocial, interpersonal, and behavioral outcomes. In order to better understand the role of perceived stigma as a factor in poor patient outcomes, there is a need for conceptual clarification and an integrative focus on appropriate measurement. As part of a multi-stage process of measure development, we conducted 36 semi-structured interviews with a diverse group of lung cancer patients (20 women, 16 men; mean age=64 years). Interviews were conducted in two outpatient oncology settings: an NCI-designated cancer center and a county public hospital. Participant race and ethnicity breakdown included 47.2% Non-Hispanic White, 27.8% Black, 16.7% Hispanic White, 5.6% Asian, and 2.8% American Indian. Among the sample, 38.9% reported a high school degree or less, 22.2% noted some college, and 38.8% were at least college graduates. Seventeen (47.2%) self-identified as either never smokers or long-term quitters, while 19 (52.8%) were either current smokers or quit at the time of their lung cancer diagnosis. A rigorous iterative coding process identified complex emotional themes among lung cancer patients, including guilt, regret, anger, causal attributions, perceptions of controllability, and concerns about smoking and cessation. Interpersonal themes were also identified, including blame from family and friends, concerns about treatment, and discussions about negative societal views of lung cancer. Further analysis explores connections between key themes and potential variations based on patient factors, including smoking status. Thematic analysis of these interviews contributes to the development of a conceptual framework and item generation for a measure of lung cancer stigma.

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## D-022

### BODY-RELATED EMOTIONS AND C-REACTIVE PROTEIN IN BREAST CANCER SURVIVORS

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Women who have been treated for breast cancer have a good prognosis for survivorship due to improved screening and treatments. However, this diagnosis places these women at significant risk for physical and mental health threats. One such risk is heightened body dissatisfaction, which can itself be linked to various poor health outcomes. Based on existing work, we propose that negative body-related emotions may be associated with low-grade systemic inflammation (C-reactive protein; CRP). It is important to test this premise since inflammation can be a precursor to underlying disease and co-morbidity. The main purpose of this study was to examine the association between body-related negative emotions and CRP in recent post-treatment breast cancer survivors. The women (Mage =54.9+10.8 years; Mtime since diagnosis =10.39, SD=3.89; Mtime since treatment =2.92, SD=2.96) completed the social physique anxiety (SPA) scale and one week later provided a blood sample for CRP at baseline and 6 months later, at which time body-related guilt and shame were also assessed. In separate linear regression analyses, controlling for personal and cancer-specific characteristics. SPA was positively associated with CRP at baseline ($\beta$=.79, R2=.14), and 6 months later ($\beta$=.58, R2=.18). Additionally, body-related shame ($\beta$=.63, R2 =.25) and guilt ($\beta$=.39, R2=.15) were related to CRP levels 6 months later. The findings of this study suggest that body-related emotions may be linked to biological health outcomes including immune system function, which highlights the importance for health care practitioners to understand and intervene on body dissatisfaction in recently treated breast cancer survivors.

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## Citation Poster

## D-023

### ELECTRONIC PATIENT REPORTED OUTCOMES (EPRO) TO GUIDE THE IMPLEMENTATION OF BEHAVIORAL CANCER PAIN INTERVENTIONS

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Two challenges to the implementation of behavioral pain interventions are rapid pain assessment and timely application. ePROs provide a basis for a health information technology (HIT) system in which data can be rapidly collected and analyzed to inform practice. Pain and pain-related variables were collected through ePROs in a busy cancer center. Patients with breast (n=2265), lung (n=1193), prostate (n=810), and colorectal (n=513) cancer used tablet computers to complete ePROs from the Patient Care Monitor (0= none to 10=worse) assessing pain, physical symptoms and function, and psychological distress and despair. Analysis of variance examined pain differences between cancers. The impact of physical and psychological variables on pain was examined by cancer type using hierarchical linear regressions controlling for age, race, and sex. Models were significant; effect size (d) is reported. Patients were M=60 years (SD=11); 50% female; White (78%), Black (19%), other (3%). Lung cancer patients (m=2.3;sd=2.5) had significantly higher pain than breast (m=2.0;sd=2.4), prostate (m=1.8;sd=2.2) or colorectal (m=1.8;sd=2.2) patients. Mean pain levels were low, though there was substantial variability: 44% lung, 37% colorectal, 31% breast, and 30% prostate patients indicated pain>3. Across cancers, the impact of physical and psychological variables on pain was significant with small to medium effect sizes (d=.17-.40). Physical symptoms (d=.40), physical function (d=.37), and psychological distress (d=.24) had the strongest relationship with pain for breast patients. These results suggest behavioral interventions targeting physical symptoms, physical function, and psychological distress may be especially beneficial for improving pain in breast patients. An ePRO system can rapidly assess pain and pain-related variables; we are creating an HIT system to analyze pain and other ePROs in real time to facilitate timely behavioral intervention application.

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## D-024

### FORMATIVE EVALUATION OF A VIDEO-BASED PATIENT DECISION AID FOR PROSTATE CANCER AMONG AFRICAN AMERICAN MEN: IMPLICATIONS FOR MULTIMEDIA OUTREACH AND EDUCATION

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Background: African American (AA) men are disproportionately affected by prostate cancer, with rates more than twice as high as those of white men. Patient decision aids (PtDA) have been promoted to facilitate informed decision-making (IDM) among men at risk for prostate cancer. Given the high prevalence of prostate cancer among AA and the identified socio-cultural barriers to screening, the development of a culturally and linguistically appropriate PtDA may prove beneficial in the dissemination of medically accurate, evidence-based information.
Methods: Focus groups were conducted with AA men to determine essential elements for the design of a video-based PtDA on prostate cancer. Inclusion criteria were: AA men; aged 40 to 70 years; and no diagnosis of prostate cancer or any other cancer. Focus groups were transcribed verbatim and analyzed using a combination of content analysis and the constant comparison method.
Results: A purposive sample of 18 AA men, ranging in age from 41-65 years, was recruited. The AA men reported a need for more information on the prostate and risk factors for prostate cancer, as well as diagnostic tests and treatment for prostate cancer. They also suggested that awareness-raising strategies target men at risk for prostate cancer, as well as their spouses and family members. Key recommendations for video-based PtDAs were the use of clear, direct language and illustrative graphics to describe prostate cancer and the inclusion of testimonials from AA men who experienced prostate cancer and interviews with AA doctors.
Conclusions: As multiple socio-cultural factors play a role in prostate cancer screening among AA men, video-based PtDAs on prostate cancer tailored to meet the needs of this group should effectively address their core concerns and challenges while also engaging spouses and families. These findings will assist in the design and development of culturally and linguistically appropriate, evidence-based multimedia approaches on prostate cancer for the AA community.

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## D-025

### MEASUREMENT OF AFFECTIVE AND ACTIVITY PAIN INTERFERENCE USING THE BRIEF PAIN INVENTORY

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Background: The Brief Pain Inventory (BPI) is the most frequently employed measure used to capture pain as a patient-reported outcome (PRO). The BPI was initially designed to yield separate scores for pain intensity and pain interference. However, a preliminary confirmatory factor analysis (CFA) of a dataset using an abbreviated version of the BPI provided initial evidence that the pain interference factor can be separated into separate factors of affective (e.g., mood, relations with other people) and activity (e.g., work, walking ability) interference. The purpose of this study was to confirm this affective/activity interference dichotomy using data from a multicenter study in which the full 11-item version of the BPI was administered.
Methods: A retrospective CFA was completed for a sample of 184 individuals diagnosed with castration-refractory prostate cancer (Age 40-86, M=65.58, 77% White Non-Hispanic) who were enrolled in Cancer and Leukemia Group B (CALGB) trial 9480. A one-factor model (i.e., pain) was compared against two-factor (i.e., intensity and interference) and three-factor models (i.e., intensity, activity interference, and affective interference).
Results: Root mean squared error of approximation (0.075), comparative fit index (0.971), and change in chi-square, given the corresponding change in degrees of freedom (13.33, p<.05) values for the three-factor model were statistically superior in comparison to the alternative models. This factor structure was found to be invariant across age, mean PSA level, and ethnicity.
Conclusion: The results of this study confirm that the BPI can be used to quantify the degree to which pain separately interferes with affective and activity aspects of a patient's everyday life. These findings will provide clinical trialists, pharmaceutical sponsors, and regulators with confidence in the flexibility of the BPI as they consider the use of this instrument to assist with understanding the patient experience as it relates to treatment.

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## D-026

### RESPONSE TO CANCER STRESS AND DEPRESSIVE SYMPTOMS IN BREAST CANCER SURVIVORS AND THEIR SIGNIFICANT OTHERS

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Studies show that breast cancer causes substantial psychological distress and disruption in the lives of both survivors and their significant others (Northouse & Swain, 1987; Wagner, Bigatti, & Storniolo, 2006). Significant others' support is one of the strongest determinants of survivor functioning and plays a significant role in maintaining the survivors' psychological adjustment (Manne, Pape, Taylor, & Dougherty, 1999). However, most studies of couples coping with breast cancer have assessed the survivors and their significant others separately. Few studies have examined couples as dyads, and how cancer affects couple's interaction and dyad coping behaviors. A number of studies have shown age-associated differences in women survivor's adjustment to breast cancer. Not many studies compare age differences in couples' adjustment.

To fill the gaps in the literature, the present study used Actor-Partner Interdependence Model (APIM) to examine 499 couples' responses to cancer stress (avoidance and intrusive thoughts) in relation to their own and their significant others' depressive symptoms. In addition, this study examined whether younger (222 couples, diagnosed at age 45 or younger) or older age group (277 couples, diagnosed after 55 years of age) was associated with the relationship between response to cancer stress and depressive symptoms. Results showed that when survivors report high level of response to cancer stress, so do their significant others. Participants with higher level of avoidance or intrusive thoughts reported higher level of their own depressive symptoms. Furthermore, significant others' avoidance was positively related with survivors' depressive symptoms. The relationship between significant others' avoidance and survivors' depressive symptoms was found in the older age group but not in the younger age group.

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## D-027

### SELF EFFICACY FOR COPING WITH CANCER PREDICTS QUALITY OF LIFE IN LOW INCOME, MINORITY CANCER SURVIVORS

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Background: Despite noted cancer health disparities, we know relatively little about quality of life (QOL) and its predictors, in low-income, minority cancer survivors.

Objective: To examine the association between self efficacy for coping with cancer and QOL in this vulnerable population. Methods: This study is part of an intervention trial. Self-efficacy was assessed with Merluzzi's Cancer Behavior Inventory at baseline and post-intervention (approximately 1 month from baseline). QOL [(i.e., emotional well-being (EWB), social well-being (SWB) and functional well-being (FWB)] was assessed with the FACT-G post-intervention and 6 months later. To examine if baseline self-efficacy predicted QOL post-intervention, and if self-efficacy post-intervention predicted QOL at 6 months, we used regression analyses controlling for time since diagnosis, age, gender, race, education, cancer type, income, receipt of chemotherapy and / or radiation and intervention group (cancer education, health and wellness classes, or no-treatment control).

Results: Cancer survivors ($N=140$) had a mean age of 53±10.5 years, were primarily Black (79%) and with breast cancer (38%). Almost 50% had incomes< $700/month. The overall EWB model was significant ($p=0.03$) and accounted for 17% of the variance in EWB. Baseline self-efficacy predicted post-intervention EWB ($p=0.03$); it did not predict SWB or FWB. Self efficacy post-intervention predicted EWB, SWB, and FWB at 6-months ($p<.0001$, $p=.03$, and $p=0.0002$, respectively). Our model accounted for 41% of the variance in EWB, $p<.0001$. The model for FWB accounted for 28% of variance and approached significance ($p<.0046$.) No variables other than self-efficacy were significantly associated with QOL outcomes.

Conclusions: One's confidence in coping with cancer plays a significant role in QOL outcomes over time. Interventions designed to increase confidence for this population should be designed and tested to determine their impact on improving QOL outcomes.

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## D-028

### INDIVIDUAL AND FAMILY FACTORS ASSOCIATED WITH QUALITY OF LIFE IN SURVIVORS OF COLORECTAL CANCER

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Background: Previous research has shown that a diagnosis of colorectal cancer can have lasting emotional and physical consequences. Despite this knowledge, few studies have examined the impact of family level factors on QOL of these survivors.

Purpose: The purpose of this study was to test a theoretically and empirically based model of resiliency that suggests adjustment to illness and quality of life is influenced by 1) illness and concurrent family stressors (fear of recurrence, treatment related symptoms of patient, comorbidity, perceived stress, perceived control), 2) family resources and support (family hardiness, family cohesion, social support), and 3) the meaning attached to the disease.

Methods: A survey-based study was conducted to examine psychosocial health and QOL (using the SF-12) among colorectal cancer survivors ($N=109$) recruited from the Hartford Hospital Tumor Registry (2-5 years post-diagnosis).

Results: Overall, the patients (M Age=65.7, SD=13.3) reported moderate levels of fear of recurrence (M=10.2, SD=4.0), perceived family stressors (M=12.7, SD=3.9), perceived control (M=12.7, SD=3.9), constructed meaning (M=16.2, SD=4.3) and high levels of family hardiness (M=46.0, SD=8.5), family social support (M=61.3, SD=9.6), and family cohesion (M=19.7, SD=3.4). Results from hierarchical regression suggest higher perceived stress, lower family cohesion, and low constructed meaning are associated with lower mental QOL scores. Lower physical QOL scores were associated with higher number of comorbid conditions and marginally lower family hardiness scores.

Discussion: Our results indicate both individual and family level factors are differentially correlated with mental and physical QOL. Clinicians working with cancer survivors might consider how the strengths and durability of the family promotes or inhibits individual's adjustment to a diagnosis of colorectal cancer.

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## D-029

### FEASIBILITY OF PHYSICAL ACTIVITY INTERVENTION FOR SURVIVORS OF EARLY STAGE, LUNG CANCER (LC)

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Physical activity (PA) may improve post-treatment physical functioning and quality of life. We examined program acceptance, reasons for refusal, retention and post-intervention satisfaction as indicators of feasibility of physical rehabilitation for sedentary LC survivors, treated surgically, free of malignant disease and without prohibitive medical comorbidities. Eligible LC survivors were randomly assigned to either a 12-wk PA intervention focusing on home-based walking, upper-body strengthening and breathing exercises or a 12-wk, wait-list control. Post-intervention satisfaction ratings ranged from 1 (not at all met expectations) to 5 (met expectation completely). Enrollees ($n=44$, 33% of eligibles) had a mean age of 69.8 (±8.3) yrs , were 70% female, and 54% had at least some college education. The mean time since dx was 50 mos. At baseline, participants reported an average of 38 mins of at least moderate PA/week. Refusers ($n=56$) were older than acceptors. Most common reasons for refusal were low motivation, being too far to travel, and comorbid health concerns. Treatment completion was good with 76% receiving the PA intervention as planned. The most common reasons for drop-out were termination due to medical or pain concerns. Among those who received the PA intervention, program satisfaction was high. On average, expectations were very much met regarding learning the benefits of exercise (M =4.1), increasing motivation to start an exercise program (M=4.1), and getting encouragement to maintain exercise (M= 4.4). Expectations about learning how to cope with pain and other physical symptoms were somewhat less met. Participants reported being "very satisfied" with guidance on pedometer use, breathing techniques, and how to monitor symptoms and stay safe while exercising. Addressing practical barriers will be critical in designing PA interventions for LC survivors.

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## D-030

### PSYCHOSOCIAL FACTORS AND SURVIVAL IN WOMEN WITH EARLY STAGE ENDOMETRIAL CANCER

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Psychosocial factors have previously been linked with survival and mortality in cancer populations. Research suggests that quality of life, social support, and coping in the pre-surgical period are related to better health outcomes and survival while depression and life stress are associated with mortality across several cancer types. Little evidence is available about the influence of these factors on outcomes in gynecologic cancer populations, particularly endometrial cancer, the 4th most common cancer among women. This study examines the relationship between several psychosocial factors at the pre-surgical period and survival and all-cause mortality in women with endometrial cancer. Participants were 76 women (M age=60.3 yrs, SD age=9.4 yrs) who were diagnosed with early-stage endometrial cancer (Stages I-III) and subsequently underwent surgery. Of this sample, 17 women have died and the remaining 59 have reached 4-5 year survival since diagnosis. In a Cox survival analysis, controlling for tumor stage, a known biomedical prognostic factor, an active coping style endorsed on the BriefCOPE (M=5.96, SD=1.66) was linked with longer survival, although the result was approaching significance, Hazard Ratio (HR)=0.710, p =.058. Depression, life stress, self-distraction, emotional support, and quality of life in the preoperative period were not significantly associated with survival or all-cause mortality 4-5 years following diagnosis. Although based on a small sample, the active coping finding lends support to the hypothesis that, among women with endometrial cancer, coping strategies may be predictive of survival outcomes. Future research should attempt to examine these relationships in a larger sample.

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## D-031

### DESCRIPTIVE ANALYSIS OF RELATIONAL AND INFORMATIONAL COMMUNICATION IN CANCER CONTROL NAVIGATION

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Patient navigation is designed to reduce disparities in cancer detection and treatment in low-income and racial/ethnic minority populations by linking patients with a lay health provider who can help them access and obtain needed services. Little is known about how time is spent within navigator-participant interactions. A pilot study was conducted with a sample of low-income women (n=10; mean age=43.1, SD=14.3) assigned to the cancer control navigation arm of a randomized, controlled intervention trial investigating provision of cancer-related referrals through an information and referral system (2-1-1). The content of 22 telephone navigation conversations (111 total minutes) was analyzed by topic and speaker across two coders (Krippendorff's alpha=.81). Mean call duration was 5.0 minutes (range=0.8 min-18.5 min). Based on frequency (count) analysis, relational topics (social-emotional in nature) occurred slightly more often (51%) than informational topics (48%) (health and non-health events and barriers). A time analysis (to 0.1 second) revealed that the majority (74%) of conversation time was spent on informational topics and that participants spent more time on relational interactions (29%) compared to navigators (18%). Navigators spent most of their time giving and seeking information related to health (33%) and the navigation program (40%), while participants focused on life events or stressors (24%) in addition to health (35%). Both coding and timing of communication interactions were necessary to accurately depict the nature of calls. The topical content within cancer control navigation for this low-income sample was broad and varied by speaker. Future research should address how time spent within these relatively brief interactions affects cancer control outcomes.

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## D-032

### EMBODIMENT AND THE PATIENT PERSPECTIVE: CONSUMER ADVOCATES IN THE PEER REVIEW OF CANCER-RELATED RESEARCH

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Background: Many organizations that fund cancer-related research have adopted the practice of including consumer advocates on peer review panels. Typically non-scientists with personal experience of cancer, advocates are assumed to bring the "patient perspective" to the evaluation of research proposals. This study explored consumer advocates' role with the goal of characterizing the patient perspective and describing the kinds of critiques advocates aim to contribute.
Methods: In-depth interviews were conducted with a purposive sample of consumer advocates (n=19) participating in peer review through the National Cancer Institute's Consumer Advocates in Research and Related Activities (CARRA) Program. Interviews were audio recorded and transcribed. A content analysis was performed to identify themes relevant to understanding advocates' role, and these themes were interpreted using the theoretical framework of embodiment.
Results: In describing the patient perspective, advocates emphasized their knowledge of the bodily experience of cancer. This experience included emotions, particularly those of fear and confusion, as well as the physical pain and fatigue associated with illness and treatment. For advocates, such bodily vulnerability was of both ethical and practical concern as physical and emotional pain impacted patients' quality of life as well as their ability to understand information, make decisions, navigate clinical environments, and participate in research activities. Interviewees reported drawing on the patient perspective to critique research proposals in two main areas: the protection of human subjects and the relevance of research outcomes. By reminding scientists of the ways patients are "more than just the blood in the test tube," advocates aimed to improve informed consent, reduce participant burden, support the recruitment of under-represented populations, and encourage innovation.
Conclusions: Advocates believed they made an important contribution to peer review, despite concerns that their experiential knowledge of cancer was out of place in the scientific forum of peer review.

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## D-033

### THE EFFECT OF HIGH-DOSE ACTIVE VITAMIN D AND EXERCISE ON FATIGUE IN BREAST CANCER PATIENTS

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Background: Fatigue is a common side effect in breast cancer patients; up to 60% of women undergoing adjuvant hormonal therapy (HT) report fatigue. Clinical trials involving exercise interventions and vitamin D supplementation in cancer patients show promise in reducing fatigue. The secondary aim of this feasibility trial is to examine the effect of a novel weekly, high-dose, active vitamin D regimen in combination with weight-bearing exercise on fatigue in breast cancer patients.
Methods: Forty female non-metastatic, ER+breast cancer patients receiving HT were randomized to 1 of 4 arms for 12 weeks: 1) weekly, high-dose active vitamin D (calcitriol) [45 μg QW], 2) an individualized exercise program, 3) both, or 4) a daily multivitamin (control). Thirty-two provided evaluable data. Fatigue was assessed using the brief fatigue inventory (BFI), a 9-item questionnaire with each item scored on a 0-10 scale with 0 representing "not present" and 10 representing "as bad as you can imagine." Changes in fatigue scores were calculated using ANCOVA, controlling for age, stage, and baseline fatigue scores.
Results: At baseline, 81% of participants reported having fatigue (≥1) within the previous 24 hours, with an average score of 2.5. A greater change in the average fatigue level in the past day was observed for patients receiving active vitamin D (AVD) compared to controls (Con) (AVD=-0.4 vs Con=+0.8; p=0.05). The change in worst fatigue level in the past day favored the active vitamin D group, but the difference was not statistically significant (AVD=-0.2 vs Con=+1.3; p=0.12). There was a greater reduction in total BFI score for the active vitamin D group (AVD=-3.3 vs Con=+3.5; p=0.04), but not for the exercise group (Exer=-0.7 vs Con=+0.2; p=0.80).
Conclusion: Active vitamin D therapy may be effective in reducing fatigue. The lack of effect of exercise on fatigue may be due to the inclusion of participants who were already engaged in exercise. Further research is warranted to determine the effect of high-dose active vitamin D therapy on fatigue in breast cancer patients on HT.

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## D-035

### SYMPTOMS OF THE POST-TRAUMATIC STRESS DISORDER AND MYOCARDIAL INFARCTION: IMPACT ON CARDIOVASCULAR COMPLICATIONS

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Objective: To assess the impact of post-traumatic stress disorder (PTSD) symptomatology 3 months post myocardial infarction (MI) on cardiovascular complications evaluated 1 year later.
Method: 474 patients (360 men, 114 women), recruited in three hospitals within the Montreal area, were evaluated 2-5 days and 3 months post MI for PTSD and depression. Information on cardiac events experienced during the year post MI was obtained from Department of Health and Social Services). Three categories of cardiovascular complications are examined: ischemic complications (infarct, angina, etc.), cardiovascular/hypertension complications (hypertension, heart failure, etc.) and arrhythmic complications (tachycardia, fibrillation, etc.). The presence/absence of PTSD symptomatology was defined based on a clinical threshold on the Modified scale of PTSD Symptoms.
Results: Only the regressions involving arrhythmia reveal a role for PTSD. Arrhythmia vs no complication: OR=11.007, CI (95%)=1.583-76.526, p=.015; Arrhythmia vs other complications: OR=3.765, CI (95%)=1.166-12.155, p=.027.
Conclusion: PTSD symptoms are associated with a greater risk of arrhythmic complications in the year following the MI. The detection of post MI PTSD symptomatology and its treatment could reduce the risk of arrhythmic complications, one of the main risk factors for sudden cardiac death.
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## D-036

### RELATIONSHIP AMONG HOPELESSNESS, DEPRESSION AND ORTHOSTATIC REGULATION IN HEALTHY ADULTS

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Cardiovascular (CV) problems can manifest in several different ways including orthostatic blood pressure (BP) dysregulation. Orthostatic BP dysregulation, even when subclinical, is associated with a variety of sequelae including depression, hopelessness, and behavioral and motivational problems including ADHD. Orthostatic BP regulation can be measured by the efficiency of the postural shift from supine to standing in children as young as three years as well as in the elderly. This study utilizes pulse pressure (PP) to assess orthostatic BP regulation by calculating the difference between systolic and diastolic BP assessed under both supine and standing conditions.
Depression, hopelessness and the orthostatic PP were evaluated in 74 generally healthy women and men seen in an inner-city clinic. Participants with no history of psychiatric disorders or CV disease were recruited and completed the Zung Depression and Everson Hopelessness Scales. Pulse pressure was measured as systolic BP minus diastolic BP. Orthostatic response was assessed as PP change, calculated by subtracting the supine PP from the standing PP.
Depressive symptoms and hopelessness (r=.47, p<.01) were strongly correlated. Two separate multiple regression models adjusted for age, gender, ethnicity, education and body mass evaluated the effects of the orthostatic response with hopelessness and depression as outcome variables. Depressive symptoms were unrelated to the PP response. Nevertheless, when controlling for depression, the orthostatic response remained significantly associated with hopelessness both linearly (R2=.06, p=.01) and curvilinearly (R2=.05, p =.02). That is, with both strong increases and decreases in orthostatic PP, hopelessness was elevated. These findings evidence a strong link between hopelessness and orthostatic PP regulation independent of depressive symptoms. Additionally, orthostatic response may serve as an important mechanism for assessing hopelessness as a sequel of CV problems.

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## D-037

### THE EFFECTIVENESS OF A MULTIDISCIPLINARY PAIN REHABILITATION PROGRAM IN THE TREATMENT OF POSTURAL ORTHOSTATIC TACHYCARDIA SYNDROME IN ADOLESCENTS

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Postural Orthostatic Tachycardia Syndrome (POTS) is a clinical syndrome defined by the presence of excessive tachycardia on the assumption of an upright posture. It is accompanied by symptoms which can include lightheadedness, tremulousness, nausea, fatigue, exercise intolerance, weakness, hyperpnea or dyspnea, palpitations, sweating, anxiety, and sleep disorders. Eighty-eight percent of patients with POTS have chronic pain most commonly headache and abdominal pain. The functional disability and psychological distress observed in these patients can be severe. Treatment has included non-pharmacological interventions that have included water and salt supplementation, exercise, and the use of elastic support hosiery, and also pharmacological treatment. No rehabilitation efforts have been examined in the treatment of POTS to date in either adolescent or adult populations. The present study evaluated the effectiveness of a multidisciplinary pain rehabilitation program in improving psychological distress and functional impairment in 68 adolescents; 34 patients diagnosed with POTS and 34 chronic pain patients without POTS diagnosis who were age, gender, and pain site matched. Measures were completed at admission and discharge from the three week program and included the Center for Epidemiological Studies- Depression- Child version, the Pain Catastrophizing Scale, the Functional Disability Inventory, the Multidimensional Anxiety Scale, and the Numeric Pain Rating Scale. Results revealed no differences for depression, anxiety, or overall functional disability at baseline. After participation in our program, similar to the chronic pain patients, adolescents with POTS demonstrated significant reductions in depression (t=5.109, p<.001, d=1.0), anxiety (t=2.237, p<.05, d=0.38), and catastrophizing (t=6.494, p<.001, d=1.24) and significant increase in overall functional abilities (t=6.166, p<.001, d=1.27).

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## D-038

### FIGHT, FLIGHT, OR FALL: AUTONOMIC NERVOUS SYSTEM REACTIVITY DURING SKYDIVING

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The sensation seeking (SS) trait is not well understood. We intended to identify the autonomic nervous system (ANS) correlates that instantiate novelty and risk in the progression of SS into high-risk behavior during the actual expression of risky behavior. Skydiving was used as a window into the SS trait as it is a socially-sanctioned risky behavior.
We utilized an innovative device to gather ANS measures of sympathetic and parasympathetic control throughout skydiving. To identify the contribution of novelty, we compared novice jumpers (N=29) to experienced jumpers (N=15). Hierarchical Linear Modeling revealed whether (1) there was physiological activation for each individual and (2) there were differences in reactivity between novice and experienced jumpers.
Experienced jumpers exhibited more parasympathetic control before the jump, indicating that novelty may mediate when physiological activation differs between individuals ($\beta$=.56, p<.0001). During the jump, all jumpers displayed increases in HR, but there were no group differences. The unwavering risk may explain recurring ANS activation, as activation would be adaptive in the face of immediate threats regardless of how many times that threat is encountered. Interestingly, a pattern of coactivation between the SNS and PNS emerged during the actual jump and fall, suggesting that both components of the ANS response are necessary to facilitate the appropriate behavioral state to cope with a high-intensity risk.
Although it is relatively safe to skydive, SS behaviors in the extreme version may pose significant health risks. High SS has been associated with excessive gambling, risky sex, drug abuse, and reckless driving. This study illustrates that high-risk activities may be pleasant for some individuals who experience an ANS-induced physiological rush. Lack of ANS habituation after repeated exposure may be one physiological mechanism underlying repeatedly engaging in high-risk activities.

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## D-039

### DEPRESSIVE SYMPTOMS AND SELF-EFFICACY ABOUT BP CONTROL PREDICT WHITE COAT EFFECT IN HYPERTENSIVES

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The white coat effect (WCE) is the discrepancy between clinic blood pressure (BP) and BP taken at home or by ambulatory BP monitoring (ABPM). The WCE has been related to anticipatory anxiety in the clinic related to the patient's expectations of high BP readings and related consequences (e.g., apprehensive responses from office staff, increases in BP medication). Our purpose was to explore the association of rumination with the WCE, in the context of other psychosocial factors for sustained hypertension such as depression, sleep, perceived stress, and confidence in their blood pressure control, using bivariate and multivariate methods. WCE (mean of 3 office SBPs minus waking mean SBP by ABPM) was evaluated in 180 uncontrolled hypertensives as part of screening for a hypertension RCT. Subjects completed: Beck Depression Inventory II (BDI), Ruminative Response Scale (RRS), Perceived Stress Scale (PSS), Pittsburgh Sleep Quality Index (PSQI), and Hospital Anxiety and Depression Scale (HADS), and a rating scale of confidence in controlling BP (self-efficacy). In bivariate correlations, WCE correlated significantly with BDI (r=.33, p=.000) and HADS total and HADS depression (r=.20, p=.012; r=0.25, p=.001 respectively), but not HADS anxiety (r=.101, ns). Total and mood-related rumination were also associated with the systolic WCE (r=.20, p=.02; r=.17, p=.03 respectively), as was sleep disturbance (PSQI) (r=.233, p=.008). Confidence in ability to control blood pressure was negatively associated with systolic WCE (r=-.29, p=.000), supporting previous findings. In a multiple regression model (R=.48), depressive symptoms remained significant (BDI, HADS Depression & Total), as did BP control self-efficacy. Rumination correlated very highly (r=.79) with the BDI, and in the multivariate equation was n.s.. In summary, the WCE, previously related to anxiety, is also strongly related to depressive symptoms even when controlling for med adherence, sleep, BMI, age, and gender.

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## D-040

### CARDIOVASCULAR RESPONSES TO A GUIDED RELAXATION: THE ROLE OF TRAIT MINDFULNESS

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There is increasing evidence that mindfulness-based interventions are a useful method for reducing biological responses to stress. There is also evidence that higher levels of trait mindfulness may be protective for certain health conditions. This study sought to examine if individuals' trait mindfulness affected cardiovascular (CV) responses to a guided relaxation. Participants were 111 undergraduates from UC Irvine (Mage=20.78, SD=2.75), randomly assigned to a 35-minute guided relaxation (n=54; 85% female) or 35-minute control group (stress-management lecture; n=57; 77% female), and the Mindfulness Attention Awareness Scale (MAAS) was administered. High- and low- mindfulness groups were created based on a median split of all MAAS scores. Systolic and diastolic blood pressure (SBP; DBP) and heart rate (HR) were assessed before and after the session.

The guided relaxation resulted in an increase in SBP (Mchange=2.78), while SBP decreased (Mchange=-1.02) in controls, t(109)=2.26, p=.03. DBP and HR did not change after either session. There was no difference in trait mindfulness between the relaxation and control groups. Trait mindfulness was correlated negatively with both SBP (r=-0.25, p=.01) and DBP (r=-0.20, p=.04) changes, but not with HR. The high-mindfulness group had an increase (Mchange=1.52) in HR after the relaxation and decrease (Mchange =-3.71) in HR after the lecture, t(54)=2.33, p=.02. The low-mindfulness group had no differences in SBP, DBP, or HR after either session. Mindfulness was a significant contributor to changes in SBP, with mindfulness accounting for 5% of the variance in SBP changes (β=-0.25, p=.01), as indicated by multiple regression analysis controlling for gender (F=3.56, p=.03).

Results suggest that stress-reduction interventions may elicit CV changes based on an individual's trait mindfulness, and some individuals may experience greater benefit to information-based, rather than mindfulness-based, interventions. Tailoring interventions to an individual's trait mindfulness may be useful when aiming for specific CV responses.

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## D-041

### PERCEIVED DISEASE SEVERITY VERSUS ACTUAL DISEASE SEVERITY IN PATIENTS WITH CARDIOVASCULAR AND RESPIRATORY PROBLEMS

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Research has shown that illness perceptions can greatly influence a patient's psychological and physiological well-being. It is imperative that health providers understand how patients perceive the severity of their disease and whether it is consistent with actual disease severity, so to better prepare coping behaviors and treatments. The purpose of the present study was to examine the relationships between actual disease severity and perceived disease severity in a sample of patients (N=193) with cardiovascular and respiratory problems in the Emergency Room (ER) and Inpatient floors of four hospitals. The patients, 51.5 percent male and 48.5 percent female, were predominantly white (85.9 percent) and between the ages of 20 and 83 (Mean age=52 years). Perceived disease severity was measured by scales created for the purposes of this study and was measured at three time anchors (1. when patients first notice their symptoms, 2. when patients first come to the hospital and 3. when patients fill out the baseline assessment for the study). Actual Disease severity was measured by total Thrombosis in Myocardial Infarction risk scores for ST-Elevated Myocardial Infarction. We hypothesized that perceived disease severity would be positively correlated with actual disease severity at each time anchor and that perceived severity would differ between patients in the ER and those admitted to the hospital. Pearson Correlation analysis revealed that perceived severity at time anchor three was positively correlated with actual disease severity (r=.26, p=.002). T-test analysis revealed a statistically significant difference between perceived severity at time anchor two (t(106)=-2.91, p=.004) and time anchor three (t(107)=-3.67, p<.001) for patients admitted to the hospital versus discharged from the ER. Results indicate that patients' perceptions of their diseases more accurately coincide with the actual severity of their diseases as time progresses.

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## D-042

### NEIGHBORHOOD DEPRIVATION AND CARDIOMETABOLC RISK

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Living in an economically deprived neighborhood has been associated with an increased risk of cardiovascular disease (CVD), but the pathways have not been well elucidated. The present study seeks to examine the association of neighborhood deprivation and cardiometabolic risk factors (CMR) among adults. The analysis included 19, 079 participants from the REasons for Geographic And Racial Differences in Stroke Study, a national, population-based, longitudinal study of black and white adults age>45 years at baseline. Baseline data collection included a centralized telephone interview and an in-home examination. Participant addresses were geo-coded to U.S. Census block groups to develop an index of six economic indicators of neighborhood deprivation (e.g. income/wealth, education, occupation/employment). Participants self-reported total household income and education. CMR was assessed by HDL, C-reactive protein, triglycerides, glucose, BMI, waist circumference, and blood pressure. CMR were examined separately and as a cluster (metabolic syndrome). Logistic regression examined whether neighborhood deprivation was associated with increased odds of CMR. Among blacks, neighborhood deprivation was associated with lower HDL (p<.001), higher C-reactive protein (p<.01), higher glucose (p<.001), higher waist circumference (p<.05), higher BMI (p=.01), higher blood pressure (p<.01), and metabolic syndrome (p<.001). Among whites, neighborhood deprivation was associated with lower HDL (p<.001), higher C-reactive protein (p<.01), higher triglycerides (p<.01), higher glucose (p<.001), higher BMI (p<.0001), higher waist circumference (p<.001), higher blood pressure (p=.01) and metabolic syndrome (p<.001). These findings highlight the role of neighborhood economic deprivation on CMR for black and white adults. In order to reduce the observed disparities, interventions should be tailored to address the contextual effects of deprived neighborhoods that may increase CMR.

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## Meritorious Poster

## D-043

### RELATIONSHIPS AMONG INDIVIDUAL DEPRESSIVE SYMPTOMS AND C-REACTIVE PROTEIN: AN ANALYSIS OF 2005-2008 NHANES DATA

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Systemic inflammation is one mechanism that might account for the prospective association of depression with incident cardiovascular disease and diabetes. Although numerous studies have observed a positive relationship between depression and various inflammatory markers, few investigations have examined the components of depression, which is a multidimensional construct. The aim of the present study was to determine whether particular depressive symptom clusters are more strongly associated with C-reactive protein (CRP) than are others. Participants were 6,073 healthy adults aged 20-85 years (50% female, 51% non-white) who were involved in the National Health and Nutrition Examination Survey (NHANES) from 2005-2008. Depressive symptoms were assessed with the Patient Health Questionnaire-9 (PHQ-9), and CRP level was quantified using latex-enhanced nephelometry. We excluded persons with CRP>10 mg/L, as well as those with chronic health conditions associated with elevated CRP levels. Multiple regression analyses adjusted for demographic factors, acute illnesses, and diabetes revealed that PHQ-9 total score was positively associated with CRP ($\beta=.036$, $p=.006$). When the PHQ-9 items were entered into separate models, anhedonia ($\beta=.026$, $p=.04$), sleep disturbance ($\beta=.033$, $p=.01$), and fatigue ($\beta=.050$, $p<.001$) were related to higher CRP; however, depressed mood, appetite disturbance, and the one behavioral and three cognitive symptoms were not (all ps>.09). When the three significant items were simultaneously entered into the same model, only fatigue remained positively associated with CRP ($\beta=.042$, $p=.005$). Although adjustment for body mass and smoking weakened the fatigue-CRP relationship, it remained significant ($\beta=.027$, $p=.024$). Our results suggest that the positive association between depressive symptoms and CRP is largely driven by the somatic symptoms of depression, especially fatigue. Knowledge of which symptom clusters are most strongly related to inflammatory markers may help to elucidate the directionality of and mechanisms underlying the depression-inflammation relationship.

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## D-044

### ASSOCIATIONS OF CARDIOVASCULAR RISK FACTORS WITH A FUNCTIONAL POLYMORPHISM IN THE 5HTR2C GENE

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HPA activation may explain some of the impact of stress on the pathogenesis of metabolic syndrome. Cortisol has been shown to partly mediate the association between depression and serum glucose. The serotonin 5HTR2C receptor mediates HPA axis activation during stress. We recently found that men with the rs6318 Ser23 C allele had higher cortisol levels and larger rises in anger/depressive mood ratings during anger/sadness recall compared to Cys23 G carriers. Thus, we hypothesized that those carrying the C allele would be more likely than G allele carriers to express higher levels of endophenotypes associated with elevated cortisol levels, including central obesity, poor glucose metabolism, and higher lipids. In 502 subjects (243 males;259 homozygous females) we examined potential GenderXGenotype, and AgeXGenotype interactions as predictors of these endophenotypes. For glucose metabolism, AgeXGenotype predicted HbA1c ($p=.02$); among younger individuals (< 30 yrs) the difference between C and G carriers was nonsignificant, while among those over 30 years old C allele carriers had a mean HbA1c of 5.8 compared to 5.5 for G carriers($p<.001$). A similar AgeXGenotype trend was found for fasting glucose ($p=.12$). Results for insulin were nonsignificant. For body composition, an AgeXGenotype association was found for hip circumference (HC)($p=.04$); among younger individuals HC was similar for G and C carriers, while among older individuals the mean HC for C carriers was 110 cm, and 105 cm for G carriers. A similar trend was found trunk and total body fat (AgeXGenotype $p=.06$;$p=.08$,respectively). Associations for waist circumference, waist hip ratio, and BMI were not significant. Lipids showed a gene main effect for HDL ($p=.02$) and LDL ($p=.01$); with a mean HDL for C carriers of 56.2, and 52.0 for G carriers; and a mean LDL for C carriers of 109.1, and 98.5 for G carriers. Triglycerides were not associated with genotype. GenderXGenotype interactions were nonsignificant. Thus, these findings are consistent with our hypothesis suggesting genetic variation in 5HTR2C may be associated endophenotypes that increase risk of CVD and type 2 diabetes.

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## D-045

### AN INVESTIGATION OF POSTTRAUMATIC STRESS DISORDER (PTSD) AND ENDOTHELIAL FUNCTION IN A YOUNG STUDY COHORT

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Objective: This study sought to investigate whether a known biomarker of cardiovascular disease (CVD), endothelial function, differed by gender, minority, and PTSD status in a young study cohort (18-39 years).
Method: 154 participants completed a structured clinical interview to determine psychiatric condition, including PTSD, and underwent a brachial artery flow-mediated dilation (FMD) assessment to clarify endothelial functioning status. Endothelial dysfunction is recognized as the initial step in the atherosclerotic process. In this study, ultrasound images of the brachial artery were taken at baseline (at rest) and during hyperaemia induced by inflation and deflation of an occlusion (blood pressure) cuff. FMD was defined as the maximum percent change in arterial diameter relative to resting baseline. A cut point of <5% in arterial change was used to indicate possible impaired endothelial functioning. Participants reported a mean age of 30 years (SD=5.56; range, 20-39 years), and 48% were female. Race was almost equally divided between African American (48%) and White participants (44%), with other racial groups representing 7% of the sample. Additionally, 46% of the study sample met diagnostic criteria for PTSD. Of those with PTSD, 21% met criteria for endothelial dysfunction.
Results: There was a trend for a greater percentage of younger PTSD individuals to exhibit an at-risk FMD status ($X2=0.09$). Moreover, at-risk FMD status was associated with female gender ($p=0.04$) and minority race ($p=0.01$). Recruitment in this study is ongoing and results will be reanalyzed with the larger sample population (anticipated n=225 by 04/2012) to determine whether these preliminary findings remain stable.
Conclusions: PTSD is a risk factor for increased cardiovascular mortality and morbidity. Increase autonomic arousal is a hallmark of the disorder. However, little is known about the trajectory of cardiovascular outcomes over time in this population. These results suggest that the cardiovascular risk can be detected early in the course of the disorder. Future studies would benefit from an evaluation of other biomarkers of CVD.

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## D-046

### "THAT'S NORMAL FOR ME": MOTIVATING AFRICAN AMERICAN WOMEN TO ADOPT BETTER HYPERTENSION CONTROL IN A BEHAVIORAL WEIGHT MANAGEMENT PROGRAM

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Rates of obesity and hypertension are higher among African American (AA) women than other racial groups. Overweight AA women are often motivated to lose weight to achieve better health, including management of high blood pressure. However, management can be complex. A 12-week community-based weight management intervention study, called the Family Intervention Study of Health (FISH), tracked the progress of AA women (N=82) during 12 weekly weight management educational sessions. Blood pressure education was a critical component of treatment. 72% had elevated BP at baseline compared to 52% at post-treatment. 65 women successfully completed the program. Completers who lost weight (n=51; 7.7±6.3lb) reduced systolic blood pressure by 4 mmHg. Completers who gained weight (n=14; 2.1±2.0lb) increased diastolic blood pressure by 2 mmHg. 17 women discontinued the study at various stages of treatment. Many chose to discontinue treatment as a result of the study's focus on hypertension awareness and weekly monitoring of blood pressure. Stage 1 hypertension was often conceptualized by participants as "that's normal for me" and many participants resented efforts to promote normotension. Unfortunately, participant medical caregivers often conveyed these messages not only to their patients, but to study staff attempting to work with participants to achieve better control. Tailored multi-behavioral interventions focusing on weight management and improvement of blood pressure control are warranted among AA women. This study supports the need for education on the management of hypertension, medication side effects, and the relationship between behavior change for weight loss and blood pressure improvement. Development of culturally-sensitive educational materials, physician involvement and education, and increased physician-patient discussion of acceptable systolic and diastolic measurements are useful means of reducing health disparities among AA women.

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## D-047

### SCREENING FOR PERCEIVED STRESS AND SUBCLINICAL ATHEROSCLEROSIS IN A CARDIOLOGY-BASED PREVENTION PROGRAM

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Clinicians underestimate the influence of emotional distress on the pathogenesis of cardiovascular disease (CVD). This study screened for perceived stress and subclinical atherosclerosis in a group of adults that elected to participate in a cardiology-based prevention program. The study involved a single visit observation of participants. One hundred and sixty-five apparently healthy asymptomatic adults (65% male) with a mean age of 50 years (SD=8.5) completed the 10-item Perceived Stress Scale (PSS-10). A carotid-intima media thickness (CIMT) test with B-mode ultrasound was used as a measure of subclinical atherosclerosis. Plaque was considered to be present when CIMT was >1.5 mm and located in >50% of the surrounding intima-media. Population norms were used to categorize the CIMT scores for cardiovascular risk based on age, gender and race. Inclusion criteria for the study required that participants had no prior history of diabetes or clinically apparent atherosclerosis. The mean PSS-10 score was 15.2 (SD =6.2). Fifty-three percent of the participants were categorized as having an elevated PSS-10 score (>14). Thirty-one percent were in a moderate risk range (scores 15-20), 15% were high (scores 21-24) and 7% were very high (scores 25-40). CIMT testing identified that 61% of the participants had advanced atherosclerosis, which was defined by the presence of carotid artery plaque (44%) or CIMT >75th percentile (17%). There appears to be evidence of increased CVD risk in this self-selected population. Screening for emotional distress may identify individuals who could benefit from stress reduction. Early detection of subclinical atherosclerosis combined with appropriate medical treatment and lifestyle modification may help prevent a future adverse CVD event.

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## D-048

### EFFECTIVENESS OF BEHAVIORAL INTERVENTIONS ON SYSTOLIC BLOOD PRESSURE (SBP) IN HYPERTENSION: IMPACT OF COMORBID MOOD DISORDERS

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Depression and anxiety are associated with an increased risk of hypertension (HTN) and decreased treatment adherence. Interventions in primary care settings should consider the role of psychopathology in the treatment of medical illness.

We evaluated the effectiveness of two behavioral interventions for veterans with uncontrolled HTN [blood pressure (BP) ≥130/80 mm Hg in those with diabetes or kidney disease; BP ≥140/90 in all others]. After screening and a one-month run in period, 533 veterans were randomized to a Transtheoretical stage-matched intervention (SMI), a non-tailored health education intervention (HEI) or usual care (UC). HEI and SMI were delivered monthly by phone for 6 months. Effectiveness was evaluated separately by mental comorbidity using regression analyses that controlled for baseline differences and baseline SBP while incorporating clustering by physician.

The number of patients in SMI, HEI and UC with comorbid depression and/or anxiety were 32, 38 and 33; the corresponding numbers without comorbidity were 144, 142 and 144. Baseline analyses stratified by comorbid and non-comorbid status indicated no significant differences by arm except for BMI. In comorbid patients, at 6 months, the systolic BP (SBP in mm Hg) levels in SMI, HEI and UC were 130, 131 and 136; SBP was -7.1 in HEI (p<.01) and -6.0 in SMI (p>.05) compared to UC in regression analyses. Among patients without comorbid mental illnesses, 6-month SBP in SMI, HEI and UC were 131.5, 131.9 and 133.3; SBP was -3.3 in SMI (p<.04) and -2.0 in HEI (p>.05) compared to UC in regression analyses.

Hypertensive patients with and without psychological comorbidities respond positively to behavioral interventions, though this response differs for SMI and HEI. This analysis should be utilized to help delineate the specific constructs that may be responsible for positive treatment outcomes in interventions for hypertensive patients.

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## D-050

### ACCEPTANCE-AVOIDANCE IN PHYSICAL ACTIVITY (PA) AMONG AFRICAN AMERICANS WITH TYPE 2 DIABETES (T2DM)

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African American adults experience a high prevalence of T2DM. Although T2DM can be managed with lifestyle changes, including increased PA, these changes are frustratingly difficult to make. Acceptance-avoidance, also referred to as mindfulness or self-regulatory focus, is believed to be an indicant of how well T2DM patients are managing distressing thoughts and feelings believed to be associated with avoiding diabetes care and self-management. It is thought that as patients accept, diffuse or disengage from distressing thoughts and feelings they are more able to focus on self-management goals. Although Bandura suggests that negative thoughts and fears can lower self-efficacy and trigger poor behavioral performance, evidence is needed as to how acceptance and avoidance relate to other SCT variables like social support, self-efficacy, outcome expectations, and self-regulation. Data from 52 African American adults (59% female; age: m=65.13, sd=13.12; 95% overweight or obese) with T2DM (n=31) or prediabetes (n=21) enrolled in a community-based diabetes intervention were used in a preliminary analysis of the contribution of acceptance and avoidance in conjunction with traditional SCT variables to their pretest PA levels (m=2.67 days exercising/week, sd=2.56). Participants' acceptance levels measured by the AADQ (m=46.81, sd=12.00) were similar to other samples of adults with T2DM. Participants who reported avoiding their T2DM care because of upsetting thoughts were less active (m[sd]=1.5[2.15] vs. 3.22[2.43] times/week; F=4.23, p<.05) than non-avoiders. Exploratory path analysis of the effects of SCT variables on PA levels (alpha=.10) suggested lower avoidance ($\beta$=-.36) and negative outcome expectations ($\beta$=-.28) and higher self-efficacy ($\beta$=.28) and self-regulation ($\beta$=.63) contributed to higher levels of PA. Adding avoidance to the traditional SCT model predicting PA increased R2 from .54 to .60 (F=3.83). Results suggest the effect of avoidance on PA levels, although fairly strong, may be unique and unrelated to self-efficacy and self-regulation.

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## D-051

### HEALTH LITERACY AS A BARRIER TO MEDICATION COMPLIANCE IN DIABETIC PATIENTS

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Understanding medication regimens can be challenging for many adults, and more so for the population with low health literacy skills. Patients are reported to forget up to 80% of verbal information received by their health care provider and about 50% of the remembered instruction is incorrect (Pfizer, 2007). Written medication instructions if used are most often written at 10-12th grade reading level. Consideration of health literacy levels and providing literacy appropriate medication communication could be the key to patient adherence and better health outcomes. The purpose of this project was 1) to assess the health literacy level of a rural diabetic patient population 2) to design and implement a low literacy diabetic medication instruction tool; and 3) to determine if the use of the tool improved patient medication comprehension and adherence.

A non-experimental study design ( pre-test, intervention, post-test format) was used with a convenience sample (n=50) of adult diabetic patients seen by the nurse practitioner in a rural internal medicine practice over three months. Participants were assessed for health literacy level using the Rapid Estimate of Adult Literacy in Medicine instrument. Current medication comprehension and adherence was assessed prior to participants receiving written medication instructions with large print, graphics, and easy-to-read language at the 5th grade reading level (Fry Method). Two week follow-up phone interview assessed medication comprehension, adherence and blood glucose reports. Conclusion - Average health literacy level was 7-8th grade level. 80% of patients with high blood sugars decreased to goal blood sugar values. Patient comprehension (p=.05) and adherence (p=0.00) were significantly improved to their personal medication regimen.

Implications for Practice - Practice change implementation of low literacy written instructions with graphics at routine chronic care check-ups could improve diabetic patient medication adherence and comprehension.

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## D-052

### THE EFFECTS OF SMOKING ON WALKING ABILITY AND QUALITY OF LIFE IN ADULTS WITH TYPE 2 DM AND PERIPHERAL ARTERIAL DISEASE

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Walking programs are standard of care and primary therapy for patients with both peripheral arterial disease (PAD) and type 2 diabetes (T2DM). Smoking is a leading risk factor for both PAD and long-term complications in patients with T2DM, and may bestow both physiological and psychological deterrents to walking. Little is known, however, about the relationships between smoking status, walking ability, or patient-reported outcomes, including pain and quality of life in patients with co-morbid T2DM and PAD. Our aim was to explore the relationship between smoking, perceived and actual walking ability, and quality of life in patients with co-morbid T2DM and PAD.

Methods: Walking ability and subjective pain assessments were measured during progressive treadmill testing, subjective walking ability was measured using the Walking Impairment Questionnaire, distance subscale (WIQ). Quality-of-Life (QOL) was measured using the MOS SF-36. Depressive symptoms were measured using the Center for Epidemiological Studies-Depression (CES-D).

Results: In adults with T2DM ($n=51$, $69.5+8.3$ years) who were taking part in a study of PAD and walking, smoking was associated onset of claudication pain ($r=-0.412$), pain level at peak walking distance ($r=0.423$), perceived walking ability ($r=-0.337$), depressive symptoms (0.321), and QOL (all $p<0.05$). Additional t-test comparisons revealed that patients with diabetes who were current smokers had earlier onset of pain and higher pain levels at exercise peak, lower perceived walking ability, lower QOL, and higher depressive symptoms than patients with diabetes who did not smoke (all $p<0.05$). Treadmill peak duration time was lower in the smokers, but did not reach statistical significance (6.2 vs. 8.3 minutes, $p=0.097$). Factors such as HbA1c, other co-morbid conditions, or medication regimen did not affect these relationships. Results from this study suggest that smoking is associated with poor patient-reported outcomes, including pain, depressive symptoms, and quality of life alongside the known physiologic risks in patients with T2DM and PAD.

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## D-053

### EDUCATIONAL DIAGNOSIS OF TYPE 2 DIABETES CONTROL BASED ON PRECEDE-PROCEED MODEL IN AMERICAN SAMOA

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Translating effective interventions into different populations is important to reduce health disparities, yet understanding the cultural context is crucial to customize the intervention. We examined baseline data from 271 type 2 diabetes patients enrolled in a community health worker (CHW) intervention trial in American Samoa to assess factors, based on the Precede-Proceed model, that influence diabetes control in this population. Predisposing factors included health beliefs (barriers, benefits), education, age, Patient Activation, depression, perceived health for age; enabling factors included diabetes self management skills (diet, foot care, medication adherence, physical activity); reinforcing factors included resources for support from family, medical team, community. All participants were Samoan ethnicity, recruited from a community health center diabetes registry; 86% of eligibles consented. Sample mean age was 55 (SD 12.7), 63% female, mean education 12.2 yrs. (SD 2.2), mean HbA1c of 9.8 (SD 2.3). Variables with significant bivariate correlations with HbA1c–age, perceived health, medication adherence, Patient Activation, benefits, barriers, diabetes self care, family support–were entered into a stepwise linear regression. Results showed the predisposing factors of older age and positive perceived health and the enabling factor of more consistent use of self care behaviors were significantly associated with lower HbA1c , after adjustment for other factors; $F=16.2$, $p<0.001$, 19.4% of variance explained. Interventions in this setting must take into account the evident greater vulnerability of younger diabetes patients as well as the potential for greater improvement in HbA1c from an intervention that emphasizes learning diabetes self care behaviors. Our presentation will discuss relevant cultural contexts which may account for these findings with intervention planning implications.

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## D-054

### AFRICAN AMERICAN PATIENTS' PERCEPTIONS OF THE COMMUNITY HEALTH WORKER MODEL FOR DIABETES CARE

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Background: African Americans with diabetes tend to experience higher mortality rates, poor glycemic control, and other diabetes related complications compared to European Americans. Community health worker (CHW) interventions are increasingly employed to improve diabetes outcomes and reduce health disparities. However, few studies have explored patient perspectives of peer-delivered diabetes education. The purpose of this qualitative study is to investigate possible benefits as well as risks of community health worker-delivered peer support for diabetes from the perspectives of African American women living with type 2 diabetes in the Deep South.

Methods: Four ninety-minute focus groups were conducted by a trained moderator with a written guide to facilitate discussion on the topic of community health workers (CHWs) and diabetes management. Participants were recruited from the diabetes education database at a safety-net hospital in Birmingham, AL. Two independent reviewers performed content analysis to identify major themes using a combined deductive-inductive approach.

Results: There were 25 participants. Mean years with diabetes was 11.2 (range 6 months to 42 years). Participants were knowledgeable about methods for self-management but limited access to health services and stress as major barriers. Preferred CHW roles included liaison to the healthcare system and easily accessible information source. Participants preferred that the CHW be knowledgeable and have personal experience managing their own diabetes or assisting a diabetic family member. Given high levels of stress, the need for emotional support and partnership from a peer educator was also expressed. Concerns regarding the CHW-model were possible breaches of confidentiality and privacy. Participants also had concerns about unsolicited medical advice and frequency of contact.

Conclusion: The self-management strategies and barriers to management identified by participants were reflected in their preferred CHW roles and traits. These results suggest that African American women with diabetes in Alabama would support peer-led diabetes education that is community-based and socially and emotionally supportive.

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## D-055

### DESCRIPTIVE EPIDEMIOLOGY OF DIABETES LINKED TO ETHNICITY AND GEOSPATIAL CHARACTERISTICS IN THE 100 COUNTIES OF NORTH CAROLINA

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American Indians (AI) have significantly higher risk for Type II diabetes than Caucasians in the United States. While comparing AI to other broad categories of ethnicity is valuable for many public health issues, examination of additional sociodemographic characteristics attributable to specific tribes or nations may provide insight into the importance to variations in health risk of differences in location, history, differential acculturation, and economic resources . The Eastern Band of the Cherokee primarily reside in Jackson and Swain Counties, NC; the Lumbee tribe members hold no Reservation but are largely located in Robeson County, NC. Warren, Hoke, and Scotland Counties count 5.1, 10.1, and 11.1 population percent AI, respectively. Using data obtained from the NC Dept. of Health and Human Services and ArcGIS (ESRI), we mapped health care infrastructure and calculated bivariate correlations (PASW) to identify the relationship of risk factors for diabetes across counties, particularly lifestyle variables and the proportion of individuals identified as either Caucasian, African-American, Native American, or Asian. Our analyses indicate that the percent of AI ethnicity in any county has less impact on diabetes rates than the proportion of the population reporting sedentary lifestyle ($r=.54$; $p<.01$), obesity ($r=.48$; $p<.01$), and less than high school education ($r=.58$; $p<.01$). The percent of the state's hospitals in each county was related to other resource and economic variables, and was inversely related to diabetes rates ($r=.-.38$; $p<.01$). The incorporation of geospatial analysis with conventional methods of behavioral research assisted in clarifying factors that connect sociodemographic variables to diabetes rates. We conclude that this analysis provides further evidence that ethnicity per se is likely to be less important to diabetes risk than the socioeconomic and behavioral factors commonly associated with minority and/or marginalized populations, which should be the focus of future intervention programs.

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## D-056

### PROVIDER PERCEPTIONS OF THE COMMUNITY HEALTH WORKER'S ROLE IN DIABETES PREVENTION AND MANAGEMENT AT A COMMUNITY HOSPITAL

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Background: While the Community Health Worker (CHW) model is increasingly being implemented in the prevention and management of diabetes, little is understood about how providers view the role of CHWs as a part of the healthcare team. This qualitative study specifically examined primary care providers' perceptions of the CHW model in diabetes prevention and management.
Methods: Six semi-structured interviews were conducted with primary care providers at a safety-net hospital in Birmingham, Alabama. A convenience sample of providers, including physicians (4), a physician's assistant and nurse practitioner, was recruited. Interviews were conducted via telephone by a trained interviewer using a written guide. Interviews were audio taped, transcribed, and then coded by two independent reviewers using an iterative consensus process.
Results: Participants identified several specific CHW roles; all focused on activities that providers felt were outside of their own scope of practice. These included: 1) liaisons to identify key patient barriers and communicate them to providers; 2) educators who would both teach patients about diet, exercise, and preventive care, and also educate providers about specific cultural issues pertaining to patients; and finally 3) mentors who would serve as a long-term support for patients and help guide them through the process of change. Concerns centered on CHWs' ability to recognize their limitations. Providers also reported time constraints and the lack of system resources as potential barriers to interaction with CHWs.
Conclusion: Study findings suggest that although providers agree that CHWs can be assets to any healthcare team, most are unsure of how such an intervention could practically be implemented within resource-poor systems. These results suggest a need for the development of creative strategies to help these vulnerable systems better serve the patients that depend on them for their care.

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## D-057

### RACE CONCORDANT PATIENT-PROVIDER RELATIONSHIPS IN DIABETES AND HYPERTENSION CARE: VIEWS OF PATIENTS FROM THREE CULTURAL GROUPS

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Background: African Americans and Latinos/Latinas show higher prevalence of diabetes and hypertension than do European Americans (DHHS,2009). Interpersonal barriers due to language and/or cultural differences between patients and providers may partially explain disparities (Cooper-Patrick et al., 1999). Patient-provider race concordance has been shown to reduce interpersonal barriers in care for minority patients, facilitating medication adherence (Traylor et al.,2010), patient trust (Boulware et al., 2003), and health services use and satisfaction (Saha et al., 1999). Patients' viewpoints on race and cultural concordance are particularly important in diabetes and hypertension care, for which adherence and self-management are key.
Methods: We conducted 27 focus groups with 142 adults living with diabetes and/or hypertension who identified as African American, Latino/Latina, or European American. Participants discussed experiences with doctors and views regarding race and cultural concordance. We extracted themes from transcripts using NVivo.
Results: African Americans expected that race concordant doctors would treat them fairly, understand their perspectives, and help them communicate symptoms. Some African American men, however, voiced reluctance to place high expectations on race concordant doctors. Many Latinos and Latinas preferred culturally concordant doctors, stating that the doctors better understood their culture sometimes communicated in Spanish without the need of interpreters.Some Latinas and Latinos placed more value on Spanish language competency regardless of cultural background. European Americans did not report a concordance preference.
Conclusion: Cultural minority group members with diabetes and/or hypertension report obstacles to effective care in doctor-patient relationships, particularly in race-discordant relationships. Continuing efforts to increase the number of minority physicians can facilitate patient care, as can the ability of physicians to interact with patients who are not of their own race or cultural group.

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## D-058

### PRELIMINARY EXPLORATION OF ACCEPTANCE AND DISTRESS TOLERANCE IN PATIENTS WITH TYPE 2 DIABETES

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Introduction: Self-management of type 2 diabetes may evoke distressing thoughts and feelings. Increasing acceptance and mindfulness may impact self-management and life satisfaction for patients.
Hypothesis: Researchers explored the relationships between distress tolerance, acceptance of diabetes-related thoughts and feelings and the degree to which they interfered with valued actions, diabetes self-care activities, life enjoyment and satisfaction, and coping.
Methods: Data were collected from fifty adult patients with type 2 diabetes at an urban endocrinology clinic (52% male; 62% African American, 24% Caucasian, 14% Hispanic; 54% on disability/SSI; 38% HS/GED as highest level of education; 30% income<\$10,000; mean [SD] age=55.9 [10.4] years, range=34-75; mean [SD] BMI=35.09 [7.06]). Measures included the Distress Tolerance Scale (DTS mean [SD]=56.6 [11.4]), the Acceptance and Action Diabetes Questionnaire (AADQ mean [SD]=60.8 [8.2]), the Summary of Diabetes Self-care Activities, items from the Quality of Life Enjoyment and Satisfaction Questionnaire- Short-Form (Q-LES-Q-SF), and the Coping Responses Inventory (Seeking Guidance and Support subscale mean [SD]=16.0 [3.9]; Cognitive Avoidance subscale mean [SD]=12.3 [4.1]).
Results: Correlational analyses revealed statistically significant associations between acceptance/commitment and distress tolerance (r=.527, p<.001), cognitive avoidance (r=-.433, p=.003), satisfaction with mood (r=.402, p=.005), satisfaction with social relationships (r=.358, p=.012), satisfaction with leisure time activities (r=.354, p=.016); and number of cigarettes smoke (r=-.354, p=.013). Distress tolerance was also statistically significantly related to cognitive avoidance (r=-.610, p<.001), satisfaction with mood (r=.409, p=.004), satisfaction with social relationships (r=367, p=.011), satisfaction with leisure time (r=.446, p=.002), and satisfaction with overall sense of well-being (r=.332, p=.030).
Conclusion: These significant associations suggest further examination of targets of Acceptance and Commitment Therapy in a population of patients with type 2 diabetes.

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## D-060

### THE CLINICAL RESEARCH APPRAISAL INVENTORY (CRAI) SHORT VERSION: MEASURING UNDERGRADUATE AND GRADUATE STUDENTS' RESEARCH SELF-EFFICACY

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Purpose: Examine the Clinical Research Appraisal Inventory (CRAI) for use with undergraduate and graduate students in STEM disciplines. Outcomes of a theory-based intervention delivered to faculty mentors and their student protégés were measured.
Theoretical framework: Self-efficacy (Bandura, 1997) is concerned with one's perceived ability to perform tasks within a specific domain. Strong self-efficacy is important in forming career development goals.
Methods: Students (n=235) participating in an Efficacy Intervention to Promote Research Careers" completed the 42-item CRAI online. All participants were working on a research project with a faculty mentor. Two instruments for measuring students' self-efficacy in research were studied: the 92-item CRAI scale and the 46-item CRAI scale. For each original subscale, the proportion of variation in the total subscale score for the full CRAI explained by the total subscale score for the reduced CRAI was calculated and reported. Then, for all study participants, Cronbach's alpha was computed for the new subscales. Finally, a factor analysis using a varimax rotation and maximum likelihood estimation was performed.
Results: The revised 46-item scale was retained with 6 subscales that will be described. Most subscales had adjusted R-squared >98%; however, two subscales from the 92-item CRAI were found not relevant to the population in this study. Further testing of the revised scale will be described.
Conclusions and implications: Results demonstrated that the short, 46-item, version of the CRAI is a concise, valid, and reliable measure sensitive to undergraduate and graduate students' perceived research self-efficacy. Goal achievement increases student's confidence and competence in research and leads to retaining talented students in careers in science.

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## D-061

### CULTURAL AND LINGUISTIC SERVICES IN A PUBLIC HOSPITAL: A PILOT STUDY

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Background: Cultural differences and language barriers may greatly impact communication between patient and provider. They may contribute to health disparities and have a significant adverse impact on health. The demographics of New Orleans changed dramatically after Hurricane Katrina. As the number of new immigrants continues to grow, the complex health needs and diversity of this population pose challenges for the planning and delivery of health services in New Orleans. Therefore, it is imperative for health care providers to become culturally and linguistically competent to provide timely and efficient health care. The objective of this pilot study is to evaluate the level of cultural and linguistic competence among physicians and clinical staff in a Public Hospital.
Method: A web-based self-administered anonymous survey was conducted to obtain information from a Public Hospital Emergency Department (ED). Overall, 49 participants completed the survey. This anonymous survey asked about their demographic information; trainings received for providing cultural/linguistic appropriate care; the physical environment, materials and resources with which they work; the individual's communication style, values and attitudes.
Results and Conclusions: The majority of participants was female (67%), white, and non-Hispanic (83%). More than 58% of participants agreed that the administration had identified cultural/linguistic competence as an organizational concern and that hospital-based interpreter services are effective at addressing the need of the ethnic/cultural population. About 42% of participants had cultural/linguistic training prior to work at the Public Hospital, and 54% of participants reported that they had on-site training at the hospital. The results of multivariate regression analysis showed that participants who had on-site training were more likely to have a higher cultural/linguistic score. The finding of this pilot study suggest that the Public Hospital is taking steps toward providing its staff with training and resources to provide culturally and linguistically appropriate care. On-site culturally and linguistically training are effective mean to provide better quality of care.

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## D-063

### THE LINK BETWEEN RELIGIOSITY AND MENTAL HEALTH AMONG HIV-POSITIVE MOTHERS

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Although there is some evidence to support the protective effect of religiosity on mental health, such evidence is rather limited. Indeed, some data suggest that greater religiosity is associated with poorer mental health. As this link is explored, methodologists have called for greater specificity in measuring the multiple aspects of religion and religious practice. Further, these relationships are understudied in some groups, including minorities and persons living with HIV. Baseline data from 103 HIV-positive mothers enrolled in a behavioral trial to improve parenting skills were examined to test the relationship between specific aspects of religiosity and mental health. Regression models examined the association of religious practices (both public and private) and daily spiritual experiences, along with race, maternal age, and number of children, on mothers' self-reported hopelessness, depression, and stress. Overall, the predominantly (85%) African-American sample reported high rates of religiosity and high rates of depression, with 59% scoring above a clinical cutoff on the CES-D. In bivariate analysis, daily spiritual experiences were significantly correlated with depression ($r=-.25$), and both spiritual experiences and religious practices were correlated with hopelessness ($r=-.39$ and -.39). In multivariate regression, religious practices remained significantly associated with hopelessness ($t=-2.08$, $p<.05$). Demographic variables were not associated with hopelessness or depression in regression analysis, but number of children trended towards a positive association with stress ($p=.053$). These results suggest that specific aspects of religion may have a slightly protective effect on mental health for HIV-positive mothers and that these mothers could benefit from interventions that enhance religious coping and support as well as mental health.

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## D-064

### FORGIVENESS OF SELF: A LINK BETWEEN CONTROL AND RESILIENCY

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HIV leads to numerous health and psychosocial stressors. Resiliency, the ability to cope with stressors, may be an invaluable tool to successfully manage such stressors (Connor & Davidson, 2003). Previous literature suggests control is an important factor in determining resiliency (Baumeister & Exline, 2000). However, forgiveness may be the link in this association (McCullough, 2000). Therefore, a greater understanding of the association between resiliency, control and forgiveness may lead to future interventions that successfully increase resiliency to help those living with HIV cope more effectively.
We examine these variables in our current study and hypothesize that resiliency (CD-RISC; Connor & Davidson, 2003; $\alpha=.89$), overall sense of control (SCI; Shapiro, 1994; $\alpha=.89$) and forgiveness of self (HFS; Thompson et al., 2005; $\alpha=.92$) are positively associated, and forgiveness of self mediates the relationship between overall sense of control and resiliency.
After IRB approval was received and informed consent was collected, 120 HIV positive participants (African American 69%, male 50%) from DFW completed a survey protocol.
We conducted 3 separate regression analyses to test our mediation model. In the first regression overall sense of control was associated with forgiveness of self ($\beta=.19$, $p<.05$). In the second regression overall sense of control was associated with resiliency ($\beta=.82$, $p<.01$). In the final regression the model was significant $F(2, 44)=7.68$, $p<.01$ and accounted for 22.5% of the total variance in resiliency. As predicted overall sense of control was not significant ($\beta=.46$, $p=.08$) and forgiveness of self was significant ($\beta=1.22$, $p<.01$).
Results indicate forgiveness of self mediates the relationship between overall sense of control and resiliency. We suggest that while control may be an important factor in determining resiliency, forgiveness of self is essential to this link. Furthermore, interventions that focus on forgiveness of self may potentially increase resiliency enabling people living with HIV to better cope with health and psychosocial stressors associated the virus.

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## D-065

### 'MY SON, YOU ARE GOING TO DIE?': SHORT TERM OUTCOMES OF HIV STATUS DISCLOSURE IN UGANDA

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Background: Disclosure of HIV status supports risk reduction and facilitates access to prevention and care services given the life long nature of HIV/AIDS medication. However the fear of the negative short-term repercussions often inhibits disclosure. This paper therefore explores the short term outcomes of disclosure among clients attending an urban HIV clinic in Kampala Uganda.
Methods: Using a case study design, data was collected with a semi structured interview protocol. The convenient sample of 40 adult HIV clients was stratified by age and gender (above and below 35). A manifest content analysis with specific codes and categories assigned to emerging themes was used.
Results: Of the 134 short-term responses elicited during disclosure events, 32 (24%) were negative responses, like emotional shock and extreme reactions of anger. Most (n=77; 57%) were positive including encouragement, advise and support regarding HIV treatment and care. HIV prevention and behavioral change responses (n=15; 11%), had advise to change sexual behavior, or recipient seeking HIV testing or care. Respondent's gender did not point to receiving negative reactions but women reported more encouragement (32% vs 22%) compared to men reporting more prevention and behavior change (16% vs 6%) reactions. Male recipients responded with prevention and behavioral change (15% vs 8%) and less positive or supportive responses (54% vs 67%) compared to females.
Conclusion: Gender influences the short-term response when people disclose highlighting the need to develop gender specific disclosure support strategies to enable PLWA make informed choices regarding disclosure.

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## D-066

### INTERNALIZED STIGMA, HIV STATUS DISCLOSURE, AND SOCIAL SUPPORT IN A SAMPLE OF HIV+MEN WHO HAVE SEX WITH MEN

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Internalized stigma, the extent to which people living with HIV/AIDS (PLWHA) endorse the negative beliefs associated with HIV as true of themselves, is associated with decreased psychological and physical health. Beyond these intrapersonal consequences, internalized stigma may have costly interpersonal consequences as well. The current study examined whether internalized stigma adversely affects two interpersonal domains —status disclosure and social support. We examined the effect of internalized stigma on status disclosure to sexual partners, which can inform sexual decision-making in serodiscordant couples and status disclosure to family members, which can be beneficial in minimizing the psychological distress associated with HIV. In addition, we examined whether internalized stigma was related to less perceived social support from close others. Participants were 170 men living with HIV/AIDS who indicated that they had sex with men during their last sexual encounter. Results revealed that greater internalized stigma was associated with status non-disclosure to participants' last sexual partner ($B=-.79$, $p=.01$) and family members ($\beta=-.21$, $t(151)=-2.24$, $p<.05$, $R2=.03$). Moreover, higher levels of internalized stigma were associated with less perceived availability of social support ($\beta=-.26$, $t(151)=-3.42$, $p<.01$, $R2=.06$). Findings from this study provide evidence that internalized negative beliefs about one's HIV status are linked to poor interpersonal consequences. Implications of these findings will be discussed with regards to prevention and intervention efforts to reduce HIV stigmatization.

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## D-067

### INTERDISCIPLINARY MODEL OF REFERRAL AND SERVICE ACCESS AS OUTGROWTH OF PEDIATRIC HIV RESEARCH IN SOUTH AFRICA: ETHICAL AND CLINICAL IMPLICATIONS

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Current estimates indicate that over 330,000 children under the age of 15 years in South Africa are living with HIV. Pediatric psychosocial assessment and intervention efforts are greatly needed to improve children's quality of life, ameliorate psychological distress, and facilitate access to health care. The Singabantwana Abanye ("All Children Together as One") study established a partnership with a community based organization, Wola Nani in Cape Town, South Africa, to document psychosocial and basic health functioning of children living with HIV. A critical aspect of the partnership was to uphold the ethic of providing a service in the context of conducting research in a low resource setting. This presentation reports the piloted process and results of developing an interdisciplinary model of care to facilitate referrals based upon individual assessment results (including data on emotional and cognitive functioning). An intensive training program was completed with Wola Nani counselors (local community members) in pediatric clinical interviewing and ethics of research with vulnerable populations. Participants in the study sample included children living with HIV (N=45, 52.3% female) and their primary caregivers (N=45). Mean child age was 9.3 years (SD=1.3, range=8 to 12 years). The interdisciplinary team included representatives from the study team, Infectious Disease, Social Work, Developmental Pediatrics, and Child Psychiatry. 70.2% of assessed children were identified as needing specialized services: of referrals, 28% were to medical subspecialties, 31% to psychiatry, 8% to Developmental Pediatrics, 33% to Social Work. The preliminary data from this pilot study highlight specific areas of clinical importance, including: (1) the value of routine psychosocial screening and assessment to identify children for subspecialty follow up and (2) importance of interdisciplinary coordination to facilitate service access for identified vulnerable children.

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## D-068

### A QUALITATIVE STUDY ASSESSING BARRIERS AND FACILITATORS TO HIV TESTING IN LATINO CHURCHES

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Latinos continue to be disproportionately affected by HIV. Novel strategies to increase HIV testing among Latinos are needed. Empirically tested church based testing interventions have the potential to reach a large number of Latinos since nearly 50% of this population attends church weekly, however none currently exist. This qualitative study evaluated the perceived barriers and facilitators for HIV testing in the Latino Catholic Church among Midwest church members (N=31; average age=39.43 years, SD=13.91) and leaders (N=2). Anticipating that cultural factors (e.g., machismo) may limit free and open discussion in mixed gender focus groups, we planned two women only and two men only groups. Despite the plan, one of men only groups ended up being a mixed gender group. Despite concerns, thematic categories related to HIV testing barriers and facilitators in the Latino church were similar across all focus groups and interviews. Barriers to testing included HIV related stigma (e.g., HIV is not something that should be discussed in church), cultural factors (e.g., machismo, familismo, respeto), fear (e.g., losing confidentiality, romantic partner questioning trust), use of promotores interventionists leading to loss of confidentiality, lack of information and access to testing, and cost. Facilitators included the visible support for HIV testing by church leaders, modeling of testing by church leaders, increasing free access to testing (e.g., following church services), and HIV education. Although participants identified many barriers, overall, participants reported that they would get tested for HIV if testing was provided in the church. Furthermore, the church leaders reported being supportive of providing HIV testing in the church. To our knowledge, this is the first report of formative research critical for the development of HIV testing interventions in Latino churches.

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## D-069

### IS SELF-EFFICACY A MEDIATOR OF THE EFFECT OF BEHAVIORAL INTERVENTIONS ON MEDICATION ADHERENCE IN PERSONS WITH HIV?

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Adherence to antiretroviral medications is imperative for persons with HIV (PWHIV). Self-efficacy, one's perception his/her ability to perform specific behaviors, is hypothesized to be positively associated with medication adherence in the treatment of HIV. This investigation examined self-efficacy as a mediator of the short-term effect of interventions on antiretroviral medication adherence. Data are from a randomized controlled trial that compared the effect of a structured telephone delivered intervention (SI) and individualized telephone delivered intervention based on subject's self-identified needs (II), both based on social cognitive and self-efficacy theory, relative to a usual care (UC) group on adherence to antiretroviral therapy. The sample consisted of 335 PWHIV (SI: n=112, 33.4%; II: n=112, 33.4%; UC: n=111, 33.1%), taking antiretroviral therapy and without HIV dementia who were randomly assigned with equal allocation to one of the three study arms and were assessed at baseline and 12 weeks following the intervention. Adherence was assessed indirectly using electronic event monitors (EEM), summarized as the percentage of days with correct intake, and subjectively using the Morisky Medication-taking Scale, a 9-item self-report that yields a total score where higher scores suggest greater adherence. Self-efficacy was measured using 18-item self-efficacy beliefs subscale of the Erlen HIV Self-Efficacy Scale of Medication-Taking where higher scores suggest greater self-efficacy. Subjects were mostly male (68.7%, n=230), black (55.5%, n=186) and on average (±SD) 43.6±7.9 years of age. Mediational analyses revealed no significant indirect effects suggesting self-efficacy as mediator of the effect of the interventions on self-reported or EEM measured adherence. Direct effects, however, were found for structured telephone delivered intervention on self-reported adherence ($b=0.69$, $SE=0.28$, $p=.014$) and individualized telephone delivered intervention on EEM adherence ($b=6.69$, $SE=3.27$, $p=.041$). Additionally, self-efficacy was jointly associated with only self-reported adherence ($b=0.04$, $SE=0.01$, $p<.001$).

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## D-071

### JUST BE A MAN ABOUT IT: THE INFLUENCE OF MASCULINITY ON THE COPING MECHANISMS OF UNDERGRADUATE AFRICAN AMERICAN MEN

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For African American men, manhood is a goal that they are taught to strive for and achieve. However defining masculinity for African American men is not so simple. To reach manhood African American men must deal with the pressures of staying true to their culture, while wanting to be accepted and fit into mainstream society. This dilemma may serve as a stressor. For African American men in college, the added stress of college life along with the stress of being a Black man may prove to be more than they can handle. Using Focus groups and in-depth interviews, this research seeks to determine how undergraduate African American men define masculinity. Presently, 33 participants have taken part in this study. Various themes that have initially emerged include stereotypes concerning African American men, mainly by persons forming opinions from what they've seen or heard. This theme translates into African American men constantly feeling the need to excel in everyday life and relentlessly attempt to prove others wrong. Finally, with this constant drive to excel, many African American men feel that true manhood is only reached when they have experienced key issues in life that come with manhood. Results will provide insight that can be used to assist colleges, counseling, and public health professionals in developing methods to assist young African American men in developing views of manhood that relieve stress and improve their overall health.

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## D-072

### PATIENT FACTORS ASSOCIATED WITH BEHAVIORAL HEALTH APPOINTMENT ATTENDANCE IN A PRIMARY CARE SETTING

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Understanding factors that predict attendance to behavioral health appointments in a primary care setting is essential for the continued development and improvement of behavioral health services. The purpose of this study was to examine patient factors associated with behavioral health appointment attendance. Utilizing archival data, we reviewed 180 patient charts from a community health clinic serving an uninsured population. All patients received a referral to a behavioral health provider (BHP). Overall, patients attended the majority of scheduled appointments (67.2%). Several factors were correlated with BHP appointment attendance including attendance at medical appointments and fewer prescribed psychiatric medications. In addition, patients who were not diagnosed with a psychiatric disorder were more likely to attend BHP appointments than those with a diagnosed psychiatric disorder ($F(1,175)=4.3$, $p<.05$). Implications of the results are discussed.

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## D-073

### CONFIDANT RELATIONS IN TAIWAN: IMPLICATIONS FOR HEALTH CARE TREATMENT

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The confidant relationship is recognized as a major social factor affecting individual health. Yet, meager cross-cultural data has been available to guide researchers, policymakers, and practitioners. Although a few studies have investigated confidant relations among persons in Western countries, none has been reported with a Chinese population. Especially because this population internationally under-utilizes mental health services, we collected data in Taiwan.

In this study, 142 Taiwanese adults responded to a structured questionnaire. Participants comprised 105 females, 32 males, and 5 gender unspecified (overall mean age=33.8 years with a range of 18 to 74 years). They were asked whether they had a confidant, and if so, to describe various aspects of this relationship.

Contrary to studies conducted in Western countries, Taiwanese men were equally likely as Taiwanese women to have a confidant (87.5% of males and 89.5% for females). Taiwanese women were significantly more likely ($p.<.001$) to have a female rather than a male confidant, but males showed no gender difference. For both genders, more than 85% of participants had known their confidant for over 3 years and had experienced phone or face-to-face contact in the past month. Such temporal factors suggest close involvement, and indeed, 54.9% of females and 75.0% of males rated the relationship as "very important" to them, and only 5.5% of females and no males rated it as "not very important." In striking contrast to our study in Brazil, less than 30% of all participants had a confidant who was a spouse or other family member. This unexpected finding may reflect the adverse impact of the authoritarian parenting-style noted in Chinese families including Taiwanese, undermining intimate interactions among its members and also among spouses. However, the confidant relationship for both Taiwanese males and females comprised high mutuality, high trust, and minimal lying. The implications of our findings for enhancing health treatment in Chinese culture, especially in the better utilization of mental health services, are discussed. We also highlight several directions for future research.

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## D-074

### THE CHANGING MENTAL-HEALTH NEEDS OF STUDENTS IN GREATER NEW ORLEANS POST-KATRINA

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Project Fleur-de-lis (PFDL) was created as a long-term, school-based mental-health response to Hurricane Katrina. Through evidence-based practices, innovative care pathways, and unified records, PFDL offers free consultation and psychological services to schools (Cohen et al., 2009). Evidence of racial and class factors in Katrina response (Elliott & Pais, 2006) suggest that systemic factors have impacted the PFDL population. This study aims to identify the differences between PFDL students immediately after Katrina and five years later.

This study examined two subgroups of youth referred to PFDL—youth seen the year after Katrina (2006-07) and five years later (2010-11). The 369 youth ranged in age from 4 to 18 and completed demographics and the Pediatric Symptom Checklist (PSC; Jellinek et al., 1988), a screener of emotional and behavioral needs. In 2006-07, PFDL served 12.3% public schools and 25% African American and 46% Caucasian youth. In 2010-11, PFDL served 59% public schools and 64% African American and 29% Caucasian youth. T-tests were used to assess group differences in psychosocial functioning.

Results of the t-tests revealed significant group differences in PSC internalizing, externalizing, and attention subscales. Youth served in 2010-11 reported significantly greater internalizing, $t(296)=4.38$, $p=0.007$, externalizing, $t(295)=25.13$, $p<0.001$, and attention issues, $t(296)=0.25$, $p<0.001$, than those served in 2006-07.

Our findings show that the PFDL population has significantly changed in regards to school, race, and symptomatology post-Katrina. Youth in 2010-11 showed greater inattention, internalizing, and externalizing symptoms compared to 2006-07 youth. Also, student demographics shifted: PFDL served predominately Caucasian, private-school youth in 2006-07 and predominately African American, public-school youth in 2010-11. Systemic and contextual factors, such as school access and post-storm stress impact these changes. These results indicate that though PFDL is the largest school-based, mental-health response to Hurricane Katrina (Bendsen et al., 2007), it is only now that they are serving the most at risk, high-needs students.

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## D-075

### PSYCHOPATHY'S INFLUENCE ON THE INTERPLAY OF CORTISOL WITH TESTOSTERONE AND DHEA

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The hypothalamic-pituitary-adrenal (HPA) and -gonadal (HPG) axes are major components of the endocrine system that work in concert to influence health and development. The HPA and HPG axes are highly interconnected, yet few studies investigate their end-products simultaneously, especially during salient developmental stages (i.e., adolescence) or in relation to important behavioral outcomes (i.e., psychopathy). Psychopathy is a multifaceted disorder marked by superficial charm and deceitfulness (Interpersonal facet), reduced guilt and empathy (Affective facet), impulsivity and sensation seeking (Lifestyle facet), and antisocial behavior (Antisocial facet). Psychopathic individuals have reduced fear responsivity and hypoaroused HPA functioning which may disrupt conscience development and empathic behavior. HPG end-products (e.g., testosterone and DHEA) may be broadly linked with aggressive or antisocial behavior, which suggests a role for the HPG axis in some facets of psychopathy. DHEA as an end-product of both the HPA and HPG axis has not been examined in psychopathic individuals, nor have the interplay of these endocrine axes been examined in psychopathic individuals. The current study used hierarchical linear modeling to examine whether facets of psychopathy moderate the association between 10 repeated measures of salivary DHEA, testosterone, and cortisol in a sample of 50 adolescent males incarcerated at a maximum security facility. Cortisol release was tightly coupled with both testosterone ($\beta$=.61, p<.001) and DHEA ($\beta$=.53, p<.001). HPA and HPG hormones were more strongly coupled in individuals with higher Interpersonal psychopathy scores ($\beta$=.04, p=.076 for DHEA and $\beta$=.05, p=.04 for testosterone). An opposite pattern was evident for the Lifestyle facet; DHEA was less tightly coupled with cortisol in individuals with higher Impulsive Lifestyle scores ($\beta$=.01, p=.04). Results highlight the need to understand the distinct facets of psychopathy in association with multiple hormone axes to refine neurobiological models of antisocial behavior.

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## D-076

### MULTIPLE EMOTIONAL FACTORS AND THE PREVALENCE OF PERIODONTAL DISEASE: ANALYSIS OF NHANES I DATA

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Although previous studies have examined depression as a potential risk factor for periodontal disease, other overlapping emotional factors have been largely ignored. Consequently, we examined the association between six interrelated emotional factors and periodontal disease, a predictor of future cardiovascular disease. Data from the National Health and Nutrition Examination Survey (NHANES) I - a large epidemiological study conducted from 1971 to 1975 - were analyzed. Participants were 3,756 individuals aged 25-74 years (53% female, 17% non-white). The six emotional factors were assessed by the depressed mood, anxiety, freedom from health worry, energy level, satisfying life, and emotional/behavioral control subscales of the General Well-Being Schedule (converted to z-scores). Based on the Russell Periodontal Index, periodontal disease (43%) was defined as the presence of four or more periodontal pockets identified by a licensed dentist during an examination. Separate logistic regression analyses adjusted for age, sex, and race revealed that, in addition to depressed mood (OR=1.17, 95% CI:1.09-1.26, p<.001), anxiety (OR=1.10, 95% CI:1.02-1.18, p=.009), low energy level (OR=1.18, 95% CI:1.09-1.25, p<.001), health worry (OR=1.19, 95% CI:1.10-1.28, p<.001), low life satisfaction (OR=1.12, 95% CI:1.04-1.20, p=.003), and low emotional/behavioral control (OR=1.15, 95% CI:1.07-1.24, p<.001) were associated with an increased prevalence of periodontal disease. After adjustment for depressed mood, health worry continued to be related to periodontal disease (OR=1.13, 95% CI: 1.04-1.23, p=.003), while anxiety, energy level, life satisfaction, and emotional/behavioral control did not (all ps>.06). In each of these models, depressed mood remained associated with periodontal disease (ORs=1.10-1.21, all ps<.04). Our findings suggest that depressed mood and health worry are independent correlates of periodontal disease, raising the possibility that both of these emotional factors may be risk factors for periodontal disease.

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## D-077

### EARLY ASSESSMENT OF BEHAVIORAL ACTIVATION PREDICTS DEPRESSION IMPROVEMENT AT SIX WEEKS

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Background: In the treatment of depression, early measurements of predictive factors hold potential to impact treatment course to maximize probability of remission. Behavioral activation (BA) is a therapeutic treatment of depression, and to our knowledge it is unknown whether early assessment of behavioral activation can be used to predict depression improvement.
Methods: Study participants consisted of diverse adult patients at an urban primary care health setting who screened positive or had been diagnosed with Major Depressive Disorder. Participants were part of an ongoing trial comparing motivational interviewing with enhanced usual care (EUC) to EUC alone. BA was assessed with the Behavioral Activation for Depression Scale—Short Form (BADS-SF), a valid and reliable, 9-item instrument (range: 0-56, higher=more activation), at 48 hours. Depressive symptoms were assessed at baseline, 6-weeks, and 12-weeks using the Patient Health Questionnaire (PHQ-9) screening measure (range: 0-27, higher=worse depression; remission defined as PHQ-9 score<6).
Results: The study included 118 participants with complete BADS-SF and PHQ-9 data. The mean BADS-SF score at 48 hours was 34.1 (SD 9.7), suggesting moderate activation. Linear regression adjusted for baseline depressive symptoms demonstrated that a 1 SD higher BADS-SF score was associated with a 1.3 point improvement (score decrease) in the PHQ-9 depressive symptom scale (Cohen's d ES=0.25, P=0.01), and the odds of remission was 2.7 (95% CI 1.4, 5.3, P=0.004) at 6 weeks. BADS-SF score was not associated with outcome at 12 weeks, although future analysis by treatment arm will evaluate whether participants receiving MI with EUC demonstrated results extending to 12 weeks.
Discussion: Early assessment of behavioral activation at 48 hours was associated with depressive symptom improvement at 6 weeks in a depression treatment trial. Screening and targeting BA may be an efficient early intervention in the treatment of depression in the primary care setting.

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## D-078

### PERCEIVED BENEFITS FROM METHYLPHENIDATE AMONG YOUNG ADULTS WITH ADHD WHILE DRIVING IN THE EVENING

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Vehicular collisions are the leading cause of death among young adults, and driving mishaps (collisions, citations, etc.) are significantly more common among young adult drivers with Attention Deficit Hyperactivity Disorder (ADHD) when not taking methylphenidate (MPH) than when taking MPH (1). The impact of on-road mishaps extends beyond the ADHD driver to passengers and others on the road. Driving is a demanding activity that is impaired in this population by the core ADHD symptoms of inattention, impulsiveness and hyperactivity. Use of and adherence to ADHD medication is higher among those individuals who attribute benefits to taking medication. We hypothesized that young adults with ADHD would perceive benefits in their driving when taking long acting MPH. In a double-blind placebo-controlled crossover design, 10 young adults (mean age=25.4 years) with ADHD Combined Type were tested on two occasions (MPH, placebo) on a high fidelity driving simulator at 10:00p.m. and then 1:00a.m. At 8:00a.m. on the day of both testing occasions, subjects applied a dermal patch, MPH or placebo, and took it off after the 10p.m. drive. Following the 10p.m. and 1a.m. drives, subjects rated each drive on a 5-point scale (0=Not at all, 4=Extremely). Using a one-tailed p-value, young adults taking MPH reported the drives as less difficult (p=.09) and less stressful (p=.01) and that they were more attentive (p=.05) and less irritable (p=.02). The condition-blind experimenter also rated the driving performance of the young adults taking MPH as safer (p=.01) compared to when they were taking a placebo. These subject ratings and visibly safer driving performance of young adults on MPH are consistent with previous findings (2), and it suggests that young adults with ADHD perceive the benefits to driving ability of long acting MPH. These findings also suggest that MPH may discourage road rage while driving in the evenings, when vehicular collisions are most likely.

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2 Applied Psychophysiology and Biofeedback, 25(3), 133-142

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## D-079

### MENSTRUAL ATTITUDES OF GIRLS WITH SICKLE CELL DISEASE

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Purpose: To investigate the menstrual attitudes of African American girls, ages 14 to 17 years, with sickle cell disease who had not experienced menarche.
Background: Sickle cell disease (SCD) is a severe monogenetic disorder that has a harsh clinical course on major body systems including growth, reproductive health, and menarche onset. Earlier research suggests depression about delayed menstruation contribute to low self-esteem in over 70% of healthy adolescent girls when they are dealing with peer group identity and unfolding femininity and sexuality. Yet, such findings are unknown for African American girls with SCD and who are often underweight, short in stature, and progress through Tanner's stages of pubertal development at a later age than healthier cohorts.
Methods: A nonprobability sample consisted of girls ($n=15$) recruited through the Comprehensive Pediatric Sickle Cell Center at Children's Hospital of Pittsburgh. Eligibility included African American girls with SCD between the ages 14 to 17 years. A survey approach was used to collect on the 58-item 5-point Likert type Adolescent Menstrual Questionnaire for pre-menstrual girls.
Findings: The results of the analysis of frequency indicated a higher percentage of the girls responded to the issues related to fear, privacy, secrecy, shame, and embarrassment than positive thoughts (happy and joy) about menstruation. Eleven (73%) girls indicated they will not tell anyone when their period starts; 12 (80%) feared they will not notice when they are bleeding and others will know they are on their period; and 6 (40%) were uneasy buying pads or tampons at school or at a store. Over 50% of the girls held the view that girls do not like to be seen putting pads in the garbage. However, all but one girl agreed that it is normal for girls to menstruate.
Implications/Relevance: The findings provide implications for how girls with SCD see themselves and feel about themselves. Also, the findings have relevance since they provide preliminary results indicating a need to further explore the influence of attitudes about menstruation on the mental health of African American girls with SCD.

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## D-080

### CAN VIRTUAL REALITY TRAINING AID ADOLESCENTS WITH ASPERGER'S DISORDER IMPROVE THEIR DRIVING SAFETY?

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While Asperger's Disorder is not associated with an intellectual deficit, it's symptoms which impair motor coordination, visual searching, and executive function interfere with the acquisition of safe driving skills and acquiring a driver's license. We investigated whether training in a high-fidelity Virtual Reality Driving Simulator (VRDS) could augment the acquisition of driving skills. 14 adolescents (mean age+16.9 years, 85.7% male) with Asperger's Disorder, and who had acquired their learner's permit but not their full license, were assessed on a VRDS twice, separated by two months. Between testing participants pursued routine driver education, and half of the subjects also received 10 sessions of VRDS training, where they were taught basic driving skills, hazard detection and how to negotiate anticipated and unanticipated road and traffic conditions. Following the second VRDS testing, participants completed a 60-minute on-road examination by an independent driving instructor blind to who received VRDS training. 67% and 50% of the VRDS trained and of the control participants, respectively, passed the on-road test. These data suggest that VRDS training may be beneficial in aiding novice Asperger's drivers to acquire safe driving skills, and experience from this study may direct further enhancement of such VRDS training.

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## D-082

### PRIMARY CARE UTILIZATION AND POTENTIALLY PREVENTABLE INPATIENT AND EMERGENCY DEPARTMENT VISITS IN THE U.S., 1993-2008

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Access and quality of care issues have received increasing attention from policy makers. The Agency for Healthcare Research and Quality developed the Prevention Quality Indicators (PQI) in response to these issues. The PQI measure healthcare encounters that may have been prevented with access to high quality primary care for medical conditions such as diabetes, asthma, and heart failure. Despite state and federal recognition, clinician stakeholders have expressed concern over their limited ability to affect patient-level behavioral factors that influence risk for PQI encounters (e.g., self-management). Behavioral Medicine researchers are uniquely positioned to address the issue. However, primary care utilization (PCU) must first be understood before demonstrating additional effects of interventions on reducing PQI rates. This study used U.S. Census Bureau population data to adjust estimates from four National Center for Health Statistics datasets ($N=5.8$ million, weighted $N=16.9$ billion) to predict national PQI rates from PCU. From 1993-2008, rates on emergency department (ED) PQI increased (27.7-32.0) while inpatient PQI rates were stable (20.4-20.7). Rates per 1,000 varied in ED PQI (7.9-119.4) and inpatient PQI (2.3-87.9) across age, sex, and race strata. Black patients experienced PQI rates approximately twice those of White patients. Percent change over time in PCU predicted rates of ED PQI ($\beta=.602$, $p<.001$) and inpatient PQI ($\beta=.560$, $p<.001$). However, increased PCU was associated with decreased PQI rates in patients aged 65 years and older only. Change in PCU did not consistently predict rates on the ED or inpatient PQI when controlling for age and sex, particularly across race categories. Increased PCU may have stabilized rates of PQI encounters, but not enough to influence existing racial disparities. Actionable strategies from the Behavioral Medicine perspective may enhance understanding of care quality while incorporating these practices into measures already used for health policy.

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## D-083

### THE PSYCHOMETRIC PROPERTIES OF THE MINDFULNESS ATTENTION AWARENESS SCALE IN AN AFRICAN-AFRICAN COMMUNITY SAMPLE

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Mindfulness has generally been described as non-judgmental awareness in the present moment. It has garnered increased attention regarding its potential psychological and physiological benefits. The extent to which the results of previous studies on mindfulness are generalizable requires an assessment of the psychometric properties of measures when used with specific groups. To date, no study has explored the validity of mindfulness in a predominantly African-American community-based sample using the Mindfulness Attention Awareness Scale (MAAS). The purpose of the current study was to examine the psychometric properties of the MAAS in a middle to older African-American community-based sample. Eighty-one African Americans with a mean age of 59.95 completed a battery of psychosocial measures, which included the MAAS and the Openness to Experience dimension of the NEO-Five Factor Inventory (NEO-FFI). A methodological approach similar to that conducted by Brown and Ryan (2003) was utilized to determine the factor structure, reliability, and convergent validity of the scale. The overall reliability for the MAAS scale was high ($\alpha=.91$). Principle components analyses yielded three components: External Inattention ($\alpha=.88$); Behavioral Automaticity ($\alpha=.79$); and Internal Inattention ($\alpha=.73$), which accounted for approximately 62% of the total variance in the MAAS. Correlational analyses showed significant associations between Openness to Experience and External Inattention ($r=.30$, $\rho=.012$) and Total MAAS and Openness to Experience ($r=.24$, $\rho=.030$). Findings in the current study are generally aligned with those found in Brown and Ryan (2003), but also allow for a more robust understanding of mindfulness in a community-based sample of African Americans.

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## D-084

### USING CLINICIAN WORKAROUNDS TO GUIDE HEALTH INFORMATION TECHNOLOGY DEVELOPMENT

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Background & Purpose: Medication management enabled with health information technology (MMIT) has exploded inside hospitals over the last decade with the goal of improving patient safety. Bar Code Medication Administration (BCMA) has been adopted by many hospitals to improve patient safety when administering medications. Clinician workarounds, behaviors mediating system weaknesses or flaws without solving underlying problems, may be linked to patient safety risks during hospitalizations.
Methods: Morse's method of pragmatic utility was used to explicate the construct of clinician workarounds. An integrative review of the literature was undertaken to comprehend the concept of clinician workarounds and to identify linkages between clinician workarounds and risks to patient safety.
Results: Clinician workaround is categorized as an emerging concept with blurred boundaries using a pragmatic utility approach. BCMA allows for easy detection of medication errors such as missing or ill-timed medications. Focus on easily detected medication errors may be masking risks associated with clinician workarounds that are not captured in clinical health information systems.
Conclusions: Further theory development and research is needed to 1) differentiate clinician workarounds from medication errors, 2) disentangle people, technology and processes that result in clinician workarounds, and 3) identify linkages between clinician workarounds and patient safety.
Clinical Relevance: Clinician workarounds result as a gap between systematic, well ordered clinical information systems and the complex, dynamic delivery of health care services to patients. Integration of health information technology into clinical practice such as BCMA has improved patient safety. However many MMIT processes have been optimized to prevent errors related to ordering and dispensing performed by physicians and pharmacists and not for nurses delivering direct patient care. Explicating and exposing clinician workarounds is essential to the development of next generation health information technology systems.

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## D-085

### SMART STUDY MOTIVATIONAL INTERVIEWING AND TREATMENT FIDELITY

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T2DM with Stage 3 CKD requires counseling to achieve self-management behaviors for regimen adherence. Motivational interviewing (MI) uses an elicit-provide-elicit approach useful as self-management support. In behavioral science, good design meets the treatment fidelity challenge. A study aim was to assess the feasibility of the Self-Management and Resourceful Transition (SMaRT) program for future intervention. Reported are methods to assure MI treatment fidelity and the analyses from coded recordings of 14 calls to participants in the control group and 18 calls to those receiving MI.
Methods: Patients from outpatient clinics were randomly assigned to the SMaRT program of telephone counseling using MI along with education about T2DM and CKD or attention control of healthy living lecture with telephone delivered social conversation. An external review of the telephone audio-recordings was conducted by an independent observer using the DARNT model.
Results: The MI calls were significantly longer (M=29.8 vs. 5.2 minutes), t=5.84, p<.001, and clients talked for a significantly greater percentage of the call time in the MI condition (MMI=72% vs. 35% of total time), t=3.00, p=.007. A greater percentage of counselor talk were rated as MI-consistent in the MI condition (9% vs. 24%), t=16.5, p<.001, with a significantly higher percentage of reflective listening, open-ended questions, and emotion-focused statements, and a significantly lower percentage of statements with direct instructions to patients (all ps<.05). Participants in the MI condition were more likely to express desire or reasons for change ("DARNT" statements: 41% vs. 0%), t=7.31, p<.001, but no less likely to make statements that were unrelated to the topic of health behavior change (28% vs. 25%), t=0.33, p=.74. An independent observer rated the MI counselor as more accepting, empathic, genuine, and warm, and participants in the MI condition as more self-disclosing, collaborative, and affectively engaged in the interaction (all ps<.001).
Conclusion: Use of DARNT with independent observer rating indicated adherence to the MI approach. Monitoring of MI quality contributes to identifying the active ingredient of the intervention.

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## D-087

### GOIN' GREEN: APPLICATION OF THE REASONED ACTION APPROACH TO UNDERSTAND INTENTION TO EAT AND BUY DARK GREEN LEAFY VEGETABLES AMONG AFRICAN-AMERICAN WOMEN IN A LARGE MID-WESTERN CITY

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Although dark green leafy vegetables have been shown to protect against chronic disease, consumption is low in the United States. The current study examined intrapersonal factors associated with intention to eat and buy more dark green leafy vegetables. African-American women>18 years of age who resided in Marion County, Indiana and were responsible for buying and preparing food for their household were surveyed. Demographics, health status, behavioral characteristics, dark green leafy vegetable consumption and Reasoned Action Approach (RAA) constructs were assessed. The mean age of the sample (n=410) was 43 years and 71% were overweight or obese. Multiple regression analyses revealed that RAA global constructs explained 60.9% of the variance (F(3, 403)=209.611, p<.001) in intention to eat more dark green leafy vegetables. Attitude ($\beta$=0.601, p <. 001) and self-efficacy ($\beta$=0.229, p <. 001) had statistically significant relative weights, with the weights for attitude being larger than the weight for self-efficacy. RAA global constructs explained 71.2 % of the variance (F (3, 403)=331.708, p <. 001) in intention to buy more dark green leafy vegetables. As with eating, in predicting intention to buy, both attitude ($\beta$= 0.638, p<.001) and self-efficacy ($\beta$=0.244, p<.001) had significant weights, with the weight for attitude being larger. For both eating and buying, correlational analyses revealed that many of the beliefs underlying attitude and self-efficacy were significantly related to intention. Interventions to promote dark green vegetables may be more effective if they focus primarily on changing attitudes and increasing self-efficacy. African-American women play a critical role in feeding their families. Therefore, the benefits of an intervention may extend to other members of their household as well.

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## D-088

### PRIMING AFFECTIVE ASSOCIATIONS WITH FRUIT CHANGES FRUIT CONSUMPTION BEHAVIOR

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Purpose: Fewer than half of Americans meet current recommendations for fruit and vegetable intake. The behavioral affective associations model posits that affective associations, feelings and emotions associated with a behavior, are a proximal influence on decision making. Affective associations have been shown to predict fruit and vegetable consumption and other health-related behaviors in several cross-sectional observational studies. The purpose of this study was to test whether a causal relation exists between experimentally manipulated affective associations with fruits and future fruit consumption behavior, as measured by a snack selection task.
Method: Following a baseline assessment of cognitive and affective variables, participants' (N=161) affective associations about fruits were experimentally manipulated with an implicit priming paradigm. Images of fruits were repeatedly paired with positive, negative, or neutral affective stimuli. The key outcome measure was a behavioral choice task in which participants chose between fruit and a granola bar.
Results: Compared to those in the negative prime condition, participants in the positive prime condition were significantly more likely to select a piece of fruit versus a granola bar in the snack selection task (OR=3.04, p=.024). They were also significantly more likely to select a fruit instead of a granola bar compared to those in the neutral condition (OR=2.4, p=.052).
Conclusion: Consistent with prior evaluative conditioning studies, the priming paradigm significantly altered food choice behavior. This provides further evidence of the implicit and direct influence of affective associations on behavior, suggesting the need to incorporate affective associations in health decision making models. The results also speak to the potential utility of intervention strategies targeting affective associations with health-related behaviors.

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## D-089

### GOIN' GREEN: AN EXPLORATION OF ENVIRONMENTAL DETERMINANTS OF EATING DARK GREEN LEAFY VEGETABLES AMONG AFRICAN-AMERICAN WOMEN IN A LARGE MID-WESTERN CITY

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The current study explored both dark green leafy vegetable consumption and access to food stores that offer fresh fruits and vegetables regularly. African-American women in Marion County, Indiana who were responsible for buying and purchasing food for their household were recruited to complete a survey. Questions were designed to obtain demographic, health status, psychosocial, consumption, and spatial (e.g. household, food store) data. Spatial data were geo-coded using an internet service and ArcGIS 10.0 service pack. Half-mile radial buffers were placed around each household to create neighborhood boundaries. Spatial data were exported into SPSS 18.0. Descriptive and inferential statistics were conducted to describe consumption, access to fresh fruits and vegetables and potential relationships. Women with missing data were excluded from the final sample of 273 respondents. Results showed that women consumed 1.6 mean cups of dark green leafy vegetables in the last three days. On average, the closest food store in their neighborhood food environment (e.g. within one-half mile of participant households) was limited-service (e.g. did not offer fruits and vegetables regularly). When radial buffers were removed, results indicated that women lived 0.29 miles closer to limited-service food stores compared to full-service food stores (e.g. offered fruits and vegetables regularly). The average distance to the food store where each woman purchased her fruits and vegetables from most often, was an average of 2.0 miles from their household. Only demographic variables were significantly associated with consumption. Findings suggest that women in the study did not rely on their closest full-service food store for fresh produce. Instead, they traveled further distances to obtain them.

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## D-090

### THE RELATION BETWEEN TRAIT MINDFULNESS AND INHIBITION IN A COMMUNITY-BASED SAMPLE OF AFRICAN AMERICANS

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Purpose: Previous research has revealed that brief mindfulness meditation and self-reported measures of mindfulness are positively related to sustained attention. However, other research has suggested that mindfulness interventions are not related to attentional processes. Mindfulness involves self-regulating attention and inhibition of habitual or automatic behavior, and individuals who are more mindful may perform better on executive measures of attention and inhibition such as the Stroop Color-Word task (Stroop). The Stroop involves the ability to exert control over involuntary and automatic processes and requires selective concentration. To the extent that mindfulness increases self-regulating attention and inhibition, more mindful individuals should theoretically perform better on the task. The aim of this exploratory study was to determine if an association exists between trait mindfulness and inhibition in a community-based sample of African Americans (AAs).
Method: Sixty-seven AAs with a mean age of 59.95 (SD=12.19) completed the Stroop and the Mindfulness Attention Awareness Scale (MAAS). Hierarchical linear regression was used to explore the hypothesis that mindfulness is positively related to Stroop performance.
Results: After controlling for age, gender, and years of education, mindfulness was not associated with the Stroop ($\beta=.04$, $p=.72$).
Conclusions: Results suggested that trait mindfulness did not influence inhibition as measured by the Stroop in this population. While being mindful may help individuals attend to and inhibit actions, these mechanisms may not be captured well by certain cognitive measures. Future analyses should explore the influence of mindfulness on more applied examples of inhibition, such as avoidance of maladaptive behaviors. In addition, the validity of the MAAS as a measure of trait mindfulness for AAs deserves attention.

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## D-092

### POST-BARIATRIC PATIENTS IN SUBSTANCE ABUSE TREATMENT: DO THEY DIFFER FROM THE TRADITIONAL SUBSTANCE ABUSE INPATIENT?

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Post-bariatric surgery patients are overrepresented in substance abuse treatment programs (Saules et al., 2010). Between July 2009 through April 2011, 4,640 patients were admitted to a comprehensive substance abuse treatment facility, 116 (2.5%) of whom reported a history of bariatric surgery. To understand unique factors that may affect bariatric patients' substance abuse treatment prognosis, the present study compared post-bariatric (PB, n=57) patients in that substance abuse treatment program with their non-bariatric (NB, n=60) counterparts. Participants completed a survey assessing demographics, substance use (AUDIT-R), and behavioral excesses. Diagnostic data and quantity of alcohol use were extracted from medical records. Relative to NB patients, PB patients were significantly more likely to be female and married or living with a partner. PB patients reported a significantly later mean age of first 1) regular use of alcohol/drugs; 2) concern about alcohol/drug use; and 3) alcohol/drug treatment. The main hypotheses were not supported: latency between regular use and concern about use did not significantly differ between PB patients and NB patients, nor did the duration from regular use to age of treatment seeking. As expected, however, PB patients did report a significantly shorter time between having concerns about substance use and seeking treatment. There was a trend towards PB patients consuming a greater maximum number of drinks per drinking day. PB and NB patients did not differ on the total number of substance used. NB participants, however, were more likely to report frequent cocaine and marijuana use. Analyses comparing rates of other behavioral excesses (internet use, video game playing, gambling, sex) did not yield significant differences between PB and NB patients. Results indicate that PB patients who experience post-surgical substance use may differ from the "typical" substance abuse patient in several ways that may reflect unique treatment needs. Future research should both explore these treatment needs as well as the factors that may confer risk for post-surgical substance abuse among bariatric patients.

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## D-093

### RELATIONSHIP BETWEEN SLEEP QUALITY, DEPRESSION, AND OBESITY AMONG MIDDLE-AGED MEXICAN AMERICAN WOMEN

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Background: Mexican American (MA) women bear a disproportionate burden of the obesity epidemic. In fact, national prevalence data demonstrate that middle-aged MA women are particularly at risk for being obese. Moreover, chronic sleep deprivation and poor sleep quality may increase the risk of obesity and weight gain. While the association between depression and obesity has been established, the specific pathway by which sleep quality and depression relate to obesity is unknown.
Method: This study is based on a cross-sectional random sample of 302 middle-aged (M=49.74±6.54 years old), healthy MA women living in the California/Baja-California border region of the U.S. Data were derived from the Nuestra Salud Study, which examined psychosocial influences on cardiovascular disease risk. Participants completed surveys (in English or Spanish) assessing socio-demographic information, sleep quality (Pittsburgh Sleep Quality Index), and depressive symptoms (Center for Epidemiologic Studies Depression Scale). In addition, women underwent anthropometry assessments. Hierarchical multivariate regression models were used to test the hypothesis that after accounting for other factors, depression and sleep quality would be independent determinants of weight status (BMI and waist circumference).
Results: Results demonstrate that after adjusting for demographics, exercise, income, nutrition, and depressive symptoms, poor sleep quality was significantly associated with BMI ($\beta=.140$, $p<.01$) and waist circumference ($\beta=.170$, $p<.05$). These effects for sleep quality were not mediated or moderated by depression. Depression was not associated with BMI or waist circumference in adjusted and unadjusted models.
Conclusion: Results imply that poor sleep quality has a direct positive association with obesity among this sample of MA women. Implications for research and practice will be discussed.

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## D-094

### BETTER TOGETHER: HEALTHY CASWELL COUNTY - FINDINGS FROM A COMMUNITY-BASED RANDOMIZED CONTROLLED PILOT STUDY TARGETING OBESITY

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Background: For low resourced rural areas, such as Caswell County, NC, providing collaborative and multi-leveled interventions to effectively address health behaviors is extremely challenging. This pilot study was conceptualized to promote collaboration among an emerging community-based participatory research coalition, and determine the feasibility of executing regional obesity interventions. The primary objective of this 15-week randomized controlled pilot study was to determine the effectiveness of providing biweekly access to group fitness classes, with (Group 1) and without (Group 2) weekly evidence-based nutrition and physical activity education sessions.

Methods: Outcome measures were assessed at baseline and immediately post intervention. Standardized assessment procedures and validated measures were used. ANOVA tests were used and intent-to-treat analyses are reported.

Results: Of 89 enrolled participants, the majority were African American (63%) females (91%). Groups were not significantly different at baseline. There was a group by time effect, such that Group 1 experienced significantly greater improvements in their BMI (F=15.0, p<0.01) and waist circumference (F=7.0, p=0.01), when compared to Group 2. There were no other significant group differences, including blood pressure, dietary intake, and psychosocial variables. There was an overall time effect, such that both groups improved weekly minutes of moderate physical activity (F=9.4, p<0.01).

Discussion: In a health disparate region void of physical activity resources, this study demonstrates that access to free group fitness can improve minutes of moderate physical activity, but alone is insufficient to improve weight outcomes. To effectively impact weight outcomes, both access to physical activity and evidence-based educational programming is needed. Importantly, this study also signifies successful collaborations among community-academic partners and demonstrates feasibility for a larger scale obesity trial.

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## D-095

### PREDICTORS OF ALCOHOL USE TRAJECTORIES FOLLOWING BARIATRIC WEIGHT LOSS SURGERY

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Background: Bariatric surgery is the only effective long-term treatment for obesity, but some studies have observed post-surgical problems related to alcohol use. At present, no large-scale studies have examined the prevalence and correlates of either increases in alcohol use post-surgery or maintenance of frequent alcohol use, both of which may increase risk of post-surgical alcohol-related problems. The current study examined whether type of surgery, tobacco use, and severity of depression predicted increased drinking or sustained frequent drinking following bariatric surgery.

Method: Participants were 43,237 individuals who underwent bariatric surgery (21% men). Of these patients, 53% received Roux en Y Gastric Bypass (RYGBP), and 47% received Adjustable Gastric Banding (AGB) or Sleeve Gastrectomy (SG). Single-item rating scales of severity of depression and the frequency of pre- and post-surgical (M=350 days following surgery; SD=145) alcohol and tobacco use were entered directly into the Bariatric Outcomes Longitudinal Database. Two logistic regression analyses were performed to examine predictors of sustained frequent drinking (i.e., “frequent” drinking pre- and post-surgery) and increased drinking post-surgery, respectively.

Results: Fifty-seven percent ($n$=282) of those who drank frequently before surgery sustained frequent drinking post-surgery. Of those with infrequent or no alcohol use prior to surgery, 2% ($n$=832) increased drinking post-surgery. Undergoing either AGB or SG was associated with a greater likelihood of both increased drinking ($p$=0.03, OR=1.16) and sustained frequent drinking ($p$<.001, OR=2.24) post-surgery. Neither pre-surgical tobacco use nor severity of pre-surgical depression were significant predictors of increased drinking or sustained frequent drinking post-surgery.

Conclusion: Continued frequent drinking is substantially more common than increases in drinking following bariatric surgery. Surgery type may affect these trajectories, but additional work is needed to examine other relevant factors influencing post-surgical alcohol use.

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## D-096

### DO CONCERNS ABOUT THEIR WEIGHT MOTIVATE MINORITY ADOLESCENTS TO PERFORM WEIGHT-RELEVANT BEHAVIORS?

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Because adolescents in certain minority groups are at relatively greater risk for obesity, motivating them to manage their weight is a primary intervention focus. However, motivation to perform weight control behaviors in these groups is not well understood. E.g., whereas investigators agree that eating and exercise behaviors are relevant for weight control, whether at-risk adolescents perceive these as relevant is unknown. Our objective was to test whether concerns about weight affected motivation to engage in four eating and exercise behaviors in a sample of minority adolescents.

Method: To indicate concerns with their weight, 233 adolescents (M=14.23 yrs, range 12-17yr; 88% African American; 56% female) reported previous weight loss attempts, satisfaction with their weight and frequency of talk about losing weight with family and friends. Respondents also indicated their intention to eat fast food, eat fruit and vegetables, drink sugared beverages and engage in vigorous exercise in the next month.

Results: Weight concerns were present in this sample; 47% had tried to lose weight in the previous year, 27% were dissatisfied with their current weight, 31% had talked with their parents and 37% with their same sex friends about weight loss in the past six months. Talk with parents and with friends were related to weight loss history (r=.39 and r=.38) and weight satisfaction (r=-.37 and r=-.28). However, none of these four variables were associated with intentions to eat fast food (R2=.02), eat fruit and vegetables (R2=.01), drink sugared beverages (R2=.01) or exercise (R2=.04; average r=.07). Girls had more weight concerns than boys, but gender did not affect weight concern-intention associations.

Conclusion: Minority adolescents with a history of weight loss attempts and dissatisfaction with their current weight discussed weight loss with their parents and same sex friends. However, concerns about weight loss did not affect motivation to engage in eating and exercise behaviors, which may suggest that adolescents do not think about these behaviors as relevant for weight control.

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## D-097

### ACCURACY AND CONGRUENCY OF PATIENT AND PHYSICIAN PERCEPTIONS OF WEIGHT-RELATED DISCUSSIONS: PROJECT CHAT

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Background: Primary care providers are urged to counsel overweight patients to lose weight. Rates of reported weight-related counseling vary widely, perhaps due to self-report bias. We examined the accuracy and congruency of recall of weight-related discussions by patients and physicians using independent verification.

Method: We audio recorded encounters (‘gold standard’) between 40 physicians and 461 overweight/obese patients. We coded all weight-related content and also assessed patient and physician recall of weight-related discussions.

Results: According to the coded encounters, weight was discussed in 69% of the encounters (n=320). Overall, patient accuracy (patient and audio recording concurred) and physician accuracy (physician and audio recording concurred) and congruency (patient and physician agreed and audio recording concurred) were 67%, 70% and 62%, respectively. When we examined encounters that were coded as containing weight-related content, physicians were highly accurate (97%) as were patients (98%), with 95% congruency between patients and physicians. Further, 31 physicians were 100% accurate and for 36 physicians their patients were 100% accurate. Accuracy was much lower when audio recordings indicated no weight-related content: accuracy for physicians was only 44%, patient accuracy was 36% and congruency was 28%.

Conclusion: Physician and patient self-report of weight-related discussions were highly accurate. This was especially true when audio recordings indicated weight-related discussion, less so when audio recordings indicated no discussion. Physicians and patients might overestimate the presence of weight-related discussions.

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## D-098

### A MINIMAL-CONTACT SELF-MONITORING-BASED WEIGHT LOSS INTERVENTION FOR PATIENTS WITH OBSTRUCTIVE SLEEP APNEA

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Weight loss has been shown to decrease the severity of obstructive sleep apnea (OSA); however, very few studies have investigated the effects of behavioral weight loss interventions for patients with OSA. The primary aim of this pilot study was to determine the feasibility and initial weight effects of a brief minimal-contact self-monitoring-based weight loss intervention using daily dietary self-monitoring and a self-administered cognitive behavioral weight loss manual (SM). A secondary aim was to explore the association between weight loss and CPAP adherence. Forty overweight or obese men and women diagnosed with mild or moderate OSA were randomized to either the SM or an attention-control (AC) condition. SM participants were instructed to complete daily dietary logs for 6 weeks and were given a weight loss treatment manual. Both groups received brief weekly phone calls reminding them to weigh themselves at home that week. Participants were weighed on a medical scale at baseline, post-treatment (6 weeks), and at a 6-week follow up. Objective CPAP adherence data were retrieved at post-treatment and follow-up. Recruitment and retention were good in this study and attrition rates did not differ significantly by group. Intent to treat repeated measures ANOVA indicated a main effect of time (but not group), such that both groups lost weight over time. Pearson r correlations between weight change and CPAP adherence indicated that among SM participants, 6-week weight loss was correlated with CPAP adherence at post-treatment (trend: $p=.08$) and follow-up ($p=.02$), such that SM participants with greater weight loss at 6 weeks had greater CPAP adherence at 6 and 12 weeks. This study provides initial data on the effects of a minimal-contact weight loss intervention for patients with obstructive sleep apnea and highlights a possible association between weight loss and CPAP adherence.

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## D-099

### BRAIN FUNCTION DIFFERENCES BETWEEN MALE AND FEMALE SUCCESSFUL DIETERS

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In general, women have more difficulty losing weight than do men. Functional magnetic resonance imaging (fMRI) studies show that men and women respond differently to food-related stimuli. This study examined baseline differences in brain responses to food images in men and women who successfully completed a diet intervention.

Obese adults ($n=70$) were scanned using fMRI before beginning a 12-week structured weight loss intervention (diet). Participants viewed food (F) and nonfood (NF) images before (PRE) and after (POST) eating a small meal. Successful dieters (34 women, W and 19 men, M) were defined by losing $\geq 7\%$ of baseline weight at the end of 12 weeks. Gender (W, M) by Image (F>NF) ANOVA were run for PRE and POST separately and data were co-varied for percent weight loss (threshold $p<.01$, cluster corrected for multiple comparisons). Differential activations were found in multiple prefrontal cortex (PFC) and parahippocampal (PHG) regions at PRE and POST. When viewing food images, women showed increased activation in the right PFC ($F=26.00$, $p<.01$) at PRE, and decreased activation in the left PFC ($F=19.27$, $p<.01$) at POST. This pattern was not observed in men. Bilateral PHG was found (right $F=12.22$; left $F=18.61$, both $p<.01$) at PRE and right PHG ($F=16.67$, $p<.01$) at POST. At PRE, men show a greater difference F<NF than women, whereas at POST women show a greater difference F>NF.

This study demonstrates that obese men and women respond differently to food images in both prefrontal and limbic regions, which may indicate differences in how they respond to food in vivo. All participants were successful in the diet; therefore these differences did not alter their ability to lose weight. However, it is unknown whether baseline brain differences contribute to long-term weight loss maintenance. A better understanding of these differences can help direct future diet interventions

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## D-100

### THE EFFECT OF CONTEXT CUES AND MEAL MEMORY RECALL ON SNACK FOOD INTAKE

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Cognitive processes, including memory have been shown to influence energy intake in humans as evidenced by patients with an inability to form new memories consuming multiple meals in a short time period. Experimental research has also shown the influence of attention and memory recall of a lunch meal on subsequent eating during a snack. In addition, memory has been shown to be enhanced when recalled in the same environment or context where learning occurred. This study was undertaken to examine the influence of context cues and recall of a lunch eaten in the laboratory on subsequent snack food intake three hours later. Forty lean females between the ages of 18-30 participated in a 2 (Same versus Different Context) by 2 (Lunch versus Travel Recall) study in which participants attended two sessions over one day including a lunch session in a distinct laboratory room (consisting of red lighting and a checkered tablecloth) and a snack session in which context and recall were manipulated. Results reveal main effect of context ($p<0.05$) such that participants exposed to the same context as their lunch session consumed less in the snack session than participants exposed to a different context. Dietary disinhibition and restraint moderated these effects with a significant disinhibition by context interaction ($p<0.05$) such that participants with low disinhibition reduced energy intake when exposed to the same context as a previous meal, while context had no effect on high disinhibition participants. There was also a significant restraint by recall interaction ($p<0.05$), such that low restraint women increased energy intake when recalling a meal as compared to high restraint women recalling a previous meal and low restraint women recalling their journey to campus. These results show that memory processes are important in influencing energy intake and individual differences moderate this relationship.

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## D-101

### FOOD REINFORCEMENT PREDICTS WEIGHT CHANGE IN ADULTS OVER ONE YEAR

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Food reinforcement is an index of the motivation to eat and is positively correlated with body mass index (BMI), and predicts energy intake. Food reinforcement has been shown to predict weight change in children over one year, with children higher in food reinforcement gaining more weight than children low in food reinforcement; however this has not been studied in adults. In this study we sought to examine the influence of relative reinforcing value of food on weight change over one year in adults. A sample of 88 non-obese ($BMI<30$) adults (males, females) between the ages of 18-50 were measured for BMI, food and reading reinforcement and ad libitum eating and again for weight at one year. Food reinforcement, as measured by a proportion of breakpoint reinforcement for food to total breakpoint for food and reading time, significantly predicted weight change ($p<0.05$) such that subjects with a relatively high food reinforcement (one standard deviation above the mean) gained approximately 5 pounds, while those low in food reinforcement showed no weight change in either direction over one year. These results suggest that food reinforcement is a significant contributor to obesity and weight change over time and clinical treatments that target food reinforcement may help to aid in long term weight loss maintenance.

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## D-102

### RECRUITMENT OF YOUNG ADULTS FOR WEIGHT GAIN PREVENTION

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Young adults are at greatest risk of weight gain, but interventions to prevent weight gain have had limited success. SNAP (Study of Novel Approaches to Prevention), part of the EARLY Consortium of studies, is an RCT testing two novel approaches to weight gain prevention compared to minimal treatment control. Participants will be 600 young adults, age 18-35; with BMI 21-30. Both interventions are based on self-regulation theory; one focuses on making daily small changes in eating and activity and the other stresses periodic larger changes to produce weight loss.

Two-thirds (428 of 600) of the needed participants have been randomized (16.4% men; 25.0% minorities). Interested individuals (n=3997) viewed the study recruitment website and completed an initial online screener. Seventy-one percent screened eligible for age and weight , 51.5% of those completed the phone screen, 53.6 % of those eligible after phone screen attend orientation, and 78.2% of those who were eligible after orientation were randomized; thus 10.7% of all initial inquiries and 15.0% of initial eligible inquiries were randomized. Self-selection, rather than ineligibility, accounts for the drop-off. Fewer men completed the online screen ( 841 vs. 3145; 21.0%; $p<0.001$); more were ineligible after online screen ($p<.001$); and fewer eligible men after phone screen were randomized ($p=.04$) compared with women. Most commonly men were ineligible due to BMI>30. In contrast, the distribution of phone screens by ethnicity more closely matched randomization (screens=69.8% Caucasian; 10.6% African American [AA]; 4.8% Asian; 8.9% Hispanic/ randomization= 75.0% Caucasian; 10.5 % AA; 4.4% Asian; 6.8% Hispanic).

These data are unique in capturing initial interest via a recruitment website; they highlight the difficulty of recruiting participants, particularly men, for a weight gain prevention trial; and provide a benchmark for comparison of recruitment efforts in other trials.

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## D-103

### EMOTIONAL OVEREATING AND BINGE EATING IN A VETERAN POPULATION SEEKING WEIGHT-LOSS TREATMENT

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Approximately 68% of the adult U.S. population and 75% of veterans are overweight or obese. Studies investigating the effect of binge eating on weight loss in a population that meets partial criteria for Binge Eating Disorder (BED) suggest that stress responsiveness and symptoms of psychopathology are the same in those who binge eat, regardless of meeting full criteria for BED. The association between sub threshold binge eating (subBE) and emotionally dysregulated overeating, however, has yet to be examined.

A retrospective chart review was performed on 120 patients meeting criteria for obesity (body mass index (BMI)>30 who participated in an 8-week weight loss program (27% female, mean age 53 years, SD=11). Baseline assessment included demographics and a validated measure of psychosocial factors impacting weight management. BMI was collected at baseline and 6 and 12-months post intervention.

Study analyses comprised descriptive statistics and Pearson correlations. 77% of participants endorsed binge eating at least once per week. “Emotional eating” was correlated with family/relational problems, boredom, loneliness, stress, and/or negative emotions. Although PTSD was the only psychological diagnosis that was correlated with subBE, self-reported symptoms of anxiety and depression were also positively correlated with the behavior (all $p<05$).

Patient reports of negative affect, stress, and subclinical symptoms of depression and anxiety may indicate a relationship between emotional overeating and subBE that could contribute to weight-gain and co-morbidities of obesity. The relationship between subBE and emotional overeating and the impact of these factors on obesity deserves future attention in order to develop effective behavioral interventions for obesity.

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## D-104

### THE SELF BEHAVIORAL WEIGHT LOSS TREATMENT TRIAL: DESIGN AND BASELINE CHARACTERISTICS

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Obesity is a major, chronic health problem associated with an extremely high rate of relapse. Standard behavioral treatment (SBT) has been used in weight loss trials for nearly 2 decades with little improvement in weight loss maintenance. Self-efficacy, one's perception of his ability to perform specific behaviors, influences maintenance. The strongest of the 4 self-efficacy enhancement sources is mastery performance. While SBT provides participants standard goals, it does not use a tailored approach nor does it set incremental goals to increase the likelihood of performance mastery. We have implemented a novel intervention that builds on the 4 sources of self-efficacy. The experimental condition consists of modified SBT: standard group sessions supplemented with individual sessions that are guided by self-efficacy theory and provide tailored behavior change goals for weight loss that are developed collaboratively (SE+mSBT) and increased incrementally as the goals are achieved. The comparison group has standard group sessions with standard goals. We hypothesize that the SE+mSBT group will have improved weight loss maintenance, quality of life, adherence to lifestyle change, and a reduced coronary heart disease risk profile. The intervention lasts 18 months; measurement assessments are conducted every 6 months. Anthropometrics, lipids, blood pressure, energy intake and expenditure, and psychosocial factors are measured. Self-efficacy is measured via the 20-item Weight Efficacy Lifestyle (WEL) questionnaire. Scores range from 0 to 180; high scores indicate high self-efficacy. We have randomized 130 participants, our target sample, which is mostly white (71.5%) and female (83.1%) with 15.9±3.1 years of education, a mean age of 53.0±9.6 years and mean BMI of 33.5±3.9; the mean baseline WEL score was 99.5± 33.5, suggesting a moderately low level. The intervention is ongoing for the final two cohorts. If demonstrated to have efficacy in maintaining weight loss, the intervention could reduce the rate of recidivism following weight loss treatment and be considered for translation to clinical practice.

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## D-105

### DOES PARENT SELF-EFFICACY FOR CHILDREN’S HEALTHY WEIGHT BEHAVIORS RELATE TO PARENT AND CHILD DIET, PHYSICAL ACTIVITY, OR SEDENTARY TIME?

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Background: Parent self-efficacy (SE) is an important construct associated with child health. Objective. To examine associations of parent SE for children’s healthy weight behaviors with child and parent diet, physical activity (PA), and sedentary time.

Methods: Parents with a child 2-5 y participating in a parenting intervention completed the Parenting SE for Children’s Healthy Weight Behavior survey. This instrument assesses parents’ confidence to support children’s PA (12 items, 2 factors) and diet (18 items, 4 factors), identified using exploratory and confirmatory factor analysis. Parents reported amount of PA, TV and video game time. Accelerometer data (1-wk) were collected on parent and child, and 3 dietary recalls captured parent and child diet.

Results: On average, parents (n=325) were 34.9 y, 40% African American, 92% female, and over 60% had college degrees. Children’s mean age was 41.8 mos and most attended child care. Higher parent confidence to overcome outdoor play barriers was positively associated with increased child time playing outside on weekends ($r=0.13,p<0.05$). Confidence to promote PA was correlated positively with parents meeting national PA recommendations ($r=0.3,p<0.0001$) and negatively with parent TV ($r=-0.15,p<0.05$) and video game time ($r=-0.13,p<0.05$). Also, higher general confidence to promote child PA was associated with more child vigorous PA ($r=0.12,p=0.05$)and less child screen time on weekdays ($r=-0.16,p<0.01$)and weekends($r=-.13,p<0.05$). Higher diet role model confidence was positively correlated with parents’ intake of fruits ($r=0.13,p<0.05$) and veggies ($r=0.11,p<0.05$) and children’s intake of veggies ($r=0.17,p<0.05$). Also, increased child veggie intake was associated with parents’ confidence to provide healthy food ($r=0.14,p<0.05$) and limit unhealthy food/drink ($r=0.13,p<0.05$).

Discussion: Data show important relationships between parent SE, parent behavior, and child PA and fruit/veggie intake.

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## D-106

### PARENTING SELF-EFFICACY FOR CHILDREN'S HEALTHY WEIGHT BEHAVIORS: INITIAL INSTRUMENT DEVELOPMENT

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Background: Parent practices are associated with child behavior, and research shows self-efficacy (SE) is associated with positive health behaviors. Objective. Develop a measure of parenting SE for children's healthy weight behaviors.
Methods: Parents with a child (2-5 y) were recruited as part of a parenting intervention. Parents completed the Parenting SE for Children's Healthy Weight Behavior survey, which assesses parents' confidence to support children's physical activity (PA-14 items) and diet (Diet-21 items). Exploratory factor analysis determined factors to retain for each set of items and the items best representing those factors. Results were then used to fit a confirmatory model. Descriptives, alphas, and relationships to selected demographic variables were estimated.
Results: On average, parents (n=325) were 34.9 y, 40% African American, 92% female, and over 60% with college degrees. Mean age of the participant child was 41.8 mos; most attended daily child care. SE-PA results suggest a 2-factor model, including external outdoor play barriers (2 items) and General PA-SE (10 items). Fit of this 12-item 2-factor model was good (RMSEA=0.081, CFI= 0.974, TLI=0.968). For SE-Diet, a 4-factor with one higher-order factor fit the data best. Factors include Provision of & Getting Children to Consume Healthy Food (8-items), Role Modeling (3-items), Limiting Food & Drink (5-items), and Rewards & Bribes (2-items).The higher order factor represents overall parent SE for Diet and includes all factors except Rewards & Bribes. The 18-item 4-factor high-order model was good (RMSEA=0.069, CFI=0.961, TLI=0.954). Scores for several scales were significantly related to parent demographics.
Discussion: This new instrument has potential to assess parents' SE for children's healthy weight behaviors, identify areas where parents need help, and benefit behavior change research. Future work will focus on associations between SE and child behaviors; additional items may enhance instrument development.

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## D-107

### DEVELOPMENT OF A THEORY-BASED, CULTURALLY RELEVANT, COMMUNITY-BASED WEIGHT LOSS PROGRAM FOR LATINA IMMIGRANTS

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Background: Obesity is a risk factor for diabetes and weight loss has been shown to be the key factor in lifestyle interventions for diabetes prevention. A disproportionate percentage of Latinas are overweight or obese compared to non-Hispanic white women. Effective community-based interventions have focused on a global approach to weight management but few have included Latinos immigrants.
Objective: To develop and pilot test a culturally relevant, theory-based, weight loss program for Latina immigrants to be administered by promotoras in a community setting.
Methods: We employed participatory methods and a systematic approach to develop all components of the group-based intervention. The resultant 8-week program- ESENCIAL- focuses on practical ways to promote weight loss through the incorporation of the cultural beliefs, attitudes and perspectives of Latina immigrants. Overweight Latina immigrants were recruited from a local clinic and via word of mouth to participate in a pilot study. Data was collected before and after the intervention. The questionnaire included a validated dietary practices scale. Height and weight were measured using standardized protocols. Physical activity was assessed using accelerometers worn a minimum of three days before and after the intervention.
Results: Twenty-five women completed the intervention. Mean age was 36, mean time in the U.S. was 13 years and the majority was from Mexico. Mean BMI was 33; 73% of participants had a positive family history of diabetes. The intervention resulted in statistically significant weight loss (mean 2.0kg, SD 2.6, p<.001). Levels of moderate physical activity increased significantly (p< 0.05) and dietary practices improved (p<0.01). Changes in dietary practices were significantly associated with changes in weight (p=0.04).
Conclusions: This theory-based, culturally relevant community based intervention resulted in significant weight loss among a sample of Latina immigrants. Future studies should evaluate the intervention compared to control in a large randomized trial.

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## D-108

### PARENTAL LIFESTYLE ROLE MODELS FOR HISPANIC CHILDREN

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This study examined parental lifestyle behaviors and the relationship of their dietary and physical activity (PA) habits with children's health and lifestyle behaviors. We predicted that parents who were healthy role models would have children with lower BMI who were more physically active and ate more fruits and vegetables. The sample consisted of 86 children in grades K-1 and their parents at two low-income schools. The mean age of parents was 35.4 years; 88% were female and 95% identified their child as Hispanic. Measures of parents' BMI, dietary intake (24-hour recall), and PA (Modifiable Activity Questionnaire) were obtained. Measures of children's BMI, metabolic risk, dietary intake (24-hour recall) and PA (accelerometry) were obtained. Only 57% of children had a healthy BMI, 8.9% of children ate five or more servings of F&V, and 16.4% engaged in the recommended PA. Only 22.4% of parents had a healthy weight (BMI <25), 10.7% ate the recommended servings of F&V, and 32.5% engaged in the recommended amount of PA. Healthy role model scores were based on the sum of the three factors: 53.5% of parents were not healthy role models (score of 0), 30.2% were limited healthy role models (score of 1), 16.3% were good role models (score of 2), but none of the parents in the sample were excellent role models. Significant associations were found between parent role model scores and child F&V (p<.03), protein (p<.03), and dietary fiber intake (p<.02). There were no relationships observed with child PA, lipid/metabolic risk, or BMI, but parents who were overweight had children who were also overweight (p<.02) and had more risk factors for metabolic syndrome (p<.03); parents who ate more F&V had children with lower BMI (p<.05). These findings indicate that most parents are not good role models for healthy lifestyles; however, parents who were more healthy role models have children with favorable dietary intake and lower risk for metabolic syndrome, suggesting that child obesity prevention efforts may benefit by helping parents to be better lifestyle role models for their children.

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## D-109

### CLOTHING SIZE DISSATISFACTION: A STRONGER PREDICTOR OF SIZE-RELATED AVOIDANCE THAN BODY MASS INDEX

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Body image issues are salient in the United States (U.S.) especially among women. Age-, gender-, and race-representative U.S. adult participants (N= 2,997) who perceived themselves to be larger in clothing size than their ideal size reported height, weight, actual and ideal clothing size, and size-related avoidance behavior in an internet survey. Body mass index (BMI) was calculated as an anthropometric measure, and the difference between current and ideal clothing size, a novel construct called relative size (RS), was calculated as a measure of body size dissatisfaction to predict a variety of avoidance behaviors. Factor analysis of the 10-item avoidance scale yielded "general avoidance" and "body display avoidance" components. Hierarchical regression analyses were performed for each component with the predictor variables in the following steps: BMI, RS, gender, gender-BMI interaction, and gender-RS interaction. RS was found to offer more predictive utility for "general avoidance" than BMI, $\Delta$R2=.018, F(2, 2994)=73.025, p<.001. This finding may suggest that one's perception of and dissatisfaction with size deters involvement in varied life events more so than actual body size. Women reported more "body display avoidance" than men, revealing gender as the strongest predictor, $\Delta$R2 =0.080, F(3, 2293) =138.262, p<.001. BMI and RS also predicted body display avoidance, $\Delta$R2=.001, F(1, 2995)=3.982, p<.05 and $\Delta$R2=.041, F(2, 2994) =65.631, p<.001. These findings seem to reinforce previous literature showing that poor body image, assessed by clothing size, has a stronger negative relationship with engagement in life activities for women than men. Though not examined in the current study, RS may have some clinical utility. Greater clothing sizes have been associated with cardiovascular disease, diabetes, and cancer risk independent of BMI. Moreover, patient assessment of RS could offer helpful information for health professionals involved in weight-loss treatment. Future studies could assess such clinical implications of RS.

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## D-110

### EFFECTS OF A FAMILY-BASED INTERVENTION ON PARENT ACCURACY OF CHILD'S WEIGHT

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Parental involvement is critical to the success of child obesity prevention interventions. However, parents may not be aware of what is a healthy weight for their child. This study tested intervention effects on parent accuracy of child's weight. Participants were 541 parent-child dyads enrolled in a 2-year 2-group randomized controlled child obesity prevention intervention (MOVE/Me Muevo). Two health coaches conducted phone consultations with parents and parents attended health workshops at local recreation centers. Parent report of child's weight was compared with child objectively measured weight category to assess parent accuracy. Parents were 37±6 years old, 94% female and 40% Latino. Children were 6.6±0.7 years old, 54% female and 32% overweight/obese. At baseline, 66% and 64% of intervention and control parents (respectively) were accurate of their child's weight category. At post-intervention, 71% and 63% of intervention and control parents (respectively) were accurate of their child's weight category. Intervention group parents had 1.7 greater odds of being accurate of their child's weight category at post-intervention compared to control group parents ($p=0.03$), adjusting for accuracy at baseline, child gender, child age, parent education, parent ethnicity and group clustering. Additional adjustment for child baseline weight category reduced intervention effects on parent accuracy ($OR=1.5$, $p=0.11$). Parents of obese children were less accurate of child's weight category ($OR=0.09$, $p<0.01$), independent of any covariates. The MOVE study improved parent accuracy of child's weight category, however child's weight category confounds intervention effects. Future research should focus on helping parents of obese children recognize the health consequences of obesity.

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## D-111

### HEALTH RISK BEHAVIORS AS DETERMINANTS OF OBESITY IN MEXICAN AMERICAN WOMEN

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Obesity and related physical health problems are a major source of morbidity and mortality in Mexican American women and estimates suggest that 3 in 4 MA women are overweight or obese. Recent findings suggest that disordered eating behaviors, typically associated with anorexia and bulimia nervosa contribute to obesity but this association has not been studies in populations of MA women. This study examines the pattern of associations among body mass index (BMI), disordered eating behaviors, tobacco and alcohol use in a sample of 481 college-enrolled young adult MA women. Results are based on baseline data collected as part of a 12-month longitudinal study designed to determine self-cognitions as determinants of health risk behaviors in this population. Women recorded 8 disordered eating behaviors (food restricting, fasting, self-induced vomiting, laxative, diuretic, diet pill use, binge eating, excessive exercise, tobacco and alcohol use using ecological momentary assessment methodology for a 14-day period at baseline. BMI was measured prior to the start of EMA. The mean BMI for our sample was 25.7 ($sd=6.0$) and a range from 16 to 48. Using CDE weight category definitions, 3.4% ($n=16$) of our sample was underweight, 51.5% ($n=241$) normal weight, 25.9% ($n=121$) overweight and 19.2% ($n=90$) obese. Food restricting was positively and significantly correlated with binge eating ($Rho=0.17$) fasting for>8 hours ($Rho=0.45$), self-induced vomiting ($Rho=0.18$), laxative (Rho 0.10) and diet pill use ($Rho=0.15$) [all $p<.03$]. Alcohol and tobacco use were not related. To examine the associations between the BMI, disordered eating, alcohol and tobacco, we used the negative binomial regression, which gave satisfactory goodness of fit. Results showed that food restricting ($Estimate=0.04$), binge eating ($Estimate=0.03$) and tobacco use ($Estimate=0.08$) were positively and significantly associated with BMI. Results suggest that interventions designed to reduce or eliminate disordered eating behaviors and tobacco use may be central in reducing obesity in young adult MA women.

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## D-112

### EFFECTS OF A RECREATION CENTER- AND FAMILY-BASED INTERVENTION ON CHILD BMI: THE MOVE/ME MUEVO PROJECT

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Multi-level community-based interventions are needed to prevent childhood obesity. The MOVE/Me Muevo study was a 2-year group-randomized controlled child obesity prevention intervention. Parent-child dyads that lived near 30 recreation centers were enrolled ($n=541$) and randomized to two groups (intervention vs. control). Two health coaches implemented weekly phone consultations with parents, tip sheets were mailed and parents attended four workshops at local recreation centers. Intervention strategies were aimed at increasing opportunities for physical activity and healthy eating within the home and at local recreation centers. Parent and child BMI was measured. Secondary outcomes included child waist circumference (WC) and total percent fat via BIA. Parents completed a comprehensive self-report survey to assess demographics and various child obesity-related health behaviors. Parents were 37±6 years old, 94% female, 40% Latino and 62% overweight/obese. Children were 6.7±0.7 years old, 55% female and 33% overweight/obese. Total retention rates were 91%. Intent-to-treat mixed effects multivariate analyses showed no intervention effects for any primary or secondary anthropometric outcomes (child BMI, WC, %fat). However, gender was a significant moderator of intervention effects (interaction term $p<0.05$), whereby girls in the intervention group had a lower post-intervention adjusted mean BMI z-score of 0.62($SE=0.04$) compared to 0.71($SE=0.04$) for the control group. The MOVE intervention achieved favorable reductions in BMI among girls, but not boys. Future research should consider tailoring intervention messages and strategies based on the gender of participants.

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## Citation and Meritorious Poster

## D-113

### THE MISUSE OF PRESCRIPTION STIMULANTS FOR WEIGHT LOSS, PSYCHOSOCIAL VARIABLES, AND EATING DISORDER SYMPTOMS

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There is an increasing prevalence of the intentional misuse of prescription drugs among young adults. One notable concern is the rise in the nonmedical use of prescription stimulants. In 2005, in a nationally representative sample of undergraduates, the past-year prevalence of the nonmedical use of prescription stimulants was 25%. Motivations for the misuse of prescription stimulants include: to help with concentration, to increase alertness, to get high, and for the sake of experimenting. The present study examined the use of prescription stimulants, defined as those normally used to treat ADHD (e.g., Ritalin, Adderall), for the purpose of weight loss in young adults ($N=424$). We are unaware of previous studies that have examined the intentional misuse of prescription stimulants for the aim of losing weight. In this sample of young adults, 11.2% reported ever having misused a prescription stimulant for weight loss. These individuals had lower self-esteem, $t=3.05$, $p<.01$. They also reported a greater desire to lose weight for self-image reasons (i.e., to feel more attractive) versus health reasons (i.e., to feel healthier and have more energy), $t=-2.55$, $p=<.05$. Also, individuals who reported using prescription stimulants for weight loss scored higher on some eating disordered behaviors, including vomiting to prevent weight gain or to counteract the effects of eating, $t=-2.13$, $p<.05$; using laxatives or diuretics for weight loss, $t=-2.69$, $p=.01$; and fasting (skipping at least two meals in a row), $t=-3.51$, $p=.001$. Results suggest that the misuse of prescription stimulants for weight loss is relatively common and is associated with problematic weight-related motivations and behaviors. It is important to understand the misuse of prescription stimulants for weight loss, the motivations behind it, and how this use is related to eating disorder symptoms. Weight loss interventions for young adults should assess the use of prescription stimulants for weight loss and emphasize the harmful effects related to the misuse of prescription stimulants. Physicians may also wish to express these concerns when prescribing such medications.

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## D-114

### PRELIMINARY EVALUATION OF A STUDENT-RUN, COMMUNITY-BASED WEIGHT MANAGEMENT PROGRAM TARGETING HISPANIC FAMILIES: FIT FOR HEALTH

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Hispanic adults and youth have experienced significant rates of weight gain and associated health disparities. Although effective weight loss programs have been demonstrated in some children, less is known about programs for low-income, ethnic minorities. This study evaluated the effects of an on-going medical and graduate student run program, FIT for Health, that was developed with community-based participatory approaches for primarily Hispanic families with an overweight (BMI%>85th) child (ages 8 - 10 years). FIT for Health is the product of a five year partnership between community leaders and organizations, government entities, academic researchers, and students to reduce obesity that has served 85 primarily low-income families, of which 83% were Hispanic. A governing FIT for Health student board recruits families, collects measurements, and facilitates an 8-week program focusing on diet and physical activity that is delivered in English and Spanish. To date, baseline and 8-week post-intervention data has been collected on 37 families (Youth, 46% female; 87% above 95th BMI%; mean age=8.9±0.8, 73% Hispanic) with reliable and valid self-report questionnaires to evaluate changes in diet and physical activity behaviors. Height and weight were also collected to calculate youth BMI z-score and adult BMI. Dependent t-tests indicated that youth demonstrated significant improvements in diet from baseline to post-intervention including consumption of vegetables ($p<.01$), low-fat dairy ($p<.05$), and reductions in dietary fat ($p<.05$) and eating out ($p<.05$). Youth also demonstrated a non-significant improvement in physical activity. No significant changes were found in youth or adult BMI. This community-based program also had high attendance levels (80%). These data provide preliminary support for a community-based, student-run program to improve health variables in a primarily low-income Hispanic population that utilizes community resources.

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## D-115

### PATIENT ATTITUDES AND PREFERENCES REGARDING WEIGHT LOSS INTERVENTION AMONG OBESE MEDICAL INPATIENTS

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Hospitalized obese patients rarely receive counseling about weight loss during their admission. Specific patient attitudes and preferences regarding inpatient weight loss interventions have not been systematically investigated. The purpose of this study is to describe attitudes towards weight management and preferences for inpatient weight loss interventions among obese hospital inpatients.

We surveyed 204 adult patients with a body mass index (BMI) of≥30 who were admitted to a hospital medicine service between March and May 2011, and consented to participate. The patient sample was predominantly Caucasian (67%) and female (62%). The mean age was 55 years and mean BMI was 38.1 kg/m2. Participants were surveyed via in-person interviews on the second day of their inpatient admission. Chi square tests were used to compare the group differences according to age and degree of obesity.

Although 82% expressed the desire for their inpatient providers to discuss weight loss during their admission, the vast majority of patients (92%) reported that their provider did not discuss weight management during their hospitalization. The majority of participants reported receptivity to specific weight management strategies such as general nutritional counseling (64%), individualized meal planning (65%), and developing an exercise plan with a physical therapist (54%). Chi square tests revealed that patients with the highest BMI (≥ 35) reported greater interest in weight loss interventions compared with their less obese counterparts (BMI between 30-35). Respondents with BMI≥35 and those younger than 60 years old were more likely to endorse attitudes linking weight to health than their less overweight and older (≥60) counterparts.

Most obese patients admitted to the hospital for acute medical conditions expressed motivation to participate in behavioral weight management interventions. Efforts to tailor and implement patient-centered, in-hospital weight management interventions have the potential to meet a critical need as well as leverage patient motivation towards behavior change during an important window of opportunity.

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## D-117

### CHRONIC FATIGUE AND BURNOUT: A CRISIS OF FAITH?

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Fatigue is a widely recognized hazard to occupational safety and health (OSH). Its similarity with burnout has baffled OSH management. Limited research evidence suggests job burnout precedes chronic fatigue syndrome (CFS) and ill health. Underlying mechanisms are nevertheless unclear. Job burnout entails a "crisis of faith" or cynicism in the meaning of work which might undermine one's spirituality. This study aimed to investigate the role of spirituality in the relations between burnout and chronic fatigue and health. A retrospective cohort study was conducted on 283 CFS patients in Hong Kong. Both the mediating and moderating effect models of spirituality were tested with Hierarchical Regression Analysis. The results revealed while both the main effects of job burnout and spirituality on chronic fatigue ($\beta=.426$, $p<.01$; $\beta=-.146$, $p<.05$) and ill health ($\beta=.239$, $p<.01$; $\beta=-.407$, $p<.01$) were significant, neither of the interaction effects between burnout and spirituality on chronic fatigue and ill health was significant ($p>.05$). Contrarily, spirituality was found to partially mediate the relations between burnout and chronic fatigue (Sobel test=2.258, $p<.05$) and ill health (Sobel test=5.792, $p<.01$). Further tests on burnout dimensions showed partial mediating effects of spirituality on the relations between exhaustion and chronic fatigue (Sobel test =3.344, $p<.01$) and ill health (Sobel test=6.035, $p<.01$), partial mediating effects of spirituality on the relations between cynicism and chronic fatigue (Sobel test=3.786, $p<.01$) and ill health (Sobel test=6.226, $p<.01$), and full mediating effects of spirituality on the relations between work-related efficacy and chronic fatigue (Sobel test=-5.483, $p<.01$) and ill health (Sobel test=-7.282, $p<.01$). The research findings suggest that burnout contributes to chronic fatigue and ill health partly through undermining one's spirituality. Interventions to enhance spirituality at work, such as understanding organization mission and their implications to the meaning of one's work, are advocated to prevent chronic fatigue and ill health.

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## D-119

### PREDICTING ILLNESS BEHAVIOR: HEALTH ANXIETY AND HEALTH LOCUS OF CONTROL

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Medical patients frequently present to healthcare providers with health anxiety and illness behavior. In order to better treat these patients, the relationship between health anxiety and illness behavior must be better understood. The present study examines health anxiety as a predictor of illness behavior, and more specifically includes Health Locus of Control (HLOC) as a potential mediator. HLOC refers to the extent to which perceived control over health is internally oriented (as measured by internal HLOC) and externally oriented (as measured by chance and powerful others HLOC). We tested the hypothesis that HLOC may mediate the relationship between health anxiety and illness behavior in college women (N=202). Path analysis and bias-corrected bootstrapping procedures were used to test the significance of mediated models, and each aspect of HLOC (internal, chance, and powerful others) was examined separately as a potential mediator. Results indicated that our hypothesis was largely supported. The indirect effect of powerful others HLOC was significant ($\beta=.06$, $p<.001$) demonstrating that powerful others HLOC partially mediates the relationship between health anxiety and illness behavior. Further analyses indicated that health anxiety and powerful others HLOC explain 76% of the variance in illness behavior. At the same time, indirect effects of internal and chance HLOC were not significant. These findings are consistent with research suggesting that perceived control over health may have implications for understanding health anxiety and illness behavior. More specifically, the perception that one's health is strongly determined by healthcare providers, i.e., powerful others HLOC, has important consequences when considering the relationship between health anxiety and illness behavior. In sum, our findings suggest that behavioral medicine researchers and clinicians should look more closely at this particular form of HLOC, perception of health providers as powerful others, in understanding individuals with high levels of health anxiety and illness behavior.

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## D-120

### RELATIONSHIPS BETWEEN PATIENT CHARACTERISTICS AND THE USE OF AN INTERNET-BASED SELF-MANAGEMENT SUPPORT SYSTEM

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While web-based self-management support systems (SMSS) have been shown to successfully assist a wide range of patients, they usually are delivered as a fixed set of components. As patients may have varying needs for support, research to identify which components are most beneficial to patients with different characteristics is critical to optimize and tailor these systems to patients' individual needs.

In this study of 103 cancer patients who used a multi-component SMSS, called WebChoice, for one year, we investigated the relationships between baseline measures of symptom distress, self-efficacy, and social support, and the frequency and time use of the components in WebChoice: self-monitoring; choice of self-management options; information resources; a messaging system in which patients asked questions to a clinical nurse specialist, and a forum for group discussion with other patients.

Results: Symptom distress was significantly related to posting messages in the forum (r=.28, p<.01). Patients scoring lower on several self-efficacy factors communicated more with the nurse (r=-.20, p=.04), and used the forum (r=-.24, p=.02) and the information resources (r=-.24, p=.02) more often. Lower social support was related to greater use of self-monitoring (r=-.25, p=.01) and use of self-management options (r=-.34, p<.01). Age (r=-.30, p<.01) and gender (r=-35, p<.01) were related to use of the forum, and gender to use of the informal components (r=.26, p=.01). There were no significant relationships between income or education and WebChoice component use.

While the sample size and the detected relationships were small, this study provides beginning evidence that there may be subgroups of patients who can benefit from different support components. However, more research is needed to identify the appropriate variables on which to tailor SMSS to different subgroups.

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## D-121

### IS INTENSIVE MEASUREMENT OF BODY IMAGE AND DISORDERED EATING REACTIVE? A TWO-STUDY EVALUATION

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Body dissatisfaction and disordered eating behaviors are associated with many important health outcomes including mood disorders, weight control attempts, and obesity. Ecological Momentary Assessment [EMA] and other intensive methods are increasingly used to capture these processes in daily life. A criticism of EMA is that multiple assessments may increase participant reactivity to internal or external cues, thus influencing psychosocial and behavioral processes and potentially biasing measurement. We conducted two studies to evaluate measurement reactivity to an EMA protocol in body image and eating behavior constructs. Study 1 recruited 63 college women. Study 2 enrolled 131 at-risk college women screened for high body dissatisfaction and/or disordered eating behavior. All participants completed traditional paper measures of body-related constructs at the start and end of each study. In both studies participants completed EMA on handheld computers consisting of 5 assessments each day of mood, eating, exercise, and activities (for 2 weeks in Study 1, 1 week in Study 2). We examined if paper self-report measure scores changed before and after intensive EMA; such changes would be consistent with measurement reactivity. Study 1 showed no changes in body dissatisfaction ($p$>.19), thinness norm internalization ($p$>.64), or eating, food, or body weight concerns ($p$>.13). Study 2 similarly found no changes in body dissatisfaction ($p$>.87), thinness norm internalization ($p$>.62) or body image quality of life ($p$>.83). Thus, multiple daily assessments over 1-2 weeks did not affect eating behaviors, attitudes, or body dissatisfaction in either non-clinical or at-risk samples of young women. These studies are the first to carefully examine EMA reactivity in body image, but are consistent with research documenting the lack of measurement reactivity to EMA in other domains (e.g., pain, alcohol use). EMA can be used to assess the real-world experience of body image and eating behaviors and to inform treatment development for a variety of clinical health issues, without undue concern for reactive processes.

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## D-122

### DEPRESSION AND ANXIETY MEDIATE THE RELATION BETWEEN HUMOR COPING AND HEALTH-RELATED QUALITY OF LIFE

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Humor as a means of coping is easily accessible, inexpensive, and accepted among various populations. For these reasons, humor has been identified as a form of complementary and alternative medicine (CAM) and many individuals with chronic illnesses report using humor to manage stress, foster hope, and take an active role in their treatment. Among healthy populations, the use of humor as a coping strategy has been related to improvements in mental and physical well-being, including decreased depression and anxiety and better perceived health. The relation between humor coping and physiological outcomes is proposed to occur through processes of stress reduction, often referred to as the stress-buffering hypothesis (Bennett and Lengacher, 2006) however, research shows inconsistent support for this hypothesis.

The current study proposed a new model for this association by assessing depression, anxiety, and preventative health behaviors as mediators of the relation between humor coping and health-related quality of life (HRqol). Undergraduate students (n=317) completed an anonymous survey. As hypothesized, higher reported humor coping was directly related to less depression and anxiety and indirectly related to higher levels of HRqol in the areas of emotional limitations, energy, well-being, social functioning, and general health (p<.05) using the multiple mediator model proposed by Preacher and Hayes (2008). Analyses revealed that anxiety was a stronger mediator than depression for the relationship between humor coping and well-being. Health behaviors were unrelated to humor coping and therefore, were not included in the model (r=-.03, p<.05).

These findings support a new model that recognizes mental health as one causal mechanism underlying the physical benefits of humor. These findings have implications for the inclusion of humor in psychosocial interventions designed to simultaneously improve mental and physical health.

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## D-123

### CHRONIC KIDNEY DISEASE RISK IN AFRICAN IMMIGRANTS

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Research on mechanisms for health outcomes often assumes people of African ancestry are homogenous. Categorizing all black people in the United States (US) as African Americans (AA) ignores the diverse factors that contribute to health outcomes in people who immigrate from different regions in Africa. African immigration to the US is growing rapidly, increasing nearly 167% from 1990 to 2000. Given this trend, the overall health of African immigrants (AI) in the US is as varied as their countries of origin. For example, research has found that Africans who immigrate to the US are more likely to be glucose intolerant and have higher blood pressure (BP) as compared to AA, despite lower body-mass index (BMI). Evidence suggests that greater length of residency in US is associated with suboptimal health outcomes. Chronic kidney disease (CKD) has a high prevalence rate in blacks; yet, few studies have explored risk factors for renal function in AI. The purpose of this study was to examine the association between length of residency in the US and estimated glomerular filtration rate (eGFR), an indicator of kidney function. The sample consisted of 108 AI, (age 34±9y (mean±SD); 56% male). The average length of residency in the US was 10±8y. Participants underwent a medical exam, which included measurements of BMI, BP and collection of serum samples to determine creatinine level. The Modification of Diet in Renal Disease (MDRD) formula was used to calculate eGFR. On average eGFR was 112±47 ml/min. Hierarchical regression analysis revealed that length of residence in the US is negatively associated with eGFR after adjusting for age, years of education, gender, household income, BMI, and BP ($\beta$=-.108, p=.04). Hence longer residence in the US may be detrimental to renal function. Analysis of adaptive and acculturative health behaviors of AI after arrival in the US is warranted.

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## D-124

### THE EFFECT OF IQ ON OUTCOMES OF A CAMP-BASED INTERVENTION FOR INDIVIDUALS WITH SB

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A preliminary study of a camp-based, psychoeducational cognitive intervention that aimed to improve independence in individuals with spina bifida (SB) has yielded promising results (O'Mahar et al., 2010). We expected that campers would take on more SB responsibilities and improve on social and health goals, with these changes predicted by higher IQ.

73 individuals with SB, ages 7-41 years (M=16.85, SD =7.04), participated in a 5-day summer camp. All campers took part in a daily 1-hour intervention, modified for 3 age groups: 7-12 (n=27), 13-18 (n=23), and over 18 (n=23). Campers and parents (of campers under 19) completed measures pre-intervention (T1), post-intervention (T2), and 1 month post-intervention (T3). Measures assessed SB self-care independence and goal progress. IQ was assessed with the WASI FSIQ, splitting the sample at 80.

Repeated measures ANOVAs showed that parents reported increased independence in areas of communication, F(1,47)=13.59, p<.01, ambulation, F(1,46)=4.20, p<.05, skin care, F(1,47)=11.84, p<.01, catheterization, F(1,47)=10.21, p<.01, bowel management, F(1,49)=13.75, p<.01, and total independence, F(1,41)=4.66, p<05. Campers reported an increase in catheterization, F(1,68)=4.19, p<.05. Mastery of social goals reported by parents, F(1,40)=14.09, p<.01, and campers, F(2,82)=18.85, p<.001, and health goals reported by parents, F(1,40)=25.94, p<.001, and campers, F(2,84)=16.20, p<.001, also increased.

A MANOVA indicated that higher IQ predicted greater goal progress, as reported by parents, Λ=.26, F(2,29)=5.18, p<.05. Post-hoc analyses revealed those with higher IQ showed a greater increase in social goals, F(1,30)=10.60, p<.01. ANOVAs also showed that higher IQ predicted a significant increase in camper-reported self-catheterization, F(1,59)=4.28, p<.05.

An intervention aimed at improving independence in individuals with SB is effective across age groups for many outcomes. Participants with higher IQs showed greater benefit in terms of social goals and self-catheterization. Future directions will be discussed.

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## D-125

### MEDICATION INFORMATION-SEEKING BEHAVIORS OF ARTHRITIS PATIENTS AND THEIR PARTNERS

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Background: No studies have documented the medication information-seeking behaviors of arthritis patients and their partners. Our objectives were to: 1) examine patients' and partners' most frequently used medication information sources and 2) determine which sources patients and partners trust most for arthritis medication information.

Methods: Using an online questionnaire, patients with a self-reported diagnosis of arthritis and their partners (n=94 couples) indicated how much medication information they obtained from 11sources when the patient was prescribed a new arthritis medicine. Responses ranged from 1=none to 4=a lot. Patients and partners also indicated their level of trust in each source (1=not at all trustworthy, 4=very trustworthy). Bonferroni-corrected paired samples t-tests were used to determine whether patients and partners differed in: 1) the amount of medication information they obtained from each source and 2) how much they trusted each source.

Results: Most couples were married (99%), White (84%), had a high school education or more (95%), and, on average, had been together for 25 years. Patients were predominately female (68%), had arthritis for 11 years, and had a diagnosis of osteoarthritis (42%) or rheumatoid arthritis (30%). Patients were most likely to use doctors, the Internet, and medicine package inserts for medication information. Partners were most likely to use the patient, doctors, and medication package inserts. Patients used doctors significantly more than partners [99% CI (-1.25, -0.54)]. Partners were significantly more likely to use the patient for medication information than patients were to use their partners [99% CI (1.45, 7.81)]. Both patients and partners highly trusted health professionals, including doctors, pharmacists, and nurses. Partners trusted patients more than patients trusted their partners [99% CI (0.36, 1.07)].

Conclusion: Partners use and trust arthritis patients as sources of medication information. With the exception of doctors, the most used sources were not the most trusted sources of information.

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## D-126

### PATIENT-PARTNER TEAMWORK CONGRUENCE IS ASSOCIATED WITH MEDICATION ADHERENCE

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Background: Our objectives are to: 1) describe the extent to which patients and their partners believe arthritis-related issues should be managed as a team and 2) determine whether congruent patient and spouse perceptions of teamwork are associated with patient medication adherence.

Methods: Using online questionnaires, patients with a self-reported diagnosis of arthritis and their partners (n=94 couples) indicated their teamwork preferences for arthritis management, or the extent to which they believed four aspects of arthritis (day-to-day management, long-term planning, treatment, emotions related to arthritis) should be managed together as a couple. Responses ranged from 1=should be handled only by the patient to 10=should be handled together as a team. Teamwork congruence scores were calculated using the following equation: 10-[(patient summary score-partner summary score)]; higher scores indicated greater congruence. Patients used a Visual Analog Scale to report how often they took their arthritis medications exactly as directed; higher scores indicated greater adherence. After analyzing descriptive statistics, we used linear regression to determine whether teamwork congruence was associated with adherence when controlling for patient age, gender, education, and disease duration.

Results: Most couples were married (99%), White (84%), had a high school education or more (95%), and, on average, had been together for 25 years. Patients were predominately female (68%), had arthritis for 11 years, and had osteoarthritis (42%) or rheumatoid arthritis (30%). Both patients (M=6.4, SD=2.8) and partners (M=6.8, SD=2.7) believed arthritis should be managed more as a team than by the patient individually. Couples were highly congruent (M=8.35, SD=1.5) and higher congruence (B=0.32, p=.002) was associated with better medication adherence.

Conclusion: Patient-partner congruence in teamwork perceptions for arthritis management is associated with better patient medication adherence. Future longitudinal studies should examine how teamwork in couples may play a role in illness management.

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## D-127

### POORER SELF-RATED HEALTH IS ASSOCIATED WITH ELEVATED INFLAMMATION IN HISPANICS WITH METABOLIC SYNDROME

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Single item measures of self-rated health have been shown to predict mortality among individuals with chronic diseases. Latinos' assessment of their overall health are lower than those of Whites and it has been questioned whether relatively poor self-rated health actually reflects culturally specific explanatory models of health that include emotional distress rather than global health. Chronic inflammation has been studied as a pathway underlying the association between self-rated health and mortality in Whites but remains unexplored in Latinos. The current study aimed to replicate previous findings in Whites by examining associations between self-rated health and serum inflammatory markers in Latinos. Serum interleukin(IL)-6 and C-reactive protein (CRP) were assessed among participants self-identified as Hispanics who completed a baseline assessment as part of a controlled trial on the "Biobehavioral Bases & Management of Metabolic Syndrome"(N=107). All participants had metabolic syndrome and a non-diabetic OGTT based on ADA criteria. Multivariate linear regression revealed that poorer self-rated health was significantly associated with higher levels of CRP after controlling for age, body mass index, and gender (B=.24,p<.01). The association between self-rated health and IL-6 was non-significant. CRP tends to be higher in patients with metabolic syndrome and at an increased risk for cardiovascular disease and may be of higher clinical relevance in the current sample. The association between self-rated health and CRP remained after controlling for depressive symptoms (Beck Depression Index) and self-perceived stress (B=.24,p<.05), indicating that subjective health ratings are of clinical utility in Latinos beyond the influence of emotional distress. Implications of these findings suggest further examination of the role of inflammation as a mechanism to explain the association between mortality and self-rated health in Latinos and support the notion that Latino's relatively poor self-rated health is still a valid indicator of global health with objective physiological correlates.

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## D-128

### BILINGUALISM AND COGNITION AMONG OLDER PERSONS IN THE SAN LOUIS VALLEY HEALTH AND AGING STUDY

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The purpose of this study was to assess the influence of Spanish-English bilingualism on cognitive functioning among participants in the San Luis Valley Health and Aging Study (SLVHAS), an epidemiologic study of chronic illness and disability among Hispanic and non-Hispanic White (NHW) persons age 60 to 99, in rural southern Colorado. Previous research has suggested a relationship between bilingualism and preserved cognition in old age. We hypothesized that bilingualism, in both Hispanics and NHWs, would be associated with better cognitive functioning in cross-sectional analyses, and with a smaller decline in cognition from baseline to follow-up. The sample consisted of 1293 persons at baseline (57.5% female, 57.5% Hispanic), and 1094 persons at a mean follow-up of 22 months (58.4% female, 57.9% Hispanic). Most attrition was due to death or subjects moving out of the study area. We tested mental status using the Mini Mental State Exam (MMSE), and executive cognitive functioning (EF) using the Behavioral Dyscontrol Scale (BDS). Bilingualism was assessed using an ordinal scale based on self-report of fluency (speaking, understanding, reading, writing) and frequency of language use with family, friends, neighbors, and co-workers. In linear regression models controlling for gender, ethnicity, age, and education, greater bilingualism was associated with better mental status and better EF at both timepoints (all $p < 0.00001$). When change in MMSE and BDS scores was used as the dependent variable, with the addition of baseline cognitive status as a covariate, bilingualism was a significant determinant of both change in mental status and in EF ($p<0.0001$; $p=0.007$, respectively). The findings provide support for the idea that bilingualism may confer some protection of cognition as people age.

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## D-129

### GAGGING DURING ORAL HEALTH CARE: RELATION TO BELIEFS ABOUT DENTISTS AND DENTAL TREATMENT

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Gagging is a reflexive response that interferes with oral health care. For example, it may interrupt dental treatment in the clinic or may prevent completion of proper preventive behaviors at home. Little is known about the epidemiology of gagging during dental treatment and its relation to gagging outside of the dental context. In an effort to understand this phenomenon, 458 participants (54.1% female; 91% Caucasian; average age 36.3 years, SD=14.5 years) were recruited from the waiting room of the Oral Diagnosis Clinic at the West Virginia University School of Dentistry. As part of a larger battery of psychosocial instruments, participants completed the Revised Getz Dental Beliefs Survey and a demographics questionnaire that included items about problems with gagging. A majority of the participants (59.0%, n=270) reported gagging during at least one previous dental visit, and 42.1 % (n=193) of the sample reported that gagging has interrupted dental treatment in the past. One-third of the participants (33.4%, n=153) indicated that gagging had been a problem at times other than a dental visit, and gagging during dental visits was found to be positively correlated with gagging outside of the dental context ($r=.38$, $p<.001$). No sex or age differences were found for prevalence of gagging in the dental clinic. Interestingly, those who reported problems with gagging during dental visits had more a more negative view of dentists and dental treatment (M=69.4, SD=28.5) than did nongaggers (M=49.6, SD=20.8, $t(456)=5.32$, $p<.001$ ), as indicated by Dental Beliefs Survey total score. There was no difference in view of dentists and dental treatment between those who reported problems with gagging outside of the dental clinic and those who did not. Gagging in the dental context, then, is associated with more negative views of the dentist and dental treatment. Future research should address the directionality of this association as well as the mechanisms by which problems with gagging develop.

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## D-130

### ARE THE HEALTH BENEFITS OF MARRIAGE GENERALIZABLE ACROSS RACIAL/ETHNIC GROUPS? A COMPARATIVE ANALYSIS OF RACE/ETHNICITY AND SEX EFFECTS ON ACUTE HOSPITALIZATION RECOVERY

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Wedded bliss appears to be good for the heart and for health. Married individuals experience better physical health outcomes compared to their unmarried counterparts with the effects stronger for men than for women. However, little is known regarding the degree to which these benefits are generalizable across racial/ethnic groups. Factors such as cultural valuing of relationships may influence marital functioning with downstream effects on health. To examine these relationships we conducted a retrospective cohort analysis on all 24,119 adults admitted between January 1 and December 31, 2008 to a large, community “safety-net” hospital serving the Dallas metroplex. Current analyses focused on the three largest racial/ethnic groups (7739 NH White, 7991 NH Black, 7298 Hispanic) which accounted for 95.4% of the total sample. Hispanic patients were younger (44.1 years) than NH Blacks and Whites (49.4 and 48.0 years, respectively) and more likely to be married (2721 vs. 1294 and 2090, respectively). A total of 369 deaths (1.6%) were recorded during the initial 2008 hospitalization. A 3 (race/ethnicity) X 2 (sex) X 2 (marital status) ANCOVA controlling for age revealed a two-way interaction between race/ethnicity and marital status was observed, $F(2,22827)=2.97$, $p<.05$. Post-hoc contrasts revealed that marriage was associated with a survival benefit among Hispanics but a deleterious outcome among NH Blacks $F(1,15094)=6.55$, $p<.01$. In addition, a three-way interaction between race/ethnicity, marital status, and sex emerged, $F(2,22827)=3.59$, $P<.03$. Post-hoc contrasts revealed that this effect was driven by differences between Hispanic and NH whites, $F(1,14840)=5.84$, $p<.02$. Married Hispanic men and NH White women were more likely to survive the acute hospitalization relative to their single counterparts. In addition, married Hispanic men were significantly more likely to survive than married NH white men. These findings suggest that the effects of marriage on health vary as a function of race/ethnicity warranting further investigation.

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## D-131

### U.S. AND COMMUNITY SUBJECTIVE SOCIAL STATUS IN HISPANIC AMERICANS

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Low socioeconomic status (SES) is associated with poor health outcomes. This relationship is especially relevant to Hispanic Americans (HAs), who comprise a large portion of the low SES population. Recent research has shown that high subjective social status (SSS), or an individual’s perception of social standing, can buffer the negative health outcomes associated with low SES; however, SSS has received little attention in HAs. Also, characteristics that might interact with SSS, such as acculturation and gender, have rarely been studied. Finally, SSS can be assessed at either the broad U.S. or local community level, providing insight into how aspects of SSS may differentially relate to health. In this study, 424 Spanish- or English-preference HAs completed the McArthur Scale of SSS, and the Health-Related Quality of Life Scale. This scale consists of two questions: 1) U.S., which asks participants to indicate their SSS relative to the U.S.as a whole, and 2) community, which asks participants to indicate their SSS relative to others in their community. A 2 (gender) x 2 (language preference, as a proxy for acculturation) ANOVA yielded no significant ($p<.05$) group differences for U.S. or community SSS. Bivariate correlations calculated for gender and acculturation subgroups demonstrated significant relationships ($p<.05$) of both U.S. and community SSS to current health status, with the exception that community SSS scores and health were not associated for HA women. Results are consistent with prior research on SSS in other ethnic majority/minority groups, and underscore the importance of this potentially modifiable variable as a correlate of health status.

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## D-132

### SOMATIC SYMPTOMS, HEALTH SEEKING BEHAVIOR AND SPIRITUALITY AMONG INDIAN ADOLESCENTS

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This study assesses spirituality and it’s relation to somatic symptoms and health seeking behavior in India. Hypothesis: Individuals with higher levels of spiritual well-being will report fewer somatic symptoms and seek religious forms of healing (e.g. prayer, attending house of worship). Methods: Urban college students attending St. Xavier’s College in Mumbai, India ($N=194$; Mean Age: 19 years; 73.1% Female; Religion: 46.3% Christian; 37.3% Hindu; Other: 16.4%) completed surveys on spirituality: Spiritual Well-Being Scale (SWBS) and somatic symptoms: Cohen- Hoberman Inventory of Physical Symptoms (CHIPS). Participants rated the frequency with which they engaged in behaviors to cope with health-related issues (Health-Seeking Behavior Scale: HSBS). Principal component analysis of the HSBS revealed three factors: Religious Practice for Health (prayer), Alternative Practices (yoga/meditation), Home Care (home remedies, parental support) (Alpha=.76, .64, .51; Eigenvalue=3.45, 1.81, 1.68; Variance=22.98, 12.07, 11.18, respectively). Religious Practice for Health Subscale (RPH) of HSBS was used for linear regression analysis in this study to analyze the relationship between spirituality, somatic symptoms and religious practice for health. Linear Regression Analyses were computed where level of spiritual well-being was regressed on RPH and somatic symptoms controlling for gender, age and religious affiliation. Data revealed that Spiritual Well-Being was a significant predictor of RPH ($\beta=.09$ $p=.001$) while age, gender and religious affiliation were not significant. Spiritual Well-Being was not a significant predictor of somatic symptoms, however, gender ($\beta=5.37$ , $p=.01$ ), age ($\beta=1.83$, $p=.02$ ) and religious group ($\beta=1.34$, $p=.01$ ) were significant predictors. Results support our hypothesis that individuals with high levels of spiritual well-being are more likely to seek religious forms of healing, however results do not support our hypothesis that high spiritual well-being will predict lower somatic symptoms. Future analyses will examine the impact of frequency of religious practice on health.

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## D-133

### THE HEALTH ACTION AND RESEARCH TRAINING (HART) PROJECT: FILIPINO AND NATIVE HAWAIIAN YOUTH-LED HEALTH RESEARCH IN HAWAI‘I

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The Health Action Research Training (HART) project involved community-based participatory research that engaged adolescent youth as primary researchers, research analysts, and agents of change. Using a social ecological approach, the HART program was designed to holistically examine the determinants of youth health behavior at multiple levels of influence; specifically investigating individual, social, and community factors. A second objective of HART was to integrate investigative and applied research through youth-led investigations. The HART curriculum provided adolescents with the knowledge and resources necessary to complete a health behavior interview with their parent or a health-related assessment of their school and nearby community. HART was successfully implemented among ethnic minority youth at two separate high schools in Hawaii. Results showed variations in participating adolescents’ health behaviors depending on whether they shared these behaviors with their parents versus their peers; and community-level examinations revealed significant associations between adolescent health behavior and accessibility to supportive environmental resources. Both examinations provide ground-work for future research and culturally adapted interventions among similar youth populations. The purpose of the current study is to outline the HART program structure and describe the youth empowerment strategies that were initiated on multiple levels. The three main project phases are presented with result highlights and participating adolescents’ self-reported reflection of their participation in the HART project. Finally, the challenges and limitations of this approach are described, as well as the lessons learned.

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## D-135

### THE RELATIONSHIP BETWEEN REPORTED CANCER PAIN, SELF-EFFICACY, AND PERSONALITY IN OLDER BLACK AND WHITE CANCER PATIENTS

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It is well-established that personality not only affects physical health and longevity but also mental health and coping mechanisms. One area of limited research is the relationship between cancer pain intensity, self-efficacy, and the Five Factor Model of personality (e.g., neuroticism, extraversion) among older adults, particularly older minorities. An ongoing study is examining how personality traits and self-efficacy affect cancer pain intensity (worst, least, average, and current) in older patients receiving outpatient treatment at a comprehensive cancer center. Participants were interviewed on their pain intensity, personality, and self-efficacy. Symptom data was collected from the Brief Pain Inventory (BPI) and the Chronic Pain Self-Efficacy Scale (CPSE) while personality data was gathered from the Ten Item Personality Inventory (TIPI) and the Positive and Negative Affect Scale (PANAS). The mean age of the sample was 65.1 years (SD±7.94). Seventy nine percent of the sample was white. Preliminary data indicated that the average pain was 4.24 (0-10 scale; with 10 being worst pain), with the sample recording as mean of 6.61 and 2.60 on worst and least pain, respectively. Regression analyses showed that positive affect ($\beta=7.36$, $p<.01$) was found to be associated with higher perceived self-efficacy ($F15, 96=2.17$, $p<.05$). Having low openness to experience ($\beta=-3.46$, $p<.05$) was also found to be associated higher ratings of self-efficacy. Mediation models found that the relationship between CPSE and current pain is mediated by extraversion and both positive and negative affect. These findings indicate that different personality types and personal affect may influence perceptions of pain while receiving outpatient cancer treatment. More empirical research is needed to understand the impact of pain and its relationship with personality in more diverse and marginalized cancer populations across the age continuum.

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## D-136

### EFFECTS OF ANGER REGULATION TACTICS BY TRAIT SUPPRESSION ON CVR DURING PAIN-INDUCTION

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Suppression of anger-related thoughts and feelings during anger induction has ironic effects of worsening physiological responses to subsequent stressors, such as pain. The tendency to chronically suppress thoughts and feelings (Trait Suppression) is an individual difference factor that may moderate these effects. We sought to determine whether Trait Suppression would amplify or reduce CVR effects during pain following attempts to regulate anger by: a) suppressing thoughts and feelings about an anger provoking event; or b) distracting attention from the event. Eighty-eight healthy people underwent anger induction and then were told to either suppress all thoughts and feelings about the event or were told to think about their bedroom at home. All subjects then underwent a cold pressor. SBP, DBP) and HR were recorded throughout procedures. Trait Suppression was measured with Wegner White Bear Suppression Inventory. A 3-way Anger Regulation Tactic (Suppress, Distract) x Trait Suppression (low, high) x Period (anger-induction, anger regulation, cold pressor, recovery) interaction was found $F(3,267)=3.8$, $p<.01$ for SBP changes. Simple interaction test showed that Trait Suppression x Period interaction for subjects in the Distraction Condition was nonsignificant ($F<1$), whereas this interaction was significant for those in Suppress $F=6.1$, $p<.01$. Further dissection revealed that Low Trait Suppression subjects showed greater SBP increases during cold pressor than High Trait Suppression subjects $F=6.3$; $p<.05$. This effect emerged despite Low and High Suppression subjects reporting similar pain severity during cold pressor ($F<1$), and High Suppression subjects reporting greater anger during cold pressor ($F=3.9$; $p<.05$). Findings suggest that people who do not chronically suppress thoughts and feelings may be especially susceptible to ironic effects of short-term (“state”) suppression, at least in terms of CVR. Results indicate that important individual differences in the manifestation of suppression-induced ironic effects remain to be explored.

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## D-137

### CHRONIC PAIN TREATMENT AND MEDICAL UTILIZATION AMONG PATIENTS WITH HEPATITIS C

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Background: Hepatitis C virus (HCV) infection affects 2% of the US population, and chronic pain is common among persons with HCV. The purposes of this study were to examine medical utilization and the use and acceptability of various pain treatments among patients with HCV and chronic pain.
Method: Outpatients with HCV (N=105) were recruited from a VA medical center. Participants completed detailed psychosocial questionnaires, and pain diagnoses and medical utilization over the past five years were extracted from medical records.
Results: Sixty-three percent of HCV patients had chronic pain. After controlling for demographic, psychiatric, and substance use variables, negative binomial regression models indicated HCV patients with chronic pain utilized inpatient general medical (OR=5.41), surgical (OR=1.88), and psychiatric (OR=3.13) services to a greater extent than HCV patients without chronic pain. In addition, HCV patients with chronic pain had nearly twice as many outpatient visits with a primary care provider (OR= 1.79). Patients expressed high interest in participating in behavioral and complementary alternative medicine approaches for pain.
Conclusions: HCV patients with chronic pain utilize medical services at a higher rate than HCV patients without chronic pain. HCV patients with chronic pain report significant interest in participating in a variety of services for chronic pain, particularly complementary and alternative medicine approaches. Given that some traditional pharmacological approaches for pain may not be an option for some HCV patients with pain, future studies that examine the efficacy of a variety of chronic pain interventions for patients with HCV and chronic pain appear warranted.

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## D-138

### INFLUENCES OF ANXIETY SENSITIVITY AND POSTTRAUMATIC STRESS SYMPTOMOTOLOGY ON PAIN RESPONSIVITY

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Individuals with greater sensitivity to anxiety have been shown to have lower pain tolerance, as a result of their own anxiety and fear. Individuals with higher self-reported symptoms associated with posttraumatic stress may share similar responsivity to pain. This reduction in pain tolerance may be pertinent in health care settings. The purpose of this study was to examine possible differences and similarities in response to acute nociception in adults with high or low scores of anxiety sensitivity and symptoms of posttraumatic stress. Using 28 adult volunteers from the community, who responded to advertisements, regarding emotionally painful events and positive life experiences, this investigation utilized measures of pain ratings as reported by participants during a laboratory pressure pain induction experiment. Participants first completed the Anxiety Sensitivity Index (ASI) and the PTSD Checklist (PCL). Following the measures, each participant experienced two levels of laboratory-induced pressure pain (high weight, low weight) on pre-determined fingers, and two levels of induced fear (high fear, low fear). Results showed that participants who scored high on the ASI reported significantly higher levels of pain in response to their pain tolerance level ($p<.05$). Participants who scored high on the PCL also reported significantly higher pain ratings following the first 30 seconds of pain stimulation ($p<.05$). These findings indicate that individuals who have higher scores on the ASI and PCL may be more sensitive to pain stimuli compared to individuals who score low on the ASI and PCL. In addition, a trend in the data indicated that individuals with higher scores escaped the pain stimulation sooner than those with low scores; however, it was not significant. These findings suggest it may be important to assess a patient's psychological symptoms, especially anxiety, prior to treating pain as it is influential in the patient's perception of the physical sensation.

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## D-139

### MINDFULNESS-BASED COGNITIVE THERAPY FOR THE TREATMENT OF CHRONIC HEADACHE PAIN: PRELIMINARY FINDINGS OF A RANDOMIZED CONTROLLED TRIAL

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The current study reports preliminary findings of a randomized controlled trial (RCT) investigating the feasibility and initial estimates of efficacy of Mindfulness-Based Cognitive Therapy (MBCT) compared to a delayed treatment (DT) control condition within a chronic headache pain sample. Given the exploratory nature of this trial, data are also presented from those participants that crossed over from the control condition and completed treatment (DT-MBCT). The DT-MBCT participant data provides evaluation of changes in pain-related outcomes independent of the immediate treatment group. Frequency statistics were obtained to determine the demographic makeup of the sample; pre- to post-treatment difference scores were calculated and responder analyses were conducted to examine the clinical significance of the findings. A $\geq$25% improvement was considered clinically significant for an outcome variable. The sample was predominantly middle-aged (M=40.5-years), high-SES (70.0%=annual income of $35,600 or above), white (90.0%), and female (90.0%). Treatment completers to date include 5 participants for MBCT, 5 participants for DT, and 4 DT-MBCT participants. For MBCT, 2 out of 5 participants were responders on outcomes of headache disability (HDI), depression (BDI), and pain acceptance (CPAQ); 3 participants were responders on pain intensity (BPI); all 5 individuals were responders on pain catastrophizing (PCS). For DT, 1 participant out of 5 was a responder on the BDI and BPI. Among DT-MBCT participants, 2 out of 4 were responders on the BDI; 3 were responders on HDI and BPI; all 4 participants were responders on PCS. Overall, these preliminary findings indicate that MBCT for chronic headache pain holds promise, especially in terms of improving pain intensity and in reducing pain catastrophizing. The finding regarding catastrophizing is important given the wealth of research that has found catastrophizing to be related to an array of poor pain-related outcomes. Data collection for this research is ongoing; the completed project will provide a research base for future RCTs comparing MBCT to attention control, and future comparative effectiveness studies of MBCT and CBT.

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## D-140

### ACUTE ANALGESIC EFFECTS OF NICOTINE AND TOBACCO SMOKING IN HUMANS: A META-ANALYSIS

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Nicotine addiction and chronic pain are two highly prevalent and comorbid conditions that engender substantial burdens upon individuals and systems. The interaction of smoking and pain can be conceptualized as a prototypical example of the biopsychosocial model, demonstrating a complex interplay between biomedical, behavioral, cognitive, affective, socio-cultural, neurobiological, and physiological phenomena (Ditre et. al., in press, Psychological Bulletin). Smoking has been associated with the onset of chronic pain, and the prevalence of smoking among persons with painful conditions may be greater than twice that of the general population. Whereas direct pain-inhibitory effects of nicotine and tobacco smoke have consistently been demonstrated in animal studies, human results have been far less convergent. The main goal of the current study was to estimate the magnitude of purported analgesic effects of nicotine/tobacco among humans. Separate random effects meta-analyses were conducted for continuous measures of pain threshold (Study N=22) and pain tolerance (Study N=16). Mixed effects analyses were conducted to examine categorical moderators. Summary effect sizes are reported in Hedge's g, which may be interpreted as small (.20), medium (.50), and large (.80), respectively. Antinociceptive effects of nicotine/tobacco were observed to be "small" for both pain threshold ($g=.27$; CI: .11-.44; $p=.001$) and tolerance (.26; CI: .13-.38, $p<.001$). Although effect sizes were considerably heterogeneous for pain threshold ($Q=40.17$; $p<.01$), observed tolerance effects were less variable ($Q=20.77$; $p=.14$). Smoking status was found to be a significant moderator of pain tolerance effects, and there was evidence to suggest that pain threshold effects may be influenced by smoking status, gender, method of pain induction, and timing of nicotine administration. Discussion will address hypothesized mechanisms, clinical implications, and directions for future research.

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## D-141

### USING PRESURGICAL PSYCHOLOGICAL VARIABLES TO PREDICT COMPENSATION AND MEDICAL COSTS OF RADIOFREQUENCY NEUROTOMY PATIENTS RECEIVING WORKERS' COMPENSATION

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Low back pain is the most frequently reported type of pain among U.S. adults (Deyo, Mirza, & Martin, 2006) and is estimated to account for $90 billion per year in direct medical care costs in the U.S. (Luo, Pietrobon, Sun, Liu, & Hey, 2004). Radiofrequency (RF) neurotomy is a minimally-invasive procedure commonly used to manage low back pain originating in the facet joint. It is the second most common pain management procedure in the U.S. Costs associated with this procedure continue to escalate, and the use of this procedure among Medicare patients has doubled in the past decade (Manchikanti, 2004). Little research exists which examines the actual costs or biopsychosocial correlates of costs of RF neurotomy. Due to the increasing costs and prevalence of RF neurotomy, the present study reviewed a retrospective cohort of 101 patients who received RF neurotomy via the Workers' Compensation Fund of Utah (WCFU). Cost data and pre-surgical biopsychosocial variables were abstracted from WCFU databases. We hypothesized that a pre-determined model of five biopsychosocial variables would be predictive of costs in linear regression models. Medical costs averaged $70,422 (SD=$79,128) per patient and compensation costs averaged $25,002 (SD=$35,622) per patient. Biopsychosocial variables (e.g. number of prior back and neck surgeries, lawyer involvement in compensation claim) were predictive of both medical and compensation costs in linear regression models. This study discloses costs of treating a cohort of injured workers receiving RF neurotomy and also supports the biopsychosocial perspective in characterizing risk of incurring high costs. There is a need for additional research examining the outcomes of patients undergoing this procedure to examine the relationship between increased cost and patient-oriented benefits.

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## D-142

### ARE CAREGIVER RATINGS OF HEALTH-RELATED QUALITY OF LIFE IN CHILDREN WITH SICKLE CELL PAIN INFLUENCED BY PARENTAL STRESS?

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Previous research has suggested that caregiver stress and mental well-being can influence the extent to which caregivers report decrements in health-related quality of life (HRQL) in their children. Our previous work suggested that caregiver reports of HRQL were responsive to changes in pain in pediatric sickle cell disease (SCD); however, the influence of caregiver stress on these reports is unknown. It is possible that caregiver stress influences the measurement of caregiver-reported HRQL or that pain elicits parental stress that in turn influences the HRQL of children. The purpose of this study was to determine whether caregiver -reported changes in HRQL in response to child pain were influenced by changes in parental stress. Fifty-seven caregivers of children with SCD (ages two to 19) completed proxy reports of the Pediatric Quality of Life Inventory and the Parental Stress Scale at two time points, ranging from six to 18 months apart. Pain episode frequency between time points was assessed via medical record review. We assessed relationships between pain episode frequency, changes in parental stress, and changes in HRQL (using the physical, psychosocial, and total domains) over time. Results suggested that pain episode frequency was associated with decrements in both caregiver-reported HRQL (all domains; r=-.35 to -.41, p<.01) and parental stress (r=.36, p=.006) over time. There was also a trend for a relationship between changes in parental stress and psychosocial HRQL (r=-.22, p=.102). These findings suggest that pain in sickle cell disease may have broad effects on both child and caregiver well-being over time. Additionally, although we could not assess mediation due to limited power, the relationships observed between pain, parental stress, and psychosocial HRQL may indicate a mediator role for parental stress.

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## D-143

### PROBLEM-SOLVING AS A MODERATOR OF DISEASE COMPLICATIONS AND QUALITY OF LIFE FOR CHILDREN WITH SICKLE CELL DISEASE

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Purpose/Background: Children with sickle cell disease (SCD) are at risk for poor quality of life (QoL) and school functioning, due to medical, sociodemographic, and psychosocial influences. General family functioning and parenting stress are associated with health outcomes and treatment adherence among children with SCD. Because problem-solving abilities are associated with health behaviors and self-management, we predict that an intervention to improve QoL through problem-solving will reduce the impact of SCD complications on QoL. The current analysis sought to validate our intervention model by exploring problem-solving as a moderator between disease complications and QoL.

Methods: At baseline, 74 children ages 6-12 and caregivers completed measures of child QoL. Caregivers also completed a measure of problem-solving. A complications score, including pain episodes, was computed from medical chart reviews.

Results: Social problem-solving significantly moderated the relationship between disease complications and child QoL (Beta=.268, p=.036), but did not moderate complications and parent-reported QoL (Beta=-.163, p=.164). For parents who exhibit adaptive problem-solving, as complications increase, child reported QoL increases. However for parents who exhibit poor problem-solving, as complications increase, child reported QoL decreases.

Conclusion: The results suggest that problem-solving is protective against the impact of the disease on the child's QoL, supporting the intervention model. Interestingly, the relationship was significant for child reported QoL, but not for parent report of child QoL. Parents of children with more complications and an adaptive problem-solving style may have more opportunities to practice problem-solving skills and reduce the impact of SCD on daily functioning. The family-based approach of the intervention brings caregivers and children together to address concerns as they learn and practice more adaptive problem-solving skills.

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## D-145

### INCREASING CLOSENESS AND TALKING ABOUT EXERCISE INFLUENCE EXERCISE BEHAVIORS AND PERCEPTIONS

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Rates of exercise among women are low, but can be increased through social interactions. While there is research on the role of social support, very little is known about the role of closeness in exercise. 144 female participants had a conversation with a stranger who was actually a study confederate. The conversation with the confederate consisted of a 2 (closeness-induction vs. not) x2 (exercise mentioned vs. not) design. After the interaction, participants were separated from the confederate and asked to exercise at their own pace on an elliptical for at least a few minutes ad libitum. We predicted that exercise-related conversations would have beneficial effects on subsequent exercise as well as feelings about that exercise. We also examined differences based on how close participants felt to the confederate following the conversation. Multivariate general linear modeling results showed a main effect of exercise such that participants in the two exercise conditions stayed on the elliptical longer and also reported the elliptical experience being significantly more pleasant than participants in the non-exercise conditions. Additionally, closeness had a main effect such that participants in the two closeness-induction conditions reported the elliptical experience as significantly less challenging than participants in the two non closeness-induction conditions. There were no significant interactions between exercise condition and closeness condition. These results illustrate that conversing with another person about exercise has beneficial effects on subsequent exercise behavior and perception (regardless of feelings of closeness to that conversation partner). Additionally, building closeness to another person (regardless of whether or not exercise is mentioned during this interaction) seems to be able to buffer against the perception of exercise being challenging.

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## D-146

### MOTIVATIONAL FLEXIBILITY: A CONCEPTUAL FRAMEWORK FOR PREDICTING EXERCISE

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Despite the benefits of exercise to physical and mental health, over half of U.S. adults do not engage in the CDC's recommended amount of activity. Conventional health behavior theories that have been used to predict exercise behavior have some limitations, such as assuming that health is the main motivation for engaging in healthy behaviors. To address such limitations, we developed a new concept called motivational flexibility, which is the idea that people have multiple reasons for engaging in a behavior, and the main reason can change across occurrences of the behavior. We hypothesized that flexibility would be associated with greater frequency, intensity, duration, and enjoyment of exercise. Student exercisers (n=198) completed daily assessments for 14 days indicating whether they exercised or not and their reasons for exercising or not exercising. Multilevel modeling was used to test associations between motivational flexibility and exercise, controlling for baseline exercise. We found that frequent variations among the most important motive(s) for exercising each day ("shifting") was associated with greater enjoyment of exercise, t(188)= 2.45, p<.05. However, shifting was associated with less enjoyment of exercise when the number of reasons for exercising each day was above average, simple slope=-1.01, t=-1.68, p=.09. These results offer evidence for the role of motivational flexibility in affective perceptions of exercise. Although we did not find direct associations between flexibility and behavior, it is likely that enjoyment of exercise eventually leads to behavior. Shifting may be indicative of an ability to adapt to changing environmental demands. However, the combination of having many reasons for engaging in a behavior and not feeling strongly committed to any single reason may be detrimental to adherence. Understanding the manner in which people think about their engagement in health behaviors can lead to fruitful and innovative health behavior interventions and contribute to our general knowledge of motivation and behavior.

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## D-147

### EXPERIMENTAL EVIDENCE FOR THE INTENTION-BEHAVIOUR RELATIONSHIP IN THE PHYSICAL ACTIVITY DOMAIN: A META-ANALYSIS

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Many contemporary theories of physical activity include an intention construct as the proximal determinant of behaviour. Support of this premise has been found through correlational research where r=.50 in meta-analysis. The purpose of this paper was to appraise the experimental evidence for the intention-behaviour relationship in the physical activity domain using meta-anlysis. Studies were eligible if they included: (1) random assignment of participants to intervention/no intervention groups; (2) an intervention that produced a significant difference in intention between groups; and (3) a measure of behaviour was taken after the intention measure. Literature searches were concluded in January 2011 among five key search engines. This search yielded a total of 1033 potentially relevant records; of these, 12 studies passed the full eligibility criteria (N=4,270). Random effects meta-analysis procedures with correction for sampling bias were employed in the analysis. The sample-weighted average effect size derived from these studies was d+= .40 (95% CI .24 to .56) for intention, yet d+= .13 (95% CI .07 to .19) for behaviour. The d+is equivalent to a r=.06. The behavioural results did not show evidence of heterogeneity, suggesting that increasing the number of studies will not yield a different outcome. These results demonstrate a weak experimental link between intention and behaviour that may be below meaningful/practical value. We suggest that prior evidence in the physical activity domain was probably biased by the limits of correlation coefficients in passive designs. It is recommended that contemporary research apply models featuring intention-behaviour mediators or action control variables in order to account for this intention-behaviour gap.

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## D-148

### ACTION CONTROL THEORY OF EXERCISE BEHAVIOUR

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Physical inactivity prevalence remains extremely high, despite its impact on numerous chronic diseases. While prior theories have been useful, the adaptation and augmentation of prior work may be helpful to improve our interventions. In this spirit of attempting to advance physical activity theory, the following paper introduces the Action Control Theory of Exercise (ACT). ACT places the intention-behaviour gap at its centerpiece and divides its prediction framework into phases of an action decision (initial intent) followed by action control (success or failure in translation of intent into behaviour). ACT also specifies five core constructs that are proposed as the proximal causes of this framework (outcome expectations, experiential expectations, opportunity to act, automaticity, cross-behavioural regulation). ACT is reviewed using 10 prior published studies(N=5,687) and an example of its application with an original data-set. These data feature a random sample of 263 college students who completed ACT measures at time one, followed by the Godin Leisure Time Exercise Questionnaire two weeks later. Participants were classified into the three ACT profiles: 1) nonintenders (14.1%; n=31), 2) unsuccessful intenders (35.5%; n=78), and 4) successful intenders (48.6%; n=107). Discriminant analysis identified one function that significantly distinguished among the three groups [canonical r=.64, χ2=(10)=121.45, p<.01]. Experiential expectations [F(2,213)=39.85, p<.01, η2=.27], and opportunity to act [F(2,213)=30.54, p<.01, η2=.22] were predictors of both the action decision and action control. Outcome expectations predicted only the action decision [F(2,213)=22.44, p<.01, η2=.17. By contrast, automaticity [F(2,213)=16.06, p<.01, η2=.13], and cross-behavioural regulation [F(2,213)=4.99, p<.01, η2=.05] predicted only action control (p<.01). These original results and those of prior research demonstrate the viability of ACT. The theory provides new constructs that independently predict intention-behaviour discordance, while retaining constructs with high utility from past theories. The paper concludes with a discussion on its use in intervention and the limits of ACT for understanding other health behaviours.

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## D-149

### DETERMINANTS OF EXERCISE-RELATED SELF-EFFICACY & OUTCOME EXPECTATIONS IN ENDOMETRIAL CANCER SURVIVORS

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Understanding determinants of self-efficacy and outcome expectations could improve exercise interventions. In a sample of endometrial cancer survivors we tested determinants of exercise and barriers self-efficacy (ESE, BSE), based on sources of self-efficacy information identified by Social Cognitive Theory (SCT; past exercise, affect and physical sensations during exercise, social support). We also explored how these variables relate to positive and negative outcome expectations (OE+, OE-). Post-treatment endometrial cancer survivors (n=100) completed assessments of fitness, exercise, and SCT variables at baseline and every 2 months for 6 months. They received a tailored exercise recommendation and telephone counseling to help them implement the recommendation. At assessments, social support and exercise history were assessed before a cardiorespiratory fitness test (EX), physical sensations and exercise-related affect were measured during EX, and appraisal of physical sensations was measured after EX. These variables were included in 4 multilevel models to predict ESE, BSE, OE+, and OE-, measured after EX. Age, BMI, and time were also included in the models. Later time point (p<.01), younger age (p<.001), lower BMI (p<.01), more friend support (p<.01), more positive affect (p<.01) and appraisal of physical sensations (p=0.05) during EX were related to higher ESE. For BSE, later time point (p<.01), more friend support (p=.05), and positive affect during EX (p<.01) were significant. Family support (p=.03), more positive affect during EX (p=.02), and positive appraisals of sensations during EX (p=.01) were related to OE+, while reporting more OE- was related to younger age (p=.06), more physical sensations during EX (p=.01) and having a less positive appraisal of these physical sensations (p<.01). Results indicate that increasing social support for exercise and addressing how survivors feel physically and emotionally during exercise may have a positive impact on SE and OE and should be addressed in interventions.

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## D-150

### PREDICTING LEVELS OF GROUP COHESION: INFLUENCES OF GROUP PROCESS VARIABLES OVER TIME

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Four dimensions of group cohesion—individual attractions to the group-task (ATGT) and social (ATGS) as well as group integration-task (GIT) and social (GIS)—have been related to sustained participation in exercise groups. While strategies that increase communication, cooperation, and friendly competition are proposed to lead to increases in cohesion and have been used successfully to promote physical activity, to date, no study has examined the relationships between participant perceptions of these factors. The purpose of this study was to determine the longitudinal relationships between group cohesion and group process variables for minority women enrolled in the Health is Power (HIP) study. Black and Hispanic/Latina (n=403; 84.6% Black) women completed assessments of the study variables at baseline (after initial interactions with group), post intervention (6 months), and follow-up (12 months). These data were used to determine the extent to which perceptions of communication, cooperation, and friendly competition were predictive of perceptions of the 4 dimension of group cohesion. Competition, roles & responsibilities (RR), and task communication predicted significant variance in ATGT at baseline (R2=.459), where as task communication and competition were predictive (R2=.4) at 6 months, and only task communication predicted ATGT at 12 months (R2=.491). As for ATGS at baseline, 6 and 12 months: RR and competition (R2=.65), task communication, social communication, competition, RR (R2=.74), and social communication, competition, and RR (R2=.674), respectively. GIT at 6 months was predicted by cooperation, task communication, and social communication (R2=.75) and at 12 months by friendly competition, cooperation, and task communication (R2=.816). At baseline, GIS was predicted by task communication (R2=.32), at 6 months by social communication (R2=.34), and at 12 months by both social communication and cooperation (R2=.393). These data have the potential to influence the strategic planning of group process combinations that may ultimately increase the perception of group cohesion over time.

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## D-151

### EFFECTS OF EXERCISE ON DISABLEMENT PROCESS OUTCOMES IN PROSTATE CANCER PATIENTS UNDERGOING ANDROGEN DEPRIVATION THERAPY: A SYSTEMATIC REVIEW

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Androgen-deprivation therapy (ADT) is a foundation of treatment for men with metastatic prostate cancer (PCa). It has become evident that ADT, either surgically induced or by pharmaceuticals, results in adverse effects that may accelerate functional decline. Although exercise improves muscular strength and functional performance in PCa patients, it is unclear if exercise results in similar improvements in physical disability outcomes in men on ADT. The purpose of this systematic review is to determine if exercise produces comparable improvements in impairment, functional limitation, and physical disability domain outcomes identified in Nagi's disablement process model among PCa patients on ADT. Data were extracted on impairment, functional limitation, and physical disability domain outcomes from 8 published exercise intervention studies involving 618 men on ADT. Cohen's d effect sizes were calculated for change in each outcome and compared across the disablement process model domains. Results revealed that exercise yielded large effect size improvements in impairment domain outcomes of muscular strength (d=1.08) and endurance (d=2.08) but negligible effects on body composition measures (d=.01). Exercise also resulted in moderate improvements in functional limitation domain outcomes (d=.44) but only elicited small improvements in physical disability domain outcomes (d=.25). These findings suggest that while exercise results in improvements in select impairment and functional limitation outcomes, exercise alone may not be sufficient to improve body composition or physical disability outcomes in men on ADT. Multi-component interventions involving exercise, diet, and behavioral counseling designed to facilitate the transfer of fitness and functional benefits to improve performance of activities of daily living may be required to elicit meaningful change in body composition and physical disability outcomes in PCa patients on ADT.

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## D-152

### A THEORY-BASED MOTIVATIONAL INTERVENTION TO INCREASE PHYSICAL ACTIVITY AMONG OLDER ADULTS

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In addition to the numerous health benefits of physical activity, adequate levels can help reduce the risk of falling, facilitate independent functioning in activities of daily living, and increase quality of life among older adults. The purpose of this study was to design and test the effectiveness of a 4-week mail-based physical activity intervention designed according to an integrative theoretical framework (Kosma, Ellis, Cardinal, Bauer, & McCubbin, 2007). The intervention included four weekly stage-matched packages that targeted population specific physical activity beliefs based on previous research (Antikainen et al., 2009) and weekly phone calls to reassess stages of change (SOC). The final sample included 55 older adults between the ages of 54 and 96 (M age=72.3 yrs, SD=8.0) from 11 senior centers and senior living facilities. Most of the participants were female (72.7%), Black (89.1%), and reported low levels of education (70.4%<high school degree) and income (85.5%<$1571 monthly). The results indicated that the treatment and control groups reported significantly more positive attitude towards physical activity at follow-up, and that the treatment group reported significantly higher levels of physical activity at follow-up while physical activity decreased in the control group. The treatment group also reported improved SOC after the intervention with 56.0% reporting higher SOC than at baseline compared to only 16.7% in the control group; however, this difference was not statistically significant. This study provides preliminary evidence for the utility of the integrated model in intervention design. It also supports the use of theory-based materials among older adults in community settings.

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## D-153

### CHILDREN'S PHYSICAL ACTIVITY AND SEDENTARY BEHAVIOR - DOES ETHNICITY MATTER?

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Ethnicity has been shown to influence the effect of interventions that increase physical activity (PA) and reduce sedentary behavior. However, less is known about how PA and sedentary behaviors are related to ethnicity in children. Therefore, this study quantified, via self-report, three intensities of PA (Strenuous, Moderate, and Mild) and four types of sedentary behaviors (watching TV/video/DVD; studying; computer-based schoolwork; and playing video games) in a sample of 4th and 5th grade elementary school students (n=257; mean age=10.2 [±.8]; 49.4% female; 46.5% Hispanic, 26.6% White, 26.9% other; mean BMI percentile=63.0 [±36.1]). Mean strenuous PA was 3.9 [±2.2], moderate PA 2.7 [±2.2], and mild PA 2.3 [±2.1] hrs/week. On average, students watched 20.6 [±14.7] hours/week of TV, studied 16.6 [±15.1] hours/week, did computer-based schoolwork for 5.7 [±8.4] hours/week, played video games 19.3 [±19.2] hours/week. ANOVAs revealed that: 1) Hispanics (18.8±15.7) and others (17.3±15.1) spent more time studying compared to whites (12.1±13.1) (F(2,239)=3.95, p<.05); 2) Hispanics (6.8±9.3) and others (6.1±9.0) spent more time on computer-based schoolwork compared to whites (3.1±4.7) (F(2,246)=4.48, p<.05); whereas 3) none of the other comparisons were significant (p>.05). This sample accumulates almost 1 hour of moderate plus strenuous PA and over 9 hours per day in sedentary behaviors. Over-reporting may be an issue. However, ethnic differences appear in the non-recreational/academic sedentary behaviors possibly reflecting value of academics, achievement orientation, or parental support in homework. Health promotion interventions addressing this population should target decreasing recreational sedentary behaviors across ethnicities.

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## D-154

### INFLUENCE OF SOCIAL NETWORKS AND NETWORKING ACTIONS ON SEDENTARY ADULTS' WALKING QUANTITY

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Social networks have been shown to significantly influence physical activity and other health behaviors. Characteristics of social networks may be important to assess in physical activity programs to identify modifiable mediators of physical activity. However, few comprehensive protocols exist to measure modifiable social network characteristics. As part of an ongoing randomized controlled fitness walking intervention, 308 sedentary adults (mean age=50.3, 62% female, 92% White, mean BMI=29.8) completed original, brief self-report measures of their social network characteristics at baseline. Participants reported a median of 2 walking partners in their social networks, and reported taking a median of 1 action to increase their social networks for walking within the prior month. The number of social actions taken to build one's walking network was associated with network size (r=.43, p<.001). In linear regression models adjusted for age and sex, an increase of 2 people in participants' walking networks predicted an average of 12 additional minutes of walking per week (average of 2 validated self-report walking measures); p's<.01. Similarly, every additional 3.5 actions taken to build one's social network for walking predicted an average of 16.5 additional minutes of walking per week; p's=.001 for both walking measures. Greater walking network size also predicted objective measures of health status, including lower systolic blood pressure (standardized beta=-.12), lower body mass index (standardized beta=-. 12), and smaller waist circumference (standardized beta=-.15), after adjusting for baseline level of self-reported walking (all p's<.05). These findings suggest that increasing the size of social networks for walking may increase walking quantity. Furthermore, even after adjusting for walking quantity, having larger social networks for walking may confer protective health benefits.

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## D-155

### GOD LOCUS OF CONTROL, PHYSICAL ACTIVITY, AND HEALTH BELIEFS

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Purpose: The most religious regions within the United States are also those with the highest rates of obesity and chronic disease. The aim of this study was to explore perceptions of the role of God, the individual and health professionals have in predicting physical activity behavior, susceptibility to chronic disease, and perceptions that physical inactivity contributes to chronic disease risk among a national sample of adults.
Methods: An advertisement for the study with a link to an online survey was posted on Craigslist websites throughout the United States. Participants completed the Multidimensional Health Locus of Control Scale including the God Locus of Control (GLOC) sub-scale, a modified version of the Godin Leisure Time Exercise Questionnaire, and items assessing perceived susceptibility to chronic disease and the perceived role of physical inactivity for chronic disease risk.
Results: A total of 314 people have provided complete data for the survey thus far. Backward elimination multiple regression procedures controlling for age, education and ethnicity were used to test if (a) physical activity levels, (b) perceived susceptibility for chronic disease, and (c) perception that physical inactivity contributes to chronic disease could be predicted by the Multidimensional Health Locus of Control and GLOC sub-scales. Results indicated that (a) GLOC ($\beta$=- .13, p=038) and Internal LOC ($\beta$=.13, p=.028) predicted physical activity levels (R2=.06, p=.005), (b) GLOC ($\beta$=.20, p=001) and age ($\beta$=.23, p<.001) predicted perceived threat of chronic disease (R2=.10, p<.001), and (c) GLOC ($\beta$=- .15, p=011) and age ($\beta$=- .16, p=007) predicted perceptions that physical inactivity contributes to risk of chronic disease (R2=.05, p=.001).
Conclusions: The results of this study suggest that people who feel their health is controlled by God are less likely to be physically active, feel a greater susceptibility for chronic disease and are less likely to perceive that physical inactivity contributes to risk of chronic disease. These findings could be valuable in the design of future faith-based physical activity interventions.

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## D-156

### A COMMUNICATION INTERVENTION TO PROMOTE 5AS PHYSICAL ACTIVITY COUNSELING: EFFECT ON CLINICIAN AUTONOMY SUPPORT AND PERCEIVED COMPETENCE

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Purpose: To assess the effect of an intervention to promote clinician-patient communication about physical activity on patient ratings of their ability to engage in physical activity and their clinicians' autonomy-supportiveness.
Methods: Family medicine clinicians (n=13; nine physicians, two nurse practitioners, and two physician assistants) at two urban community health centers were randomized to early or delayed communication training. Training consisted of four one-hour training sessions designed to teach and reinforce the 5As (Ask, Advise, Agree, Assist, Arrange), autonomy support, and problem-solving for physical activity counseling. Patients (n=312) completed surveys at baseline, immediately post-intervention, and six months later. Outcome measures included the Health Care Climate Questionnaire (autonomy-support) and the Perceived Competence Scale for physical activity.
Results: Clinicians were 75% female and were 66% Caucasian, 25% African American, and 9% Asian American with a mean age of 50 years and average work experience of 15 years. Patients mean age was 43 years, and 75% were African American, 15% Hispanic, and 10% Caucasian. Most (58.2%) had Medicaid insurance. Patients' mean BMI was 32.5; co-morbidities included hypertension (49%), chronic pain (44%), depression (32%), and diabetes (21%). Using a mixed model controlling for clinician as a random effect, autonomy support increased significantly at post-intervention compared to baseline (mean HCCQ scores 3.68 to 4.11 , p=0.03). There was no significant change in the perceived competence for physical activity (p=0.37).
Conclusions: A clinician-directed intervention increased clinician autonomy support but not patient perceived competence for physical activity. Future work will examine the relationship between clinician autonomy support and subsequent referral and patient use of community physical activity resources.

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## D-157

### MANUAL DEVELOPMENT FOR A MINDFULNESS BASED INTERVENTION TO INCREASE CARDIORESPIRATORY FITNESS IN SEDENTARY ADULTS

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There has been growing support for the applicability of contextual based therapies in the field of behavioral medicine, specifically with issues such as pain, diabetes, smoking, obesity, weight management, and physical activity. The procedures used for the development of this treatment manual followed a 3-Phase process based on expert systems analysis. In Phase 1 an extensive literature review was conducted. The organizational structure for the manual was derived from Carroll and Nuro's (2002) Stage Model for Psychotherapy Manual Development. In Phase 2 topic experts were recruited via targeted e-mails; 6 field area experts were contacted, each with experience in the application of ACT. Three experts agreed to serve as manual reviewers and were provided with the manual draft, as well as a semi-structured interview form. Experts were asked to review the current exercises/strategies used in the manual, to offer possible alternatives for more effectively executing the aims of the module, and to provide any indication of problems/difficulties that were likely to occur during the implementation of the protocol and possible solutions to these issues. Phase 3 included independent review of revision data by 2 therapists and rater agreement on included revisions. The completed manual includes treatment introduction sections for the therapist and the participant, as well as 8 topic modules. In accorance with Carroll and Nuro, the therapist's introduction includes content related to the description and rationale of the approach, treatment goals, specification of defining interventions, session content, and general format. In addition to modules focusing on the constructs of values, mindfulness, acceptance, and committed action, additional modules are included for review and the topic of behavioral lapse and relapse. A pilot study is currently being conducted in order to assess the feasibility, acceptability, and preliminary efficacy of the Mindful Steps intervention. Theory based manual development processes are an important, and often under utilized area of intervention science.

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## D-158

### SELF-DETERMINATION THEORY AND THE PREDICTION OF QIGONG PRACTICE MINUTES IN BREAST CANCER SURVIVORS

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Purpose: Many breast cancer survivors experience fatigue, depression and other negative health outcomes after treatment. In a study designed to test the effects of Qigong (QG) on these symptoms, we examined the relationship between total minutes of Qigong practice and self-determination factors (SDT). According to SDT, there are varying forms of motivation that influence exercise behavior. These forms of motivation vary along a continuum and include amotivation, external regulation, introjected regulation, identified regulation and intrinsic regulation.

Methods: A double-blinded, randomized controlled trial was implemented to test the effect of 12 weeks of QG practice or a sham control intervention with 87 post-menopausal breast cancer survivors with persistent fatigue, age 40-75, between 6 months and 5 years past primary treatment. Total minutes of Qigong practice were self-reported via a weekly telephone call conducted by study staff. Minutes were reported per day and summed for a weekly total.

Results: The majority of self-regulation factors were not predictors of total practice minutes. In fact, identified regulation was the only significant predictor of total practice minutes after adjusting for age and depression.

Conclusions: The results suggest that other factors besides SDT would be better predictors of exercise habits in this population. Additional analyses are needed to determine these predictors so that more effective interventions for breast cancer survivors can be developed and implemented.

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## D-159

### CARDIORESPIRATORY FITNESS MEDIATES THE EFFECT OF SEX ON BMI AMONG WHITES ONLY IN A RACIALLY DIVERSE SAMPLE OF ADOLESCENTS

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The aim of the current study was to understand the relationship between race/ethnicity, socioeconomic status (SES), sex, cardiorespiratory fitness, and body mass index (BMI), and to determine whether cardiorespiratory fitness mediates the association between the demographic variables and BMI. A cross-sectional study was conducted in a north Texas school district, which included 609 Caucasian/Whites, 293 Hispanic/Latinos, and 113 African-American/Black early adolescents (10-14 years). The Progressive Aerobic Cardiovascular Endurance Run (PACER), representing the number of 20-meter laps students completed within a particular timeframe and pace, was used as an estimator of cardiorespiratory fitness. In order to assess body mass, BMI was used. Results indicated racial/ethnic differences in BMI and sex differences on PACER laps. Specifically, non-Hispanic white ($M=20.47$, $SD=4.33$) adolescents had a significantly lower BMI than both non-Hispanic blacks ($M=22.66$, $SD=5.43$) and Hispanic ($M=21.81$, $SD=4.65$) adolescents. Respective of PACER sex differences, males ($M=37.87$, $SD=18.02$) ran significantly more laps than females ($M=30.91$, $SD=14.33$). Using standard multiple regression, race/ethnicity was significantly related to BMI, but SES and sex was not. In this first step, the model accounted for 2% of the variance, $F (3, 1014)=6.56$, $p<.001$. When the PACER was added in the second step, 16% of the variance, $F (4, 1014)=48.31$, $p<.001$, was accounted for by race/ethnicity, PACER laps, and sex. In this second step, adding the PACER mediated the effects of sex on BMI. In order to determine if there was an interaction between the PACER on significant variables, step three, showed a significant model, Adj. $R2=.158$, $F (1, 1014)=32.\ 79$, $p<.001$; however, the interaction between sex and the PACER was non-significant as well as the interaction between race/ethnicity and the PACER on the effects of BMI. The results of this sample suggest that cardiorespiratory fitness explains the relationship between sex differences in BMI among non-Hispanic whites, but does not account for such sex differences among Hispanic and non-Hispanic blacks.

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## D-160

### A COMPARISON OF SEDENTARY VERSUS VIGOROUS ACTIVITY WITH MATERIALISM AND OTHER SOCIAL CORRELATES

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Background: Though a body of work exists investigating sedentary and vigorous physical activity (PA) as discrete variables, few studies compare them or consider the role of materialism and self-identity.

Method: A cross sectional study ($n=420$) of young adults (ages 18-24) investigated correlates of PA using the Integrated Behavioral Model (IBM). Relationships between PA, materialism, self-identity for fitness, and several IBM constructs (attitude, injunctive and descriptive norms, and self-efficacy) were examined using SPSS 19.

Results: Bivariate correlations indicated vigorous recreation PA was associated with self-efficacy ($p<0.001$, $r=0.278$), injunctive norms ($p=0.001$, $r=0.159$), descriptive norms ($p=0.005$, $r=0.130$), and fitness self-identity ($p<0.001$, $r=0.383$). Sedentary minutes were correlated with materialism ($p<0.001$, $r=0.213$), self-efficacy ($p<0.001$, $r=-0.284$), injunctive norms ($p=0.002$, $r=-0.143$), descriptive norms ($p<0.001$, $r=-0.200$), fitness self-identity ($p< 0.001$, $r=-0.391$), materialism self-identity ($p=0.002$, $r=-0.144$), and attitude ($p=0.003$, $r=-0.139$). Stepwise linear regression with vigorous recreation PA (DV) completed two iterations ($R2=0.168$). Self-identity fitness ($r=0.397$) and materialism ($r=-0.119$) were significant. When controlling for sedentary behavior, materialism was no longer significant ($R2=0.169$). Stepwise linear regression with sedentary minutes (DV) completed three iterations ($R2=0.228$). Fitness self-identity ($r=-0.417$), materialism ($r=0.228$), and descriptive norms ($r=-0.222$) were significant. When controlling for vigorous recreation PA the model was unchanged.

Conclusions: Separate models for sedentary and vigorous recreation PA both found self-identity and materialism to be significant. Additionally, a lack of seeing people being active appears to influence sedentary behavior. The complexity and significance of these relationships suggest value in further consideration of how materialism and self-identity shape PA choices. A more clear understanding will increase efficacy of interventions targeting PA and sedentary behavior.

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## D-162

### ASSOCIATIONS BETWEEN INTERLEUKIN-10, CORTICOTROPHIN-RELEASING HORMONE, PSYCHOSOCIAL STRESS, AND USE OF SELECTIVE SEROTONIN RE-UPTAKE INHIBITORS DURING PREGNANCY

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Introduction: Previous studies have documented associations between maternal psychosocial stress and inflammatory markers, as well as placentally-produced corticotrophin-releasing hormone (CRH) during pregnancy. Furthermore, evidence supports the premise that an interaction between chronic psychosocial stress and pregnancy physiology can contribute to poor pregnancy outcome, such as preterm birth. The Primary aim of our study was to describe the associations in pregnancy between maternal inflammatory markers, placental CRH, and maternal psychosocial stress variables.

Methods: Measures of maternal serum CRH, Interleukins-1, 6, & 10, C-Reactive Protein, Macrophage Migratory Inhibitory Factor, and Tumor Necrosis Factor-$\alpha$ were completed in 100 pregnant women at two time points; 14-20 weeks and 26-30 weeks gestation. A self-administered questionnaire was completed at 14-20 weeks and included the Centers for Epidemiological Studies - Depression scale, the Perceived Stress Scale, the Norbeck Social Support Questionnaire, the Life Orientation Test, the Brief COPE, the Pregnancy-Related Anxiety scale, Interpersonal Abuse survey, and demographic/behavioral data, including maternal use of selective serotonin re-uptake inhibitors (SSRIs).

Results: Significant correlations were found between IL-6 & 10, and depression, anxiety, perceived stress, and several individual maternal coping styles. Furthermore, IL-10 levels were significantly lower in women with 4th quartile CRH levels and in those women taking SSRIs during pregnancy.

Conclusions: These results suggest a biobehavioral mechanism as one pathway in which chronic maternal stress factors (psychosocial stressors) and SSRI use are linked with elevated CRH and lower IL-10 (an anti-inflammatory cytokine) during pregnancy. Thus, a pro-inflammatory and altered hormonal pregnancy milieu may ensue which has a known association with adverse pregnancy outcomes, such as preterm birth.

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## D-163

### EXTENSION EDUCATORS' AND PARAPROFESSIONALS' SUCCESSES AND CHALLENGES IN RECOMMENDING HEALTHY LIFESTYLE CHANGES 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-164

### EXPLORATORY FACTOR ANALYSIS OF THE PREGNANCY EXPERIENCE SCALE (PES) AND THE PRENATAL SOCIAL SUPPORT SCALE (PSS)

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The current study tests the factor structure of items from the Pregnancy Experience Scale (PES) and of the Prenatal Social Support Scale (PSS) that pertain to the relationship with the participants' significant other using Exploratory Factor Analysis (EFA) with data from the Healthy Moms Healthy Babies study. Women were recruited (n=100) from prenatal clinics located in southern California (mean age=26 years, 45% Latina and 39% African American, mean gestational age=17 weeks). The EFA solution for the four items (e.g., "Discussions with your spouse/partner about pregnancy/childbirth issues") extracted from the PES included a 1 factor loading structure and explained 40.5% of the variance in the score of perceived stress experienced during pregnancy that pertained to the relationship with one's significant other (Cronbach's $\alpha$=.68). The EFA solution for the three items (e.g., "How often do you feel that if you are tired, you can rely on your spouse/partner to take over?") extracted from the PSS included a 1 factor loading structure and explained 56.8% of the variance in the score of social support received specifically from the participants' significant other (Cronbach's $\alpha$=.79). The prenatal factors found in both the PES and PSS may be used in future studies investigating the intensity of perceived stress from one's significant other and the quality of social support received from pregnant women's significant others.

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## D-165

### PARTNER'S EFFECTS ON WOMEN'S STRESS EXPERIENCED DURING PREGNANCY

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This study investigated whether the social support (SS) received from one's partner during pregnancy (Prenatal Social Support Scale) mediated the relationship between marital status, having a planned pregnancy, and prenatal stress (i.e., Cohen's Perceived Stress Scale, Relationship Stress during Pregnancy Scale, Salivary cortisol from the Trier Social Stress Test). Women were recruited (n=100) from prenatal clinics located in southern California (mean age=26 years, 45% Latina and 39% African American, mean gestational age=17 weeks). A path analysis regression model demonstrated that marital status was significantly associated with SS received from the partner (F=4.38, p=.015, R2=.09), SS did not vary among married and cohabitating couples (t=-.10, p=.92), yet, women who were in non-cohabitating relationships received significantly less SS from their partner (t=-2.471, p=.015). Also, women who had unplanned pregnancies (t=4.24, p<.001) were significantly associated with having lower levels of SS from their partner. Higher levels of SS received from the partner was found to be associated with lower levels of perceived stress (t=-3.97, p<.001), and pregnancy-specific stress that pertained to the partner (t=3.71, p<.001). However, SS was not associated with cortisol levels (t=-.22, p<.82). Although, the role of social support from the partner did not appear to be a significant mediator between marital status, planned pregnancy status, and prenatal stress in this study as there was not significant direct associations, additional research is needed on this topic. More specifically, future studies are needed on the effectiveness of SS and stress management interventions among women with unplanned pregnancies and who are not in a cohabitating relationship with their partner.

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## D-167

### EXAGGERATION OF DESCRIPTIVE AND INJUNCTIVE NORMS REGARDING CELL PHONE USE WHILE DRIVING AMONG COLLEGE STUDENTS

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Distracted driving related to cell phone use has become a growing public health threat, especially among drivers younger than 20, who represent the age group with the highest proportion of distraction-related traffic fatalities (NHTSA, 2010). Among college students, the exaggeration of descriptive and injunctive norms regarding risky health behaviors has been demonstrated across a variety of domains, including alcohol consumption, drug use, and sexual behavior (Martens et al., 2006). However, perceived social norms regarding cell phone use while driving have not yet been examined. Therefore, the aims of this study were to determine a) whether students overestimate both the prevalence and acceptability of using cell phones while driving among their peers, and b) if perceived norms are associated with the frequency of one's own cell phone use while driving. Participants included 881 students from two private colleges in the Northeast who were predominately female (61.9%) and white (67.2%), and mostly first-year students (64.3%; M age=19.2). First, participants estimated that over 60% of students regularly used their cell phone for each of the following functions while driving: talking (65%), reading texts (69%), and sending texts (62%). However, only 40%, 42%, and 29% of participants reported that they sometimes engage in each of these behaviors while driving. Second, participants perceived their peers as being more accepting than they were of using a cell phone while driving, t(869)=15.99, p<.001, and holding more liberal views regarding distracted driving laws, t(868)=16.62, p<.001. Third, students' reports regarding the frequency of their own cell phone use while driving and their opinions regarding its acceptability were positively correlated with their normative estimates for their peers. These findings suggest that students perceive others as being more accepting of and more likely to engage in cell phone use while driving. Future research might consider the use of normative re-education to address these misperceptions as a way of reducing the prevalence of risky cell phone use among college students.

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## D-168

### HIRING A HEALTHCARE ADVOCATE FOR A PARENT: WHO'S IT REALLY ABOUT?

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A healthcare advocate (HCA) is a professional who works for a patient and his or her family by helping with various concerns and issues that arise with illness. Considering the complexity of healthcare systems and the ubiquity of illness, especially chronic illness, HCAs could provide needed assistance to many. Yet, little has been done to understand who would choose to hire an HCA or why they would choose to do so. In our study, respondents (N=846) read a story in which they were told to imagine they were James Smith, and their father, Daryl, had a heart attack or broken hip, had or did not have Alzheimer's disease (AD), and lived near or far from them. They were asked to rate their likelihood of hiring an HCA to help with facets of Daryl's care. Personal and parental data were collected from respondents. Although parental factors were assigned in the story, it was hypothesized that respondents' real parents' situations would affect the decision to hire an HCA for Daryl. A stepwise linear regression was performed to examine this hypothesis. On step one, manipulation-check items (rating of Daryl's illness's severity, the amount of medical assistance he will require, and the respondents' confidence that they understand the role of an HCA) were entered and found to account for a significant portion of the variance in likelihood of hiring an HCA (R2=.265, F(3,768)=92.439, p<.001). Manipulated variables from the vignette were entered on step two, but were not related to likelihood of hiring (ΔR2=.002, F(3, 765)=.564, p=.639). On step three, respondents' real parents' situations (alive or not; history of AD; history of other medical conditions) were entered and related to likelihood of hiring with marginal significance (ΔR2=.007, F(3,762)=2.407, p=.066). Though the effect was small for respondents' real parents' situations, it demonstrates that those who have experienced the illness of a parent, particularly AD (β=-.076, p=.018), may be most likely to hire an HCA.

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## D-169

### PREFERENCE FOR IMMEDIATE REINFORCEMENT OVER DELAYED REINFORCEMENT: RELATION BETWEEN DELAY DISCOUNTING AND HEALTH BEHAVIOR

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Reinforcement from engaging in health behaviors is often delayed by several months or years, a circumstance partly responsible for some people's increased preference for engaging in unhealthy behaviors associated with immediate reinforcement. To examine whether individuals who discount most by delay engage in fewer health behaviors, 72 young adults completed questionnaires assessing health behaviors and impulsiveness and laboratory-behavioral measures of impulsive decision making. Regression analyses of impulsivity measures predicting health behavior were only significant for one measure, the Experiential Discounting Task, a task in which monetary consequences of choice were actually experienced by study participants. Participants who discounted most by delay (i.e., exhibited impulsive choice) engaged in fewer health behaviors than those who showed less impulsive responding. This task, in contrast to a hypothetical choice task or self-reported impulsiveness, measures the actual behavior of discounting by delay, and was the facet of impulsive decision making most closely associated with adopting a range of health behaviors.

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## Meritorious Poster

## D-170

### PREDICTORS OF DATING ABUSE VICTIMIZATION AND PERPETRATION AMONG HIGH SCHOOL STUDENTS

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Each year around 1 in 4 teens experience emotional or physical abuse by a dating partner. Dating abuse is related to a range of acute and lasting harmful psychological and physical consequences. There has been limited research on prospective predictors of dating abuse victimization and perpetration. Participants were the 9-11th grade control group students from a randomized trial of a Transtheoretical Model-based intervention for dating violence prevention. Baseline stage of change for using healthy relationship skills, demographics, sexual orientation, and number of dating partners were examined as predictors of dating abuse at 10-month follow-up among daters (N=978). Four logistic regression analyses were conducted to identify predictors of emotional abuse victimization (EV), physical abuse victimization (PV), emotional abuse perpetration (EP), and physical abuse perpetration (PP). Using healthy relationship skills at baseline was associated with reduced odds of experiencing and perpetrating dating abuse at Month 10 (OR's ranged from 0.55 to 0.69 for the four types of abuse, p<.01). Females were more likely than males to experience and perpetrate emotional abuse (OR's were 1.80 and 1.91 for EV and EP, respectively, p<.001). Teens who reported that that they weren't straight or weren't sure of their sexual orientation had increased odds of PV (OR=3.00, p<.001) and PP (OR=2.11, p<.01). Each additional dating partner increased the odds of PV (OR=1.11, p<.001) and PP, (OR=1.09, p<.001). Those who had subsidized lunch at school were more likely to engage in PV (OR=1.71, p<.01). Findings are consistent with national retrospective data, and point to specific issues that could be addressed in teen dating abuse prevention programs to reduce risk, including healthy relationship skills and the importance of making good decisions about dating. In addition, efforts should be made to understand and address the unique risks and needs of gay, lesbian, bisexual, transgender, queer and questioning (GLBTQQ) youth.

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## D-171

### COLLEGE STUDENTS' COGNITIVE RATIONALIZATIONS FOR INDOOR TANNING: AN EXPLORATION

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Indoor tanning causes melanoma, the most deadly form of skin cancer. The best way to intervene among those indoor tanners who prioritize appearance enhancement despite being knowledgeable about harmful effects of indoor tanning is still unclear. It is likely that these indoor tanners utilize cognitive rationalizations or justifications for indoor tanning despite awareness of risks. Undermining these cognitive rationalizations may make risks of indoor tanning more personally relevant thereby motivating efforts to change the behavior. This study adapted an available measure of cognitive rationalization to indoor tanning and conducted a survey with a sample of college students. The goals of this study were to examine the distribution of the item responses in order to examine how relevant these rationalizations are to our population of interest (current indoor tanners), and to examine the construct and predictive validity of the cognitive rationalization scale. 218 undergraduate students from a large northeastern university in the United States who were current or former indoor tanners (87.6% females; 78.4% Caucasian; mean age=19.8 years) were recruited for this study. Results indicate that 62.5% of the scale items were endorsed by at least 10% of the participants, and only these items were included for further analyses. Confirmatory Factor Analysis revealed that the predicted model (three subfactors: skeptical, worth-it, and danger ubiquity rationalizations) fit the data; χ2(32)=46.28, p=.05, χ2/df=1.45, CFI=0.97, RMSEA=0.05. Correlations among the three fitted factors were generally moderate supporting the uniqueness of each of the factors. As well, hierarchical regressions indicated that worth-it rationalizations (i.e., beliefs indicating indoor tanning as a worthwhile activity despite potential hazards) were significantly associated with intention to indoor tan in the next 3-month (β=.16, p<.05) and 12-month (β=.24, p<.001) periods. The findings reported here will be discussed in light of potential opportunities to design counter-rationalization interventions for college aged indoor tanners.

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## D-173

### THE ROLE OF RELIGION IN SOCIAL-COGNITIVE MODELS OF SEX RISK AMONG RURAL AFRICAN AMERICAN COCAINE USERS

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Disparities in HIV are dramatic and new perspectives in theoretically-based culturally-targeted prevention efforts are needed. Religion is an innovative way to culturally target sexual risk reduction efforts to African American communities. This research expands previous religion-risk research by examining distinct dimensions of religion, incorporating Social Cognitive Theory, and recruiting an understudied population. Data from participants ($n=223$) of a longitudinal sexual risk reduction study for African American cocaine users living in the rural South were analyzed using correlational and path analysis. Strong bivariate relationships between self-efficacy for condom use ($r=-0.52$, $p<0.05$), sexual risk negotiation skills ($r=-0.24$, $p<0.05$), and peer norms ($r=-0.27$, $p<0.05$) and unprotected sex support the importance of theory-based constructs in understanding sexual risk. All examined religion variables had a nonsignificant inverse association with unprotected sex. Weak associations between religion variables and mental health suggest that that some aspects of religion may be less protective of mental health in populations that experience high levels of distress. Healthier peer norms for risk behavior were correlated with greater perceived church leader-based religious support ($r=0.15$, $p<0.05$), which supports the role of church leaders as health advocates. However, religion variables were not universally associated with health-promoting benefits. Multivariate models that examined cognitive and social aspects of sex risk explained 72% and 66% of the variance in unprotected sex, respectively. Future research must examine specific dimensions of religion to determine their relationship with risk behaviors and associated theoretical constructs so that cultural adaptation using religion has the desired effect.

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## D-174

### PARTNER-SPECIFIC SEXUAL RISK REDUCTION INTERVENTION IMPACT ON INCARCERATED ADOLESCENTS' SEXUAL HEALTH ATTITUDES AND INTENTIONS

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Substance-using incarcerated adolescents are at high risk of negative sexual health outcomes (STIs and unplanned pregnancy). Incarcerated adolescents' relatively short sentences (6 - 18 months) pose a high risk of spreading STIs to the public once they return to their communities. Interventions designed to reduce sexual risk for incarcerated adolescents are greatly needed. Of 52 juvenile-justice-involved teens who were randomly assigned to a partner-specific sexual risk reduction intervention ($N=24$) or a control healthy lifestyle intervention ($N=28$), 20 (38%) could be located following release to the community. Sexual health attitudes and intentions were measured at baseline and 3-month follow-up and compared between intervention groups. At baseline, no differences were detected between intervention groups . At follow-up, those in the sexual risk reduction intervention ($N=11$) reported significantly more positive condom attitudes ($t=-3.33$, $p=.005$), stronger condom self-efficacy ($t=-2.68$, $p=.016$) and sexual communication skills (Main Partners: $t=-2.37$, $p=.031$; Non-Main Partners: $t=-2.82$, $p=.012$), and greater HIV/STD knowledge ($t=2.39$, $p=.030$) than control intervention participants ($N=9$). The results were not uniform across sexual partner types: sexual communication skills were enhanced for both main and non-main partners, condom use self-efficacy was only enhanced for non-main partners and condom use intentions did not differ between participants in different intervention groups. The current study demonstrated the feasibility and challenges of conducting juvenile justice system research on health risks.

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## D-175

### THE ROLE OF SELF-OBJECTIFICATION IN WOMEN AND MEN'S SEXUAL HEALTH

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Background: Objectification Theory proposes that women, and more recently men, are acculturated to internalize an outsider's perspective as a primary view of themselves which can lead to habitual body monitoring and surveillance. Previous research has demonstrated that these objectifying experiences may increase health risks for eating disorders, depression and sexual dysfunction. Despite, the ubiquitous pressure of self-objectification in modern society, few studies have examined how self-objectification and body shame may influence sexual health, and more specifically, how it may influence sexual functioning and risky sexual behaviors across gender.

Purpose: The purpose of this study was to extend previous research by examining the role that self-objectification plays in sexual dysfunction and unprotected sex for both women and men.

Methods: Latent variable models examined variables from Objectification Theory , including body shame, body self-consciousness, and sexual self-esteem as predictors of sexual dysfunction, unprotected sex and depression among 340 heterosexually active men and women, aged 18-25 years old.

Results: Latent variable model results indicated that greater self-objectification and body shame was related to greater body self-consciousness and lower sexual self-esteem, which in turn predicted lower sexual functioning. Body self-consciousness and sexual self-esteem partially mediated this relationship. Separate models for women and men demonstrated good fit, suggesting that men self-objectify in a similar manner to women in regards to sexual functioning. Additional analyses demonstrate that self-objectification processes may increase levels of depression, which then may influence sexual assertiveness, condom use self-efficacy and protected sex measures.

Conclusions: Prevention interventions should focus on improving sexual self-esteem and body self-consciousness among both men and women, in an effort to reduce the risk of depression and improve sexual assertiveness, condom use, and efforts at protected sex.

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## D-177

### DEMOGRAPHICS, EXCESSIVE DAYTIME SLEEPINESS AND DEPRESSION AMONG HISPANIC AMERICANS

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Depression and excessive daytime sleepiness (EDS) can have severe negative implications for general health. EDS and depression have also been shown to be associated; however, this relationship has yet to be examined in Hispanic Americans (HAs). The purpose of this investigation was to 1) evaluate the relationship between EDS and depression in HAs, 2) examine the moderational roles of age, gender, income, education, and acculturation on this relationship, and 3) investigate the impact of EDS and depression on self-reported general health in HAs. HAs age 21 and older ($N=427$) completed questionnaires in English or Spanish. The Epworth Sleepiness Scale measured EDS, and the Patient Health Questionnaire assessed depression. Hierarchical linear regression analyses were used to examine the study objectives. Five distinct models were analyzed with depression as the outcome, each including EDS, one demographic variable, and the interaction between EDS and that variable. EDS was consistently found to be a significant independent predictor ($p<.001$) of depression, with unstandardized regression coefficients ranging from .067 to .071 and percentage of variance explained by each model ranging from 10.6% to 12.7%. Significant main effects were also found for age and income, though none of the interactions were significant. A sixth model including EDS, depression, and their interaction was evaluated with self-reported general health status as the outcome. When analyzed as such only depression was found to have a significant main effect, and once more the interaction was non-significant. These findings indicate that EDS could be considered an indicator for depression in HAs. However, the impact of EDS on health found in prior research may be due in part to latent depression rather than a direct effect of EDS. Researchers and clinicians may wish to consider EDS, but prioritize depression, when intervening to improve health outcomes among HAs.

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## D-178

### SLEEP DURING MAINTENANCE TREATMENT FOR PEDIATRIC ACUTE LYMPHOBLASTIC LEUKEMIA

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Background: Treatment for acute lymphoblastic leukemia (ALL) continues to increase in effectiveness, making considerations of treatment side-effects an important focus for improving quality of life. Corticosteroids, specifically prednisone and dexamethasone, are given for 5 days monthly after chemotherapy during maintenance treatment for ALL. Prior research has linked corticosteroids to changes in sleep patterns, mood, and behavior, but no research has compared these steroids in children.
Method: The current study described sleep patterns of children ages 3-12 taking corticosteroids during 1 month of maintenance treatment comparing time on and off steroids as well as participants taking dexamethasone versus prednisone. Thirty-seven families completed baseline reports of sleep and 24 families returned complete daily sleep diaries. Data collection is on-going.
Results: Children with ALL exhibit more behavioral sleep difficulties and sleep longer at night compared to normative values for healthy peers. On two-thirds of diary nights children did not fall asleep alone. Parents reported at least 1 night waking on 38.8% of diary nights, which were primarily less than 10 minutes long (94.1%). Parents helped children return to sleep during 46% of wakings. Sleep opportunity, total sleep time, and napping varied significantly across the month between steroids. Children taking prednisone had shorter nighttime sleep than children taking dexamethasone (F(1, 22)=6.36, p<.001), but napped more frequently (F(1, 22)=4.42, p=.007), possibly to compensate.
Conclusions: Results indicate sleep disruptions and some sleep behavior problems in children with ALL that are further exacerbated by steroid course. Future research should explore the processes contributing to disrupted sleep in children taking corticosteroids as well as begin to examine the feasibility of brief behavioral interventions for families to address behavioral sleep concerns during steroid bursts.

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## D-180

### HOOKAH TOBACCO SMOKING AMONG FIRST-YEAR COLLEGE WOMEN: CORRELATES OF PRE-COLLEGE USE AND PREDICTORS OF INITIATION

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Hookah tobacco smoking has become increasingly prevalent among American college students over the past decade. Research on the correlates of hookah use in this population has begun to emerge, but all studies thus far have been cross-sectional. Little is known about hookah use during the transition to college or about the psychosocial factors related to hookah smoking. This longitudinal cohort study examined correlates of pre-college hookah use and predictors of hookah initiation during the year after college entry. First-year female college students (N=483; 64% White) completed 13 monthly surveys about their hookah use from August 2009 to August 2010; they also provided data on demographic, behavioral, and psychosocial variables at baseline. Pre-college hookah use was reported by 29% of participants, who reported an average of 7.0 (SD=11.7, median=3) days of pre-college hookah use. Among those who did not report pre-college use, 22% initiated hookah use during the year after college entry; initiators reported an average of 3.7 (SD=3.5, median=2) days of use, and 34% tried hookah only once during the study. Exploratory multivariate logistic regression showed that marijuana use (adjusted odds ratio [AOR] 2.60), cigarette use (AOR 2.97), and binge drinking (AOR 3.76) in the past month at baseline were positively correlated with pre-college hookah use, whereas high school grade point average (AOR 0.28) and self-esteem (AOR 0.96) were negatively correlated. Marijuana use (AOR 4.37), cigarette use (AOR 4.04), and binge drinking (AOR 3.82) in the past month at baseline emerged as multivariate predictors of hookah initiation during the year after college entry. These findings inform health education efforts, health promotion interventions, and public health policy. Prevention and intervention efforts should take into account the high likelihood for hookah use to co-occur with other forms of substance use.

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## D-181

### ASSESSMENT OF CRAVING IN AFRICAN AMERICAN LIGHT SMOKERS

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The majority of African Americans smokers are light smokers, yet they have greater difficulty quitting compared to White smokers, bear a disproportionate disease burden from tobacco use, and are under-represented in tobacco research. Because craving to smoke is commonly reported in relation to cigarette use and smoking relapse, understanding the role of craving in this group may contribute to advancement in treatment. This study is the first to evaluate the Brief Questionnaire of Smoking Urges (QSU-Brief) among African American light smokers (1-10 cigarettes per day, cpd). The QSU-Brief, a 10-item instrument using a 7-point likert scale, was administered to 540 African American adult light smokers (mean 8.0 cpd, 46.5 years old, 66.1% female) enrolled in a smoking cessation clinical trial. Assessment was conducted at baseline, 1 week prior to quit date. An exploratory factor analysis (EFA) was performed to illustrate the factor structure of the items of the QSU-Brief. Factors achieving an eigenvalue ≥1 were retained. Only items that loaded≥.40 on one factor were assigned to that factor. Factor analysis supported a two-factor structure. The total weighted variance explained by Factor 1 (positive reinforcement) and Factor 2 (negative reinforcement) was 21.2% and 2.3%, respectively. The inter-factor correlation was 0.76. The largest proportion raw variation was accounted for by Factor 1 (95.43%) compared to Factor 2 (8.72%). Mean craving was relatively low for global craving (2.9), Factor 1 (3.6), and Factor 2 (2.1). Consistent with previous literature in other racial/ethnic samples, a two-factor structure (positive reinforcement and negative reinforcement) emerged. Findings support the utility of the QSU-Brief as a measure of craving among African American light smokers, and further maintain a multidimensional conceptualization of craving to smoke.

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## D-182

### DISSEMINATION OF A TOBACCO CESSATION PROGRAM FOR UNIONIZED WORKERS

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Many evidenced-based programs are not disseminated on a wide scale. Furthermore, most dissemination studies are conducted in schools and with children. Yet, dissemination in worksites would expand use of effective multi-level, contextually-relevant health promotion that targets a large proportion of adults. We published the results of a tobacco cessation intervention (*i.e.,* Gear Up for Health) among motor freight workers, where those who chose to participate reported quitting significantly more often than non-participants: 23.8% vs. 9.1%. The purpose of the current study is to describe the adaptation, implementation, and evaluation of GUFH for a broader population of unionized primarily blue-collar workers by partnering with a Health and Welfare Fund health benefits carrier (*i.e.,* GUFH-HWF). After considering the 'essential' and 'modifiable' elements of GUFH, GUFH-HWF was a 16-week pre-/post-test tobacco cessation intervention including tailored/targeted written materials and telephone counseling. Working with the HWF, 68 tobacco users (out of ~7,000 members contacted) enrolled, citing recruitment by postcards most often (68%). Most participants were male (63%); had≤a high school degree (56%); white (96%); and in preparation stage of quitting (90%). A majority completed all 4 counseling calls (69%). At follow-up, 30.9% (95% CI: 19.6-42.1%) of participants reported not using tobacco in the past 7 days. Participants found the materials and calls very/somewhat helpful (81% and 87%, respectively) and would be very/somewhat likely to pay a co-pay for this program (84%). GUFH-HWF had relatively high levels of implementation, effectiveness, and acceptability but low reach, highlighting recruitment issues that arise during worksite dissemination. For example, the HWF did not maintain records on tobacco use among members, precluding targeted recruitment efforts. The 7-day quit rate (23.8%) from the original GUFH is comparable to the current study, suggesting our adaptations yielded similar effectiveness. Future work will entail identifying mediators/moderators of worksite adoption of tobacco cessation programs.

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## D-183

### IMPLICIT AND EXPLICIT ATTITUDES TOWARD SMOKING AND MOTIVATION AND CONFIDENCE TO QUIT

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While "explicit" self-reported attitudes have long been recognized to be important predictors of health behavior, recent research has highlighted the potential importance of implicit attitudes that tap automatic cognitive processes. There is initial evidence that implicit attitudes toward smoking are correlated with smoking status and level of smoking, independent of explicit attitudes. This study explored associations between implicit attitudes toward smoking and explicit attitudes toward smoking, motivation, readiness and confidence to quit. Daily smokers (N=222; 56% male; 68% African American) recruited from the community completed survey measures of demographics, explicit attitudes toward smoking (Pros and Cons of Smoking), motivation, readiness, and confidence to quit smoking, and the Implicit Association Test (IAT). The IAT is a computerized reaction time task in which implicit attitude is inferred by comparing the latencies for responding when smoking is paired with positive words to the latencies when smoking is paired with negative words. Correlations between implicit and explicit attitude measures revealed implicit attitude was significantly correlated with the Pros of Smoking (r=.14, p<.05), but not with the Cons of Smoking (r=-.10, ns). Implicit attitudes were significantly associated with readiness and confidence to quit (r=-.14 and -.14, p's<.05, respectively), but not with motivation to quit (r=-.08, ns), while explicit attitudes (Pros and Cons of Smoking) were significantly related to motivation, readiness, and confidence to quit (r's from -.14 to .39, ps<.01). Results are consistent with the notion that implicit and explicit attitudes tap different aspects of attitudes toward smoking and may differ in their impact on the quitting process (i.e., affecting self-efficacy and readiness vs. motivation). Targeting implicit attitudes may be a means toward strengthening smoking interventions.

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## D-184

### FDA GRAPHIC HEALTH WARNINGS ON CIGARETTE PACKS: AN OPPORTUNITY TO IDENTIFY CLIENTS WITH BEHAVIORAL HEALTH ISSUES

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Telephone quitlines are evidence-based programs that provide counseling and, in most cases, medications, to tobacco users who want to quit. Quitlines are available in all 50 states, Washington, DC, Puerto Rico, and Guam; and in 10 provinces and two territories in Canada. In the United States, quitlines are accessible through a national portal "1-800-QUIT-NOW" which directs callers to their state or territorial quitline. Quitline studies suggest that up to half of the approximately 500,000 unique callers each year have mental illnesses or addictions. Two converging events present an expanded opportunity to identify and treat these individuals. All quitlines have implemented a standard set of intake and follow-up questions asked of callers. In 2011 the North American Quitline Consortium (NAQC) and the Behavioral Health Advisory Forum (BHAF) developed screening questions to identify quitline callers who present with co-morbid behavioral health conditions, including anxiety, depression, bipolar disorder, alcohol/drug abuse, schizophrenia, and emotional challenges that have interfered with life functioning. At the same time, new graphic health warnings for cigarette packs are scheduled to be launched in September 2012, and include the 1-800 number for quitlines. It is widely anticipated that the inclusion of the 800-number on cigarette packs will double quitline call volume. Thus there is an emerging opportunity to identify large numbers of tobacco users with behavioral health issues. This paper discusses potential opportunities to utilize the existing quitline infrastructure to identify tobacco users with mental illness and other behavioral health issues to a) improve their chances of successful cessation of tobacco products, and b) integrate quitline services with community behavioral health treatment. Available resources from NAQC and the BHAF will also be discussed.

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## D-185

### HIGHER EXERCISE EXPECTANCY AND CREDIBILITY BELIEFS ARE RELATED TO GREATER CRAVING REDUCTION FOLLOWING EXERCISE

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Temporarily abstinent smokers who undergo an acute bout of moderate intensity exercise experience a reduction in nicotine craving and withdrawal. Conversely, combining exercise with well-established treatments does not reliably increase smoking abstinence rates. One way to improve the effectiveness of an exercise-aided quit smoking intervention is to identify influential modifiable factors. Treatment credibility and expectancy beliefs have been shown to influence treatment outcomes in chronic lower back pain patients and anxiety sufferers. The present study sought to examine what bearing exercise expectancy (EX) and credibility (CR) beliefs had on self-reported craving and withdrawal following an acute bout of exercise amongst recently quit smokers. Female smokers (N=58) trying to quit with the 14 week Getting Physical on Cigarettes trial took part in this study. At baseline a measure of breath carbon monoxide (CO), smoking history, readiness to quit and to exercise, as well as EX and CR beliefs was obtained. Week 4, participants attempted to quit smoking and began a 10 week NRT program. On week 5 (4-6 days abstinent, CO<6ppm) participants completed the EX and CR beliefs questionnaire pre-exercise, and the Shiffman-Jarvik Withdrawal and Craving Scale pre- and post-exercise (20 minutes, moderate intensity). Participants were classified as higher (8.3/9) or lower (6.9/9) in EX and CR. Following the acute intervention participants continued with the program.

Recently quit smokers in the higher EX and/or CR groups demonstrated a significantly greater reduction in cigarette craving post-exercise compared to their counterparts in the lower groups (p<0.05, η2>.11). However, there was no significant difference in the magnitude of psychological or sedation symptom reduction between those higher in EX and/or CR and those lower in these constructs.

Findings suggest that EX and CR beliefs may have some influence on the benefits of exercise as a quit smoking aid. Clinically, maximizing EX and CR beliefs amongst smokers attempting to quit and using exercise as a means to control craving and withdrawal may be beneficial.

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## D-186

### INTENTIONS TO QUIT SMOKING AMONG DAILY SMOKERS AND NATIVE AND CONVERTED NONDAILY SMOKERS IN THE COLLEGE STUDENT POPULATION

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We aimed to 1) examine differences in sociodemographic, other substance use, psychosocial, and smoking-related characteristics among college students representing 5 smoking categories; and 2) examine readiness to quit among current smokers. In 2010, students at 6 colleges in the Southeast were recruited to complete an online survey. Of students who invited to participate, 20.1% (N=4,849/24,055) returned a completed survey. We created 5 subgroups: 1) nonsmokers (n=3,094); 2) quitters (former DS; n=293); 3) native ND smokers (never been DS; n=317); 4) converted ND smokers (previously DS; n=283); and 5) DS (n=451). Bivariate analyses indicated differences in other substance abuse, attitudes toward smoking, perceived harm, depressive symptoms, and parental and friend smoking among the 5 subgroups (p<.001). Among current smokers, we found differences in cigarette consumption, smoking within 30 minutes of waking, recent quit attempts, social smoking, considering oneself a smoker, cessation self-efficacy, and motivation to quit (p<.001). Multivariate analyses identifying correlates of readiness to quit among current smokers indicated that converted ND smokers were more likely to be ready to quit in the next month versus native ND smokers (OR=2.15, 95% CI 1.32, 3.49). Participants with greater readiness to quit had more negative attitudes toward smoking (OR=1.03, CI 1.02, 1.04), greater quitting self-efficacy (OR=1.02, CI 1.00, 1.05), and greater autonomous motivation (OR=1.04, CI 1.01, 1.06). Participants less ready to quit smoked less frequently (OR=0.94, CI 0.92, 0.97) and did not consider themselves to be smokers (OR=0.55, CI 0.32, 0.95). These findings highlight differences among smokers in terms of their readiness to quit, such that converted ND smokers were most frequently ready to quit smoking in the next month.

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## D-187

### HEALTH OUTCOMES RELATED TO SECONDHAND SMOKE EXPOSURE AMONG CHILDREN WITH CANCER

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Children with cancer are at increased risk for adverse health problems from secondhand smoke exposure (SHSe) such as decreased lung functioning, respiratory and ear infections, and gastrointestinal (GI) issues. The current study examined the relationship between health outcomes and level of SHSe among children with cancer living in smoking households.

Data focused on the baseline assessment from a randomized clinical SHSe reduction trial for 135 non-smoking children treated for cancer, <18 years, who lived with at least one smoker. Information regarding acute symptom occurrence, severity, and duration was abstracted from patients' medical charts for a 3-month time period prior to enrollment on the study. Selected symptoms were identified by oncology clinicians as those likely to be exacerbated by SHSe. Symptom items were grouped into three categories: respiratory, GI, and infection. Exposure variables included parent reports of the number of smokers in the home (1 vs. >1) and number of cigarettes to which the child was exposed. Urine samples were obtained from children and analyzed for cotinine, a biomarker of recent SHSe.

About 1/3 of all patients presented with respiratory or GI symptoms of moderate to severe intensity. The most common respiratory symptoms included allergic rhinitis/sinusitis and cough, while the most common GI symptom was stomatitis/pharyngitis. No indicators of exposure were predictive of the severity or duration of reported symptoms. The need for prescribed respiratory interventions was also not related to exposure.

Results failed to show a significant association between level of exposure and adverse health outcomes. Findings will be discussed in terms of the methodological difficulties in measuring acute health effects of SHSe for children undergoing cancer therapy. Suggestions for improving the assessment of SHSe-related health outcomes in medically compromised populations will be provided.

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## D-188

### BODY IMAGE CONCERNS AND URGE TO SMOKE AMONG PHYSICALLY ACTIVE AND SEDENTARY COLLEGE-AGE FEMALES

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Smoking is often used as a maladaptive weight control strategy among college-age females with high weight concerns. Many perceived benefits accrued from smoking including enhanced mood, reduced anxiety, and weight control can also be achieved through physical activity (PA).The purpose of this study was to examine the effects of a novel behavioral task that was designed to elicit weight concerns on urge to smoke among college-age women who vary in levels of PA. Using a cue-reactivity paradigm, 16 sedentary and 21 physically active college-age female smokers were exposed to a pilot tested body-image exposure session. Self-reported urge and smoking topography variables were obtained before and after the exposure session along with measures of body dissatisfaction, positive and negative affect, and physical-appearance related anxiety at the two time-points. Paired sample t-test showed significant increases in self-reported urge ($p<.01$) and quicker latency to first puff ($p<.01$) at post test for the entire sample. Results of partial correlation found that lower self-reported urge at post-test was associated with increased time engaging vigorous intensity PA($r=-0.44$ ; $p=.01$). However, association between latency to first puff and PA was not significant ($r=-.10$; $p=.62$). Baseline measures of depressive symptoms were significantly associated with increased self-reported urge at post-test urge ($r=.59$, $p=.03$), though this relationship was not significant after controlling for vigorous intensity PA ($r=.33$; $p=.07$) showing the potential protective effects of PA on smoking urges. These results suggest that PA can be protective of smoking urges in a situation that increases weight concerns among young women and emphasizes the need to incorporate physical activity components along with cognitive behavioral therapy in tailoring smoking cessation interventions in this population. Future research should continue to explore effects of PA on reactivity to body-cues and explore variability in cue-reactivity as a result of levels of PA.

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## D-189

### PHYSICAL ACTIVITY AND SMOKING CUE EXTINCTION AMONG RECENT EX-SMOKERS ENROLLED IN A SMOKING RELAPSE PREVENTION TRIAL

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Cue exposure treatment is a theory-driven approach to smoking cessation and relapse prevention. Research is needed to improve the understanding of factors that influence variability in smoking cue reactivity/conditioned responding (CR) over time. Recent research points to the effectiveness of physical activity (PA) in promoting smoking cessation and reducing relapse risk. The purpose of this study was to evaluate if participants who reported greater baseline PA demonstrated greater smoking cue extinction (reduction in reactivity) across repeated, non-reinforced presentation of smoking cues. Twenty-six smokers (47.96+11.17 years old) voluntarily enrolled in a smoking relapse prevention study completed 12, 5-minute smoking cue exposure trials after 2 weeks of cessation counseling and three days after a successful, cotinine-verified quit attempt. Measures of cue-reactivity included urge, heart rate variability, and galvanic skin response (GSR) across the 12 trials. The International Physical Activity Questionnaire was used to assess PA and were dichotomized into (1= PA; 0=some or none PA) based on a median split. Logistic regression analyzed whether PA predicted change in reactivity (1=achieved CR extinction; 0=no change or increase in reactivity). Preliminary results suggest that PA individuals were more likely to demonstrate reduction in reactivity (extinction) compared to some-to none PA individuals, though these results were not statistically significant, most likely due to small sample size [urge at Trial 12 ($OR=3.889$, $p=.115$); GSR at Trial 8 ($OR=5.33$, $p=.164$)]. Additional analyses will explore the role of differential exercise intensity on extinction. This study is, to our knowledge, the first to examine the role of PA on smoking-cue reactivity and the results are promising. Exploring the potential influence of PA on the smoking cue extinction process could improve our understanding of mechanisms that explain the utility of PA in smoking cessation interventions.

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## D-190

### HOPE IS LINKED WITH POSITIVE AFFECT DURING NICOTINE DEPRIVATION

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High hope has been linked to numerous health benefits. This protective advantage may occur in part through the better psychological adjustment of those high in hope, such as higher positive affect (PA) and lower negative affect (NA). The present study compares high and low hope smokers' affect under different conditions of nicotine exposure. Nicotine dependent adults ($n=123$, 61% male, mean age=30, mean cigarettes/day=15) took the State Hope Scale and PANAS on an ad lib smoking day and returned on another day when nicotine deprived (verified by carbon monoxide) for an experiment with pre- and post-PANAS measurement. Participants smoked immediately following the deprivation experiment. High hope smokers ($n=68$) had higher PA ($F(1,152)=9.2$, $p<.01$) and lower NA scores ($F(1,65)=9.1$, $p<.01$) than low hope smokers ($n=50$) at most time points. More interesting was a different pattern of PA across smoking conditions for high and low hope smokers, $F(2,23)=8.2$, $p<.001$). Low hope smokers experienced a significant increase ($p<.01$) in PA from ad libitum smoking ($M=24.9$, $SE=.99$) to post-deprivation ($M =27.9$, $SE=.98$). Instead of a linear increase, high hope smokers showed a v-shape in the three data points. Levels of PA during ad libitum ($M=31.8$, $SE=1.1$) and post-deprivation ($M=30.9$, $SE=.98$) are comparable ($p>.05$). There is a dip in PA during nicotine deprivation ($M=28.9$, $SE=.96$, $p<.01$), and then a commensurate rise from deprivation to post-deprivation ($p<.05$) back to a similar ad-libitum level. The positive reinforcement pattern experienced by low hope smokers appears stronger than that of high hope smokers, which has implications for smoking cessation. The pattern in NA across smoking conditions for high and low hope smokers was similar, ($F(2,17)=.81$, $p=.45$. However, high hope smokers' negative affect level during nicotine deprivation is similar to that of low hope smokers' during ad libitum smoking. The more adaptive affect levels of high hope smokers may serve them well during smoking cessation. Future studies aimed at understanding how to improve hope among smokers are recommended.

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## D-192

### SCIENTIFIC YOGIC MEDITATION AN INNOVATIVE ANCIENT TECHNIQUE FOR DE-STRESSING DISTRESS

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Background: We live in an age that is gushing with information and dizzying possibilities. To keep up with the choices- trivial and profound- that confront us at every turn, we multitask. Multitasking, for all its seeming efficiency, can exact heavy toll on the quality of our output leaving us completely distressed. Functional and stress related disorders are on the rise.

Aim: To evaluate efficacy of a self learning de-stressing technique Swasthiya Sukha Satyam Shivam Sundram in stress. Five step relaxation meditation technique based on ancient wisdom of over 4 thousand years with modern scientific research innovatively created. Daily meditation physically transforms the cerebral cortex. Recent research confirms that the human brain retains an astonishing degree of plasticity and capacity for learning throughout life for gaining deep relaxation, converting distress to eustress, enhancing working capacity and attaining inner happiness. To stimulate interest so that GI centers could evaluate the technique especially in functional GI disorders like IBS, GERD and anxiety.

Method: An innovative self learning five-step relaxation meditation practice for 20 minutes 5 days week.

Conclusion: Repeated practice of the technique is required in sequential order. The technique is not based on any belief system. Could be used in any medical or life's situations which generate undue psychological stress and anxiety. A DVD movie presentation of the technique would be made. Practice can definitely enhance eustressed state. We have results for 21 subjects from Taiwan where technique was practiced for 12 weeks. The results will be presented at the conference.

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## D-194

### THE ROLE OF SOCIAL SUPPORT AND ACCULTURATIVE STRESS IN HEALTH-RELATED QUALITY OF LIFE AMONG DAY LABORERS IN NORTHERN SAN DIEGO

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There is evidence to suggest that Latino day laborers experience higher levels of acculturative stress than other Latinos in other employment sectors in the United States. Given the stress-buffering role that social support plays in minimizing the negative physical and mental health outcomes of stress, this study examined this relationship in a sample of 70 Latino Day laborers in the Northern San Diego area(100% male, mean age=27.7, SD=9.1). Results from multivariate regression analysis showed that there was a significant interaction effect between social support and acculturative stress (p=.025) on physical health, indicating that higher levels of social support buffered the negative effects of acculturative stress on physical health. Acculturative stress and social support were not associated with mental health status. Overall, these findings suggest that fostering social support may be an essential strategy for promoting health among Latino male day laborers.

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## D-195

### EFFICACY OF BIOFEEDBACK IN IMPROVING HEART RATE VARIABILITY STRESS REACTIVITY AND RECOVERY

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Heart rate variability (HRV), which refers to natural fluctuations in heart rate due to sympathetic and parasympathetic nervous system activity, is related to many medical and psychiatric illnesses and/or symptoms. Recent investigations show that HRV biofeedback may be a viable way to improve those illnesses/symptoms. However, the research is limited in two ways. (1) Little to no examination has occurred of improved HRV in response to stress following biofeedback, which is important because physiological responses to stress may link HRV to disease states. (2) Very little research exists on the treatment effects with emWave, an affordable method of biofeedback currently available and marketed to clinicians. Twenty-seven individuals (Age: $M$=22.54, $SD$=3.82; 23 Females) were randomized to either a control group (N=13) or emWave HRV biofeedback treatment group (N=14). Mean number of treatment sessions was 4.7 (Range=4 - 8). All participants attended a "pre-test" and "post-test" visit during which they completed mental arithmetic and handgrip stressors (combined for analyses due to non-significant differences between tasks). Time (SDNN, pNN50) and frequency (LF and HF) domain HRV parameters at baseline, during stress, and following stress were examined. Analyses assessing interactions between Group (treatment; control) and Session (pre-test; post-test) were performed to assess treatment effects. No treatment effects were apparent for baseline/resting HRV. A Group by Session interaction showed that pNN50 (a measure of parasympathetic function) was higher during stress for the treatment group ($M$=25.57, $SE$=2.33) compared to the control group ($M$= 16.99, $SE$=2.41), at the post-test session ($F$=7.14, $p$<.05). However, similar to baseline analyses, there were no significant treatment effects evident during recovery from stress. Therefore, it is plausible that emWave HRV biofeedback resulted in less parasympathetic withdrawal, and possible parasympathetic augmentation, during stress in treatment completers, but did not appear to affect recovery from stress.

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## D-196

### EFFECTS OF ADHD TRAITS ON QUALITY OF LIFE, PERCEIVED STRESS, AND DEPRESSION IN ADULTHOOD

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The ADHD symptoms of inattention (IA) and hyperactivity/impulsivity (HI) have been linked to many negative life outcomes (Barkley, 2006; Whalen, Jamner, Henker, Delfino, & Lozano, 2002). Sluggish cognitive tempo (SCT), a relatively novel cognitive construct that has been associated with ADHD, has also been linked to maladjustment, but almost exclusively in child populations. The current study uses linear regression to examine the relationship between SCT, IA, and HI on quality of life (QOL), perceived stress (PS), and depression in adults. As part of a larger health outcomes study, 982 community-recruited participants (60.8% female, ages 18-75) completed measures of ADHD symptoms, PS (Perceived Stress; Cohen, Kamarck, & Mermelstein, 1983), QOL (WHOQOL-BREF; Bonomi, Patrick, Bushnell, & Martin, 2000), and depression (Brief Symptom Inventory, Derogatis, 1993).

Three multiple regression analyses were employed to examine the associations of interest. The regression on QOL was statistically significant, R2=.21, F (3, 979)=85.35, p<.001, with IA ($\beta$=-.19, p<.001) and SCT ($\beta$=-.31, p<.001) predicting lower QOL. The regression of ADHD traits on PS was also significant, R2=.29, F (3, 979)=143.51, p<.001, with IA and SCT predicting higher PS, ($\beta$=.28, p<.001 and $\beta$=.26, p<.001, respectively). The analysis for depression was also significant, R2=.22, F (3, 943)= 88.04, p<.001, with IA and SCT predicting heightened depression ($\beta$=.22, p<.001, and $\beta$=.33, p<.001, respectively). HI, interestingly, predicted lower levels of depression ($\beta$=-.08 p<.05).

Results primarily suggest that ADHD IA and SCT symptoms are related to higher PS, lower QOL, and increased depression. IA has been previously linked to such impairment (Riley et al., 2006). Keeping with research that has suggested SCT delineates a subtype of IA (Carlson & Mann, 2002), the results of this study suggest that the presence of SCT is likely to increase risk for such negative mental health and well-being outcomes in adults with IA.

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## D-197

### RELATIONSHIP BETWEEN WAYS OF COPING AND STRESS ON DAILY HEALTH AMONG FIREFIGHTERS DURING WORK DAYS

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The goal of the current study was to understand the relationship between daily health, coping behaviors, and stress among urban firefighters (N=84; 74% male, 69% Non-Hispanic Caucasian) who completed a 21-day daily diary study. Health markers included: exercise, pain, energy, sleep, positive emotion, and negative emotion. Approach and avoidant coping items were selected from the Brief COPE (Carver, 1997). An overall stress rating was used. Hierarchical linear modeling (HLM) was used to test study hypotheses that on workdays, (1) stress would be negatively related to health, (2) coping would be differentially related to health, and (3) stress would interact differentially with coping to predict health. Demographics and firefighter-related variables were included in the model as Level 2 control variables. Level 1 predictors (stress, coping, stress x coping) were centered within individuals. Stress was related to sleep (B=-.08, p=.002), exercise (B=-.13, p=.019), energy (B=-.27, p<.001), positive emotion (B=-.09, p<.001) and negative emotion (B=.16, p<.001). Avoidant coping was related to pain (B=.46, p<.001) and negative emotion (B=.17, p=.004). A trend was noted for approach coping and positive emotion (B=.08, p=.094). A significant interaction was observed for avoidant coping and stress on energy (B=.35, p=.021); on a low stress day, low avoidant coping was related to having more energy than was high avoidant coping. On a high stress workday, however, energy level did not seem to differ based on low or high avoidant coping. A trend was noted for an approach coping by stress interaction (B=.19, p=.097); under low stress, low approach coping was related to more energy, but under high stress, low approach coping was related to lower energy. Results underscore the importance of assessing coping at the state level as coping strategies may appear more or less effective depending on varying contexts of stress.

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## D-198

### AGONISTIC STRIVING PREDICTS INCREASED CORTISOL RESPONSES TO RECURRING PERSONAL STRESSORS IN YOUNG BLACK AND WHITE ADULTS

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Agonistic striving (AS), a goal state involving efforts to exert influence, has been shown to predict elevated ambulatory blood pressure during daily activities in Black and White youth, independently of race, sex, body mass (BMI), or anger. Agonistic Self-Defense (AS-SD), or striving to mitigate unfair treatment, is a major subcomponent of AS. We tested the hypothesis that AS-SD predicts stress responses indexed by salivary cortisol in young Black and White adults. Participants were 182 adults (63% Black, 74% female, age=32+3.3 yrs) who had participated in the Baltimore Project Heart studies of low-income minority youth during high school. AS-SD was assessed with the Social Competence Interview. Salivary cortisol was sampled before SCI, and at 20-min and 60-min post-SCI. Hypotheses were tested with multiple regression analyses controlling for race, BMI, and gender. Results supported study hypotheses: AS-SD predicted increased cortisol responding at 20-min post-SCI (b=.013, t(182)=2.32, p=.02) and marginally at 60-min post-SCI (b=.014, t (182)=1.92, p=.06). Findings are consistent with the Social Action Theory hypothesis that agonistic motives may give rise to chronically enhanced stress responding in persons who are vulnerable to unfair treatment.

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## D-199

### THE EFFECTS OF PRE-EXISTING PARTNER TENSION ON CARDIOVASCULAR STRESS REACTIVITY AND RECOVERY

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Experimental stress studies frequently consider individual differences as possible moderators of the stress response, but rarely consider the possibility that interpersonal events prior to the study may make a difference in stress responses. This study examined whether naturally occurring conflict prior to a stress reactivity study altered physiological responses in the lab when both partners were present. Seventy-six females (mean age=20.2) completed a stress task while their male partners were in an adjoining room. Systolic and diastolic blood pressure (SBP and DBP) and heart rate (HR) measurements were taken approximately every 90 seconds during stress and recovery. Self-report measures of health behaviors, height, weight, demographics and conflict/tension between partners were completed. After controlling for baseline cardiovascular function, body mass index, and smoking, results indicated that having a significant partner conflict over the last week predicted lower SBP and DBP reactivity ($\beta$=-.36, p=.05 and $\beta$=-.36, p=.06) and higher SBP and DBP during recovery ($\beta$=-.43, p<.05 and $\beta$=.35, p<.01). On the contrary, if females were currently feeling upset with their partner or acknowledged that they had any conflict during the week, they showed greater HR reactivity ($\beta$=.49, p<.001 and $\beta$=.22, p=.06). Feeling upset with the partner also predicted better HR recovery ($\beta$=.58, p<.001). Conflict presence or severity on the same day was not associated with cardiovascular outcomes. Overall, these findings indicate that conflict prior to lab stress does matter to the female stress response, although the directions and presence of findings vary. The complexity of these findings may be partially due to the presence of the partner and the interpretation of his presence. Consequently, it may be important to consider the influence of partner presence, as well as the nature of the relationship, on physiological measurements.

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## D-200

### RACIAL AND SOCIOECONOMIC DISPARITIES IN BIOLOGICAL AND PERCEIVED CHRONIC STRESS

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Substantial evidence suggests that pervasive racial and class inequalities can be linked to environment, housing, noise, and other risk-related factors. Chronic and accumulated stress, often referred to as allostatic load, has been implicated as one mechanism through which societal disadvantages influences physical and mental health disparities, and has been associated with the development of pathophysiology. In the present study we recruited 139 adults (ages 18-66; M=30.39, SD=12.85) from the diverse campus environment of UMass Boston (39% report identification with a minority group). Biological indicators of chronic stress were collected, including hair cortisol (posited to measure approximately 3 months of cortisol levels), waist-to-hip ratio, and resting systolic and diastolic blood pressure. These measures were compared to subjective measures of chronic stress related to socioeconomic and racial/ethnic disparities, including chaos in the home, city stress (i.e., frequency of violence, assessments of neighborhood safety), and personal perceived stress. We found that biological indicators were robustly associated with neighborhood risk factors, perceived stress, and chaos. Moreover, both biological and perceived measures of stress were negatively associated with well-being and life satisfaction. Critically, these associations were particularly true for African-, Afro-Caribbean, Haitian-, and Latin-American participants and those lower in subjective and objective social status measures. The present research further elucidates the complex transduction from chronic stress to disparities in physical and mental health. Assessing biological and perceived stress will inform future investigations of stress on neurodevelopment via cognitive and behavioral paradigms, and aid in the development of interventions based on physiological, psychological, and behavioral evidence unique to communities under stress.

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## D-202

### GENDER DIFFERENCES IN THE RELATIONSHIP BETWEEN DISCRIMINATION AND SUBSTANCE USE DISORDER AMONG LATINOS

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Background: Research suggests that exposure to stressors, such as discrimination, may be a critical determinant in explaining the substance use patterns among Latinos. We examined the relationship between unfair treatment and racial/ethnic specific discrimination and risk of substance use disorders among Latinos, as well as gender differences in these associations.

Methods: Our data came from Latinos recruited to the National Latino and Asian American Study (n=2554), a nationally representative study of Latinos living in the US. We performed gender-stratified weighted logistic regressions to estimate crude and adjusted odds ratios of lifetime substance use disorders for both unfair treatment and racial/ethnic discrimination.

Results: For men, low, moderate, and high levels of unfair treatment were associated with increased risk of lifetime substance use disorder compared to those reporting no unfair treatment in adjusted models (AORs ranged from 2.62 - 7.50). Low, moderate, and high levels of racial/ethnic discrimination were also associated with increased risk of lifetime substance use disorder compared to those reporting no racial/ethnic discrimination (AORs ranged from 1.63 - 3.67). For women, only high levels of unfair treatment were associated with increased risk of lifetime substance use disorder in adjusted models (AOR: 2.62). Racial/ethnic discrimination was not associated with increased risk of lifetime substance use disorder at any level.

Discussion: Our results suggest that experiencing discrimination is a risk factor for substance use disorders, especially among Latino men. Health providers should consider the role discrimination plays in the development of alcohol and drug dependence.

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## D-203

### AN OPEN PHASE PILOT OF BEHAVIORAL ACTIVATION TO SUSTAIN AND ENHANCE THE EFFECT OF CONTINGENCY MANAGEMENT FOR REDUCING STIMULANT USE AMONG HIV-INFECTED PATIENTS IN CARE

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Background: There is a high prevalence of stimulant use in HIV-positive individuals. Contingency management (CM) is an effective intervention for treating stimulant use. However, reductions in use may not be sustained after contingencies are removed. Behavioral activation (BA), a treatment for depression, may help sustain the effects of CM.

Methods: Subjects are HIV- infected and dependent on crack or methamphetamines. Subjects receive up to 16 BA sessions and tox screens are obtained 3 times/wk. for 12 wks. Subjects receive vouchers for negative screens. Tox screens are repeated in the weeks leading up to the 6 mo. assessment. Assessments were conducted at baseline and 3- and 6-mo. post-baseline. 11 subjects are enrolled; 5 have completed the intervention.

Results: Subjects' mean age is 45 years (SD=7.8); 27% are Black and 9% Hispanic. At the acute outcome assessment, completers reported reductions in stimulant use [stimulant use episodes (within-person change): -5.2 (5.2); Cohen's d=0.9]—suggesting a high effect size estimate. Mean weekly positive tox screens decreased from 1.4 (wk. 1) to 0.2 (wk. 6) to 0.8 (wk. 12) (Cohen's d=0.5; p=.08), as did mean self-reported stimulant cravings from 3.7 (wk. 1) to 3.6 (wk. 6) to 0.5 (wk. 12) (Cohen's d=1.5; p=.07). Significant within-person mean reductions in depressive symptoms [-7.40 (3.5); Cohen's d=1.05; p=0.03] were reported. Exit interviews revealed overall acceptability.

Conclusions: Combining CM and BA appears to be an acceptable and feasible intervention for this population. CM-BA may be an efficacious approach for this and worthy of testing in a RCT.

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## D-204

### READINESS TO CHANGE BINGE DRINKING AND EXPERIENCING NEGATIVE ALCOHOL CONSEQUENCES OVER TIME

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Consistently, national samples report high levels of alcohol consumption among college students (e.g., CAS, Weschler et al., 2000; MTF, Johnston et al., 2010). For example, researchers estimate that over 40% of college students drink heavily (O'Malley & Johnston, 2002). Not only are college students regular consumers of alcohol, they also experience the largest proportion of negative consequences associated with alcohol (e.g., drinking and driving), and the rate of negative consequences is increasing (NCASA, 2007). Moreover, college students' willingness to experience these consequences relates to their level of consumption (Mallett et al., 2011). The current proposal seeks to determine if the experience of alcohol-related consequences relates to the participant's readiness to change their drinking patterns and their subsequent drinking patterns over time.

Female undergraduates (n=424) were recruited for a 10-week paper/online hybrid study. Participants were predominantly Caucasian, single, and middle class; average age of participants was 19.78 (SD=1.30). Over 93% of the sample reported consuming alcohol previously.

At baseline, the majority of the college women were in Precontemplation for stopping binge drinking. The rest of the Transtheoretical Model's stages of change were represented in the sample. Approximately 30% of the sample had not binged in the last 30 days. Using the Rutgers Alcohol Problem Index, alcohol-related negative consequences were examined across binge drinking stages of change and across time. Participants who were binge drinking at baseline with varying levels of intentions to change their behaviors (i.e., Precontemplation, Contemplation, and Preparation) has significantly higher levels of alcohol related negative consequences at baseline and at the 10 week follow up than those who had changed their behaviors. These findings seem to contradict the basic premise of many alcohol intervention studies that indicate that alerting students to the negative consequences will lead to changes in their alcohol consumption. Not only did the students continue to experience negative consequences, but they also continued to drink.

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## D-205

### DIFFERENCES BETWEEN RESPONDERS AND NON-RESPONDERS TO A SCREENING AND BRIEF ALCOHOL INTERVENTION: A CASE-CONTROL STUDY

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Screening and Brief Intervention (SBI) programs for alcohol and related problems assist students in examining their own dinking behavior in a judgment free environment aimed at reducing risky behaviors and harmful consequences. Specifically the Brief Alcohol Screening and Intervention for College Students (BASICS)targets prevention for these individuals and has been shown effective (Larimer&Cronce, 2002; Walters&Neighbors, 2005. Despite this evidence, meta-analyses have shown effect sizes to be small to medium (Carey et al., 2007; Riper et al., 2009) suggesting that this approach is not universally effective.

Because SBI's are not uniformly effective, the present study used longitudinal data to examine factors related to behavior change coinciding with participation in the BASICS intervention. Case-control methods were used to examine differences between those showing significant changes in their drinking patterns six months after participation (responders) to those showing little or no change in such patterns (non-responders). The investigation compared responders (n=90)and non-responders (n=44) along a number of characteristics—all assessed pre-intervention—including age, gender, readiness to change, alcohol risk levels AUDIT scores),alcohol-related problems (RAPI scores),and psychiatric symptoms (Brief Symptom Inventory; BSI. ANOVA analysis showed non-responders to be female and younger, but ethnicity was unrelated to program impact. At baseline, non-responders had significantly greater alcohol risk levels (M=14.30 and 10.09, p<.001) and more alcohol related problems (M=11.02 and 5.61, p<.001). Non-responders also reported experiencing symptoms related to somatization (M=.50 and .27, p<.01), obsessive compulsive disorder (M=.80 and .55, p<.05), depression (M=.64 and .41, p<.05), anxiety (M=.50 and .33, p<.05,) psychoticism (M=.57 and .34, p<.05),and overall symptoms (M=.58 and .38, p<.05). Results suggest that BASICS is less effective among young women, those with more hazardous drinking patterns, and those with symptoms of psychopathology. A modified or different approach may be necessary to curb the drinking risks in these groups.

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## D-206

### MODERATING EFFECTS OF ILLICIT SUBSTANCE USE ON MAINTENANCE OF DEPRESSION TREATMENT EFFECTS AMONG HIV-POSITIVE PATIENTS RECEIVING CBT FOR ADHERENCE AND DEPRESSION (CBT-AD)

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Depression and substance abuse are two of the most common comorbidities among people with HIV. Both can compromise effective HIV disease management through suboptimal adherence. CBT-AD has been associated with clinically and statistically significant effects on depression and adherence with sustained improvement during the study follow-up period (Safren, et al., under review). The purpose was to examine substance use as a moderator of the depression maintenance effect to identify factors that may distinguish those who maintained reductions in depression from those who did not. CBT-AD was compared to enhanced treatment as usual (ETAU). Clinical Global Impression (CGI) was assessed at baseline, 3-, 6-, and 12-month follow-up to evaluate change in depression. Repeated measures ANOVAs tested for moderation effects using the follow-up assessments with condition, illicit substance use, and their interaction as the between subject factor. Baseline depression and CD4 count were controlled. A composite dichotomous measure indicating any substance use was derived from toxicology and self-report data. Eighty-one (of 89 randomized) completed through post-treatment. Mean age was 46 (SD=9.2), 61% were male, and 57% had at least a high school degree. The interaction between any illicit substance use and condition was significant ($F(2,58)=5.45$, $p<.01$). Follow-up analysis revealed that, relative to controls, severity of depression significantly increased over the follow-up period among substance using CBT patients ($F(1,49)=25.01$, $p<.001$). Non-substance users' depression severity remained stable ($p>.2$). Results suggest that concurrent substance use during treatment for depression and medication adherence among HIV-positive patients in treatment for substance use may interfere with patients' ability to maintain previously acquired reductions in depression severity. Further adaptation of CBT technologies may help to address the interfering effects of continued substance use on patient mood.

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## D-208

### CONCURRENT SPECIFIC BARRIERS AND MEDICATION ADHERENCE AMONG ADOLESCENT AND YOUNG ADULT SOLID ORGAN TRANSPLANT RECIPIENTS

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Adolescent solid organ transplant recipients are prescribed daily medications to improve the likelihood of graft survival. Despite potential negative outcomes associated with noncompliance (e.g., rejection, death), rates of medication adherence are poor. Previous research has identified behavioral and cognitive barriers to adherence in this population at the total and subscale levels (Simons & Blount, 2007). However, the association of specific barriers as they relate to adherence has not been adequately examined in this population. This study aimed to identify the relationship between temporally concurrent specific barriers to compliance and medication adherence from the parents' and adolescents' perspective. Seventy-one adolescent and young adult solid organ transplant recipients and 80 parents/caregivers completed self- and proxy-report measures of barriers and medication adherence. Results from parent-report revealed 3 individual barrier items (Forgetting, Disorganization, and Busy with other activities) that were significantly and negatively related (r=-.30-.33) to parent-reported adherence. Five specific barriers (Not sure when to take medication, Does not want people to notice, Does not feel like taking medication, Difficulty sticking to a fixed schedule, and Does not realize when out of pills) had a significant and negative relationship (r=-.31-.38) with adolescent-reported adherence. Results from this study identify specific, potentially modifiable barriers that are associated with reduced adherence. Adolescent-reported cognitive barriers may be particularly important to assess. These findings have important clinical implications for the development of more targeted interventions for promoting adherence in this population.

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## D-209

### THE IMPACT OF ATTACHMENT STYLE ON THE QUALITY OF LIFE OF PATIENTS AWAITING ORGAN TRANSPLANTATION

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Attachment defined is the affective bond that develops between an infant and their primary caregiver. Research suggests that attachment bonds developed in infancy and childhood can influence an individual's ability to develop meaningful connections with others, deal with stress, and regulate emotions into adulthood. Hunter and Maunder (2001) have detailed an adult attachment model of illness behaviour which views medical illness as a stressor which activates a unique set of attachment behaviours. The organ transplant process is associated with a high level of both emotional and physical stress for patients and their families. It is important to identify factors that may place individuals' at greater risk of distress as they move through the transplant process. In the current study we examined the relationship between patient attachment styles and quality of life among patients awaiting organ transplantation and their family caregivers. Participants were recruited as part of a larger prospective study on psychosocial factors influencing adjustment to organ transplantation. The final sample consisted of 93 adults on the waitlist for either a lung (82%) or heart (18%) transplant. Participants completed written questionnaires that included measures of adult attachment relationships (Relationship Questionnaire; Bartholomew et al., 1992), physical and mental health-related quality of life (SF-36; Ware et al., 2003), and self-reported satisfaction with caregiver relationship. To examine the relationship between the four attachment styles and patient quality of life, correlations were calculated with the physical and mental subscales of the Quality of Life measure. Correlations indicated that insecure attachment was negatively correlated with patient mental health prior to organ transplantation. Hierarchical multiple regression analyses were conducted to examine the unique ability of attachment styles to predict aspects of patient quality of life. Findings indicated that patients with a secure attachment style reported significantly greater levels of mental health. The relationship between patient attachment style and caregiver functioning will also be discussed.

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## D-210

### BARRIERS AS MEDIATORS BETWEEN EMOTIONAL FUNCTIONING AND MEDICATION ADHERENCE IN PEDIATRIC ORGAN TRANSPLANTATION

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Maintaining the life and health of a transplanted organ requires strict adherence to an immunosuppressant medication regimen. Past research has suggested that barriers to taking medication serve as important variables for understanding non-adherence in adolescents. Further, associations between emotional distress and non-adherence have been established. However, the combined relationship between these three variables is not understood. This study investigated the mediational role of barriers in the relationship between internalizing emotional symptoms and adherence to medication among adolescent solid organ (i.e. kidney, liver, heart) transplant recipients. A one-time assessment of 72 adolescents ages 12-21 (M=17.8±2.45; 56% male, 60% Caucasian) who were at least six months post-transplantation was conducted. Participants completed measures of medication adherence, barriers to medication-taking, and internalizing emotional functioning (i.e., depression, anxiety, post-traumatic stress symptoms [PTSS]). Further, medical chart review was used to collect immunosuppressant drug assay levels for 6 months prior to participation. Mediation models were investigated via bootstrapping methods for testing multiple mediators (i.e., three different categories/subscales of barriers). Results indicated that only barriers related to cognitive adaption to the medication regimen (e.g., forgetting, not being organized) mediated the relationships between internalizing symptoms (in each domain) and missed medication doses (anx- 95% CI=.06, 2.06; dep- 95% CI=.06, 2.40; PTSS- 95% CI=.02, 1.02). No significant pathways for other types of barriers, as well as for immunosuppressant drug assay levels, were detected. These findings indicate "cognitive" barriers to be an important mechanism through which emotional functioning adversely impacts medication adherence. Conclusions have clinical implications for assessing, treating, and preventing non-adherence in adolescent transplant recipients.

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# Saturday
# April 14, 2012
# 10:00 AM–11:30 AM

## Paper Session 20 10:00 AM–10:18 AM 4000

### GENDER DIFFERENCE IN GENETIC EFFECT OF MAOA PROMOTER UVNTR POLYMORPHISM ON SMOKING BEHAVIOR IN CHINESE ADOLESCENTS

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The high rate of tobacco use among adolescents in China continues to increase and constitutes a significant public health threat. A gender difference in smoking prevalence has been observed as the gap widens with age until adulthood. While environmental characteristics may contribute to smoking risk, genetic factors may play a role in determining the prevalence pattern. Monoamine oxidase A (MAOA) is the key enzyme to regulate serotonin and dopamine levels in the brain. The gene coding for MAOA contains a 30-bp tandem repeat (uVNTR) polymorphism in its promoter region with allelic variation of 2, 3, 3.5, 4 or 5 repeats. Alleles with 3.5 or 4 repeats have been reported to be 2-10 times more transcriptional efficient than those with 3 copies. Low-activity allele carriers have been hypothesized to have higher risks in smoking behavior. Our aims were to evaluate the population effects of this functional polymorphism on the risk of smoking behavior with data collected from 2,345 Chinese adolescents 11-15 years old living in Wuhan, China, and to further explore gender differences. Results indicated that girls with the low-activity allele had significantly higher risk of engaging in occasional or regular smoking than those with the high-activity allele (OR=1.54; 95% CI: 1.31-1.81, p=0.007). Significantly lower risk of occasional or regular smoking was observed in boys with the low-activity allele (OR=0.69; 95% CI: 0.60-0.79, p=0.01). The p-value for interaction is 0.000539 (OR for interaction 2.08, 95%CI 1.38-3.17). Our findings highlight that genetic effects of MAOA uVNTR polymorphism on the risk of smoking behavior may vary as a function of gender, which may partially contribute to the gender difference of smoking behaviors in Chinese adolescents and suggest the need for further study and replication.

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## Paper Session 20 10:18 AM–10:36 AM 4001

### IDENTIFYING THRESHOLD OF SOCIAL INFLUENCES ON LIFETIME SMOKING STATUS AMONG ADOLESCENTS - A RECURSIVE PARTITIONING APPROACH

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Background: Previous studies have found that cigarette smoking in adolescents is affected by social influences. However, the thresholds of such effects have not yet been well examined. This study used recursive partitioning method which creates a decision tree classifying different thresholds and combinations of social influence variables to predict lifetime smoking status among adolescents.

Methods: The longitudinal sample consisted of 1,073 students from the Midwestern Prevention Project. Students were followed yearly from 6th/7th to 12th grade. Students were considered as lifetime non-smokers if they had smoked no more than one cigarette by the end of high school. Perceived peer cigarette use, parent cigarette use, and smoking prevalence were averaged from 6th/7th to 8th grade and 9th to 12th grade to represent junior high school (JHS) and high school (HS) period, respectively. Combination of predictors and the associated cut-off points were selected by decision tree based on the conditional probability that can minimize the entropy in the model. Analysis was performed using JMP 9.0.

Results: The group that most likely to be lifetime smokers is having >8 smoker friends during HS (Prob=.97), followed by the group having 3-7 smoker friends during HS, being White, and were not in the intervention group (Prob=.96). The group that most likely to be non-lifetime smokers is having no smoker friends during JHS and HS, and with none or one smoker parent during HS (Prob=.77), followed by the group having no smoker friends during JHS, none or one smoker friend during HS and perceived smoking prevalence <47.5% during HS (Prob=.76).

Conclusion: The number of smoker friends during HS period appears to be the most important predictor of adolescents' lifetime smoking status. Having no smoker friends during JHS and HS, without both parents smoking and low perceived smoking prevalence during HS were found to be protective against adolescent smoking by the end of HS.

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## Paper Session 20 10:36 AM–10:54 AM 4002

### SMOKING ESCALATION, SMOKER IDENTITY, AND PEER INFLUENCE AMONG ADOLESCENTS

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We examined longitudinal associations between smoking escalation, smoker identity, and peer influence among adolescents at risk for smoking escalation. Smoker identity reflects that smoking is a defining aspect of a person and entails an internal motivation to smoke. Moreover, identity development is prominent during adolescence. We predicted that smoking escalation would relate more strongly to smoker identity than peer influence, particularly during a time of social-environment change. Chicago-area adolescents completed five paper-and-pencil and in-person interview assessments (N=1263; age M=15.6 years; 56.6% female; 56.5% White, 17.2% Hispanic, 16.9% Black, 4.0% Asian, 5.5% "other"). At baseline, 6-, 15-, and 24-months we assessed smoker identity (1 to 5 scale), peer influence (1 to 6 scale), and smoking behavior (# of days smoked/mo). At 33-months we only assessed smoking behavior. Between 24- and 33-months, 54.2% experienced social-environment change by finishing high school. Among all participants, smoking increased from M=3.85 days/mo at baseline to M=8.43 days/mo at 33-months; smoker identity (baseline M=1.56, 24-months M=1.60) and peer influence (baseline M=3.45, 24-months M=3.71) were relatively stable. From baseline through 24-months, linear mixed models revealed that smoking behavior was associated with both smoker identity ($\gamma$=4.50, t(2177)=28.30, p<.05) and peer influence ($\gamma$=1.56, t(2177)=15.41, p<.05), and increasingly so over time (smoker identity $\gamma$=0.30, t(2177)=4.74, p<.05; peer influence $\gamma$=0.14, t(2177)=3.46, p<.05). Regressions revealed that smoker identity and peer influence predicted smoking behavior most strongly among those who experienced social-environment change and smoked most regularly (M=16.71 days/mo at 24-months) (smoker identity; $\beta$=.25, p<.05; peer influence $\beta$=.17, p<.01). Smoking escalation is associated with smoker identity and peer influence, but more so with smoker identity. Peer influence effects may reflect peer selection driven by smoker identity.

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## Paper Session 20 10:54 AM–11:12 AM 4003

### GENDER DIFFERENCES IN THE GENETIC AND ENVIRONMENTAL CONTRIBUTIONS TO SMOKING ACROSS ADOLESCENCE

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Smoking rates go up with age during adolescence. Further, adolescents who initiate smoking at a younger age are more likely to become regular smoker and less likely to quit smoking. Prevalence rates of smoking initiation in adolescents are equal or higher in females. The role of genetic and environmental influences across adolescence and whether such effects differ in males and females is less clear. Addressing such factors has implications on the prevention of smoking initiation and treatment of regular smoking.

Multiple community-based adolescent twin datasets across several countries were combined and analyses were completed using raw measures of smoking initiation of over 10,000 adolescent twin pairs, ages 13-18. Genetic and environmental effects were assessed across ages by gender using structural equation modeling In OpenMx.

There were no significant gender difference in the prevalence of smoking initiation during middle adolescence. However, during late adolescence (16-18), prevalence in females was significantly higher. The magnitude of shared environmental effects across adolescence was substantial (~0.4-0.8) and decreased across age. The contribution of additive genetic effects was small during middle adolescence and increased into late adolescence (~0.0-0.5). Although sex differences were found in estimates of genetic and environmental effects, they were mostly not significant. These results emphasize the need to continue early prevention and education against smoking initiation, since both males and females are highly susceptible to environmental influences. Similarly, avoiding early smoking may help reduce nicotine dependence later in life.

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## Citation and Meritorious Paper

## Paper Session 20 11:12 AM–11:30 AM 4004

### PREVALENCE, FREQUENCY, AND INITIATION OF HOOKAH TOBACCO SMOKING AMONG FIRST-YEAR FEMALE COLLEGE STUDENTS: A ONE-YEAR LONGITUDINAL STUDY

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Hookah tobacco smoking has become increasingly prevalent among college students and is an emerging public health concern. Most extant research has been cross-sectional, and little is known about frequency of use or patterns of use over time, including during the transition to college. The goals of this longitudinal cohort study were to assess the: (a) lifetime prevalence, (b) current prevalence, (c) frequency of use, and (d) pattern of initiation of hookah tobacco smoking among female students during the first year of college. First-year female college students (N=483) at a large private university in upstate New York completed 13 monthly online surveys about their hookah tobacco use from August 2009 to August 2010. Lifetime prevalence of hookah use increased from 29% at college entry to 45% at one-year follow-up. Among participants who had not used hookah prior to college entry, 22% tried hookah for the first time by one-year follow-up. The highest rates of hookah initiation occurred in the first two months of students' first semester of college, with 3% trying hookah for the first time each month. Current (past 30 days) hookah use ranged from 5% to 13% during the year after college entry. On average, hookah users reported smoking hookah two days per month. Among women who reported lifetime hookah use by the study's end, 42% reported three or fewer days of use, suggesting that many young women only experiment with hookah. Hookah tobacco use is common among young women in high school and college. The transition to college is a vulnerable time for hookah initiation. Preventive efforts should begin in high school and continue through college, with a focus on students' first few months on campus.

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## Paper Session 21 10:00 AM–10:18 AM 4005

### TRANSCRANIAL DIRECT CURRENT STIMULATION (TDCS) OF THE HUMAN MOTOR AND PREFRONTAL CORTICES REDUCES PAIN AND OPIOID USE FOLLOWING TOTAL KNEE ARTHROPLASTY

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The proper control of acute and chronic pain is one of the most important areas in health care. Total knee arthroplasty (TKA) is one of the most common orthopedic procedures performed. While knee pain is often a complaint that precedes TKA, the procedure itself is associated with considerable post-operative pain lasting days to weeks. Adequate postoperative pain control is an important factor in determining recovery time and hospital length of stay. Several novel brain stimulation technologies including transcranial direct current stimulation (tDCS) are beginning to demonstrate promise as treatments for a variety of pain conditions. Electricity has no metabolite or other residue, and can directly alter brain activity in regions associated with pain processing. 40 patients undergoing unilateral TKA were randomly assigned to receive a total of 80 minutes of real (n=20) or sham tDCS (n=20) with the anode over the knee representation of the motor strip and cathode over the right dorsolateral prefrontal cortex. 20-minute tDCS treatments were delivered: 1) in the PACU, 2) 4 hours later, 3) the morning of post-operative day-1, and 4) the afternoon of post-operative day-1. VAS pain and mood ratings were collected every 4 hours following surgery provided that patients were awake. The slopes of the cumulative patient-controlled-analgesia (PCA) usage curves were significantly different between groups, and those TKA in the real tDCS group used 44% less PCA dilaudid at 48-hours post-op ($p=.007$; Cohen's $d=1.0$). Despite significantly lower PCA dilaudid levels, VAS ratings of pain-on-average were also significantly lower in the real tDCS group ($t(37)=2.28$, $p=.029$). Findings suggest that stimulating pain-modulating areas of the human cortex can significantly reduce post-operative opioid requirements without negatively impacting subjective pain ratings, and in some cases, it can significantly decrease pain ratings.

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## Paper Session 21 10:18 AM–10:36 AM 4006

### IMPLEMENTATION OF THE VA STEPPED CARE MODEL OF PAIN MANAGEMENT

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Background: In 2009, the Veterans Healthcare Administration (VHA) established the population- and evidence-based Stepped Care Model for Pain Management (SCM-PM) as the standard of pain care nationwide. The SCM-PM provides the ability to assess and treat pain within a primary care setting, allowing for more intensive, specialized, and individually-tailored approaches when needed. The three steps include: 1) primary care based pain treatment services, 2) secondary consultation services, and 3) tertiary interdisciplinary pain services. The present study examines the implementation of the SCM-PM as a best practice model and its application in the management of chronic pain within VA Connecticut Healthcare System (VACHS).

Methods: The project is a mixed methods study assessing both implementation processes and outcomes using quantitative and qualitative data. Data from the baseline and initial implementation phase will be presented. Baseline qualitative and quantitative assessments include 1) qualitative surveys assessing primary care provider, support staff, and pain management specialty provider attitudes toward pain patients and system facilitators and barriers of effective pain care, and 2) baseline pain performance indicators (e.g., percentage of patients within VHA primary care with moderate to severe pain, percentage of patient prescribed opiate medication, primary care documentation of pain plan of care and opioid pain care agreements, pain prescription drug usage, referrals to specialty care).

Results and Discussion: Barriers to effective care include lack of expertise in pain management, skepticism toward available treatments, and patient beliefs about pain management. Facilitators of effective care include multidisciplinary team support and effective communication among patients, providers, and team members. Perceptions of facilitators and barriers differ depending on staff role and/or level of care. Baseline pain performance indicators will be presented within the context of identifying gaps in pain care to be addressed through the implementation of the model. Early implementation processes across levels of care, and lessons learned will be summarized.

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## Paper Session 21 10:36 AM–10:54 AM 4007

### CLINICAL HYPNOSIS: A STRATEGY TO MODIFY PAIN IMPACT AND DEPRESSION IN SICKLE CELL PATIENTS

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Background: Sickle cell disease (SCD) is the most common genetic disease in African-Americans, characterized by recurrent painful vaso-occlusive crises. Standard medical therapies to control or prevent crises are limited because of efficacy and/or toxicity. The impact mind-body interventions such as hypnosis may have on physical and emotional suffering remains unclear.
Methods: A randomized, controlled pilot study of hypnosis was conducted in outpatient SCD patients (n=31). Participants in the treatment arm received guided hypnosis during 4 weeks of face-to-face encounters with a credentialed therapist followed by 6 weeks of daily self-hypnosis using customized digital media. Participants in the control arm of the study received face-to-face education on SCD for the same length and frequency. Patient reported outcomes collected at baseline, five and twelve weeks included pain frequency, intensity, and quality (Pain Impact Scale [PIQ] and Numerical Rating Scales); anxiety (State-Trait Anxiety Inventory), coping strategies (Coping Strategies Scale), sleep (Pittsburgh Sleep Quality Index), and depression (Beck Depression Inventory [BDI]). A nonparametric Friedman test was conducted comparing the differences within groups across time.
Results: Participants were 52% male with a mean age 36.2 years. There was a significant difference across time in the hypnosis group for PIQ ($p=0.048$) and BDI ($p=0.007$). Post-hoc analysis (Wilcoxon signed-rank tests) with a Bonferroni adjustment, indicated there was a significant difference in the PIQ between baseline and week 12 ($p=.017$), but not between baseline and week 5 or between week 5 and week 12. The week 12 BDI scores were lower than baseline and week 5. There were no significant differences in the control group.
Conclusions: As suggested by these pilot findings, the psychosocial and emotional consequences of SCD may be modifiable through guided mind-body and self-care approaches such as hypnosis.

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## Paper Session 21 10:54 AM–11:12 AM 4008

### ASSOCIATIONS BETWEEN SELF CARE AND HEALTH CARE USE AMONG CHRONIC MUSCULOSKELETAL PAIN (CMP) PATIENTS

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Background: Chronic pain affects at least 116 million Americans at a cost of $50-635 billion. A 2011 Institute of Medicine report, “Relieving Pain in America”, states that most CMP conditions should be managed and treated through self management and primary care. Research shows that participation in structured self-management programs improves functioning and pain outcomes. Yet the self-care practices patients use outside the formal health care setting remain little explored, as do effects of self care on use of pain-management services and health care in general.
Methods: As part of a larger study on outcomes and costs associated with the use of complementary and alternative medicine services and self-care for pain management, we analyzed responses from 8,067 patients, members of a large Pacific Northwest HMO, who reported current CMP. Patients were asked about self-care practices they used to manage pain. Respondents' use of pain-related and general health services was extracted from their electronic medical records.
Results: Most respondents (73%) reported some use of self care to manage pain, including massage (51%), regular physical activity (48%) and movement practices (yoga/tai chi/qi gong; 24%), nutritional supplements/herbs (38%), meditation or mindfulness practice (26%), and special dietary practices (18%). Those reporting self-care practices were younger (61.8 vs. 68.0, $p<.001$), more often female (72% vs. 63%, $p<.001$), and better educated (at least some college; 78% vs. 62%, $p<.001$). Analyses adjusting for gender, age, and education suggested that self care was associated with reduced emergency room use ($p<.02$) and primary care visits ($p=.01$), and a trend toward reduced hospital stays ($p=.06$), but there was no difference in opiate use.
Conclusions: Results suggest that people who manage pain through self care have reduced health care use compared to those who do not practice self care.

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## Paper Session 21 11:12 AM–11:30 AM 4009

### MINDFULNESS TRAINING TARGETS COGNITIVE-AFFECTIVE MECHANISMS IN IRRITABLE BOWEL SYNDROME BY MODULATING EMOTIONAL PROCESSING OF PAIN SENSATIONS

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Background: Irritable bowel syndrome (IBS) is a prevalent functional disorder characterized by abdominal pain and hypervigilance to gastrointestinal sensations. Mindfulness, which promotes nonjudgmental attention to emotional and sensory experience, may target the underlying cognitive and affective mechanisms of IBS. We tested this hypothesis in a randomized controlled trial of mindfulness training for IBS.
Methods: 75 IBS patients were randomized to 8 weeks of mindfulness training or a support group. IBS severity and quality of life were primary study endpoints. Multivariate path analysis explored therapeutic mediators of MT.
Results: Mindfulness training led to clinically significant improvements in IBS severity and quality of life. Effects of MT on IBS symptoms were mediated by statistically significant changes in nonreactivity ($\beta=.29$, $p<.05$), sensory processing of pain ($\beta=.34$, $p<.01$), visceral hypersensitivity ($\beta=.48$, $p<.001$), and pain catastrophizing ($\beta=.33$, $p<.01$). The multivariate path model accounted for 56% of the variance in improvements in IBS-related quality of life, and 16% of the variance in improvements in IBS severity.
Discussion: Mindfulness appears to ameliorate the symptoms of IBS by promoting nonreactivity to gut-focused anxiety and decreased catastrophic appraisals of the significance of abdominal sensations coupled with a refocusing of attention onto interoceptive data with less emotional interference. By learning to mindfully disengage from negative cognitive appraisals of visceral sensations and re-orient attention to the sensory quality of interoceptive experience, IBS patients may come to appraise such sensations as innocuous and eminently manageable.

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## Citation and Meritorious Paper

## Paper Session 22 10:00 AM–10:18 AM 4010

### COGNITIVE MECHANISMS UNDERLYING THE EFFECTS OF BEHAVIORAL INTERVENTIONS ON INCREASING INTENTION TO GIVE BLOOD

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Unfortunately, at a time when the need for blood is increasing, the number of active donors is decreasing. It is vital to improve retention of current donors and recruitment of those who have never given blood. There are several ways to recruit new donors including providing information about the need and teaching skills to reduce disincentives such as anxiety and vasovagal symptoms. To evaluate several methods, 198 college students who had never given blood participated in a laboratory study examining intention to give blood. They were randomly assigned to one of four groups. Those in the No Treatment Control group completed questionnaires but otherwise sat quietly during the study. The Education group browsed the website of National Blood Service (U.K.) for 20 minutes. The Applied Tension (AT) group browsed the website for 10 minutes and then learned and practiced AT, a technique known to reduce vasovagal reactions, for 10 minutes. Finally, the Relaxation group browsed the site for 10 minutes and then learned and practiced a widely used relaxation technique for 10 minutes. A questionnaire measure of intention to give blood revealed that all three active treatments increased intention more than no treatment, $F(3,195)=3.73$, $p=.012$. More interesting, the conditions influenced scores on a questionnaire assessing Theory of Planned Behavior constructs differently. For example, Education affected social norm but not perceived behavioral control whereas learning AT produced the opposite pattern. Sobel tests for mediation revealed different determinants of intention in the active treatment conditions. Relaxation seemed to increase intention through an increase in moral norm ($p=.031$), i.e. by increasing accordance between blood donation and one's moral values. AT seemed to increase intention through perceived behavioral control ($p=.023$). Finally, gaining information through an educational website increased both social and moral norm ($p=.014$, and $p=.03$ respectively). Results will be discussed both in terms of encouraging blood donation and other health-related behaviors.

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## Paper Session 22 10:18 AM–10:36 AM 4011

### THE EFFECTS OF LEG CROSSING AND APPLIED TENSION ON VASOVAGAL SYMPTOMS AND BLOOD DONOR RETURN: A RANDOMIZED TRIAL

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Applied Tension (AT) is useful in reducing vasovagal reactions among people undergoing invasive medical procedures such as blood donation. Repeated isometric muscle contraction is believed to maintain blood pressure and cerebral perfusion during stressful periods, perhaps by facilitating venous return from the lower body. If that is the case, procedures to enhance lower body tension, such as crossing the legs while tensing, should improve clinical effects. 404 young adult blood donors (57% female, X=20.6 years) were randomly assigned to either 1) a donation-as-usual group, 2) a group asked to practice repeated 5s on/5s off whole body isometric muscle tension with legs extended while in the donation chair (standard AT), or 3) a group asked to practice AT with legs crossed while in the donation chair (legs crossed AT). Participants learned AT by watching a two-minute instructional video before giving blood. Treatment was evaluated on an intent-to-treat basis using Treatment Group x Sex x Pre-Donation Anxiety general linear models. The GLM of Blood Donation Reaction Inventory scores revealed that donors who practiced AT with legs crossed reported significantly fewer vasovagal symptoms than those who did not practice AT though, somewhat surprisingly, this was limited to those with lower pre-donation anxiety scores, F(2,385)=3.75, p=.024. Participants who practiced standard AT were intermediate. More important, after two years, male donors who practiced AT with legs crossed returned to give blood significantly more often than men in the donation-as usual group (X=2.1+0.2 vs. 1.3+0.3 subsequent donations). Further research is required to determine the mechanisms of AT and understand the variability in its effects. Regardless, this simple behavioral technique appears to be a useful tool to reduce symptoms and encourage subsequent blood donation.

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## Paper Session 22 10:36 AM–10:54 AM 4012

### COGNITIVE APPRAISAL MODERATES THE VASOVAGAL RESPONSE

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Vasovagal reactions (VVR) are a common medical problem, complicating and deterring people from various medical procedures. Emotional and cognitive factors play an important role in VVR but are often neglected and poorly understood. VVR may involve processes that are similar to those that have been observed in panic. It was hypothesized that increased negative appraisal of initial symptoms of VVR would exacerbate symptoms of VVR including dizziness, etc. As sensitivity to symptoms of anxiety (e.g., "it scares me when my heart beats rapidly") predicts panic attacks, it was also hypothesized that sensitivity to symptoms of VVR would predict anxiety following those symptoms. Sixty young adults were presented a stimulus video of a mitral valve surgery, known to trigger VVR in non-medical personnel. Participants were assigned to one of three groups manipulating cognitive appraisal: negative, positive, and neutral. Participants were told: "you will likely notice unpleasant symptoms of faint, dizziness or lightheadedness; these symptoms usually come before actually fainting", "… these symptoms are very safe ....", or "you may or may not notice symptoms of faint, dizziness or lightheadedness", respectively. VVR and anxiety were measured by well validated symptom self-report measures -the Blood Donation Reactions Inventory and the State-Trait Anxiety Inventory. Known predictors of VVR were entered as covariates: blood-fears on the Medical Fears Survey, age and sex. As predicted, participants reported significantly more vasovagal symptoms during the negative appraisal condition (F(2,53)=4.382, p=.017) while anxiety (F(2,52)=0.926, p=.403) and distress to symptoms of VVR (F(2, 53)=0.987, p=.380) were unaffected. As predicted, regression analyses indicated that blood-related fears (standardized $\beta$=.523, t(1,55)=4.551, p<.001) and animal-reminder disgust (standardized $\beta$=.366, t(3,55)=2.564, p=.013) predicted vasovagal symptoms. Also, distress to symptoms of VVR predicted an increase in anxiety (standardized $\beta$=.378, t(1,57)=3.082, p=.003). Results are discussed in terms of cognition and emotion in VVR.

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## Paper Session 22 10:54 AM–11:12 AM 4013

### PROJECT ACTS, ABOUT CHOICES IN TRANSPLANTATION AND SHARING: AN INTERVENTION INCREASING DONATION INTENTION AMONG AFRICAN AMERICANS

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Background: African Americans (AAs) are overrepresented on the organ transplant waiting list but underrepresented among organ and tissue donors. Disproportionate donation rates are likely due to negative attitudes and concerns about inequalities in the donation/transplantation system. Project ACTS is a culturally sensitive intervention designed to address donation concerns among AA adults. This study reports on the comparative effectiveness of two culturally sensitive Project ACTS interventions and determines whether reviewing materials in a group setting would be more successful at increasing donation intentions and readiness to be recognized as an organ donor.

Methods. This randomized effectiveness trial used a pre-post simple factorial experimental design to assess the independent effect of intervention package (new vs. existing) and mode of delivery (group setting vs. take-home). Community Health Advocates were used to recruit 585 African American participants and were randomized to one of four conditions: (1) new intervention-group setting; (2) new intervention-take home; (3) existing intervention-group setting; and (4) existing intervention-take home. Outcomes measured at baseline and 1-year follow-up, were readiness to be recognized as an organ donor via donor card or driver's license, donation-related knowledge and beliefs and attitudes.

Results. Regarding intervention package, results indicated no significant effect by condition; however there was a significant effect of time showing increases in donation intentions at follow-up (regardless of condition; B=-1.02, p<.00). Regarding setting, participants viewing the intervention in a group setting demonstrated a greater readiness to express donation intentions and stronger beliefs and attitudes about donation (B=-.80, p<.01), than those who watched intervention at home. Participant's knowledge increased equally in both settings.

Conclusions. This study provides an example of an intervention targeting African Americans that successfully impacts knowledge, donation related beliefs and attitudes and donation intentions.

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## Paper Session 22 11:12 AM–11:30 AM 4014

### ENCOURAGING ETHNIC MINORITY TEENAGERS TO BECOME A DESIGNATED ORGAN DONOR ON THEIR FIRST DRIVER'S LICENSE: RESULTS FROM HAWAII'S IDECIDE PROJECT

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Over 100,000 critically ill Americans are on transplant waiting lists; but nearly 6,000 will die each year before receiving a transplant. Thousands could be saved if more people became a Designated Organ Donor (DOD) on their driver's license. Previous interventions found improvements in teens' knowledge about Organ Donation (OD); however, ethnic minority teens, especially Asian-Americans and Hawaiians/Pacific Islanders were underrepresented in such studies. The IDecide Project is a randomized trial testing efficacy of a multimedia intervention designed to educate teens about choice to become a DOD on first driver's license. Outcomes were becoming a DOD on license and talking to family about the choice to be DOD. Community teen groups (37 groups, n= 429) were randomly assigned to either the OD intervention or a comparison condition on Underage Drinking (UD). Teens viewed condition-specific DVDs, received text messages, and accessed websites. Surveys occurred at baseline, 1 and 6 mo later. Teens who were DOD at baseline or had already talked to parents about OD were excluded from all analyses (19%). Mean age was 16± 1yrs, 47% Female, and 66.5% Asian, 23% Hawaiian, & 8.5% White. At 1 mo, 17% teens in OD condition vs. 2.4% of teens in UD had become DODs on their license (p<.05), by 6 mo this increased to 31.2% in OD versus 6% in UD (p <.005). At 1 mo, 20% in OD condition vs. 7% of teens in UD, talked to their parents about becoming a DOD on their license (p<.005), and this increased to 53% (OD) vs. 22% (UD) by 6 mo (p<.003). Gender, age, race, and urban/rural location were not associated with becoming a designated donor at follow-up or talking to parents about this decision. Use of technology was an effective method for reaching and educating high school teens about the decision to be a DOD on license. Future OD interventions should use technology such as apps for smart phones, Twitter, or social networks, and expand to the DOD decision college students make when they renew their driver's license at 21 years of age.

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## Citation Paper

## Paper Session 23 10:00 AM–10:18 AM 4015

### SEROSORTING ASSUMPTIONS AND HIV RISK BEHAVIOR IN MEN WHO HAVE SEX WITH MEN

Eric G. Benotsch, PhD,[1] Kristina Hood, MS,[1] Vivian Rodríguez, MS,[1] Aaron M. Martin, MS,[1] Daniel Snipes, BS,[1] Anna Cejka, MA[2] and Diana Luckman, MA[3]

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Men who have sex with men (MSM) have adopted a variety of strategies to reduce HIV transmission. One strategy, termed "serosorting," is when individuals only engage in sexual behavior with others who have the same HIV status. Although serosorting should theoretically reduce transmission, its success is contingent on individuals knowing their HIV serostatus, engaging in effective conversations regarding serostatus, and accurately disclosing their serostatus to their partners. Many MSM have regular conversations concerning HIV status with their sex partners. In some circumstances, rather than having a frank conversation, men may make assumptions about their partners' HIV status. In the present study, we surveyed 350 MSM attending a Gay Pride festival regarding their disclosure of HIV, whether they inquire about sexual partners' HIV status, and whether they sometimes assume that a partner has a particular status. Overall, 40% of men indicated that they always have a conversation about HIV status before having sex with a new partner. Among participants who indicated they make assumptions about a partner's HIV status, there was a notable tendency to assume partner seroconcordance. Among those who indicated they make assumptions about partner status, 89% of HIV-positive men would assume their partner was also positive and 75% of HIV-negative men would assume their partner was also negative. Individuals who made assumptions of seroconcordance reported more high-risk sexual behavior, including more sexual partners and more unprotected anal sex acts in the past 3 months (ps<.05). MSM who made assumptions of seroconcordance also reported more substance use in conjunction with sexual activity (ps<.05). Results suggest that some MSM are not engaging in true serosorting, but rather are making assumptions regarding the HIV status of their partners. Interventions designed to promote candid HIV disclosure conversations are needed.

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## Paper Session 23 10:18 AM–10:36 AM 4016

### NEGATIVE AFFECT MODERATES THE ASSOCIATION BETWEEN AT-RISK SEXUAL BEHAVIORS AND SUBSTANCE USE DURING SEX: FINDINGS FROM A LARGE COHORT STUDY OF HIV-INFECTED MALES ENGAGED IN PRIMARY CARE IN THE US

Matthew J. Mimiaga, ScD, MPH,[1,2] Sari Reisner, MA,[1,2] Heidi Crane, MD, MPH,[3] Johannes Wilson, BA,[1] Chris Grasso, MPH,[2] Steven A. Safren, PhD,[1,2] Mari Kitahata, MD, MPH[3] and Kenneth H. Mayer, MD[1,2]

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Background: Prior studies show that negative affect (NA) levels are high in HIV-infected men and some may use substances as a way to self-medicate NA. NA may impact the association between substance use and sexual risk. This has not been evaluated in large cohort studies of HIV-infected men.
Methods: Data were analyzed from HIV-infected males (N=2,868) across 4 US sites in the CNICS cohort. Generalized estimating equations were used to adjust for clustering by site. The outcome is alcohol and/or drug use during sex in the last 6 mo. Primary statistical predictors are unprotected anal sex (UAS) and unprotected vaginal sex (UVS) in the last 6 mo., and continuous NA, defined as depression/anxiety symptoms assessed by the PHQ-9/PHQ-5. All 14 PHQ items loaded on a single dominant factor of NA (Eigenvalue=9.4; variance explained=91%).
Results: 25.8% reported alcohol and/or drug use during sex. Adjusting for age, race, VL, ARVs, and substance abuse treatment, factors associated with substance use during sex were: Model 1: UAS (aOR=2.79; 95% CI=1.79, 4.37; p<0.0001) and NA (aOR=1.06; 95% CI=1.02, 1.10; p=0.002); Model 2: UVS (aOR=1.60; 95% CI=1.14, 2.26; p=0.007) and NA (aOR=1.10; 95% CI=1.01, 1.19; p=0.032). A significant interaction term was fit in each model for NA x unprotected sex: Model 1: NA x UAS (aOR=0.97; 95% CI=0.94, 0.99; p=0.03); Model 2: NA x UVS (aOR=0.98; 95% CI=0.97, 0.99; p<0.0001). Higher levels of NA increase the strength of the relationship between UAS and substance use during sex, but the opposite is true for UVS.
Conclusion: The relationship between sexual risk and substance use at the time of sex was moderated by NA. Intervention efforts may benefit from considering depressive/anxious symptom clusters as having shared internalizing properties.

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## Paper Session 23 10:36 AM–10:54 AM 4017

### COMORBID ALCOHOL ABUSE AND ANXIETY: IMPACT ON DISEASE PROGRESSION AND QUALITY OF LIFE IN HIV

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Both alcohol abuse (AA) and chronic worry have been hypothesized to accelerate disease progression and negatively impact quality of life in patients with HIV. Two studies were conducted to assess the independent and cumulative effects of AA and generalized anxiety disorder (GAD) on physical and psychosocial functioning in HIV-positive patients.
In study 1 symptoms of AA and GAD were assessed via the CAGE screen and DSM-IV diagnostic criteria in 102 patients at an HIV outpatient clinic. CD4 counts and HIV RNA viral loads at baseline and 6- and 12-month follow-up were accessed via chart review. Nineteen percent (n=28) of respondents met criteria for AA; 31.8% (n=55) endorsed symptoms of GAD. Multivariate linear modeling revealed significant interaction (p=.01) and multivariate main effects of AA (p<.001) and GAD (p=.01) on viral loads, which increased in patients with AA only, but decreased in individuals with GAD and comorbid AA and GAD. There were no significant effects on CD4 counts.
Study 2 examined relationships between AA, GAD, and quality of life in another group of 108 HIV-positive patients at the same clinic. Twenty-five percent (n=22) of respondents met criteria for AA; 33.0% (n=36) endorsed symptoms of GAD. Univariate analyses of variance revealed significant main effects of AA (p=.001) and GAD (p<.001) on quality of life, with patients with either diagnosis faring worse. There was no significant interaction.
Results suggest that AA and GAD are common and frequently comorbid in HIV-positive patients. Alcohol abuse was associated with accelerated disease progression and worse quality of life. Anxious patients also reported lower quality of life, but did better physically, regardless of the presence or absence of co-occurring alcohol abuse. Findings emphasize the importance of providing treatment for psychosocial difficulties to HIV-infected patients. Future research should attempt to replicate these results and identify underlying mechanisms.

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## Paper Session 23 10:54 AM–11:12 AM 4018

### ALCOHOL USE IN SEXUAL CONTEXTS MEDIATES ASSOCIATION BETWEEN ABUSE HISTORY AND HIV-RELATED RISK TAKING

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Background: Past physical and sexual abuse is positively associated with subsequent HIV-related risk taking. Alcohol use has been shown to increase susceptibility to HIV infection in general; however, its role as a possible mediator in the relationship between a history of abuse and HIV risk remains to be examined.
Methods: This study sought to assess the association between past physical and sexual abuse and subsequent HIV-related risk behaviors and the role of alcohol use in sexual contexts as a mediator of this relationship in a sample of 216 women (Mean age=28.56, SD=7.94) interviewed anonymously by trained interviewers using hand-held computers at consumption and purchase alcohol venues and other public locations in rural Louisiana. Frequency of alcohol consumption in the past three months, alcohol use before, during, and after sex, a composite score of seven HIV-related risk behaviors, and experiences of physical, sexual, and emotional abuse were assessed cross-sectionally. A series of regression analyses was used to develop the mediation models.
Results: Many women had experienced physical (53.1%), sexual (39.2%) and emotional abuse (72.7%). Past abuse was significantly and positively associated with frequency of alcohol consumption, drinking in sexual contexts, and HIV-related risk taking (all p<.05). Alcohol use in sexual contexts, but not overall frequency of alcohol consumption, was a significant mediator in the association between past physical and sexual abuse and HIV-related risk taking.
Conclusions: Findings suggest that specific patterns of use, but not overall frequency of consumption, mediate the relationship between history of abuse and subsequent HIV-related risk taking. HIV/AIDS prevention efforts should target alcohol use in sexual contexts and its effects on susceptibility to HIV infection in women with abuse histories.

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## Paper Session 23 11:12 AM–11:30 AM 4019

### IDENTIFYING HETEROSEXUAL MEN WHO BENEFIT FROM A SEXUAL RISK REDUCTION INTERVENTION USING GROWTH MIXTURE MODELING

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Background: To improve sexual risk reduction interventions, it is necessary to know for whom these interventions work best, and for whom improved interventions are needed. Despite the importance of identifying intervention responders and non-responders, no study has documented risk trajectories following intervention among heterosexual men.
Objectives: To identify risk trajectories for men participating in a sexual risk reduction intervention and examine baseline characteristics differentiating those trajectories.
Methods: Growth mixture modeling was used to identify 12-month trajectories of unprotected sex among heterosexual men attending a sexual risk reduction intervention ($N=210$, 76% African American, Mage=33.2 years). ANOVAs and chi-square tests were used to compare trajectory groups on demographics, intervention condition, sexual history, substance use, psychological antecedents, and partner characteristics.
Results: Two trajectory groups were identified. Risk Reducers (46%) reported fewer acts of unprotected sex following intervention, whereas a Risk Maintainers (54%) reported continuously high levels of unprotected sex. These groups did not differ with respect to demographic characteristics or intervention type. However, Risk Maintainers were more likely than Risk Reducers to report lifetime sex work, forced sex in the past year, and alcohol use prior to sex. They had higher levels of peak alcohol use, poorer condom skills, and scored lower on stage of change for consistent condom use. Finally, Risk Maintainers were more likely to have steady partners and less likely to change partner status following intervention.
Conclusions: Results showed that some men reduced risk behavior following intervention, while others maintained high levels of risk behavior. Understanding factors distinguishing these groups can contribute to the development of targeted risk reduction interventions.

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## Meritorious Paper

## Paper Session 24 10:00 AM–10:18 AM 4020

### THE ROLE OF MICROVASCULAR COMPLICATIONS IN THE RELATIONSHIP BETWEEN GLYCEMIC CONTROL AND DEPRESSIVE SYMPTOMATOLOGY IN TYPE 1 DIABETES: A MEDIATIONAL STUDY

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Background: People with diabetes are more likely to be depressed than nondiabetic controls, and depression in people with diabetes is associated with increased morbidity and mortality. Chronically high blood glucose levels, measured by hemoglobin A1c, have been linked to both depression and to the development of microvascular complications (e.g., retinopathy, nephropathy, and neuropathy). The interrelationships among A1c, microvascular complications, and depression have not previously been investigated in a comprehensive model, and a better understanding of the nature of these associations is needed.
Purpose: The primary purpose of this study was to examine the hypothesis that the link between higher A1c and depression is mediated by severity of microvascular complications. A longitudinal design was employed to provide evidence bearing on the temporal precedence of the proposed relationships.
Methods: Participants were people with type 1 diabetes ($N=1441$) enrolled in the Diabetes Control and Complications Trial (DCCT), a longitudinal, randomized controlled trial investigating intensive insulin treatment and diabetes complications. Biological markers were used to measure A1c and microvascular complications (retinopathy, nephropathy, and neuropathy). Depressive symptomatology was measured by the depression subscale of the Symptom Checklist-90-Revised. Multiple mediation analyses with bootstrapping were conducted to test the proposed models.
Results: Microvascular complications partially mediated the relationship between A1c and depression.
Conclusions: Results indicate that the severity of microvascular complications partially accounts for the association between A1c and depressive symptomatology in people with type 1 diabetes. Medical symptoms resulting from chronically high blood glucose levels may play a role in the development of depression in people with diabetes.

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## Paper Session 24 10:18 AM–10:36 AM 4021

### DISTRESS AND DIABETES SELF-CARE IN IMPOVERISHED MINORITIES LIVING WITH TYPE 2 DIABETES

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Background: We examined psychological distress and diabetes self-care in Hispanics and Blacks with sub-optimally controlled type 2 diabetes living in the South Bronx, New York.
Methods: Participants ($n=639$) were recruited for an RCT of a telephone-delivered diabetes self-management intervention. Baseline data on diabetes self-care (SDSCA), medication adherence (Morisky), depression (PHQ8), diabetes-related distress (DDS), and glycemic control (HbA1c) are reported here. Ethnic differences were examined with t-tests, linear regression, and factor analyses.
Results: Participants (65% female; 69% Hispanic; 27% non-Hispanic Black; mean age=56±12) were impoverished (78% reported household income< $20K/year). Mean HbA1c was 9.1±1.9%; mean BMI was 32±8 kg/m2. Approximately 28% of the sample screened positive for major depressive disorder (PHQ8>10). Hispanics were significantly ($p=0.001$) more likely to screen positive (31%) than Blacks (18%). Hispanics also had greater diabetes distress ($p=0.004$). These differences persisted after controlling for demographic and diabetes-related covariates. Hispanics reported poorer adherence to diet ($p=0.03$) and exercise ($p=0.02$) but better adherence to foot self-examinations ($p=0.01$). No ethnic differences were observed in HbA1c or other aspects of self-care. Diabetes distress was associated ($ps<0.005$) with nonadherence to diet, exercise, glucose testing, and medications. Depression was associated ($ps<0.0003$) with nonadherence to diet, exercise and medications. Exploratory and confirmatory factor analyses of the DDS and PHQ8 showed no ethnic differences in scale structure.
Conclusions: Among disadvantaged ethnic minorities with sub-optimally controlled type 2 diabetes, Hispanics experience increased levels of depression and diabetes-related distress. They also report poorer diet and exercise. Intervention approaches to these interrelated problems are needed for this underserved community.

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## Paper Session 24 10:36 AM–10:54 AM 4022

### BEHAVIORAL ACTIVATION FOR COMORBID DEPRESSION AND DIABETES

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Diabetes is a common chronic illness affecting over 25 million adults in the U.S. Low income, minority, and older adults are at even greater risk for developing diabetes. If not managed properly, diabetes can have detrimental effects on physical and mental health, highlighting the need for effective treatments.
Depression occurs in 15-20% of patients with diabetes and is related to poorer disease outcomes. Depression is thought to suppress health behaviors (e.g., nutrition, exercise, medication adherence) necessary for diabetes management and thus may be a critical component of any intervention for diabetes.
Behavioral activation (BA) is a promising intervention for depression in adults, minorities, and older adults. BA posits that depression results from decreased levels of reinforcement gained by interacting with one's environment. Thus, treatment centers on activating patients in their treatment regimen by assessing contextual factors thought to maintain depression and implementing strategies that re-engage clients in meaningful activities; these same strategies may also be useful in diabetes management. However, there is no current research on the effects of BA in adults with comorbid depression and diabetes.
We examined the utility of a home-based BA intervention on improving symptoms of depression and relevant health behaviors in 22 low income adults and older adults with impaired glucose tolerance. Patients met with a therapist for an intake, four 90 min therapy sessions, and two follow-up sessions (12 and 24 wk) to assess for maintenance of treatment gains. Results indicated significant improvement in depressive symptoms, well-being, and health behaviors from pre to post with moderate effect sizes. Clinical significance in improving depressive symptoms and well-being was demonstrated at follow-up (small to moderate effect sizes), but did not reach statistical significance due to a small sample size ($n=13$). Initial results support BA as a useful intervention for managing diabetes and depressive symptoms in low income adults.

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## Paper Session 24 10:54 AM–11:12 AM 4023

### THE INFLUENCE OF DIABETES DISTRESS ON A CLINICIAN-RATED ASSESSMENT OF DEPRESSION IN ADULTS WITH TYPE 1 DIABETES

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Depression is more prevalent among patients with diabetes compared with the general population. Recent critiques have highlighted measurement challenges in assessing depressive symptoms in patients with diabetes, including overlap between symptoms of diabetes and depression, and distinguishing between subclinical depression, major depressive disorder, and diabetes distress. This mixed-method study analyzes responses to a semi-structured interview assessing depressive symptoms, the Montgomery-Asberg Depression Rating Scale (MADRS). Interviews with adults with type 1 diabetes (n=34) were conducted as part of a larger intervention study. Interviews were coded for themes and rated for diabetes distress severity. Participants completed measures of diabetes distress (Diabetes Distress Scale (DDS)) and depression (Center for Epidemiological Studies - Depression (CES-D)). Pearson correlations assessed relationships between interview-based and self-report measures of depression and diabetes distress. Participants scored a mean of 10 (SD=10) on the MADRS, indicating mild depression. For 67% of participants, diabetes contributed to their distress. Themes emerged relating to diabetes symptoms and distress, including appetite, weight and sleep problems; functional impairment; and interconnectedness between distress and diabetes. The MADRS total score was strongly associated with self-reported depression ($r=.77$, $p<.001$) and self-reported diabetes distress ratings ($r=.62$, $p<.001$). Interview-based diabetes distress ratings were associated with the DDS ($r=.35$, $p=.05$). Findings provide strong evidence that diabetes-related distress can affect evaluation of clinical depression, even in standardized clinical interviews administered by trained professionals, the gold standard of assessment. Results highlight a need for improved measurement of depression in patients with chronic illness to distinguish between distress caused by illness burden and distress indicating the presence of a psychiatric disorder.

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## Paper Session 24 11:12 AM–11:30 AM 4024

### CAN THE SUNSHINE VITAMIN IMPROVE DEPRESSION, DIABETES SYMPTOMS, AND QUALITY OF LIFE IN WOMEN WITH DIABETES?

Sue Penckofer, PhD,[1] Mary Byrn, PhD,[2] Mary Ann Emanuele, MD,[1] Patricia Mumby, PhD,[1] Laurie Quinn, PhD,[3] Diane Wallis, MD[4] and Patrick Harrison, MA[1]

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Depression is present in 25% of persons with type 2 diabetes and occurs twice as often in women than men with diabetes. Depression negatively impacts the quality of life of persons with diabetes. Epidemiologic evidence suggests that low levels of vitamin D may be associated with depression. The Sunshine Study examined the effect of vitamin D supplementation on (1) depression (Center for Epidemiologic Studies Depression, CES-D and Physicians Health Questionnaire, PHQ-9), (2) diabetes symptoms (Diabetes Symptom Checklist), and (3) quality of life (SF-12 and Ferrans & Powers Quality of Life Index) in women with type 2 diabetes. Fifty women (mean age 54) who had significantly elevated depression symptoms ($\text{CES-D}>16$) and low vitamin D levels ($<32$ ng/dl), were given weekly vitamin D2 (Ergocalciferol 50,000 IUs) for a period of six months. Laboratory, physical and self-report measures were collected at baseline, 3 and 6 months. Ninety two percent of women (n=46) completed all visits. Findings indicated a significant decrease in depression following treatment for both the CES-D (T1=26.8, T2=15.1, T3=12.2, $p<.001$) and for the PHQ-9 (T1=11.5, T2=5.8, T3=5.2, $p<.001$). There was also a significant decrease in diabetes symptoms (T1=7.7, T2=4.9, T3=4.6, $p<.001$). Quality of life improved in terms of mental health functioning (SF-12) (T1=35.6, T2=46.3, T3=49.2, $p<.001$) and life satisfaction (T1=17.5, T2=19.1, T3=20.3, $p<.001$). Vitamin D levels significantly increased (T1=18.8, T2=34.4, T3=37.5, $p<.001$). There were no improvements in fasting glucose or hemglobin A1C. Overall, vitamin D supplementation decreased depression, reduced diabetes symptoms, and enhanced quality of life. A randomized trial to evaluate the effect of vitamin D supplementation on these outcomes as well as an exploration of possible mechanisms of action is needed. Vitamin D supplementation may be a simple and cost-effective method to improve depression and quality of life in persons with diabetes.

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## Meritorious Paper

## Paper Session 25 10:00 AM–10:18 AM 4025

### IMPACT OF ANDROGEN DEPRIVATION THERAPY (ADT) ON FATIGUE AMONG MEN WITH PROSTATE CANCER

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ADT is a commonly used treatment for prostate cancer that works by blocking testosterone production. Previous studies have found that ADT is associated with fatigue among prostate cancer patients. Because fatigue is also common in cancer patients and the general population, it is important to include comparisons with men who have been treated for prostate cancer but who did not undergo ADT and men without cancer. Accordingly, the objective of this study was to compare changes in fatigue among men undergoing ADT (ADT+), men with prostate cancer not treated with ADT (ADT-), and men without cancer (CA-). It was hypothesized that men in the ADT+group would report greater fatigue severity and interference over time compared to men in the two control groups. Participants were 49 ADT+men, 44 ADT- men matched for time since diagnosis, age, and education, and 33 CA- men matched for age and education. Men in the ADT+group completed assessments prior to beginning ADT and six months later. Men in the ADT- and CA- groups completed assessments at baseline and six months later. Participants completed the Fatigue Symptom Inventory. Mixed model ANOVAs were conducted to examine changes in fatigue severity and fatigue interference over time. A significant group x time interaction was found for fatigue interference ($p<.05$). ADT+men reported a significant increase in fatigue interference over time, as compared to ADT- and CA- men who did not change over time. For fatigue severity, a main effect for group was found ($p<.05$), such that the ADT+group reported greater fatigue severity than both the ADT- and CA- groups ($ps<.05$). These findings support the hypothesis that men undergoing ADT experience worse fatigue than prostate cancer patients treated with surgery and non-cancer controls. Future research should seek to identify interventions to reduce fatigue among men receiving ADT.

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## Paper Session 25 10:18 AM–10:36 AM 4026

### GENETIC PREDICTORS OF FATIGUE IN PROSTATE CANCER PATIENTS TREATED WITH ANDROGEN DEPRIVATION THERAPY: A PILOT STUDY

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PURPOSE: Emerging evidence suggests that pro-inflammatory cytokines and cytokine gene polymorphisms are associated with fatigue and other symptoms in cancer patients treated with chemotherapy and/or radiation. Pro-inflammatory cytokines are suppressed by testosterone, which is depleted from the body during androgen deprivation therapy (ADT) for prostate cancer. No studies have examined whether fatigue in patients treated with ADT is associated with polymorphisms in cytokine genes. The goal of the current study was to examine cytokine gene polymorphisms as predictors of fatigue in patients treated with ADT for prostate cancer.
METHODS: As part of a larger study of ADT, genomic DNA samples extracted from blood of 43 prostate cancer patients were genotyped to examine single nucleotide polymorphisms (SNPs) in three genes regulating pro-inflammatory cytokines (IL1B: rs16944, IL6: rs1800795, TNFA: rs1800629). Patients completed the Fatigue Severity Index prior to initiation of ADT (T1) and six months later (T2). For analysis, we used a dominant model (i.e., any minor allele vs. homozygous major allele) for each SNP.
RESULTS: A significant genotype*time interaction was observed for IL6 such that patients with at least one C allele (n=29) showed a greater increase in fatigue disruptiveness from T1 to T2 than patients with the GG genotype (n=14). A significant genotype*time interaction was also observed for TNFA such that patients with at least one A allele (n=18) showed a greater increase in fatigue severity than patients with the GG genotype (n=25). There were no significant main effects of genotype or genotype*time interactions for the IL1B gene.
Conclusions: Data from the current study suggest that genetic variation in IL6 and TNFA predict increased fatigue following initiation of ADT. These data provide evidence for the role of IL6 and TNF genes in the development of fatigue in prostate cancer patients treated with ADT. Larger studies are needed to confirm these findings.

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## Paper Session 25 10:36 AM–10:54 AM 4027

### SEXUAL FUNCTION IN MEN RECEIVING ANDROGEN DEPRIVATION THERAPY FOR PROSTATE CANCER: A CONTROLLED COMPARISON

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The effects of primary treatments for prostate cancer (PC) on sexual function have been well-characterized. The relative effects of androgen deprivation therapy (ADT) on sexual function are less well-known. To date, there are few controlled studies of ADT effects in PC. We examined sexual function in PC patients receiving ADT compared to PC patients treated with radical prostatectomy (RP) only and men with no history of cancer (Controls) matched for age and education, and in the case of PC patients, time since diagnosis. ADT patients (n=49) completed the Expanded Prostate Cancer Index Composite (EPIC) prior to initiation of ADT and at follow-up 6 months later. RP patients (n=44) and Controls (n=33) completed the EPIC at a similar 6-month interval. Levels of serum testosterone (serum T) were also assessed. Analyses yielded significant (ps<.001) group by time interactions indicating erectile function, sexual desire and ability to climax decreased significantly (ps<.05) over time in ADT patients. There were no changes in these domains for both RP patients and Controls. At follow-up, ADT patients' erectile function, sexual desire and ability to climax were significantly worse (ps<.05) than for RP patients and Controls. There were no differences between RP patients and Controls in sexual desire and ability to climax; RP patients reported worse erectile function (p<.05). Self-reported hormonal function demonstrated a similar pattern of results: ADT patients reported an increase (p<.001) in hormonal symptoms over time, and at follow-up, more (p<.05) symptoms than RP patients and Controls. Serum T levels were available in a subset of participants and, consistent with receipt of ADT, demonstrated differential effects over time and between groups. Study findings suggest ADT affects sexual function in multiple domains. Longer-term studies are needed to determine the full extent of dysfunction associated with ADT and whether sexual function is comparable to matched controls and RP patients after cessation of ADT and recovery of normal serum T levels.

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## Paper Session 25 10:54 AM–11:12 AM 4028

### TESTOSTERONE, HOT FLASHES, AND SLEEP DISTURBANCES IN MEN RECEIVING ANDROGEN DEPRIVATION THERAPY FOR PROSTATE CANCER

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For men receiving androgen deprivation therapy (ADT) for prostate cancer, marked reductions in testosterone levels occur rapidly. ADT has also been associated with increases in hot flashes and sleep disturbances. However, there is a lack of research comparing change over time in testosterone, hot flashes, and sleep among men receiving ADT relative to control groups. The present study sought to address this issue by recruiting both a disease control group and a non-cancer control group.

Participants (N=56; M=70 years; range 57-86) were men with prostate cancer about to begin ADT (ADT+, n=17), men with prostate cancer treated with prostatectomy only, (ADT-, n=22), and men with no history of cancer (NC, n= 17). Participants were matched on age and education. Cancer patients were also matched on time since diagnosis. At baseline (T1; before ADT and post-surgery in the cancer groups) and at a six month follow-up (T2), participants provided blood samples used to assay total testosterone levels and completed the Hot Flash Related Daily Interference Scale (hot flashes) and Insomnia Severity Index (sleep). Results of repeated measures ANOVAs indicated significant group by time interactions for testosterone (p<.001) and hot flashes (p=.05) and a trend for sleep (p<.10). The ADT+group demonstrated significant decreases over time in testosterone (p<.001), increases in hot flashes (p=.04), and increases in sleep disturbances (p=.05). The other two groups showed no change in these outcomes (ps>.05). Changes in testosterone levels were correlated with changes in hot flashes (r=-.52, p<.001) and sleep (r=-.30, p=.03). However, changes in hot flashes and sleep were not correlated (p=.51).

In sum, prostate cancer patients who receive ADT experienced decreased testosterone and increased hot flashes and sleep disturbances, whereas patients who do not receive ADT and non-cancer controls did not experience these changes. The finding that changes in hot flashes and sleep were uncorrelated suggests future research should examine other factors that may contribute to sleep disturbances (e.g., nocturia).

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## Paper Session 25 11:12 AM–11:30 AM 4029

### QUALITY OF LIFE DURING ANDROGEN DEPRIVATION THERAPY FOR PROSTATE CANCER: A LONGITUDINAL, CONTROLLED COMPARISON

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Research suggests that androgen deprivation therapy (ADT) for prostate cancer (PC) is detrimental to quality of life (QoL); however, much of this research is cross-sectional and does not include appropriate control groups. To address these limitations, this study examined changes in QoL over a 6-month period among PC patients on ADT (ADT+), PC patients treated with surgery only (ADT-), and non-cancer controls (CA-). All groups were matched on age, education, and geographical location; additionally, PC patients were matched on time since diagnosis. It was hypothesized that QoL would worsen over time in the ADT+group only. Participants included 49 ADT+patients, 44 ADT- patients, and 33 CA- individuals. The ADT+group completed study measures pre-treatment and 6-months later; the ADT- and CA- groups also completed measures 6-months apart. QoL domains assessed were physical and mental health QoL (SF-12); depressive symptoms (CES-D); and urinary, bowel, and hormonal problems (EPIC). Results from a mixed model ANOVA yielded significant group by time interactions for physical health QoL, urinary problems, hormonal problems, and depressive symptoms, all of which worsened over time for the ADT +group only (ps<.05). There were no group by time interactions for mental health QoL or bowel problems; however, averaged across time, the ADT+group reported more bowel problems and poorer mental health QoL relative to the ADT- and CA- groups (ps<.05). PC patients, regardless of ADT status, reported more urinary problems than CA- (p<.05). Findings support the hypothesis and suggest that PC patients initiating ADT are at risk for worsening quality of life across multiple domains. Future research should identify strategies for ameliorating the detrimental effects of ADT on quality of life. Funded by: NCI R01CA132803.

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## Citation Paper

## Paper Session 26 10:00 AM–10:18 AM 4030

### SEQUENTIAL DEPRESSION AND WEIGHT LOSS TREATMENT FOR OBESE WOMEN WITH CLINICAL DEPRESSION: THE BE ACTIVE TRIAL

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Depression is associated with obesity risk and worse weight loss treatment outcomes. Treatment of depression may facilitate weight loss, but the only randomized trial to date found that adding cognitive-behavioral therapy to a lifestyle intervention did not improve weight loss or depression outcomes relative to lifestyle intervention alone (Linde et al 2011). We tested the hypothesis that treating depression prior to a weight loss intervention, as opposed to simultaneously, improves weight loss. Obese women with major depression (N=161; mean age=45.9, SD=10.8) were randomized to either a condition involving brief behavioral activation for depression followed by a lifestyle intervention (BA) or a lifestyle intervention with health education attention control visits to match contact time (LI). Intent-to-treat analyses revealed that Beck Depression Inventory-II (BDI-II) scores significantly decreased in both conditions at 6- and 12-months, with greater improvement in the BA condition at 6-months ($\Delta$BDI-II: BA=-12.5, SE=.84; LI=-9.2, SE=.79; p=.006) but not 12-months ($\Delta$BDI-II: BA=-9.85, SE=.96; LI=-9.9, SE=.96; p=.12). No differences were observed between conditions in percent weight change at 6-months (BA=-3.0%, SE=0.66%; LI=-3.6%, SE =0.62%; p=.51) or 12-months (BA=-2.6%, SE=0.78%; LI=-3.0%, SE=0.74%; p=.71). However, women who experienced statistically reliable improvement in depression at 6-months (63%) lost greater weight (mean =-4.78%; SE=0.56%) than those who did not (37%; mean=-0.93%, SE=0.64%; p <.001). Preceding a lifestyle intervention with behavioral activation results in faster remission of depression but does not improve weight loss. Although the majority of participants experienced clinically significant improvement in depression, those whose depression did not improve lost a negligible amount of weight.

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## Paper Session 26 10:18 AM–10:36 AM 4031

### WEIGHT LOSS SOCIAL SUPPORT IN 140 CHARACTERS OR LESS

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Little is known about the role social networking sites can play in providing social support. The purpose of this study was to investigate the types of social support utilized in a remotely-delivered, behavioral weight loss intervention. In this 6-month, minimal contact intervention, overweight (N=96, BMI 32.6 kg/m2) adults were randomized to Podcast-only (2 podcasts/wk) or enhanced Mobile (2 podcasts/wk+daily Twitter interaction+ mobile diet app) groups. There were no differences in % weight loss between groups at 6 months (-2.7±5.1% Podcast vs. -2.7±5.6 Mobile) (P>.05). Exploring the Mobile group only (n=47), there was a significant decline in posts to Twitter by participant from months 0-3 (23.1±28.3) to months 3-6 (11.1±23.7; P<.01). Posts to Twitter were categorized by 3 raters into type of structural support (5 types) or request for support. The majority of Twitter posts were Informational support (n=1981; 75%), with the predominant subtype of Teaching (n=1632; 62%). One of the most frequent examples of Teaching support was posting of a status update (n=1319). Those who were active posters (≥1 post/wk) reported higher levels of support (scale 0-7) than those who were readers-only (5.1±1.4 vs. 3.7±1.8; P=0.04) at 3 months. Those who relied on social networking sites as their primary form of support felt as supported (5.5±1.0) as those who reported friends/family as their main support (5.0±1.4; p=.79); both had higher support than those who reported no form of support (2.3±1.5; P's<.05). Posts to Twitter were significantly correlated with weight loss (r=-0.57, P<.01). Level of support was not related to weight loss (r=-.21, P=.19) or posts to Twitter (r=.28, P=.08). This study demonstrates ways social networking sites can deliver information and increase social support in weight loss interventions. Ways to make social networking sites more engaging and useful for participants will be discussed.

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## Citation Paper

## Paper Session 26 10:36 AM–10:54 AM 4032

### WEIGHT LOSS AMONG SOCIOECONOMICALLY DISADVANTAGED PRIMARY CARE PATIENTS

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Background: Few evidence-based weight loss options exist for obese primary care patients, given limited translation of efficacy trial findings to clinical practice. Evidence for effective weight management in medically vulnerable populations is particularly lacking. We conducted a pragmatic randomized controlled trial to evaluate the effectiveness of a 24-month behavioral weight loss intervention among obese socioeconomically disadvantaged patients with hypertension.

Methods: Patients with obesity and hypertension (n=365) were randomized to usual care or a behavioral weight loss and hypertension medication adherence intervention. The intervention included tailored behavior change goals, self-monitoring and behavioral skills training (delivered via a website or interactive voice response), 18 counseling calls, primary care provider endorsement, and links to community resources.

Results: Most participants were Black/African American (70%) or Hispanic (13%), 68% were female, 33% had less than high school education. At 24 months, weight change in the intervention group compared to usual care was -1.0 kg (95% CI -2.2, 0.0). Intervention participants had larger mean weight losses over 24 months versus usual care (area under curve: -1.1 kg; 95% CI -2.1, -0.0). The slope of increase in SBP over time was significantly lower in the intervention than the usual care groups (p=0.018). At 24 months, intervention participants had significantly greater odds of blood pressure control than usual care (OR 1.5; 95% CI 1.0, 2.3), and the difference in trend was significant (p=0.048).

Conclusions: Moderate-intensity lifestyle intervention produced modest weight losses, improved blood pressure control, and slowed age-related increases in systolic blood pressure in this high-risk patient population.

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## Paper Session 26 10:54 AM–11:12 AM 4033

### THE WEIGH STUDY: A RANDOMIZED TRIAL FOCUSING ON DAILY SELF-WEIGHING FOR WEIGHT LOSS AMONG OVERWEIGHT ADULTS

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Observational evidence suggests that daily self-weighing (DSW) is an important self-monitoring strategy for weight loss. However, experimental evidence is limited. Results are from a 6-month, low-intensity, randomized controlled trial focusing on DSW for weight loss compared to a delayed control group.

The intervention included cellular-connected scales that transmitted weights to a study website, weekly emails with a lesson on behavioral weight control and tailored feedback on progress. Participants were not encouraged to self-monitor diet and physical activity. Control participants did not receive any intervention during the 6 months, but were given the cellular scales and told to maintain current self-weighing practices. Measured weights were obtained at baseline, 3 and 6 months. Objective measurements of self-weighing frequency were obtained for all participants.

Participants (n=91) were healthy, on average age 44y±11y, obese (BMI: 32.15± 3.8kg/m2), mostly female (75%), White (74%), and college-educated (78%). Retention rates were 98% and 96% at 3 and 6 months. At 6 months, using intent-to-treat analyses, the intervention group (INT) lost on average more weight compared to the delayed control group (CON) [6.33%±6.98% vs. 0.38%±3.05%; p<.0001] and a greater percentage of the INT group achieved 5% weight loss (42.6% vs. 6.8%; p<.0001). On average, the INT group self-weighed more days/week compared to the CON group (6.1±1.1 vs. 1.1±1.5; p<.0001). Within the INT group, DSW was perceived positively (6.3±1.9) and helpful (6.8±1.7) at 6 months (8-point scale with 1=very negative, not helpful and 8=very positive, very helpful).

These results indicate that a low-intensity intervention focusing on DSW as the primary self-monitoring strategy along with minimal emailed feedback can produce clinically significant weight loss. This establishes DSW as an effective self-monitoring strategy for weight loss. Future studies examining the efficacy of DSW compared to other forms of self-monitoring are warranted.

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## Meritorious Paper

## Paper Session 26 11:12 AM–11:30 AM 4034

### IMPROVING LIFESTYLE INTERVENTIONS FOR OBESITY: THE EFFECTS OF PRESCRIBING MODERATE VERSUS MILD CALORIC RESTRICTION GOALS ON LONG-TERM WEIGHT LOSS MAINTENANCE

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Controversy exists regarding whether a fast or slow initial weight loss results in greater long-term weight reduction. This study examined the effects of prescribing moderate versus mild caloric restriction goals on weight loss within a six-month lifestyle intervention followed by six months of extended-care. Participants included 125 obese women (mean BMI=37.9±3.9 kg/m$^2$; mean age=52.0±10.8 yrs) who were randomly assigned either a 1,000 or 1,500 kcal/day goal, so as to induce either a fast or slow weight loss, respectively. Participants prescribed the 1,000 kcal/day goal lost more weight at Month 6 compared to those prescribed the 1,500 kcal/day goal (-10.8±6.8 kg versus -6.3±6.8 kg, respectively, *p*=.045). From Months 6 - 12, the 1,000 kcal/day condition experienced a significant weight regain so that weight change at Month 12 was not significantly different between the 1,000 and 1,500 kcal/day conditions (-8.8±8.4 kg versus -5.7± 8.4 kg, respectively, *p*=.227); however, 61% of the 1,000 kcal/day participants compared to 42% of the 1,500 kcal/day participants achieved a weight loss≥5% at Month 12, *p* =.04. Treatment condition moderated the association between baseline caloric intake and weight regain. Participants reporting higher baseline caloric intake who were assigned the 1,000 kcal/day goal regained more weight from Months 6 - 12 than those consuming higher baseline calories who were assigned the 1,500 kcal/day goal, *p*=.016. Findings suggest that prescribing a 1,000 rather than 1,500 kcal/day goal increases the likelihood of achieving a 5% weight reduction long-term; however, larger caloric restriction may increase susceptibility to weight regain, especially for participants consuming greater amounts of baseline calories.

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## Paper Session 27 10:00 AM–10:18 AM 4035

### INCREASING PHYSICAL ACTIVITY WITH MOBILE DEVICES: A META-ANALYSIS

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Regular physical activity has established physical and mental health benefits; however only one quarter of the U.S. adult population meet national physical activity recommendations. In an effort to engage sedentary individuals, researchers have utilized popular emerging technologies, including mobile devices [i.e., personal digital assistants, mobile phones]. No effort has been made to synthesize current research relative to the effectiveness of such devices for increasing physical activity. We searched electronic databases (ISI Web of Knowledge, SCOPUS, PubMed) and identified 232 studies, 6 of which utilized mobile technologies to disseminate or collect intervention materials, and reported data relative to physical activity outcomes sufficient to conduct our analysis. Moderate to vigorous physical activity duration (MVPA-d) was also examined in an independent meta-analysis, as it was the only outcome measured across multiple studies (5). We calculated a Cohen's d effect size for each outcome, after which a random-effects meta-analysis was conducted using Comprehensive Meta-Analysis (BioStat, 1999). The use of mobile devices for increasing physical activity yielded a large effect (d=.83, Q=73.22); however, after further review, one study was removed for methodological issues (i.e. small sample size, lack of control). Upon recalculation we found a moderate effect (d=0.52, Q=38.49), with a smaller effect (d=0.36) for MVPA-d. Using Downs and Black's checklist (range=0-32) for determining study quality, our studies received and average of 17.17 (SD=2.4), reflecting moderate quality. Clearly, the current literature suggests that the use of mobile devices for physical activity interventions has been successful. However, lack of uniform reporting of data necessitated the exclusion of studies which failed to report sufficient information to calculate effect sizes, tempering our conclusions regarding the utility of such devices. Such preliminary evidence and practical issues (e.g. lower cost, increased reach) suggest that these devices hold promise for physical activity promotion, but large scale interventions are needed to fully understand their potential.

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## Paper Session 27 10:18 AM–10:36 AM 4036

### EFFECTS OF EXERCISE ON CANCER-RELATED FATIGUE IN PATIENTS DURING AND FOLLOWING CANCER TREATMENT: A SYSTEMATIC REVIEW AND META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS

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Exercise appears to improve cancer-related fatigue in patients both during and following treatment. These effects may be differentially moderated, however, and have yet to be systematically reviewed. In accordance with PRISMA guidelines, we estimated the population effect size for exercise training on cancer-related fatigue both during and following treatment and determined the extent to which the effect is differentiated across the time course of treatment and recovery. Articles published prior to June 2011 were retrieved using Google Scholar, MEDLINE, PsychINFO, PubMed, and Web of Science databases. Seventy studies involving 4,881 cancer patients during or following treatment were selected. Articles included a cancer-related fatigue outcome measured at baseline and post-intervention and randomized allocation to an exercise intervention or a non-exercise comparison. Random effects models were used to estimate sampling error and population variance.

Exercise significantly reduced cancer-related fatigue by a mean effect $\Delta$ (95% CI) of 0.32 (0.21-0.43) and 0.38 (0.21-0.54) during and following cancer treatment, respectively. For patients during treatment, those with lower baseline fatigue scores and higher intervention adherence rates realized the largest improvements. Following treatment, improvements were largest for trials with longer durations between completion of treatment and initiation of exercise training, with shorter program lengths, and using waitlist comparisons.

Exercise reduces cancer-related fatigue among patients during and following cancer treatment, but these effects are differentially moderated in patients over the time course of treatment and recovery. Exercise has a palliative effect in patients undergoing cancer treatment and a recuperative effect in patients following treatment.

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## Paper Session 27 10:36 AM–10:54 AM 4037

### A REVIEW OF PERCEIVED VERSUS OBJECTIVE NEIGHBORHOOD PHYSICAL ENVIRONMENT MEASURES RELATED TO PHYSICAL ACTIVITY

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Background: Associations between perceived and objectively measured features of the neighborhood physical environment and physical activity (PA) are well-documented. Despite publication of several literature reviews, none have specifically addressed whether perceived or objective physical environment variables are more consistently associated with PA.

Methods: A comprehensive search was conducted of four electronic databases for peer-reviewed studies published 1980-2010 using combinations of seven keywords. The search yielded 39 observational studies in which a comparable perceived and objective feature of the neighborhood environment was analyzed. Across 16 of the studies, level of agreement of 118 perceived and objective variable pairs was examined. Across 32 of the studies, 211 perceived and objective variable pairs were identified and examined for associations with PA.

Results: Approximately 31% of 118 perceived and objective variable pairs had fair or good agreement (kappa=0.21-0.59). The remaining pairs exhibited no or poor agreement (kappa=-0.07-0.20). Across the 211 perceived and objective variable pairs that were examined for associations with PA, both perceived and objective variables were significantly associated with PA in only 8.5% of the pairs. In approximately one fourth of these pairs, the variables had opposite relationships with PA. In 59.7% of the pairs, neither variable was significant, in 16.1%, only the perceived variable was significant, and in 15.6%, only the objective variable was significant ($p<0.05$).

Conclusion: These findings illustrate clear differences between perceived and objectively measured features of the neighborhood environment and their associations with PA. Gaining a greater understanding of how perceptions of neighborhood physical environment are formed how they may differ conceptually from objectively measured environment is pertinent. In addition, as both are important predictors of PA, it may be advantageous to consider both when developing PA interventions.

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## Paper Session 27 10:54 AM–11:12 AM 4038

### CORRELATES OF ADULT SEDENTARY BEHAVIOUR: A SYSTEMATIC REVIEW

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While the health benefits of meeting moderate/vigorous intensity physical activity (MVPA) guidelines have been well established, the health risks of sedentary behaviour, independent of meeting MVPA guidelines, are becoming evident. Sedentary behaviour may require different interventions, based on correlates that differ from MVPA. This review aimed to collect and appraise the current literature on correlates of sedentary behaviours among adults. Papers were considered eligible if they were published in English language peer-reviewed journals and examined correlates of leisure-time sedentary behaviours. Literature searches were conducted in January, 2011 among five search engines yielding 73,866 potentially relevant records; of these, 49 papers (35 independent samples) passed eligibility criteria. Articles included were published between 1989 and 2010, with sample sizes ranging from 84 to 123,216. Thirty eight were correlational, eight were prospective, two were longitudinal and one was experimental. Sedentary behaviour was primarily measured as TV viewing or computer use, followed by analysis of a more omnibus assessment of time spent sitting. Convincing evidence was present for sedentary behaviour and correlates of education, age, employment status, gender, BMI, income, smoking status, MVPA, attitudes and depressive symptoms. Notable differences by specific sedentary behaviours were present that aided in the explanation of findings. Results point to the high specificity of various sedentary behaviours (e.g., TV viewing vs. sitting and socializing) suggesting that the research domain is complex and cannot be considered the simple absence of MVPA. Several socio-demographic and health factors appear reliably linked to sedentary behaviour, yet there is an obvious absence of research focused on modifiable factors that could be of use in anti-sedentary behaviour interventions. Future research should continue to focus on select behaviours of high prevalence (e.g., screen viewing) and their association with psychological, social, and environmental variables. These should prove most useful in impending intervention initiatives.

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## Paper Session 27 11:12 AM–11:30 AM 4039

### PSYCHOSOCIAL CORRELATES OF PHYSICAL ACTIVITY IN ADOLESCENTS

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In order to promote physical activity behaviors in adolescents, it is important to understand psychosocial correlates for this population. The purpose of this systematic review was to identify and evaluate psychometric properties of measurement tools of individual level correlates for all types of physical activity in adolescents (ages 13-18). To date, this review is the only one of its kind. Search criteria were limited to manuscripts published from January 1990 to September 2011. Several psychosocial correlates were identified from previous reviews and used to search the following databases for peer reviewed English manuscripts: MEDLINE, PYSCLIT, CINAHL, ERIC, and PsychINFO. Articles that reported on a measure of an individual level correlate of physical activity, provided at least one indicator of reliability or validity, and had a sample size of at least 50 were included. Articles about special populations (i. e. pregnant women, athletes, or individuals with mental illness) or any condition that would require professional diagnosis (i.e. depression) were excluded. Measurement tools were judged according to the psychometric evaluations conducted and the practical administration of the tool as reported in the manuscripts. Initial searches yielded 684 manuscripts, which was reduced to 47 final manuscripts that met criteria. Of these, 21% assessed efficacy, 15% assessed perception, 11% assessed attitude, 11% assessed personal control and competence, 10% assessed support, and the remaining 32% assessed benefits, motivation, self-esteem, body image, barriers, expectations, intention, knowledge, enjoyment, and values. Overall, measurement tools produced statistically meaningful psychometrics, adequate sample sizes, and practical administration. Intervention researchers can utilize these psychosocial measurement tools to monitor potential mediators and moderators of physical activity in their interventions in order to have a more complete measurement model.

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## Paper Session 28 10:00 AM–10:18 AM 4040

### EFFECTS OF PATIENT NAVIGATION ON CHRONIC DISEASE SELF-MANAGEMENT

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Purpose: The purpose of the study was to examine the effects of a Patient Navigation Program (PNP) on under-served minority populations with chronic illness. The Transformacion Para Salud (TPS), a PNP using Promotoras (community health workers) for chronic disease self-management was implemented at a nurse-managed primary clinic in East Lubbock. The Transformation for Health conceptual framework was used to guide this study.
Method: Patients (N=152) with diabetes, hypertension, asthma, and co-morbidities of obesity and/or depression were enrolled and actively navigated for a two-year period. The biomarkers including HgA1c, blood pressure and lipid profiles were collected to monitor clinical outcomes. The Patient Health Questionnaire, Self Efficacy for Diabetes Management Survey (SED), Self Efficacy for Managing Chronic Disease (SEMCD) instrument and Summary of Diabetes Self Care Activities (SDSCA) Questionnaire were used to monitor behavioral changes. Descriptive statistics and paired t-tests were used to analyze clinical and behavior changes between baseline and end point.
Results: The hospitalization rate of 27 asthma patients was reduced significantly from 51.6% (12 months prior to TPS) to zero during navigation program ($\chi2$= 18.9, p<.001). Paired t-test shows an average reduction of 1.14% on HbA1c level of 125 diabetes patients, which was significantly reduced from average 9.1% to 7.8% (t124=7.49, p<.001). The average scores for SED, SEMCD and SDSCA were significantly improved 1.12 (t55=-5.07, p<.001), 0.99 (t70=-3.98, p<.001) and 0.77 (t53=-4.59, p<.001) after TPS, respectively. The mean score for the Opportunity for Nurturance subscale of the social provisions instrument was significantly decreased 0.58 (t77=2.35, p<.05) after TPS. Overall, these findings provide support for the effectiveness of the Promotoras in facilitating clinical and behavioral changes among the patients of the TPS program.

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## Paper Session 28 10:18 AM–10:36 AM 4041

### PATIENT-IDENTIFIED BARRIERS IN THE OHIO PATIENT NAVIGATION RESEARCH PROGRAM

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Objectives: The Ohio Patient Navigation Research Program used a barrier-focused intervention to assist patients with abnormal breast, cervical, or colorectal cancer screening tests or symptoms to receive timely diagnostic resolution. This paper describes the patient-identified barriers and the actions taken by patient navigators to address identified barriers documented during each encounter.
Methods: 862 patients from 18 primary care and specialty clinics within the Ohio State University Medical Center and Columbus Neighborhood Health Centers with an abnormal finding participated in a group-randomized study. Clinics were paired and randomized within pairs to either usual care or patient navigation (PN). Patients were informed about the study, consented, and completed a baseline survey. The patient navigators were not clinic-based, but mainly used phone contact from a non-clinic location (Ohio American Cancer Society-PN model).
Results: Participants in the navigation arm (N=475) were assessed in terms of reported barriers and navigator actions documented during navigation encounters. Almost half reported no barriers (n=226; 46.6%), while the remainder reported one barrier (n=113; 23.8%), or 2+ barriers (n=136; 28.6%). Patients navigated for cervical cancer care (61.2%) were more likely to report at least one barrier compared to patients being navigated for breast cancer care (46.6%; p<0.01). The most frequently reported barriers were perception/ beliefs about tests or treatment (n=89), communication with providers (n=84), scheduling problems (n=65), insurance/co-pay problems (n=49), and medical/mental health co-morbidities (n=44). The most frequent actions taken by navigators were providing support (n=175), referrals (n=125), and education (n= 74). On average, navigated participants had 3 encounters with a navigator, and 90.9% of the encounters lasted <15 minutes.
Conclusions: Half of the patients offered assistance from a PN program reported barriers that were then addressed by a phone-based PN program. Types of barriers reported focused on medical system factors while patient-related barriers were reported by fewer participants.

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## Paper Session 28 10:36 AM–10:54 AM 4042

### “CUIDANDOME”: USING LAY HEALTH ADVISORS TO PROMOTE BREAST AND CERVICAL CANCER SCREENING AMONG LATINA IMMIGRANTS

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Latinas carry a disproportionate burden of the morbidity and mortality associated with breast and cervical cancer (BCC) in the U.S. Low levels of regular screening for BCC, particularly among recent Latina immigrants, contribute to these disparities. Purpose: This study presents the results of a community collaborative project to test the effects of Cuidandome, a lay health advisor (LHA) program to promote BCC screening among Latina immigrants in Wisconsin. The program consisted of educational home health parties led by LHAs, a communitywide media campaign, and cultural competency training for providers and staff at a participating non-profit community health service agency. Process and outcome evaluation activities were completed. The outcome evaluation involved a longitudinal study to follow a cohort of 353 Latinas who participated in Cuidandome home health parties and a population-based cross-sectional phone survey with 296 Latinas residing in the catchment area. For the consistent cohort, last 12-month mammogram receipt significantly increased from 33% at baseline to 57%, and 53% at 3- and 15-months follow up (p<.05), respectively. Last 12-month Pap smear receipt significantly increased from 61% at baseline to 70% at 3-month follow-up (p<.05), but decreased back to 63% at 15-month follow-up. Knowledge about screening guidelines, risk and protective factors for BCC, and where to get these tests was significantly better at all follow-up points compared to baseline (p<.001). Adjusted analysis of data from the cross-sectional population-based survey indicated significantly higher rates of last 12-month mammogram receipt (92% vs. 52%, p<.05), but no significant differences in last 12-month pap smear receipt (69% vs. 64%, p=0.461) between Latinas who reported participating in Cuidandome home health parties (18% of the sample) vs. those who did not. LHA interventions represent a promising approach to increase BCC screening in low-acculturated Latinas, but more research on this intervention strategy is necessary.

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## Paper Session 28 10:54 AM–11:12 AM 4043

### LONG-TERM EFFECTS OF CAREGIVING STRESS ON MEDICAL MORBIDITY AMONG CANCER CAREGIVERS

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Limited information is available about the long-term impact of cancer on family caregivers' psychological and physical well-being. Thus, this study investigated the long-term effect of caregiving stress on medical morbid conditions among cancer caregivers. Caregivers participated in a nationwide longitudinal study at 2 years after their care recipients were diagnosed with a cancer (T1). A total of 720 provided valid data on caregiving stress and a list of 40 medical morbid conditions at T1. At both 5 years and 8 years post-diagnosis, medical morbidity was reassessed. Two types of caregiving stress had been measured at T1: subjective caregiving stress using the stress overload subscale of the Pearlin Stress Scale and objective caregiving stress using the cancer severity index that is a composite score of cancer type and stage. Age, gender, education, income, being the spouse of the care recipient, and employment status at T1 were included in the analyses as covariates. Results revealed that common morbidities such as hypertension and depression were reported by caregivers in much higher prevalence compared with age-, gender-, and ethnicity/race-matched US population-based NHIS data, across the three assessment points. Subjective caregiving stress at T1 was a significant predictor of the number of morbidities at 5 years ($\beta=.12$, $p<.0001$) and at 8 years ($\beta=.16$, $p<.0001$), controlling for the covariates and morbidity at T1. In addition, objective caregiving stress indexed by the severity of cancer was also an independent predictor of the number of morbidities at 5 years ($\beta=.07$, $p<.03$) but not at 8 years. Findings suggest cancer caregivers whose caregiver role was overwhelming, either subjectively or objectively, were more likely to develop medical morbid conditions 3 to 6 years later. Stress management programs for cancer caregivers may benefit them by protecting them from prematurely declining health. Further investigations for identifying biobehavioral pathways of the link from caregiving stress to morbidity are warranted.

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## Paper Session 28 11:12 AM–11:30 AM 4044

### THE RELATIONSHIPS OF RESOURCEFULNESS, WORRY AND DEMAND ON ANXIETY ON FAMILY CAREGIVERS

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Purpose: Family caregivers of individuals with dementia experience anxiety as a consequence of the distress caused by the caregiving situation; however studies on anxiety in family caregivers are sparse. This study examined the relationships of resourcefulness, worry and caregiving demand on anxiety among family caregivers of persons diagnosed with Alzheimer's disease (AD). Resourcefulness was used as a theoretical framework.
Methodology: A descriptive correlational design was used. One hundred two family caregivers who were living with and caring for a person diagnosed with AD participated in the study. Resourcefulness was measured using Rosenbaum's (1982) Self-Control Schedule. Anxiety was measured using the State-Trait Anxiety Inventory -State subscale (Spielberger et al, 1982). Worry was measured using caregiver Areas of Concern tool (Archbold et al. 1993). Caregiving demand was measured using the Activities of Daily Living tool (ADL: Katz et al. 1963). Descriptive statistics and multiple regression analysis were used to analyze the data.
Results: The analysis showed that the regression of anxiety on resourcefulness, worry, and caregiving demand accounted for 30% of the variance and was significant at the .000 level. There was a negative relationship between resourcefulness and anxiety ($p=.001$), indicating that caregivers who were more resourceful reported lower levels of anxiety. Resourcefulness accounted for 9% of the variance. There was a positive relationship between caregiving demand and anxiety ($p=.002$), indicating that caregivers with more caregiving demands report more anxiety. Demands accounted for 8% of the variance. There was a positive relationship between worry and anxiety ($p=.000$), indicating that caregivers who were more worried report more anxiety. Worry accounted for 16% of the variance. The findings support the need to address areas of concern and resourcefulness in family caregivers of persons diagnosed with AD.

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# Saturday
# April 14, 2012
# 11:45 AM–1:15 PM

## Paper Session 29 11:45 AM–12:03 PM 4045

### CALORIE LABELING AND FOOD CHOICE: WILL IT WORK? FOR WHOM? WHY?

Brian Elbel, PhD, MPH, Tod Mijanovich, PhD, Beth Dixon, PhD, Rogan Kersch, PhD, Courtney Abrams, MA and Beth Weitzman, PhD

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Background: Federal law mandates chain restaurants include calorie information on their menus beginning next year, hoping to encourage healthier food choice. This study evaluates the effect of mandatory calorie labeling policy in Philadelphia, PA on consumer food choice.
Methods: We utilize a natural experiment, collecting data before and after labeling began in Philadelphia, with Baltimore as a comparison location. We conducted interviews and collected receipts from customers exiting large chain fast food restaurants in both cities, before and after labeling. Multiple regression was utilized.
Results: We surveyed 2,128 customers ages 18-65 as they exited restaurants. Respondents were 61% male; 71% Black. After labeling, only 37% of the Philadelphia sample noticed calorie information. There was no change in mean calories purchased as a result of labeling, and no statistically significant differences by those of different age, race, sex, education, BMI, nutrition literacy, or health status. Women versus men (41 v. 32%), Caucasians v. Blacks (47 v. 34%), individuals ages 26-35 v. younger and older (43 v. 34 v. 31%), and those with a college degree or more v. less education (70 v. 31%) were most likely to see labeling. Among those who saw labeling, 65% said it did not affect their purchase, particularly younger individuals and African Americans. Overall, just 9% of customers said they used calorie information to purchase food lower in calories. Additionally, 90% of customers underestimated the calorie content of their meals by at least 100 calories, with no difference across time or cities. Fifty-two percent of customers said taste was the most important factor in deciding what they had just purchased, 65% said fast food was somewhat or very unhealthy, and 54% seldom or never watch their weight. (All $p<.05$)
Conclusions: Menu labeling did not impact calories purchased and most did not recall seeing the information. Those who saw it generally did not believe it influenced their purchases. For this policy to be effective, improvements are needed, and other policies may need to be implemented alongside.

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## Paper Session 29 12:03 PM–12:21 PM 4046

### EVALUATING THE UPTAKE OF CANADA'S NEW PHYSICAL ACTIVITY GUIDELINES

Heather L. Gainforth, MSc,[1] Tanya Berry, PhD,[2] Cora Craig, PhD,[3] Guy Faulkner, PhD,[4] Ryan Rhodes, PhD,[5] John C. Spence, PhD,[2] Mark Tremblay, PhD[6,7] and Amy Latimer, PhD[1]

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New evidence-based physical activity (PA) guidelines for Canadians were launched in January 2011. As a consequence, stakeholders that promote PA needed to change their promotion materials to reflect the new guidelines. Little is known about the rate at which key stakeholders adopt and integrate new evidence-based guidelines. Therefore, the purpose of this study was to evaluate the rate of adoption of the new guidelines among key stakeholders by examining 262 stakeholder organization websites. The websites were coded by one of six raters prior to the release of the new guidelines as well as at three and six months post-release. The content of each website was assessed for the presence of PA guidelines, whether the old or new guidelines were presented, and the accuracy of guidelines presented. At each time point, five websites were randomly selected from the sample and were coded by all raters. Inter-rater reliability was acceptable at all time points ($\kappa > .70$). Cochran's Q statistic with follow-up pairwise comparisons was used to compare results within stakeholders across time points. Results indicated that the presence of PA guidelines remained consistently low across time, Cochran's Q test, $p=.06$, with less than 20% of websites providing any guidelines. Among websites that did provide PA guidelines, the proportion providing the new guidelines increased between baseline and three months (50% new) as well as at six months (57.4% new), Cochran's $Q_{diff}$ tests, $p<.01$. If new guidelines were reported, they were generally correctly stated (> 95%). To ensure the success of the new guidelines, stakeholder groups should be encouraged to provide up-to-date PA guidelines on their websites. Further efforts need to be taken to understand optimal methods for translating guidelines into practice.

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## Paper Session 29 12:21 PM–12:39 PM 4047

### DEMAND FOR WEIGHT LOSS COUNSELING AFTER COPAYMENT ELIMINATION

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Objective: We evaluated the impact on clinic demand of eliminating a copayment for weight loss clinic appointments.
Methods: In a retrospective cohort study of 126 VA MOVE! weight loss clinics, the demand for the weight loss clinic before and after elimination of the clinic copayment was examined in veterans who were exempt or not exempt from weight loss clinic copayments. We measured the change in the proportion of all visits to each MOVE! clinic by new users and the change in the number of MOVE! clinic visits by each new user in the six months after their first clinic visit. Outcomes were estimated using generalized estimating equations, controlling for patient characteristics, copayment exemption, pre-post copayment period and an interaction of the copay exemption and pre-post indicators.
Results: The number of non-exempt new users increased significantly after the copayment was eliminated, but the number of exempt new users increased even more. Regression analysis found no difference in the proportion of new users or in the number of repeat visits between exempt and non-exempt veterans.
Conclusions: The MOVE! clinic copayment elimination was not associated with a greater increase in utilization by veterans newly exempt from these copayments compared with veterans who were already exempt from copayments. Unexpectedly, we saw a larger increase in demand among veterans who already received all VA care for free. This result may have been driven by clinic staff perception of greater potential benefit from MOVE! for this group of patients.

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Meritorious Paper

## Paper Session 29 12:39 PM–12:57 PM 4048

### WORKSITE NEIGHBORHOOD CONTEXT AND OBESOGENIC BEHAVIORS AMONG SEATTLE ADULTS

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Background: Further understanding of how environments operate to influence health behaviors may provide additional avenues through which interventions can increase the probability of behavior change. Most built environment and obesity research has focused on the effects of home neighborhood while less is known about the effects of the neighborhood around worksites.
Objective: To study associations between worksite neighborhood context and obesity-related variables among healthy working adults in Promoting Activity and Changes in Eating (PACE), a group-randomized worksite intervention to prevent weight-gain.
Methods: Density of fast food restaurants and grocery stores were related to dietary behaviors (i.e. fruit, vegetable, fast-food, and soft-drink intake) and self-efficacy to monitor eating while density of fitness destinations, parks, intersections, and elements of land-use mix were related to physical activity, walking behaviors, and self-efficacy to increase activity. Density measures were enumerated based on worksite address at baseline while behavioral data was collected at 2-year follow-up from 1984 employees within 26 worksites in the Seattle area. Linear mixed models were conducted adjusting for individual-level (age, sex, race, and education) and worksite-level (SES and intervention group) covariates as well as worksite random effects.
Results: Higher density of parks, restaurants, and residential units surrounding worksites predicted more walking behavior among employees. BMI, free-time physical activity, dietary behaviors, and self-efficacy were not influenced by measures of worksite neighborhood in these data.
Conclusions: These findings provide some support for the influence of worksite neighborhood context on walking behaviors of employees. Worksites located within "walkable" areas may be especially receptive to interventions which promote walking behavior. Additional studies are needed to strengthen conclusions.

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## Paper Session 29 12:57 PM–1:15 PM 4049

### THE DISSEMINATION OF BEHAVIORAL WEIGHT LOSS STRATEGIES THROUGH A COMMUNITY-BASED CAMPAIGN

Tricia Leahey, PhD,[1] J. Graham Thomas, PhD,[1] Brad Weinberg, MD,[2] Rajiv Kumar, MD[2] and Rena Wing, PhD[1]

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Given their wide reach, statewide campaigns provide an excellent platform for disseminating weight loss interventions to address the epidemic of obesity. We showed that adding an Internet-based behavioral weight loss (BWL) intervention (video lessons plus self-monitoring/feedback) increased weight losses in Shape Up Rhode Island (SURI), a state-wide wellness campaign (-3.5kg v. -1.4kg). In the present study, we aimed to replicate these findings and test whether adding optional group meetings to the Internet intervention further improved weight losses. SURI 2011 was a 12-week Internet-based program to promote weight loss and physical activity in Rhode Island that attracted 5,169 individuals to the weight loss component. From those, we recruited 230 individuals (84% Female; 89% White; age=46.9±11.1; BMI=34.3±7.0) and randomly assigned them to: 1) SURI alone (SURI; N=46); 2) SURI+Internet-based BWL (SURI+IBWL; N=90); or 3) SURI+IBWL+weekly, optional group sessions (SURI+IBWL+Group; N=94). The optional group sessions, led by a dietitian, involved weigh-ins and presentation of material to supplement the Internet program. Retention was 93% at 12-weeks. Weight losses were significantly different among all 3 conditions (SURI: -0.9±2.4 kg, SURI+IBWL: -3.1±6.7 kg; SURI+IBWL+Group: -4.9±4.6 kg; p's≤.02). A greater percent of participants in SURI+IBWL and SURI+IBWL+Group lost at least 5% of initial body weight (SURI: 7%; SURI+IBWL: 41%; SURI+IBWL+Group: 54%; p's≤.001). In the enhanced conditions, adherence measures (e.g., viewing videos, self-monitoring) were associated with weight loss (r's=.34-.61; p's<.001), and those in the highest tertile of optional class attendance had the best results (1-4 classes: -2.4kg, 5-9 classes: -5.3kg, 10-12 classes: -8.3kg, p's<.01). Thus, adding Internet-based BWL and optional group sessions to statewide weight loss campaigns substantially improves weight outcomes. These easily implemented strategies can greatly improve the public health impact of community-based weight loss programs.

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## Citation and Meritorious Paper

## Paper Session 30 11:45 AM–12:03 PM 4050

### INTERNALIZED HIV STIGMA, INTERNALIZED HOMOPHOBIA, AND DEPRESSION AMONG LATINO MSM LIVING WITH HIV

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People living with HIV/AIDS (PLWHA) continue to be highly stigmatized. The link between internalized HIV-related stigma and poor mental health is well documented. Similarly, internalized homophobia is associated with mental health problems, including depression. We examined the effect of "double stigma" (i.e., HIV-related stigma and internalized homophobia) on self-reported depressive symptoms in a sample of HIV+ Latino men who have sex with men (MSM). We administered the Beck Depression Inventory (BDI-1A), the Multidimensional Measure of Internalized HIV Stigma Scale (MMIHS), and the Internalized Homophobia Scale (IHP) in English or Spanish to 123 HIV+Latino MSM (average age: 47 years, average years living with HIV: 11 years, median annual household income: $10,512) at an outpatient clinic on the U.S.-Mexico Border. Self-reported depressive symptoms were correlated with scores on the MMIHS ($r=.50$, $p<.05$) and with scores on the IHP ($r=.25$, $p<.05$). The combined effects of HIV-related stigma and internalized homophobia significantly predicted depressive symptoms in a multiple regression analysis ($R=.52$, $F=22.12$, $p<.05$). To examine the relative contribution of each construct, we used a hierarchical regression analysis of scores on the MMIHS and IHP, predicting self-reported depressive symptoms. When controlling for scores on the IHP in the first step of the analysis, there was a statistically significant association between the MMIHS and depressive symptoms ($R^2=.21$, $p<.01$). However, when MMIHS scores were controlled in the first step, the association between IHP and depression was not significant ($R^2=.06$, *ns*). These data suggest that internalized HIV stigma contributes unique variance to the prediction of depressive symptoms among HIV-positive Latino MSM, above and beyond that accounted for internalized homophobia.

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## Paper Session 30 12:03 PM–12:21 PM 4051

### FEASIBILITY OF IMPLEMENTING A GROUP BASED HIV SELF-MANAGEMENT PROGRAM

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HIV/AIDS has transformed from a terminal to a chronic health condition affecting individuals for decades rather than years. Yet the development of care models that enhance client-focused HIV disease management skills is still in progress, especially in resource-poor locales. This pilot study tested the feasibility of implementing the group-based Positive Self Management Program (PSMP) to participants recruited from Oahu, HI. The PSMP is an evidence-based prototype of the Chronic Disease Self-Management Program (CDSMP) developed at Stanford University. While considerable evidence exists for the utility of the CDSMP with a variety of illnesses, a paucity of data exists on the feasibility of implementing the specialized PSMP that addresses unique needs of clients living with HIV. With a focus on enhancing self-efficacy beliefs, examples of topics addressed during seven weekly 2-hour group sessions include managing the physiological and psychological aspects of HIV illness, adherence to HIV treatment regimes, symptom management, and fostering healthy lifestyle behaviors. Using a randomized wait-list control design, participants (N=37) were recruited via convenience sampling and active outreach. HIV-positive trained lay leaders delivered the manualized PSMP. Program feasibility analyses included enrollment and retention data as well as results from a participant satisfaction survey administered after the first wave of the intervention (n=16). Results: The average attendance rate was 83% (M=5.8 sessions, range=4-7) with no drop outs. The majority of participants (81%) reported being comfortable in the group setting and 'very satisfied' with the PSMP activities. Mean satisfaction for goal setting and action planning was significantly higher than for other group activities (p=.03). Preliminary efficacy analyses indicate significantly higher reported aerobic exercise among the treatment group (p=.03) with promising trends in chronic disease self-efficacy scores post treatment. Lessons learned for application to practice will be discussed.

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## Paper Session 30 12:21 PM–12:39 PM 4052

### RELATIONSHIP BETWEEN DISTRESS TOLERANCE AND HIV MEDICATION USE AT ENTRY INTO SUBSTANCE ABUSE TREATMENT

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HIV-infected substance users are at high risk for not receiving highly active antiretroviral therapy (HAART), increasing the likelihood of poor health outcomes and mortality. Studies have largely focused on structural factors impeding these individuals' receipt of HAART, such as access to care, yet few studies have identified psychological barriers. One psychological factor that may be relevant is distress tolerance (DT), defined as one's capacity to withstand physical and psychological stressful states. DT has been implicated in both the management of HIV (O'Cleirigh et al., 2007) and substance use (Daughters et al., 2005), but has not been examined as a predictor of being on HAART in this population. The objective of the current study was to examine the relationship between DT and being on HAART in a sample of high-risk HIV positive substance users. Individuals were recruited from a large, inpatient substance abuse treatment center in N. E. Washington DC (n=60). Individuals were screened for HIV and HAART use in their first week of substance abuse treatment and given two measures of DT: the Discomfort Intolerance Scale (DIS; Schmidt et al. 2006), assessing tolerance of uncomfortable bodily sensations, and the Distress Tolerance Scale (DTS; Simon & Gaher, 2005), assessing tolerance of emotional distress. Individuals who were not on HAART at entry reported being more likely to avoid physical discomfort on the DIS (t(52)=-2.15, p<.05), yet more tolerant of emotional distress (t(52)=-2.56, p<.05), and less absorbed by negative emotions (t(52)=-2.07, p<.05) on the DTS. Current findings demonstrated low levels of physical distress tolerance to be associated with lower HAART use, which may reflect avoidance of HAART physical side effects; meanwhile, higher psychological distress tolerance was associated with lower HAART use and may reflect a higher threshold for uncertainty regarding one's health status. Future work is needed to replicate findings, but current findings provide preliminary evidence of how DT may relate to HAART use in a hard-to-reach population.

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## Paper Session 30 12:39 PM–12:57 PM 4053

### EXAMINING FACILITATORS AND BARRIERS TO HIV TESTING IN AFRICAN AMERICAN CHURCHES USING A COMMUNITY-BASED PARTICIPATORY RESEARCH APPROACH

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African Americans continue to be disproportionately burdened by HIV, accounting for almost 50% of new HIV cases each year. Due to delayed HIV diagnosis and care, they tend to enter treatment at advanced stages and die from AIDS sooner than Whites. Researchers and public health officials have called for novel HIV testing strategies that are community-based, context-driven, and translatable - and include the Black church for increased reach of African Americans beyond medical settings. Yet, few studies exist on engaging faith organizations in community-based participatory research (CBPR) to develop HIV testing strategies that can be easily delivered within existing church infrastructure/culture and efficiently adopted by Black churches. A faith based-academic partnership used a CBPR approach to examine HIV testing facilitators and barriers in African American churches to develop motivational HIV testing tools for the Taking It to the Pews (TIPS) church-based HIV Tool Kit. Formative research consisted of 4 focus groups with church members (N=61), 12 interviews with pastors, and 8 forums with church leaders. Findings on thematic categories related to church-based HIV testing barriers included: lack of HIV education, beliefs of not being at risk, limited encouragement for testing, HIV testing stigma (e.g., church rumors), and limited discussions about sex. Facilitators included: compassion for HIV-positive people, pastoral modeling of HIV testing, church members testing together, and church as a place of comfort for testing and receiving results. We will discuss formative research findings, and faith partners' participation in interpreting findings and developing/ implementing TIPS tools including motivational HIV testing materials (e.g., testimonial videos) and activities (e.g., screening of pastors).

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## Paper Session 30 12:57 PM–1:15 PM 4054

### INFORMING FAITH-BASED HIV INITIATIVES: APPLICATION OF CBPR AND MULTIPLE METHODS USED IN PROGRAM PLANNING AND IMPLEMENTATION

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Issue: Faith-based organizations (FBOs) serving predominantly Black congregations have offered numerous health programs, but relatively few have implemented and sustained HIV prevention programs.
Purpose: This presentation will provide an overview of the quantitative and qualitative research methods used to adopt, plan, design, and implement a faith-based HIV prevention program to increase the capacity of FBOs to more effectively address HIV/AIDS among Black congregations. The application of community-based participatory research (CBPR) approaches was used to inform the development of a multi-level, faith-based intervention.
Findings: An anonymous questionnaire in 2004 was administered to faith leaders (N=53) to assess their institutional capacity and readiness to engage in HIV/AIDS faith-based programming, and led to the first program pilot in 2006. Focus groups were conducted in 2007 with adolescents to assess psychosocial factors and barriers to participating in faith-based programs which led to the program incorporating a stronger youth empowerment component. In 2008, formative research informed a larger program trial of 30 FBOs with revised informational sessions for adults and knowledge and skills building sessions for youth. After the implementation phase, in 2009, telephone interviews were conducted with faith leaders (n=29) to assess facilitating factors and barriers to delivering HIV prevention programming to refine the training of faith leaders.
Lessons Learned: Faith-based, HIV prevention programs utilize data to guide and refine their programs. Different types of data were collected and used to identify the feasibility of conducting HIV prevention in FBOs, explore the needs of diverse populations, refine the curriculum, and identify future directions and populations of interest.

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## Paper Session 31 11:45 AM–12:03 PM 4055

### WHEN DO PLACEBO ANALGESICS HELP?: MODERATING EFFECTS OF TREATMENT CHOICE AND PRIOR EXPERIENCE

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In previous research examining placebo effects, participants have been assigned placebo treatments rather than being actively involved in selecting their (placebo) treatment. Recently, we found that exercising choice over one's treatment strengthens placebo analgesia. In the present study we tested the possibility that prior experience with a painful stimulus would moderate the effect of treatment choice on placebo analgesia. In this study, participants (N=105) who did or did not have prior experience with cold pressor pain were randomly assigned in a 2(choice) x 2(expectation) factorial design. Upon arrival, all participants were presented with two bottles that contained the same inert hand lotion. Half of the participants were told the bottles contained two different hand cleaning lotions, whereas other half were told the bottles contained two different analgesic lotions (expectation manipulation). Orthogonal to this manipulation, half of the participants were allowed to choose between the two lotions, whereas the other half were given a lotion to use by the experimenter (choice manipulation). Next, all participants had the lotion applied to their non-dominant hand and then placed their hand in a container of water and crushed ice for 75 sec. Reports on the short form of the McGill Pain Questionnaire served as our dependent measure. A 2(expectation) x 2(choice) x 2(prior experience) ANOVA revealed that expectation participants experienced significantly less pain than no-expectation participants ($p<.05$). Importantly, a significant three-way interaction ($p<.05$) emerged indicating that choice enhanced placebo analgesia only for individuals with prior experience with cold water pain. These results reveal that prior experience moderates the effect of treatment choice on placebo analgesia. Given recent trends toward patient-centered medicine, self-help treatments, and direct-to-consumer medication advertising, the present results have valuable practical implications.

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Meritorious Paper

## Paper Session 31 12:03 PM–12:21 PM 4056

### SALIVARY CORTISOL AND COLD PAIN SENSITIVITY IN FEMALE TWINS

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Chronic pain is a public health concern that remains difficult to elucidate because of complex biological mechanisms and individual differences. The development and maintenance of chronic pain could have unique underlying processes such as experimental pain sensitivity and dysregulation of the hypothalamic-pituitary-adrenal (HPA) axis. There is a dearth of knowledge about the potential link between cortisol and experimental pain sensitivity as contrasted with clinical pain. The aims of this study were to: a) examine the association of basal morning and evening salivary cortisol with indices of cold pain sensitivity; and b) explore the role of genetic confounding in those associations. Data were collected from 99 monozygotic (MZ) and dizygotic (DZ) community-based twin pairs. Three-day saliva samples were analyzed for cortisol levels using radioimmunoassay. A cold pressor task was used to collect time to pain threshold and tolerance, and pain ratings at both time points adjusted for baseline pain. On average, twins were 29 years old; 75% were MZ and 30% reported clinical pain. Regression analyses that accounted for correlated data and adjusted for clinical pain status showed that greater evening salivary cortisol was significantly associated with higher pain ratings at threshold (B=19.96, p=0.02) and tolerance (B=16.63, p=0.03). The pattern of findings from within-pair regression analyses indicated that the link between evening salivary cortisol and pain rating at threshold was not confounded by genetic factors (MZ B=17.38, DZ B=16.99), but the link to pain rating at tolerance (MZ B=3.2, DZ B=13.5), and time to threshold (MZ B=-11.61, DZ B=-164.3) and tolerance (MZ B=-9.6, DZ B=-282.7) were partially influenced by genetic factors. These findings may be crucial to identifying unique biomarkers to prevent chronic pain development and maintenance.

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## Paper Session 31 12:21 PM–12:39 PM 4057

### GENDER DIFFERENCES IN PSYCHOLOGICAL ASPECTS OF PEDIATRIC INFLAMMATORY BOWEL DISEASE

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Research on gender differences in pain and emotional experience generally indicate greater pain intensity, pain expressivity, pain catastrophizing (Sullivan et al., 2000), and emotional distress among females as compared to males, with the latter difference emerging in adolescence (Twenge & Nolen-Hoeksema, 2002). The present study sought to extend this research to patients with pediatric Inflammatory Bowel Disease (IBD), a chronic autoimmune gastrointestinal disorder. Participants were 130 children with IBD (M age=13.6, SD=2.7, 65% adolescents; 48% female; 88% Caucasian; 68% Crohn's Disease; 32% Ulcerative Colitis) and their parents (M age=43.5, SD=7.8; 91% female; 93% Caucasian). Children completed the Faces Pain Scale-Revised, the Pain Catastrophizing Scale, the Children's Depression Inventory, the Multidimensional Anxiety Scale for Children, and the Functional Disability Inventory. Parents completed the parent-report version of the Functional Disability Inventory and the Pain Behavior Checklist regarding their child's pain behavior. Physicians rated the severity of their patient's IBD using either the Pediatric Crohn's Disease Activity Index or the Pediatric Ulcerative Colitis Activity Index. Girls reported greater depression (p=.008), anxiety (p=.015), pain severity (p=.012), pain catastrophizing (p=.032), and functional disability (p=.002) than boys. Parents also rated girls as more disabled (p=.019). Furthermore, parents of female children rated their child as exhibiting greater pain behavior compared to parents of male children (p=.046). Physician ratings of disease severity, in contrast, did not differ as a function of child gender ($p>.05$). These findings suggest that girls with IBD may be at higher risk for associated psychosocial distress or may be more likely to communicate pain and distress to others in their environments than boys. Further research to examine gender differences in psychosocial function and adjustment in children and adolescents with IBD appears warranted.

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## Paper Session 31 12:39 PM–12:57 PM 4058

### PREDICTORS OF CHANGE IN HEART RATE VARIABILITY IN RESPONSE TO PSYCHOLOGICAL TREATMENT OF CHRONIC PAIN

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Chronic pain is associated with substantial health and psychological impairments as well as reduced functioning. Recent research also suggests that chronic pain is related to disturbed heart rate variability (HRV), an indicator of the autonomic nervous system that measures the interplay between the excitatory sympathetic and the inhibitory parasympathetic nervous system. Psychological interventions such as Cognitive Behavioral Therapy and Acceptance and Commitment Therapy are effective in reducing pain and distress in chronic pain patients. Few studies, however, have explored the indicators of HRV in response to treatment. This study examined health and psychological predictors of change in HRV indices after psychological treatment of chronic pain. Seventy-two patients with chronic pain completed self-report measures and underwent measurements of resting HRV prior to treatment and after completion of one of two 8-week group interventions. A series of linear regression analyses were used to predict pre- to post-treatment change in HRV variables from pre- to post-treatment change in other domains of assessment. The average participant was 56 years old ($SD=14$); 55% were women, 70% were Caucasian, 49% were married, and about 82% reported having some college education. Across both treatment conditions, older age ($p<.05$) was associated with smaller gains in HRV indices in response to treatment. Over the course of treatment, improvements in physical health functioning ($p<.05$) were associated with increases in HRV, however, increased depression ($p<.05$) was also associated with increased HRV, suggesting that depression may play a unique role in autonomic nervous system functioning in chronic pain patients. These findings indicate that improving physical health functioning through psychological interventions may also improve underlying autonomic nervous system functioning in chronic pain patients. Future research should examine the potentially negative impact of age and depression on improving HRV in chronic pain.

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## Paper Session 31 12:57 PM–1:15 PM 4059

### COUPLES COPING WITH CHRONIC PAIN: SPOUSAL ANGER AND CRITICISM/HOSTILITY DURING MARITAL INTERACTION AFFECT PATIENT PAIN SEVERITY

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Marital relationships are not always sources of helpful social support for chronic pain patients. For spouses, persistent patient pain, activity restriction and negative mood may lead to diminished support and increased irritability and criticism toward the patient. Expressed Emotion (EE) theory suggests that frequent spousal criticism may adversely affect patients' adjustment. We tested this theory for 84 married couples (chronic low back pain patients; healthy spouses) who participated in a lab study. Couples completed a structured marital interaction (they discussed how an aspect of the patient's behavior or attitude, chosen by the spouse, could be improved) followed by a structured pain task (patients walked, reclined, lifted a weight). We expected that spouse reports of negative affectivity aroused during the marital interaction would predict patient reports of pain intensity during the subsequent pain task, and that this effect would be (a) mediated by patient reports of spousal criticism; (b) moderated by patient depressed mood. Several effects emerged. For instance, for patients low in depressed mood, spouse reports of anger during the marital interaction were related negatively ($r=-.40;p<.01$) to patient reports of subsequent pain intensity, but not to patient reports of spousal criticism ($r=.04$). Among patients high in depressed mood, spouse anger was related positively ($r=.38;p<.01$) to patient subsequent pain intensity, and also to patient report of spousal criticism ($r=.52;p<.01$). Tests of mediation showed that the total effect of spouse anger on patient pain ($r=.38$) was composed of a nonsignificant direct effect ($\beta=.18$) and a significant indirect effect via spousal criticism ($\beta=.20$), suggesting partial mediation. Findings support an EE model of spousal criticism and patient adjustment. Arousal of strong negative affect for spouses during interaction with depressed pain patients may increase patient pain during subsequent everyday activities because such negative emotion inspires patient perceptions of spousal criticism.

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## Citation Paper

## Paper Session 32 11:45 AM–12:03 PM 4060

### INCREASING ADHERENCE TO THE 3-DOSE HPV VACCINATION SCHEDULE: A RANDOMIZED CONTROLLED TRIAL IN APPALACHIAN KENTUCKY

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With the advent of the Human Papillomavirus (HPV) vaccine to prevent cervical cancer, it is important to ensure young adult women, ages 19-26, in the "catch up" pool follow through with all 3 doses on the right time schedule. This is particularly important in rural Appalachian Kentucky where cervical cancer incidence and mortality rates are elevated compared to the rest of the state and the nation; HPV vaccination rates are low; and the population is considered medically underserved. In an effort to address low uptake rates and increase overall adherence to the 3-dose HPV vaccine regimen, the CDC-funded Rural Cancer Prevention Center implemented a social marketing campaign to engage young women in receipt of dose 1, followed by randomization to either a DVD-based counseling intervention promoting return for doses 2 and 3 and regular Pap testing or usual care which included a reminder telephone call. As of September 2011, 279 women (mean age 22 years) have enrolled in the study; 46% are randomized to the intervention group. At dose 2 there are no significant differences in adherence rates between intervention and control groups (84.6% v. 83.5%, respectively; $p=.84$). However, at dose 3 there is a significance difference in adherence between the two groups (91.3% v. 73.2%, respectively; $p=.02$). At dose 3, differences in the intervention and control groups are moderated by: ≤ 21 years of age ($p=.03$); not being married ($p=.01$); never being told they were HPV+($p=.04$); history of abnormal Pap ($p=.02$); ≤ 1 sex partners ($p=.01$); having family members and friends who would be very supportive of HPV vaccination ($p=.02$ and $p=.01$); and current hormonal contraception users ($p=.03$). As indicated by the mid-point analysis, our intervention designed to increase adherence to the HPV vaccine schedule, appears to have positive results, particularly at dose 3 which indicates completion of the vaccine series. Moderating variables point to areas for future message tailoring and intervention design among young adult women, particularly in rural, Appalachian Kentucky.

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## Paper Session 32 12:03 PM–12:21 PM 4061

### FACTORS ASSOCIATED WITH HPV AWARENESS AMONG MOTHERS OF LOW INCOME, ETHNIC MINORITY ADOLESCENT GIRLS IN LOS ANGELES COUNTY

Beth A. Glenn, PhD,[1,2] Jennifer Tsui, MPH,[1,2] Rita Singhal, MD,[3] L. Cindy Chang, MS,[1,2] Victoria M. Taylor, MD, MPH[4] and Roshan Bastani, PhD[1,2]

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The benefit of prophylactic human papillomavirus (HPV) vaccines in reducing the cervical cancer burden in the U.S. will not be fully realized without high vaccine uptake. Our recent survey with mothers of adolescent girls in LA County found mother's HPV awareness to be one of the strongest correlates of vaccine receipt among girls. The purpose of this study was to identify correlates of HPV awareness (demographics, health care access, general vaccine attitudes, childhood vaccination history), given the relationship we observed between mother's HPV awareness and vaccine uptake among daughters and the role of awareness/knowledge of the health threat as a necessary condition for health behaviors according to theory. Data for the parent study were collected through a collaboration between UCLA and the Los Angeles County Office of Women's Health, which operates a telephone hotline to provide health education and service referrals to low-income, ethnic minority women in Los Angeles. Telephone interviews were administered via the hotline, in five languages (English, Spanish, Mandarin, Cantonese, Korean) to 490 mothers of girls (9-18 yrs). Mothers were significantly more likely to be aware of HPV if they completed the survey in English, had a usual source of care, and if their daughter had health insurance. Mother's vaccine attitudes were not associated with awareness; however, mothers of daughters who had received recommended childhood vaccinations were more likely to be HPV aware. Income and education were unrelated to awareness. English language preference was the only significant factor in multivariate analyses. English-speaking mothers were more likely to be aware of HPV, perhaps due to a greater likelihood of being exposed to in-language HPV information. Increasing the availability of HPV health education in non-English languages may increase HPV awareness among mothers and ultimately vaccine uptake among adolescent girls.

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## Paper Session 32 12:21 PM–12:39 PM 4062

### INCREASING HPV VACCINATION AMONG YOUNG ADULT WOMEN: A PILOT TRIAL OF A COMPUTER-TAILORED INTERVENTION

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At this time, there is a need for empirically-supported theory-based interventions that aim to increase human papillomavirus (HPV) vaccination among young adult women. Relative to other age groups, women aged 18 - 26 are at the highest risk for contracting HPV but are unlikely to initiate vaccination or respond to knowledge-based interventions. Interventions that are population-based, easily disseminated, and utilize existing technology are an important means through which HPV vaccination can be increased. The current research examined the feasibility, acceptability, and initial efficacy of a computer tailored intervention (CTI) based on the Transtheoretical model of change that aimed to increase HPV vaccination among young adult women. The CTI was pilot tested among 243 unvaccinated 18-26 year-old women nationally and disseminated online. The majority (57%) of the sample was in the in the Precontemplation stage (not intending to complete the vaccine in the next six months) underscoring the need for this intervention. Most of the participants (91%) had heard of HPV and 80% reported having health insurance. The intervention was fully-tailored and provided individualized feedback on all fourteen TTM constructs. Overall, the vast majority of participants rated the program as easy to use, enjoyable, and informative. Overall, 90% to 95% of the sample rated the CTI positively across all acceptability and feasibility assessment items. Intention to change following the intervention was endorsed by 91% of participants indicating that the program has the potential to help participants progress towards HPV vaccination. These key findings did not differ among women with regards to age, race, ethnicity, or Stages of Change. This CTI is one-of-a-kind in the area of HPV vaccination interventions. To our knowledge, it is the only CTI for HPV vaccination in the field that uses empirically-driven tailoring. Its computer-based format makes it is easy to disseminate quickly and inexpensively and its individually-tailored format is the state of the art in behavior change research.

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## Paper Session 32 12:39 PM–12:57 PM 4063

### HPV VACCINATION IN ALTERNATIVE SETTINGS

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BACKGROUND: Low uptake of adolescent vaccines calls for innovative approaches to increasing use. One potentially effective strategy is to offer vaccines in settings other than the traditional medical home, such as schools and pharmacies.
METHODS: A national (U.S.) sample of parents of adolescent males ages 11-17 years ($n=506$) and their sons ($n=391$) completed our online surveys in Fall 2010. Most parents were less than 45 years old (61%), female (54%), non-Hispanic white (67%) and had at least some college education (56%). We identified correlates of parent and son comfort with human papillomavirus (HPV) vaccination in alternative settings (pharmacies and schools) using multivariate regression.
RESULTS: Only around one-third of parents (37%) and a quarter of sons (23%) were comfortable with sons receiving HPV vaccine in alternative settings, much lower than for vaccination at a doctor's office (89% and 79%, respectively, both $p<.001$). Parents and sons gave similar ratings of comfort with alternative vaccination settings ($r=.50$, $p<.001$), though parents were more comfortable than sons ($p<.001$). Both parents and sons were more comfortable with HPV vaccination in alternative settings if the sons had not recently visited their healthcare providers or if the sons had previously received vaccines at school (all $p<.05$). Both groups liked the convenience of vaccinating in alternative settings but were concerned that the sons' doctors receive information about any vaccines delivered.
CONCLUSIONS: Offering HPV vaccine in alternative settings may increase vaccination, especially among adolescents who do not have regular healthcare visits. Our findings highlight factors that should be addressed in order to maximize adolescent vaccination in settings outside of the traditional medical home.

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## Paper Session 32 12:57 PM–1:15 PM 4064

### USING MESSAGE TAILORING TO PROMOTE HPV VACCINATION

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**Background:** Human papillomavirus (HPV) is a sexually transmitted infection that can cause cervical cancer and other anogenital cancers in women. Safe and effective vaccines have been developed for the primary prevention of HPV infection. Although HPV vaccine uptake in the United States is increasing, vaccination rates fall well below the target goal of 80% coverage. This study examined whether tailoring intervention materials to women's perceived barriers to HPV vaccination increases their interest in receiving the HPV vaccine.
**Method:** Young adult women ($N=94$; aged 18-26) who had not received the HPV vaccine were randomly assigned to read a personally tailored or non-tailored control booklet about HPV vaccination. Message content was individually tailored to participants' perceived barriers to HPV vaccine uptake (e.g., safety concerns, vaccine cost, not being sexually active). Women's intentions to receive the HPV vaccine in the next year (5-item composite) were assessed before and after delivery of the intervention and served as the primary outcome variable.
**Results:** Participants in the tailored condition rated the booklet as more personalized than those in the non-tailored control condition, $t\,(1, 92)=-2.78$, $p=.007$. After controlling for previous sexual activity and baseline variability in perceived barriers, a significant condition by measurement occasion interaction was observed. As predicted, relative to participants in the non-tailored control condition, participants in the tailored condition reported greater pre to post increases in HPV vaccination intentions, $F\,(1, 90)=4.10$, $p=.046$, $\eta 2=.044$.
**Conclusions:** Perceived barriers to HPV vaccination vary considerably across individuals. Findings from the present study suggest that tailoring intervention materials to women's individual barriers is a potentially promising strategy for promoting HPV vaccination in young adult women.

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## Meritorious Paper

## Paper Session 33 11:45 AM–12:03 PM 4065

### SEXUAL DYSFUNCTION AND QUALITY OF LIFE AFTER TREATMENT FOR LOCALIZED PROSTATE CANCER: THE ROLE OF SEXUAL DESIRE AND BOTHER

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Objective: Treatment for localized prostate cancer (PC) is associated with decrements in sexuality and quality of life (QOL). Research has primarily focused on sexual dysfunction (i.e., physiologic impairment) and failed to consider the role of other domains of sexuality, such as sexual desire and bother. This study evaluated the effects of sexual dysfunction, desire and bother on QOL. Methods: Participants ($N=260$) were 65.3 years old ($SD=7.7$) and ethnically diverse (41% Non-Hispanic White, 17% Black, 42% Hispanic). Sexual dysfunction, desire and bother were measured using the UCLA-Prostate Cancer Index (UCLA-PCI) and the Expanded Prostate Cancer Index Composite (EPIC). The Functional Assessment of Cancer - General Module (FACT - G) was used to measure QOL. Linear modeling was used to evaluate the main effects of sexual dysfunction, desire and bother on QOL, while controlling for relevant covariates. Results: The specified model fit the data ($\chi 2$ p-value=.27; CFI=.99; SRMR=.02; and RMSEA=.03). QOL was significantly related to sexual desire ($\beta=.14$, $p<.05$) and sexual bother ($\beta=-.25$, $p<.001$) but not sexual dysfunction ($\beta=-.003$, $p>.05$). Covariates were differentially related to sexual dysfunction, desire and bother. Conclusion: Results indicate that, following treatment for PC, sexual bother may be a more significant predictor of QOL than the degree of physiological impairment, suggesting that the extent to which men perceive their sexual side effects as being a problem may have important implications for long-term changes in QOL. Risk factors related to greater sexual bother were identified.

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## Paper Session 33 12:03 PM–12:21 PM 4066

### SLEEP DISTURBANCE, HOT FLASHES, AND URINARY FREQUENCY IN PROSTATE CANCER PATIENTS TREATED WITH ANDROGEN DEPRIVATION THERAPY

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PURPOSE: Prostate cancer patients treated with androgen deprivation therapy (ADT) often report sleep disturbance, hot flashes, and urinary frequency. To date, no studies have examined differences in objectively-measured sleep among patients treated with ADT (ADT+), prostate cancer patients treated with surgery only (ADT-), or men without cancer (CA-). In addition, relationships among objective sleep disturbance, hot flashes, and urinary frequency are unclear. The aim of the current study was to compare objective sleep disturbance between these groups and examine relationships among sleep disturbance, hot flashes, and urinary frequency secondary to receipt of ADT. METHODS: Six months after initiation of ADT, ADT+participants (n=34) completed 3 consecutive nights of actigraphic monitoring. They pressed a button on the actigraph to record each incidence of a nighttime hot flash and completed daily diaries of bedtime, rising time, and nighttime urinary frequency. ADT- (n=32) and CA- (n=28) participants completed the same procedures. RESULTS: ADT+participants displayed greater minutes awake after sleep onset (WASO) and greater nighttime urinary frequency than the ADT- and CA- participants (ps<.05). There were no group differences in nighttime hot flashes (p=.37). Among ADT+participants, greater nighttime urinary frequency was associated with greater WASO (ps<.01). There was no relationship between nighttime hot flashes and WASO or nighttime urinary frequency (ps>.38). Nighttime urinary frequency mediated the relationship between prostate cancer treatment (i.e., ADT+versus ADT-) and WASO (Sobel test statistic=-2.87, p<.01). CONCLUSION: Data from the current study suggest that prostate cancer patients treated with ADT display greater objective sleep disturbance than prostate cancer patients treated with surgery only and men without cancer. Greater nighttime urinary frequency, but not nighttime hot flashes, contributed to greater sleep disturbance.

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## Paper Session 33 12:21 PM–12:39 PM 4067

### COMPARING PSYCHOSOCIAL INTERVENTIONS FOR IMPROVING QUALITY OF LIFE OUTCOMES AMONG AFRICAN AMERICAN PROSTATE CANCER SURVIVORS

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Background: African American men are under-represented in research on psychosocial interventions for prostate cancer survivors, which limits our understanding of the efficacy of psychosocial interventions in this group of survivors. Objectives: This pilot randomized controlled trial compared the efficacy of 2 culturally tailored group psychosocial interventions for improving quality of life in a sample of 59 African American prostate cancer survivors. The interventions compared were a cognitive-behavioral coping skills training intervention (CST) and a group-based comprehensive educational intervention (EDU) that provided education about physical and emotional symptoms and life-style strategies for self-management. Groups were co-led by African American psychologists and trained community advocates. It was hypothesized that participants in the CST intervention would report greater post-treatment improvements in quality of life compared to participants in the EDU intervention as evidenced by reduced symptom distress, increased self-efficacy for symptom control, functional wellbeing and social wellbeing, and reduced negative mood. Results: ANCOVA analyses indicated that, contrary to our hypotheses, survivors receiving the EDU intervention showed statistically significant improvements in self-efficacy for managing symptom severity at post-treatment, as compared to participants in the CST intervention, F (1, 53)=6.32, p<.05. This effect was partially evident at 3-months follow-up, F (1,54)=4.0, p=.50. No differential treatment effects were found in any of the other quality of life domains assessed. These findings have important implications for development and evaluation of psychosocial interventions for African American prostate cancer survivors in future behavioral clinical trials.

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## Paper Session 33 12:39 PM–12:57 PM 4068

### PSYCHOSOCIAL CORRELATES OF ANXIETY IN PROSTATE CANCER (PC) SURVIVORS UNDERGOING ACTIVE SURVEILLANCE (AS)

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Men diagnosed with low-risk PC continue to undergo unnecessary treatments that compromise health-related quality of life, yet result in similar 10-year survival rates compared to men who undergo AS. AS may be a better treatment option for men with low-risk PC, as it delays the undesirable side effects of definitive treatments. However, the intensive monitoring in AS may be a stressful experience and lead to greater anxiety, an emotional state that has been associated with undergoing active treatment despite physician recommendation for AS. The current study examined the relationships between perceived stress management skills (PSMS), PC psychosocial concerns, and anxiety in men diagnosed with low-risk PC. Analyses were conducted on a sample of 71 men undergoing AS, who were on average 65.40 years old (SD=7.85) and ethnically diverse (52% non-Hispanic White; 31% Hispanic; 17% African American). After controlling for relevant covariates, results indicated that greater PSMS were significantly associated with less IES-R anxiety ($\beta$=-.28, p<.04). PSMS were not significantly associated with PC concerns ($\beta$=-.02, p>.05), but greater PC concerns were significantly associated with greater IES-R anxiety ($\beta$=.61, p<.01) and PSA anxiety ($\beta$=.42, p<.01). These associations held after controlling for relevant covariates. The results suggest a possible role for stress management skills as perceived ability to manage stress was related to less anxiety in the AS experience. Future studies should examine the relationship among these factors in longitudinal designs and whether greater stress is associated with unnecessary active treatment in low-risk PC.

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## Paper Session 33 12:57 PM–1:15 PM 4069

### COMPARING PROMIS COMPUTER ADAPTIVE TESTS TO THE BSI IN PROSTATE CANCER PATIENTS

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The National Institutes of Health supported the development of Quality of Life or patient-reported outcomes (PRO) measurement through the Patient-Reported Outcomes Measurement Information Systems (PROMIS). PROMIS has identified important PRO domains and developed question item banks used to create computerized adaptive tests (CAT), which adapt to the individual's responses to reduce respondent burden while maintaining precision. These tests can be accessed through the PROMIS Assessment Center. NIH highlighted the need to test CAT on different populations and compare the results to established instruments to further verify the validity of the item bank and the CAT methods. Data were collected during participant screening for a study investigating a psychosocial intervention for distressed prostate cancer patients. Participants completed the 53 item Brief Symptom Inventory (BSI) and the PROMIS CAT items assessing depression, anxiety and anger/hostility. Results from PROMIS CAT and BSI subscales were compared. Participants were 136 prostate cancer patients, who were 63% white and had a mean age of 63. Correlations between the CAT measures and BSI depression, anxiety and anger/hostility subscales were .85 (p=.000), .76 (p=.000) and .66 (p=.000) respectively. Using BSI case definitions (or cut-offs), the mean CAT depression scores were 58.2 for depressed cases and 42.8 for non-cases (p=.000). The mean CAT anxiety scores were 61.1 for anxiety cases and 46.4 for non-cases (p=.000); the mean CAT anger scores were 61.2 for cases and 45.4 for non cases (p=.000). The average numbers of items administered by the CATs were 9.5 for depression, 7.4 for anxiety and 7.1 for anger. Results indicate that the CAT tests were highly correlated with the validated BSI subscales and respondent burden was minimal with fewer than 10 questions for each of the CAT domains. Further testing will be necessary for the use of the CAT in cancer populations, but these results indicate that the CAT preformed well compared to a widely used psychosocial measure.

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## Meritorious Paper

## Paper Session 34 11:45 AM–12:03 PM 4070

### EFFECTS OF QIGONG EXERCISE AND ITS DOSE-RESPONSE RELATIONSHIP IN REDUCING FATIGUE FOR PATIENTS WITH CHRONIC FATIGUE SYNDROME: A RANDOMIZED WAITLIST-CONTROLLED TRIAL

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Background: Chronic fatigue syndrome (CFS) is a medically unexplained illness with no definite effective treatment yet. Our previous pilot study showed that qigong exercise can reduce fatigue and improve quality of life for patients with CFS.
Objectives: In this study, the effect of qigong exercise in reducing fatigue and its dose-response relationship were investigated.
Methods: One hundred and thirty seven participants completed an RCT (intervention: n=72, age, 42.4 (6.7), female: 72%; control: n=65, age, 42.5 (6.4), female: 82%). Intervention was ten 2-hour sessions of qigong exercise training (Wuxing Pingheng-gong) by an experienced Daoist qigong master (YLP). The primary outcome measure was Chalder et al's fatigue score. In addition, to evaluate the dose-response relationship, participants in the intervention group were asked to record weekly the frequency and duration of their qigong practice.
Results: The intervention and control groups were comparable at baseline. After the intervention, changes in fatigue score were -14.7 (10.3) and -5.8 (7.3) for the intervention and control groups respectively (p<.001). Among the intervention group participants, those who practiced qigong at least three times per week (n=38) reported significantly bigger improvements than those who practiced fewer than three times per week (n=18) [-17.3 (8.9) vs -9.3 (11.4), p =.006]. Patients who spent at least 30 minutes in each qigong practice (n=28) also reported bigger improvements than those who did not (n=28) [-17.9 (8.4) vs -11.6 (11.3), p=.021].
Conclusion: Qigong exercise can help patients with CFS reduce the level of fatigue. A practice regimen of at least 3 days per week and at least 30 minutes each time may produce better results.

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## Paper Session 34 12:03 PM–12:21 PM 4071

### THE EFFECTIVENESS OF A TAI-CHI EXERCISE PROGRAM ON GROSS MOTOR COORDINATION, NEGATIVE SYMPTOMS AND FUNCTIONAL DISABILITIES AMONG PATIENTS WITH CHRONIC SCHIZOPHRENIA: A PILOT STUDY

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Background: Institutionalized patients with schizophrenia often suffer from negative symptoms, motor and functional impairments more serious than their non-institutionalized counterparts. Exercise can help patients improve well-being and psychiatric symptoms. Tai-chi, in particular, emphasizes body relaxation, mental alertness and motor coordination with known benefits to balance, flexibility, and stress relief.
Purpose: This pilot study aims to explore the potential benefits of Tai-chi on gross motor coordination, negative symptoms and functioning disabilities towards schizophrenia.
Methods: A randomized wait-list control design was adopted for this 12-session (6-week) Wu-style Tai-chi program. 30 participants were randomly allocated to the Tai-chi or control group. The Minnesota Rate of Manipulation Test, Scale for the Assessment of Negative Symptoms and the World Health Organization Disability Assessment Schedule-II were respectively used to measure gross motor coordination, negative symptoms and functional disabilities at baseline, 1 week post-intervention and 6 weeks post-intervention. Analyses were conducted with the Wilcoxon signed ranks test and Mann-Whitney U test.
Results: Tai-chi had a protective effect from deterioration in gross motor coordination (Z=-2.28; p=.023) and interpersonal functioning, the latter with sustained effect 6 weeks after the end of the class (Z=-2.56; p=.01). Controls showed marked deterioration in the above areas throughout the study period.
Conclusion: This pilot study demonstrated encouraging benefits of Tai-chi on promoting movement coordination and alleviating functional disabilities. Tai-chi emphasizes movement rhythm, with possible benefits to motor desynchrony. This form of group exercise also encourages socialization that may support interpersonal functioning. The relative ease of implementation renders it possible to be promoted at other institutional psychiatric services.

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## Paper Session 34 12:21 PM–12:39 PM 4072

### PRELIMINARY RESULTS OF A RANDOMIZED CONTROLLED TRIAL OF CLINICAL HYPNOSIS FOR THE TREATMENT OF HOT FLASHES IN POST-MENOPAUSAL WOMEN

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Hot flashes affect up to 80% of women during menopause and the symptoms can be severe and frequent. This paper reports on an ongoing NIH-supported randomized clinical trial of hypnosis for the treatment of hot flashes. One-hundred and sixty seven post-menopausal women with moderate to severe hot flashes were randomly assigned to either a 5-session hypnosis intervention or a 5-session structured-attention control condition. Primary outcome measures were self-reported hot flash frequency and severity (determined via daily diaries) and physiologically monitored hot flashes (determined via sternal skin conductance). Physiological assessments of hot flashes were made using 24-hour recordings of sternal skin conductance. Measures were obtained at baseline, at the end of the five weeks intervention, and at 12 week follow-up. Preliminary results show that hot flash scores (self-report of frequency and severity of hot flashes) for the participants that received the therapist delivered hypnosis intervention decreased by approximately 70% at 5 weeks and continued to decline to approximately 80% at the 12 week follow-up. Physiologically assessed hot flashes demonstrated a 50% reduction at 5 weeks and approximately 60% reduction at 12 weeks in hot flashes for participants in the therapist delivered hypnosis condition. There was an approximate 10% reduction in participants in the structured attention condition at 5 weeks and 15% at 12 weeks. To our knowledge this is the first study to demonstrate a clinically significant reduction in physiologically measured hot flashes using a hypnosis intervention. This study has important implications for women experiencing hot flashes who are contraindicated for hormone replacement therapy.

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## Paper Session 34 12:39 PM–12:57 PM 4073

### BMI REDUCTIONS IN A QIGONG/TAI CHI EASY TRIAL WITH BREAST CANCER SURVIVORS

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Background: With rising breast cancer rates and increasing disease-free survival, the population of breast cancer survivors is growing exponentially, many with persistent weight and symptom management issues. Over 2/3 are overweight or obese when diagnosed and often continue to gain weight. A key predictor of recurrence is BMI, making strategies for weight loss an important area of research. Meditative Movement practices such as Tai Chi and Qigong incorporate gentle exercise with meditative states and deep breathing and help with weight reduction.
Method: Sixty-six fatigued breast cancer survivors were randomized to a 12-week Qigong/Tai Chi Easy (QG/TCE) intervention or sham Qigong (SQG) using similar movements but without the meditative states and breath focus taught in the primary intervention. Pre- and post-intervention data were collected on weight/height and self-report questionnaires. Participants logged minutes of practice. Mean baseline BMI was 26.8 (with no significant difference between study groups), mean age, 58.8.
Results: 57 women completed the intervention and measurements (13.6% dropout). Minutes of total practice and perceived exertion were not significantly different across arms of study. There was a statistically significant difference in BMI changes between the QG/TCE and SQG control groups using analysis of covariance on the log-transformed values (p=.045). The mean decrease was -0.4 (sd=1.0) for 26 women in the QG/TCE group and 0.3 (sd=1.4) for 31 women in the SQG group. Linear regression was conducted to examine factors expected to be related to BMI reductions, including several sleep related factors (Pittsburgh Sleep Quality Index), and SF36 scales for pain, emotional distress and role limitations due to health issues. The overall model was significant (R2=.911; F=5.657; p=.035) with significant effects for exercise exertion (ranging from very low to low), total minutes practiced, pain, and an overall rating of sleep quality (p=.050, .041, .023, .010 respectively).
Conclusion: QG/TCE holds promise as a weight loss strategy for breast cancer survivors even at low levels of exertion. Weight loss may be associated with improvements in sleep and pain.

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## Paper Session 34 12:57 PM–1:15 PM 4074

### THE LONG-TERM AND ANTI-AGING EFFECTS OF QIGONG ON PATIENTS WITH CHRONIC FATIGUE SYNDROME

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Background: The beneficial effects of Qigong on chronic fatigue syndrome (CFS) have been demonstrated in our previous randomized control trial (RCT). Apart from its benefits on increasing vigor and stress relief that may impact the endocrine and immunological systems; Qigong has long been considered as a means to achieve overall health and longevity.
Objectives: The present RCT aims to study the long-term effects of Qigong on fatigue and health functioning, as well as telomerase activity, an anti-aging biomarker.
Methods: A RCT was conducted on 137 CFS patients with 72 patients in Qigong group and 65 in wait list control group. Ten 2-hour sessions (twice a week for 5 weeks) of Qigong exercise was delivered by a Qigong master. Fatigue and health functioning were measured using Chalder's fatigue scale and Short Form-12 in all participants while telomerase activity was analyzed in blood samples drawing from 33 participants in Qigong group and 31 in control group. Independent T-test and pairwise T-test were used to analyze between groups and within group changes in all measures.
Results: From baseline (T0) to 3 month post-intervention (T2), the change of fatigue was significantly greater in Qigong group than in control group (-16.1±10.8, and -6.8±8.2, p <0.001). Both groups did not differ significantly in the change of physical functioning (4.4 ±7.4 and 3.2±6.6, p=0.373); but Qigong group showed greater improvement than control group in mental functioning (8.2 ±11.7 and 1.2 ±9.5, p=0.001). The change of telomerase activity in Qigong group is marginally significant greater than control group (0.08±0.2 vs 0.02±0.06, p=0.099). Qigong group also had a significant increase in telomerase activity from T0 to T2 (from 0.10 ±0.05 to 0.18±0.20, p=0.033), but this was not found in the control group (from 0.09 ±0.04 to 0.10±0.06, p=0.176).
Conclusion: Qigong exercise helps reduce fatigue and improve mental health functioning in long term and also has anti-aging effect on CFS patients.

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## Citation Paper

## Paper Session 35 11:45 AM–12:03 PM 4075

### PEAK AFFECTIVE EXERCISE EXPERIENCES AND FUTURE EXERCISE DECISIONS OF OVERWEIGHT AND OBESE ADULTS

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The nature of affective responses experienced during exercise sessions may play a role in subsequent decisions to participate in or abstain from exercise. Kahneman (1999) proposed that the “peak” affect experienced during an episode has a decisive impact on memory formation and subsequent behavioral decisions, whereas the duration of the episode is inconsequential. To test this theory in an exercise context, we compared two exercise stimuli that were engineered to differ in the magnitude of the negative affective “peaks” they produced by setting the intensity either below or above each individual’s ventilatory threshold (VT). METHODS: Participants were 29 low-active, overweight or obese (BMI=29.4±4.3 kg/m2; Age=24±4.9 years) men (n=14) and women who completed four sessions in a laboratory. The first involved a test of maximal aerobic capacity to identify VT. The two subsequent, counterbalanced treadmill sessions consisted of exercise bouts that were designed to be isocaloric, but differed significantly in intensity: (a) a 10-min bout at an intensity that was 20% higher than VT (HI-SHORT) and (b) a 15-min bout at an intensity that was 20% lower than VT (LO-LONG). The Feeling Scale (FS) was used to measure affect throughout both sessions. At the final session, participants were asked to choose one of these two exercise bouts to repeat. RESULTS: As planned, the HI-SHORT condition produced a significantly larger negative affective peak than the LO-LONG bout, F(1,28)=52.80, p<0.001. Consistent with the hypothesis, at a ratio of 2:1, participants chose to repeat the LO-LONG bout at the final session, despite the fact that it was longer (χ2=4.2, p<0.05). CONCLUSIONS: Consistent with a previous observation (Fogelholm et al., 2000), these findings indicate that overweight or obese participants prefer a lower intensity over a shorter duration. Thus, exercise choices may be influenced by peak during-exercise affective experiences of recent exercise bouts and should be considered when devising exercise prescriptions.

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## Paper Session 35 12:03 PM–12:21 PM 4076

### ACUTE AFFECTIVE RESPONSES TO VARYING DURATIONS OF PHYSICAL ACTIVITY AMONG OVERWEIGHT AND OBESE WOMEN

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Affective responses to exercise have been shown to influence compliance to regular physical activity. Current guidelines recommend 30 minutes or more of moderate-intensity physical activity daily, which may be performed in one session or over the course of the day in bouts of at least 10 minutes in duration. However, there is limited research examining the effects of 10-minute bouts versus longer bouts of physical activity on acute affective responses. The present study compared positive affect (PA) and negative affect (NA) in response to moderate-intensity exercise for 10 minutes (EX-10), 40 minutes (EX-40), and a 40-minute resting session (REST) at Time 1 (pre-condition) and Time 2 (post-condition). After a screening visit to document eligibility, healthy, sedentary, overweight (OW) and obese (OB) women (n=28; BMI=32.59±4.25 kg/m2) participated in the experimental sessions in a randomized counterbalanced order. PA and NA were measured using the PANAS (Watson, Clark, & Tellegen, 1988), and 2 x 3 ANOVAs with planned contrasts were used to evaluate PA and NA. There was a significant time by condition interaction on PA (p=0.00) but not NA. Across Time 1 and 2, PA changed by +4.97 for EX-40, +3.42 for EX-10, and +0.75 for REST. PA over time differed significantly for EX-40 vs. REST (p=0.00) and EX-10 vs. REST (p=0.00), respectively, but PA over time did not differ between the EX-40 and EX-10 conditions. Similar results were found when analyses were completed using an outcome measure specific to exercise (SEES; McAuley & Courneya, 1994). The findings suggest that PA, but not NA, is significantly influenced by acute bouts of exercise for OW/OB women. Because 10-minute and 40-minute bouts of exercise produce similar increases in PA, both are viable options for improving PA and potentially increasing compliance when prescribing exercise for OW/OB women within national physical activity guidelines.

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## Paper Session 35 12:21 PM–12:39 PM 4077

### AFFECTIVE EXPECTATIONS INCREASE POSITIVE MOOD, EXERCISE INTENTIONS, AND EXERCISE DURATION

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Previously, correlational research has shown that one of the best predictors of exercise behavior is feelings about exercise. In this study we experimentally tested the hypothesis that giving participants an expectation that exercise improves mood would enhance exercise-related moods, intentions and behaviors. One hundred thirty-four healthy participants (49 men, 85 women, aged 18-30) were randomly assigned to an affective expectation group or a control group. Participants in the affective expectation group were informed that regular exercise results in increased positive mood and participants in the control condition were given information about stationary bicycles. Then all participants engaged in 10 minutes of moderate intensity exercise on a stationary bicycle. Mood and intentions to exercise in the future were assessed immediately after the exercise session. At the end of the session, participants had the opportunity to take home exercise-related literature. During a two-week follow up, participants reported daily exercise duration and mood. Results showed that participants in the affect condition reported more positive post-exercise affect, greater intentions to exercise in the future, and were more likely to take home exercise literature (all p’s<.05). In addition, during the follow-up portion, those participants in the affect condition spent more time exercising than those in the control condition (p<.05). This suggests that a brief affect manipulation can significantly improve feelings about exercise and increase exercise behavior. In addition, changing affective expectations about exercise can be an important component of interventions to increase exercise adherence.

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## Paper Session 35 12:39 PM–12:57 PM 4078

### HOOP YOUR WAY TO GOOD HEALTH: EFFECTS OF HULA HOOPING VERSUS TREADMILL EXERCISE ON ATTITUDES AND BEHAVIOR

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Only one third of Americans meet recommendations for daily physical activity (PA) and females engage in less PA than males. Recent work has found relationships between positive affective responses to PA and higher intentions for future PA. In addition to improving affect, brisk walking is accessible, affordable, and adequate for meeting PA guidelines. However, higher body mass index (BMI) and/or fewer PA minutes per week predict significantly more pain and discomfort while walking and less affective improvements post-PA. What is needed is a form of PA, equitable to walking in accessibility, affordability, and aerobic intensity that does not promote discomfort. One option is hula-hooping. In the present analysis a total of 120 women, aged 18-45, were randomly assigned to either 30minutes of treadmill walking (n=62) or hula hooping (n=58). Affect measures were collected pre- and post-activity and ratings of perceived exertion (RPE) and heart rate (HR) were collected in-task. Future exercise behavior at 30 days follow-up was predicted using the Theory of Planned Behavior (TPB; Ajzen, 1985). The average HR for the hula-hoop group was significantly higher t(118)=2.21 p<.025 (M=35.32, SD=15.68) than the average HR for the walking group (M=129.65, SD=12.29). Interestingly, the difference between groups for RPE was non-significant indicating that hoopers and walkers perceived the PA to be equally exerting even though the hoopers were actually exercising at a higher intensity. Mediational analyses via structural equation modeling showed that hoopers had higher post-PA perceived behavioral control (PBC) than walkers, and that higher PBC and exercise attitudes were associated with better intentions to exercise 30 days later. Unfortunately, intentions were not related to actual behavior at 30 days follow-up. Hula-hooping is equivalent or better than walking in terms of aerobic intensity, and may yield higher feelings of perceived behavioral control over exercise. These findings highlight the difficulty of translating intentions into behavior.

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## Paper Session 35 12:57 PM–1:15 PM 4079

### ENVIRONMENTAL, PERSONAL, AND BEHAVIORAL CHARACTERISTICS OF SUCCESSFUL WALKERS: A SOCIAL COGNITIVE PERSPECTIVE

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About 40% of US adults engage in leisure walking, but few achieve recommended physical activity levels through walking alone. In an attempt to understand the psychosocial foundations of successful leisure walking, 202 adults who walked regularly for exercise, identified through random digit dialing sampling methodology, participated in a telephone survey. A subset (n=148; 71% female, 12% AA, age m=50.4 yrs, 68% some college, 70% $60K+income) formed a group of dedicated walkers (m[sd]=210.5[148.2] min/week, m[sd]=33.6[27.2] months). Successful walkers rated their communities as safe (92%), comfortable (66%) and accessible (66%) for walking, with few amenities (e.g., benches, water fountains, 9%). Community pleasantness ratings distinguished high-level (225+ mins/week, 81% agreeing) from mid-level (150-224 min/week, 69%) and lower-level walkers (<150 min/week, 64%, χ2[n=144, df=6]=13.7, p=.03). Successful walkers typically walked in their neighborhoods (74%) alone (63%). Walking enjoyment was high; 87% agreed they love walking. Successful walkers had high self-efficacy (m[sd]=3.8 [.4]; 4pt scale), but tepid social support (m[sd]=2.3[.9]; 2=rarely, 3=sometimes). On 4pt scales (2=disagree, 3=agree, 4=strongly agree) they indicated high expectations for physical benefits from walking (m[sd]=3.5[.5]); emotional outcome expectations varied across high- (m[sd]=3.7[.7]), mid- (m[sd]=3.5[.6]), and lower-level walkers ((m[sd]=3.3[.7], F=3.65, p=.03,) and commitment to walking was highest among high-level walkers (e.g., always make time to walk, m[sd]=3.7 [.7] vs. 3.2[.8] vs. 2.7[.9],F=15.6, p<.0001); goal setting (m[sd]=2.3[.8]) and self monitoring (m[sd]=2.8[.7]), however, were weakly endorsed across walking levels. Results suggest strongly positive affective features in successful walking (e.g., pleasant environment, emotional benefits, and enjoyment), high walking self-efficacy, good environmental support (cf social support) and high walking commitment (cf self-monitoring and goal setting) may be required for adults to consistently achieve exercise recommendations through leisure time walking.

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## Citation and Meritorious Paper

## Paper Session 36 11:45 AM–12:03 PM 4080

### MULTIPLE EMOTIONAL FACTORS AS PREDICTORS OF CARDIOVASCULAR DISEASE INCIDENCE: ANALYSIS OF NHANES I DATA

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Although considerable evidence indicates that negative emotional factors are associated with an increased risk of cardiovascular disease (CVD), most studies have examined the influence of only a single emotional factor on CVD outcomes. To identify which of these overlapping constructs may be involved in the pathogenesis of CVD, we simultaneously examined six emotional factors as predictors of incident CVD over 18-22 years. Data from the National Health and Nutrition Examination Survey (NHANES) I and its Epidemiologic Follow-up Study (NHEFS) were analyzed. Participants were 3,346 individuals aged 25-74 years free of CVD at baseline (53% female, 16% non-white). The six emotional factors were assessed by the depressed mood, anxiety, freedom from health worry, energy level, satisfying life, and emotional/behavioral control subscales of the General Well-Being Schedule (converted to z-scores). The primary outcome was incident CVD (n=727, 22%), defined as nonfatal or fatal coronary artery disease or cerebrovascular disease, identified during the follow-up period by interviews and death certificate records. Separate Cox proportional hazard models adjusted for demographic and cardiovascular risk factors revealed that depressed mood (OR=1.08, 95% CI:1.01-1.17, p=.03), anxiety (OR=1.12, 95% CI:1.04-1.20, p=.003), health worry (OR=1.08, 95% CI:1.00-1.17, p=.05), and low energy level (OR=1.12, 95% CI:1.04-1.20, p=.002) were predictors of incident CVD. After adjustment for depressed mood, anxiety (OR=1.11, 95% CI: 1.00-1.25, p=.05) and low energy level (OR=1.11, 95% CI: 1.01-1.22, p=.02) retained their predictive value, whereas health worry did not (p=.30). In these models, depressed mood was no longer predictive of incident CVD (ORs=1.00-1.06, all ps>.16). Our results suggest that increased anxiety and reduced energy level are predictors of incident CVD, independent of affective aspects of depression (i.e., depressed mood). Low energy level scores could be indicative of the somatic aspects of depression (e.g., fatigue) or reduced positive affectivity.

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## Paper Session 36 12:03 PM–12:21 PM 4081

### MAINTAINING EXERCISE AFTER CARDIAC REHABILITATION: PSYCHOSOCIAL OUTCOMES

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Depressed mood which is common in cardiac patients can persist after major cardiac events and is associated with increased risk of cardiac morbidity and mortality. Although regular exercise may help improve cardiac outcomes and improve mood, exercise maintenance after patients complete cardiac rehabilitation (CR) is poor. We offered a telephone counseling program to help patients adhere to exercise prescriptions provided at CR discharge. One hundred and thirty patients (mean age=63.6 years, SD=9.7, 21% female, 75% married/partnered, 93% White) were randomized to a 6-month home-based telephone counseling intervention (Exercise Counseling Group, ECG) or contact control group (CCG). The telephone counseling was based on the Transtheoretical Model and Motivational Interviewing. At CR discharge and at 6 (6M) and 12-month follow-ups (12M), participants completed self-reported measures of exercise (7 Day PAR), depression (Cardiac Depression Scale), and heart-disease quality of life (QOL, MacNew Heart Disease questionnaire). Prior analyses showed significant group differences favoring the ECG group in weekly exercise participation at 12M (group difference of 80 mins.) but not at 6M. Using generalized linear regression models, the psychosocial outcomes were regressed on treatment group, age, gender and the baseline value of the outcomes. At 12M, significant group effects were found for depression with ECG reporting lower depression scores than CCG (β=-5.86, SE=2.93, p=0.04). Group effects at 6M were non-significant. Significant group effects for QOL (global QOL and physical, social and emotional subscales) were found both at 6M (global QOL, β=7.96, SE=2.35, p<.01) and 12M (global QOL, β=6.74, SE=2.99, p=.02) with ECG group reporting higher QOL than CCG. Interventions are needed for exercise maintenance after patients are discharged from CR, and these results support the importance of exercise to manage depressed mood and improve QOL among these patients.

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## Paper Session 36 12:21 PM–12:39 PM 4082

### EARLIER DEPRESSION TREATMENT REDUCES RISK OF INCIDENT CARDIOVASCULAR DISEASE: A FOLLOW-UP STUDY OF THE IMPACT TRIAL

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Depression is an independent risk factor for cardiovascular disease (CVD); unfortunately, past trials of depression treatments have not detected a cardiovascular benefit. A novel and unexplored explanation is that the interventions were delivered too late in the natural history of CVD. We evaluated this hypothesis by conducting a follow-up of patients from the Improving Mood-Promoting Access to Collaborative Treatment (IMPACT) trial. Participants were 235 depressed primary care patients with major depression and/or dysthymia (mean age=67 years, 76% female, 48% African American, 52% with baseline CVD) from the IMPACT Indiana sites who were randomized to 12 months of a collaborative stepped care program involving antidepressants and/or brief psychotherapy or usual care. Data regarding incident CVD - defined as nonfatal or fatal coronary artery disease (CAD) or cerebrovascular disease (CBV) or associated procedures (e.g., bypass graft) - were obtained from an electronic medical record system and the Centers for Medicare and Medicaid Services analytic files. During 9-year follow-up period, we identified 191 (81%) cases of incident CVD. Cox proportional hazards models revealed that depressed patients free of baseline CVD who received collaborative care for depression, versus usual care, had a 49% reduced risk of incident CVD (HR=0.51, 95% CI: 0.32-0.80, p=.004). Among those without baseline CVD, the CVD incidence rate was 54% and 76% in the collaborative care and usual care arms, respectively. No group difference, however, was detected among those with baseline CVD (95% vs. 97%; HR=1.01, 95% CI: 0.70-1.46, p=.95). The same pattern was observed for incident CAD and CBV separately. The treatment and control groups did not differ on demographics, traditional CVD risk factors, or depression variables at baseline. Our findings suggest that depression is a casual risk factor for CVD and that depression treatments delivered before the onset of clinical CVD may be cardioprotective.

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## Paper Session 36 12:39 PM–12:57 PM 4083

### PSYCHOSOCIAL AND BIOMEDICAL PREDICTORS OF MORTALITY IN PATIENTS WITH CHRONIC HEART FAILURE

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Depression is highly prevalent in heart failure (HF) patients and may lead to faster decline in physical health. Elevated inflammation, also frequently observed in HF patients, has been suggested as a precursor or sequela of depression that may explain the link between depression and poor health outcomes. This study examined (1) whether depression (measured by CESD-R), related psychosocial characteristics (marital status and social support), and inflammation (C-reactive protein [CRP]) predicted the mortality in patients up to 4 years, and (2) whether inflammation explained the associations between psychosocial variables and mortality or vice versa. Participants were 220 HF patients (68% men) with mean age of 54 (SD=11) years. Hierarchical logistic regression and meditational analyses were conducted to examine the predictors of mortality and their relationships over 4 years while controlling for age, gender, and HF severity (NYHA class). The results showed that: (1) Although depression (OR =1.02, p=.03) predicted mortality in patients in the univariate model, it became nonsignificant when somatic items were removed (p=.17) or after adjusting for covariates (p=.22); (2) CRP predicted mortality in the univariate model (OR= 2.09, p=.01) and remained significant when adjusted for covariates (OR=1.92, p=.03); (3) Depression and CRP were not associated (r=.09, p=.26) and therefore did not mediate the effect from one to the other; (4) Being married, but not social support, predicted lower mortality in both univariate (OR=.47, p=.02) and adjusted (OR=.35, p<.01) model. Social support did not mediate the influence of marital status on mortality, or vice versa. Finally, in the full model with demographic, biomedical and psychosocial variables, NYHA class (OR=2.30), CRP (OR=1.89), and marital status (OR=0.46) remained significant predictors of mortality (all ps<.05). The findings suggest that being unmarried and elevated inflammation appear to represent separate and specific pathways that contribute to higher mortality risk in HF patients. Depression was not associated with either inflammation or mortality in this sample.

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## Paper Session 36 12:57 PM–1:15 PM 4084

### ARE DEPRESSION AND ANXIETY INDEPENDENT, OVERLAPPING, OR PROXY RISK FACTORS FOR ATHEROSCLEROTIC CARDIOVASCULAR DISEASE?

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Because depression and anxiety are typically studied in isolation, it is not known whether these emotional factors are independent, overlapping, or proxy risk factors for atherosclerotic cardiovascular disease (CVD). Therefore, we simultaneously examined depression and anxiety measures as predictors of incident CVD over 9 years among 1946 older, primary care patients initially free of CVD (mean age=68 years, 73% female, 57% African American). Patients who endorsed either of the 2 depression items (17%) on the PRIME-MD were coded as screening positive for depression, and those who endorsed either of the 2 anxiety items (44%) were coded as screening positive for anxiety. Data regarding incident CVD - defined as nonfatal or fatal coronary artery disease, cerebrovascular disease, or peripheral artery disease or an associated procedure (e.g., bypass graft) - were obtained from an electronic medical record system and the Centers for Medicare and Medicaid Services analytic files. There were 1132 (58%) cases of incident CVD. Cox proportional hazards models (adjusted for age, sex, race, hypertension, diabetes, cholesterol, body mass, and smoking) revealed that both a positive screen for depression and anxiety were associated with an increased risk of incident CVD when examined in separate models (Depression HR=1.38, p<.001; Anxiety HR=1.25, p<.001), as well as when entered simultaneously into the same model (Depression HR=1.30, p=.001; Anxiety HR=1.18, p=.009). The Depression x Anxiety interaction was not significant (p=.99). Patients with a positive screen for both depression and anxiety (HR=1.53, p<.001), depression only (HR=1.30, p=.09), or anxiety only (HR=1.18, p=.02) had a greater likelihood of incident CVD than those with negative screens for both factors. Our findings suggest that depression and anxiety may be independent and additive risk factors for CVD and that older adults with comorbid depression and anxiety may be at substantially increased CVD risk.

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## Paper Session 37 11:45 AM–12:03 PM 4085

### PROBLEM DRINKING BEHAVIORS: DIFFERENTIAL EFFECTS OF STRESS AND TYPE OF SCHOOL ON BLACK VS. WHITE COLLEGE STUDENTS

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We aimed to determine sociodemographic and psychosocial factors impacting problem drinking behavior (i.e., binge drinking, driving after drinking, sexual intercourse after alcohol consumption) among black and white college students. We administered an online survey to six Southeast colleges, yielding a 20.1% response rate (N=4,840/24,055). We focused the current analyses on 3,845 black and white college students. We examined sociodemographics (age, gender, ethnicity, type of school attended), depressive symptoms (Patient Health Questionnaire - 2 item [PHQ2]), perceived stress (Perceived Stress Scale - 4 item [PSS4]), and satisfaction with life (Satisfaction with Life Scale [SWLS]) and potential interaction effects in relation to an index score (range 0 to 5) of problem drinking behaviors (i.e., past 30-day binge drinking and driving after drinking, being high on alcohol prior to last intercourse). OLS regression indicated that being male (β=-0.47, p<.001), being white (β=-1.02, p<.001), attending a four-year university (β=-0.52, p<.001), higher depressive symptoms (β =0.08, p=.001), and lower satisfaction with life (β=-0.14, p=.002) predicted greater problem drinking behaviors. Furthermore, a significant interaction between race and gender was found such that, although whites had higher problem drinking scores than blacks, white women had greater decreases in problem drinking than black women and compared to racially similar men (β =0.22, p=.01). An interaction between race and type of school was also found such that attending a four-year college posed greater risk for whites than blacks for problem drinking behaviors (β =0.37, p<.001). An interaction between ethnicity and perceived stress was also found such that higher perceived stress posed a greater risk for problem drinking behaviors among blacks than whites (β =0.04, p=.01). This study highlights contextual factors and psychosocial characteristics that impact problem drinking differently among black and white college students.

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## Paper Session 37 12:03 PM–12:21 PM 4086

### DO TELEHEALTH EDUCATIONAL MODULES SUPPORT MAINTENANCE OF PROBLEM DRINKING RESOLUTIONS?

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Background: Most problem drinkers do not seek professional treatment, and accessible community-based interventions are needed to increase service options for untreated drinkers, who comprise the majority of the population with problems and contribute the bulk of harm and cost. In this prospective study, we investigated whether recovery-focused educational modules delivered weekly using an Interactive Voice Response (IVR) system would support natural resolutions during early recovery when relapse risk is high.

Method: Recently resolved untreated problem drinkers (N=87) received access for 24-weeks to a computerized telephone IVR self-monitoring system. Drinking-related reports were collected daily, and brief educational modules that supported a typical course of recovery were introduced via IVR each week. Hierarchical linear models (with repeated observations nested within individuals) evaluated effects of module use, initial resolution status (resolved abstinent [RA] or non-abstinent [RNA]), time, drug use, and urges to drink on alcohol consumption, and tested interactions between module use and urges to drink.

Results: Retrieving an educational module during the IVR interval reduced subsequent drinking ($p<.001$), and an interaction effect showed that module use had a greater inhibitory effect on drinking among RA than RNA participants ($p<.05$). Urges to drink increased same-day drinking ($p<.001$). We also found interactions between module retrieval, urges to drink, and initial drinking status. When urges were high, the inhibitory effects of modules on drinking diminished ($p<.001$); however, this effect applied primarily to participants who started out abstinent ($p<.05$).

Conclusions: IVR-delivered educational modules appear to support the maintenance of drinking resolutions but effects may differ dependent on initial resolution status.

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## Paper Session 37 12:21 PM–12:39 PM 4087

### SCREENING AND BRIEF INTERVENTION FOR HAZARDOUS ALCOHOL USE: A PILOT STUDY IN A COLLEGE COUNSELING CENTER

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In the United States, college drinking has been identified as a public health concern. The pervasive and detrimental use of alcohol on college campuses inspired calls for wider implementation of empirically supported interventions in college settings. Despite strong evidence of the efficacy of brief interventions, no studies have examined the efficacy and feasibility of integrating a screening and brief intervention (SBI) into college mental health services. The aims of the following study were to (a) to determine the feasibility and acceptability of implementation and, (b) to examine the short-term impact of SBI on alcohol use, treatment utilization, client satisfaction, and clinical symptoms. Participants were 35 college students who screened positive for risky alcohol use at a college counseling center. Participants were randomly assigned to a brief intervention for alcohol use or to an information-only control group. Follow-up assessments took place 1 and 2 months post-intervention. Participants in the intervention condition significantly reduced drinks per week 1-month post intervention and perceived stress 2-months post-intervention when compared to controls. All participants showed reductions in peak BAC, heavy drinking episodes, and alcohol related problems at 1 and 2-month follow-up assessments. Process measures revealed that only half of providers referred eligible students despite high ratings of feasibility and acceptability of the program. Future research might examine this intervention with a larger sample as well as barriers to dissemination and recruitment among staff. This study is a promising first glance at the integration of SBI for alcohol use in a college counseling setting.

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## Paper Session 37 12:39 PM–12:57 PM 4088

### TECHNOLOGY USE AND RISK FOR SUBSTANCE USE AMONG COMMUNITY COLLEGE STUDENTS

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Alcohol use among community college students (CCS) is a serious problem, leaving students vulnerable to social and health impairment, physical or sexual assault, unintentional injuries, and death. However, there have been limited efforts to research and treat CCS, despite these students comprising nearly 40% of all college students nationwide. Because CCS spend more time commuting and less time on campus than students at 4-year colleges, we explored the potential for an intervention using mobile technology.

CCS (N=141; 58% female; 78% white, 13% Hispanic; Age M=20.9) were surveyed regarding their current substance use, binge drinking, and negative consequences of alcohol or drug use. Demographic and technology use data were also collected.

Results: Substance abuse was a common problem among CCS; 44% of participants reported binge drinking in the past 2 weeks and 27% reported marijuana use in the past 30 days. Over 70% had experienced at least one negative consequence of substance use (e.g., performing poorly on a test). In terms of technology use, text messaging was far more commonly used than voice calls or accessing the Internet via mobile phone ($p<.001$). A total of 86% of CCS texted daily (average text/day=86, range 1-600), while only 64% spoke on the phone daily. Technology use was positively associated with higher alcohol (OR=1.26, 95% CI=.87-1.83, $p<.01$) and marijuana use (OR=3.88, 95% CI=1.47-10.23, $p<.001$), however having friends or family with substance use problems moderated this relationship. That is, greater technology use was associated with more frequent binge drinking only among CCS who did not have a friend or family member with a substance use problem ($p<.02$).

These results indicate a need for substance abuse interventions among CCS, and suggest that text messaging may be a particularly appealing delivery tool. Existing high technology use requires further investigation as it may be a potential marker of risk for substance use. Interventions and programs are needed that are tailored to the unique needs of CCS.

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## Paper Session 37 12:57 PM–1:15 PM 4089

### ONE BULLOCH: ADVOCATING FOR CHANGE IN A RURAL COMMUNITY

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Bulloch County, Georgia, a rural county with a population of 67,761, has been identified as having a higher rate of alcohol-related traffic crashes than the state average. Needs assessment results revealed the highest crash rates were among White males between the ages of 25-34 within the city of Statesboro. Social and community norms related to alcohol consumption, low perceived risk of getting caught, and low perceived risk that buzzed driving is dangerous were identified as predictors of alcohol-related traffic crashes. To reduce the number of alcohol related traffic fatalities in Bulloch County, a community-driven prevention process (ONE Bulloch) employing environmental strategies (e.g., media advocacy, social norms marketing, sobriety checkpoints) was used to develop community capacity to address alcohol-related harms, including alcohol related traffic crashes. The purpose of this evaluation study was to evaluate the process and outcomes of ONE Bulloch's efforts to change social norms and behaviors related to DUI, with emphasis on 25 - 34 year old White males. The RE-AIM evaluation framework utilizing mixed methods (e.g., observation, intercept interviews, and secondary data analysis) was used to assess community, system, and environmental process and outcomes. Combined results provided insight into the contributing factors to social and community norms related to drinking and DUI for the target population. Overall, ONE Bulloch represents a community based approach to increasing capacity to address alcohol harms, and provides insight into barriers to implementation (e.g., lack of a coordinated prevention system, competing demands) and evaluation (e.g., delays in implementation which prevent readiness for outcome evaluation) and strategies for overcoming them.

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