Healthcare career intervention with youth in a predominantly Latinx rural community: a pilot study of a creative approach

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Abstract

The present study discusses a pilot intervention for youth in a predominantly Latinx rural community in the U.S. The intervention incorporated multimodal creative activities into the social cognitive career theory-based healthcare career program. Participants ($N=75$) were assessed for healthcare career self-efficacy, outcome expectations, and interests (pre-/post-intervention). Their healthcare career task self-efficacy and interests scores significantly increased overall. By race/ethnicity groups, however, only White students reported an increase in healthcare interests, and only students of color an increase in healthcare career task self-efficacy. This provides preliminary evidence for the effectiveness of the proposed intervention. Implications for services and research are discussed.

Keywords Health careers · Creative · Immigrant community

Résumé

Intervention de carrière dans le domaine des soins de santé auprès des jeunes dans une communauté rurale à prédominance latine: Une étude pilote d'une approche créative

La présente étude porte sur une intervention pilote destinée aux jeunes d'une communauté rurale à prédominance latine aux États-Unis. L'intervention a intégré des activités créatives multimodales dans le programme de carrière en soins de santé basé sur la théorie sociale cognitive des carrières. Les participant-e-s ($N=75$) ont été évalué-e-s sur leur sentiment d'efficacité personnelle dans les soins, leurs attentes en matière de résultats et leurs intérêts (avant et après l'intervention). Les résultats du

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sentiment d'efficacité personnelle des tâches et des intérêts de leur carrière dans le domaine de la santé ont augmenté de manière significative dans l'ensemble. Toutefois, par groupe racial ou ethnique, seul·e·s les étudiant·e·s blancs ont signalé une augmentation de leurs intérêts pour les soins de santé, et seul·e·s les étudiant·e·s de couleur ont signalé une augmentation de leur sentiment d'efficacité personnelle dans les tâches liées aux soins de santé. Cela fournit des preuves préliminaires de l'efficacité de l'intervention proposée. Les implications pour les services et la recherche sont discutées.

Zusammenfassung

Laufbahnentwicklungsprogramm im Gesundheitswesen bei Jugendlichen in einer vorwiegend ländlich geprägten Latinx-Gemeinde: Pilotstudie eines kreativen Ansatzes

Die vorliegende Studie beinhaltet eine Pilot Intervention für Jugendliche in einer vorwiegend ländlichen Latinx-Gemeinde in den USA. Die Intervention umfasste multimodale kreative Aktivitäten eines Laufbahnentwicklungsprogrammes im Gesundheitswesen auf der Basis der sozialkognitiven Laufbahntheorie. Die Teilnehmenden ($N=75$) wurden hinsichtlich ihrer laufbahnbezogenen Selbstwirksamkeit im Gesundheitswesen, ihrer Ergebniserwartung sowie ihrer Interessen (vor/nach der Intervention) untersucht. Auf ihre Aufgabe im Gesundheitswesen bezogen stiegen die Selbstwirksamkeit und die Interessen insgesamt signifikant an. Aufgeteilt nach ethnischer Zugehörigkeit konnte jedoch nur bei den *weißen* Studierende eine Zunahme der Interessen im Gesundheitswesen und nur bei den *students of color* eine Zunahme der Selbstwirksamkeit bezüglich der Aufgaben im Gesundheitswesen beobachtet werden. Die Ergebnisse liefern eine vorläufige Evidenz für die Wirksamkeit der vorgeschlagenen Intervention. Implikationen für Dienstleistungen und Forschung werden diskutiert.

Resumen

Intervención en la carrera de atención médica con jóvenes en una comunidad rural predominantemente latina: un estudio piloto de un enfoque creativo

El presente estudio analiza una intervención piloto para jóvenes en una comunidad rural predominantemente latina en los EE. UU. La intervención incorporó actividades creativas multimodales en el programa de carrera de atención médica basado en el enfoque socio-cognitivo de la carrera. Se evaluó a los participantes ($N=75$) en cuanto a la percepción de la autoeficacia para la carrera sanitaria, las expectativas de resultados y los intereses (antes y después de la intervención). Sus puntuaciones de percepción de autoeficacia e intereses en las tareas de la carrera sanitaria aumentaron significativamente en general. Sin embargo, por grupos de raza / etnia, solo los estudiantes blancos mostraron un aumento en los intereses relacionados con la atención médica, y solo en los estudiantes de color se observó un incremento en la percepción de autoeficacia para las tareas profesionales de la salud. Esto proporciona evidencia preliminar de la efectividad de la intervención propuesta. Se discuten las implicaciones para los servicios y la investigación.

Introduction

Career researchers across the globe increasingly emphasize the importance of addressing and eliminating barriers to career development among disenfranchised groups (Ali, 2013; Blustein et al., 2005; Fonseca, 2018; McMahon & Rixon, 2007). As an extension of the pervasive and ongoing anti-immigrant regime and rhetoric in the United States (U.S.), researchers have identified emerging risks (e.g., school disconnection, as well as feelings of insecurity and anxiety about their future or their family's future) among predominantly Latinx communities with a history of immigration; these risks pose a significant barrier to the students' psychosocial and career development (Roche et al., 2018; Wray-Lake et al., 2018).

Predominantly Latinx rural towns in the U.S. Midwest may be just one of the communities impacted by these barriers (Ali et al., 2019; Martinez & Coronado, 2018; Page et al., 2020). Over the past two decades, Latinx immigrant families have increased by a significant percentage in rural Midwest towns that have traditionally been composed of White farming families (Kandel, 2005; Lichter, 2012). Students of color residing in such rural communities may not have access to the resources to adequately navigate their career environment, as research has shown that rural settings impose perpetuating systemic barriers; these include limited access to career services and restricted family social class resources (e.g., financial stability, career role models, access to career information and activities; Abrego, 2006; Ali & Menke, 2014; Farmer et al., 2006; Martinez & Coronado, 2018).

Overall, students in predominantly Latinx rural settings are less likely to have access to occupations with promising job growth, or those that require certain levels of educational attainment (García et al., 2010). Indeed, according to the Bureau of Labor Statistics (2018), healthcare is one of the few sectors with promising job growth prospects in the U.S., increasing by 18% between 2016 and 2026. Currently, however, the pipeline for this workforce has been historically impeded, with Latinx providers continuing to be significantly underrepresented in such career fields (MacDowell et al., 2010). The shortage of healthcare providers from Latinx cultural backgrounds in turn contribute to a significant health disparity among predominantly Latinx communities (Cancel-Tirado et al., 2018; Morales et al., 2002). In response to this disparity, researchers have encouraged interventions that provide pragmatic career information to consider the holistic career contexts of Latinx students to consider entering healthcare career fields; these contexts may include cultural affiliations, sociopolitical influences, linguistic backgrounds, and local resources (Ali et al., 2019; Flores et al., 2008).

Previous research suggests that career interventions may benefit from the implementation of a creative activity component (Heppner et al., 1994). Specifically, creative career counseling approaches support students in more effective learning through their lived experiences; such creative forms elicit and allow them to access the motivational, cognitive, and affective aspects of their career development (Jahn, 2018). As such, the current study adapted creative

multimodality to address the dynamic career contexts of predominantly Latinx rural communities. Multimodal creative activities (i.e., collage-making) were expressly chosen to provide a culturally encompassing and empowering learning space for this group (Ramirez & Jimenez-Silva, 2015). In educational disciplines, the incorporation of a multimodal activity component has been identified as an effective method for students of color in particular, embracing as it does multiple ways of gaining knowledge, rather than learning solely from texts. Such non-traditional sources of knowledge (e.g., cultural heritage, ethnic identity, sociopolitical consciousness) and expression in academic settings (e.g., autobiographical works, visual expression, storytelling) can be helpful when reaching out to predominantly Latinx populations who may have more access to and familiarity with them (Bernal, 2002; Ramirez & Jimenez-Silva, 2015). By providing a space for predominantly Latinx students to better understand themselves and the world in which they live and work, the present pilot intervention study attempted to test whether this new type of multimodal creative intervention study is truly effective. To answer the research question, this pilot study used a one-group, pretest–post-test design and tested whether participants experienced changes to their social cognitive career beliefs with regard to their healthcare careers. Furthermore, the pilot study investigated whether the intervention had differential impacts on students based on students’ racial/ethnic identity, as literature suggests that students of color in rural immigrant communities often face a relatively high degree of career barriers because their parents do not speak English as their primary language, are less educated than their White counterparts, and work in low-skill industries, such as meat-packing plants, agriculture, or construction (Lichter, 2012).

Social cognitive career theory

As an extension of Bandura’s (1986) social cognitive theory and social constructivism, Social Cognitive Career Theory (SCCT; Lent et al., 1994, 2000) provides a framework describing the development of academic and career interests, how career choices are made, and the factors influencing one’s performance. SCCT explains how the bidirectional interaction of cognitive-personal variables (e.g., self-efficacy, outcome expectations, and goals), external environmental factors (e.g., socialization, perceived support, systemic oppression), and overt behaviors (e.g., career choices and career decisions) through feedback loops can promote or become barriers to career development processes (i.e., interests, choice, and performance; Lent et al., 1994; Navarro et al., 2007). According to the theory, the learning processes of academic and career development are a function of the individuals’ environments, their individual characteristics and personal inputs (e.g., gender, race/ethnicity, social class), and socialization processes (Lent et al., 2000, 2003). With continued exposure to these learning processes, individuals develop *self-efficacy* for specific activities and tasks, while at the same time forming expectations about future outcomes of their performance (i.e., *outcome expectations*; Lent et al., 1994). Over time, the theory suggests that individuals develop specific *interests* in vocation and education

through these mechanisms, which can lead to choices and goal actions of further activities towards vocational decisions and persistence.

According to SCCT, *self-efficacy* and *outcome expectations* are not expected to develop in a vacuum, but rather, result from the acquisition of particular learning experiences, or what Bandura termed sources of self-efficacy information (Lent et al., 1994). These learning experiences inform outcome expectations (Lent et al., 1994). The SCCT model includes personal mastery experiences (e.g., successes and failures), verbal persuasion (e.g., social encouragement or discouragement), vicarious learning (observation of models), as well as, physiological and affective states and reactions (e.g., positive and negative emotions) within a particular performance domain (Ireland & Lent, 2018). In theory, each type of the learning experiences can affect *self-efficacy*, which is linked to *outcome expectations* both directly and indirectly, through *self-efficacy* beliefs.

Creative career programming

The purpose of the creative career intervention in the present study is to afford students the opportunity to explore and develop their social cognitive career beliefs by integrating how their own identities, interests, and values fit within sociopolitical, geographic, and economic realities. Multimodal literacy pedagogy has increasingly been considered creative and empowering approaches in educational environments. Multimodal literacy is defined as “the meaning-making that occurs at different levels through the reading, viewing, understanding, responding to, producing and interacting with multimodal texts and multimodal communication (Walsh, 2008, p. 106). Multimodal literacy pedagogy includes both traditional strategies (e.g., reading and writing) as well as creative modalities and different semiotic systems (e.g., images, graphics, drawings, colors) (Walsh, 2008).

From the multimodal literacy perspective, collage-making (which utilizes found materials according to a tactile process) is considered a form of creative writing (Sullivan, 2012). Studies that have incorporated creative writing components in career programs (e.g., Lengelle et al., 2013, 2016) generally define the term creative writing as “the production of nonveridical (fictional) representations and narratives” (Nettle, 2009, p. 103). According to Winnicott (1971), “in the creation of artwork the creative artist opens up the possibility of being transformed” (p. 31). Drawn from a particular group of scholars in the field of writing, this study’s working definition of creative writing involves Bolton’s (1999) definition of the term, namely: a fiction or (fictional) autobiography that promotes self-insight.

Collage-making allows students to express their understanding of the world of work and craft their career narratives in a creative way. This approach is consistent with Lengelle and Meijers’s (2013) view which states that students’ writing about their autobiographical experience is creative in nature because it is based on their memories, imaginations, and hopes for the future. In the remainder of this article, the term “multimodal creative activity” encompasses the acts of reading, viewing, and responding to career information (e.g., knowledge about the world of work,

communities, and the self) as well as collage-making via images, words, poetry, storytelling, and narrative.

Researchers have stressed the importance of incorporating cultural values and beliefs into career intervention for marginalized students and attending to career self-efficacy, outcome expectations, and efficacy for overcoming barriers among students of color (Ali & Menke, 2014). These beliefs may be enhanced through the expression of one's identity on the page (Hunt, 1998; Enciso, 2011; Adler-Kassner, 2017). These beliefs can also be improved through social and collaborative experiences that interactive and creative processes entail, such as engaging in meaningful conversations with facilitators or peers in selecting images and words to help peers express their values, interests, strengths, and family or cultural context (Hunt, 1998). This perspective is congruent with career construction theory, which suggests that narratives may not only facilitate the development of a cohesive identity, but also help individuals adapt within their environment and contribute to their career story construction (Del Corso & Reh fuss, 2011).

While there is a paucity of research regarding multimodal creative activity components within career interventions with rural students, several studies have suggested the effectiveness of creative activity-based intervention on students' development and learning. According to Adler-Kassner (2017), several studies show that successful writers coalesce their identities and their learning contexts. Enciso (2011) also describes the importance of storytelling amongst the twelve- and thirteen-year-old Latinx students she works with as follows: "to name what matters to them, to speculate about what is possible in their lives, to unravel contradictions, to make sense of what is senseless, to claim or question a point of view, to wonder and to act" (p. 21). Thus, the use of the multimodal creative activity component has potential benefits for research purposes as well. For instance, the words and images created by the students provide researchers with what Tuck and Yang (2014) call "Other knowledges", or alternative kinds of data, which are different from "Academic knowledges" that are typically found in data sets (p. 235). Berthoff (1984) argued that these alternative data allow both the creators and the researcher to cross boundaries in meaning-making, add richer perception to typical data sets, and provide a symbiotic interpretation of data so that the writing intervention artifact provides information on the data sets and vice versa (as cited in Bailey & Bizzaro, 2017). Based on the literature, the present study incorporated the multimodal creative activity component into SCCT-based intervention to afford students freedom to combine the information they have learned during the intervention with their own identities and contexts within their community.

The present study

The present pilot study examines the effectiveness of the novel intervention on healthcare career-related social cognitive career beliefs among eighth graders living in a predominantly Latinx rural community in the U.S. The present study addresses the following research questions: (a) How does participation in this career intervention affect students' social cognitive career beliefs regarding healthcare occupations;

(b) Do White students and students of color respond differently to the career intervention?

Hypothesis 1 Students will report overall increase in their social cognitive career beliefs from pretest to posttest.

Hypothesis 2 Students of color will report greater increase in their social cognitive career beliefs than White students from pretest to posttest.

Methods

Participants

In total, 96 eighth grade students participated in the full course of the career intervention. However, among the students, 21 students did not attend either the pretest or posttest, yielding 75 participants as the final sample for the present study. Of the 75 participants, 26 (34.7%) identified as female, 48 (64.0%) as male. Participants were aged between 13 and 15 years old with the mean aged 13.77 years old ($SD = .45$). In terms of race/ethnicity, 46 (61.3%) identified as Hispanic/Latinx/Mexican; 23 (30.7%) were White/non-Hispanic; 3 (4.0%) were biracial; 2 (2.7%) were Asian American; 1 (1.3%) were African American. The percentage of the free or reduced lunch was considered a surrogate of the overall socioeconomic status for the community; according to the public-school district data (Iowa Department of Education, 2017), approximately 70% of the schools within the community are eligible for reduced or free lunch.

Procedure

The present study was approved by the authors' Institutional Review Board. Two eighth grade cohort groups participated in the intervention. Informed consent was obtained from students and their parents or guardians. Intervention took place at a junior high school in intact science classes, which all eighth grade students were required to take. Prior to the intervention, students participated in the pretest in their school computer lab. There were five sections of the career class in total. The intervention was led by a team of six counseling psychology doctoral students all of whom identify themselves as people of color. For the pretest, students responded to all measures via an online survey. Students also answered an online posttest survey consisting of the same measures one week after completing the intervention. Approximately 20 min was needed to complete each online survey.

Intervention

Project HOPE (Healthcare Occupations Preparation and Exploration) is a SCCT-based career intervention designed to provide middle school students in rural

communities in the U.S. with the opportunity to explore healthcare professions. Based on SCCT (Lent et al., 1994), which emphasizes the importance of exposure to a variety of experiences in the process of students choosing a career, the intervention typically consists of five to six distinct sessions in their everyday school classrooms and a field trip to a university. Different versions of Project HOPE demonstrated some evidence of effectiveness, including the SCCT-based standard healthcare career intervention version and the sociopolitical development/SCCT-based healthcare career intervention version (Ali et al., 2017, 2019). For this pilot study, the standard version of Project HOPE intervention was modified by adding creative activities informed by multimodal literacy. The facilitators were five Counseling Psychology doctoral students and one Language, Literacy and Culture doctoral student. Four months prior to the implementation, all facilitators attended weekly training sessions to learn about the standard and new curriculum, engaging in experiential learning and discussion on multicultural career and literacy issues. Trainings include both didactic and reflective sessions and were offered by a licensed counseling psychologist whose specialty is work psychology, employment, and rural career issues and a literacy professional whose specialty is public engagement and creative writing. Specifically, the interdisciplinary collaboration included theoretical, practical, and reflective discussion about establishing intended career outcomes, reflecting upon personal sociocultural identities, designing multimodal curriculum, and co-facilitating the intervention sessions.

The first three sessions focused on social cognitive career beliefs, such as knowledge about the self (e.g., career interests), knowledge about the world of work (e.g., career information), and career supports and barriers. During these first three sessions, facilitators discussed overall concepts of career, person-environment fit, and career resources and barriers. The subsequent two sessions focused on guiding students to create collages and write author statements about their collages, so as to synthesize and express the insights they had gained throughout the intervention. Student participants serve as co-creators and knowledge bearers using images, texts, and narratives to express their career selves.

Session 1: Healthcare Jeopardy aimed to introduce the healthcare career using an interactive game. Students are encouraged to start thinking about the question, “Where do I fit in within the world of work?” Students were exposed to new sets of knowledge about the healthcare career through visual and auditory stimulations; they also had the opportunity to contribute by discussing their community context (e.g., number of hospitals or clinics in their community). Session 2: Holland Code Fair was designed to expose students to the various Holland’s (1997) RIASEC codes (Realistic, Investigative, Artistic, Social, Enterprising, and Conventional), as well as related jobs and job activities. Students had a chance to explore who they are by engaging in a number of multimodal activities, including assembling blocks, drawing, and elevated speech. These activities encouraged students to experiment and discover what types of activities and styles accommodate their own particular sense of self. Session 3: Career Game incorporated anticipated problems that may occur as one navigates the world of work into an individualized game. Students are given questions about obstacles and roadblocks that they might encounter and are given the time to brainstorm how they might overcome these challenges. The session

provided students the opportunity to contextually position themselves in their communities, society, and the world. Two sessions (the fourth and fifth sessions) integrated creative activities (i.e., collage-making, creating author statements, sharing stories and collages in social settings) within the process of vocational exploration. Session 4: Career Story Collage Creation provided students the opportunity to work on an individual collage-making project that demonstrates their interests in particular career paths through the use of creative arts. The prompts used during the session were as follows: “We invite you to create your own self-portrait. It’s a story (in pictures and words) of who you are and who you hope to be in the future. If you were to picture yourself as a healthcare professional, what would that look like?” Magazines and print media that contain diversity in terms of race, gender, and social class were provided for students to create their own career self-portrait. Students were also given the time to compose their author statements to relay what their self-portrait collages mean. Session 5: Presentation Day encouraged students to share their career story collages with one another. All sessions were implemented in the school. Following the fifth session was a field trip to a predominately White institution in the Midwest. Students spent a day at the university engaging in a variety of healthcare-related career simulations offered by several science departments. Each student attended two simulations which were randomly assigned during the course of the field trip. Examples of the simulations were as follows: exploring assistive technology at the speech and hearing clinic, engaging in hands-on laboratory experience with biology faculty, building robots at the physics department, and filling teeth at the dentistry college. More detailed information on the Project HOPE curriculum may be available upon request.

Measures

Healthcare Career Task Self-Efficacy

The Healthcare Career Task Self-Efficacy (HCTSE) scale assesses students’ self-efficacy beliefs about performing healthcare-related tasks (Ali et al., 2019). The scale consists of 11 items, and sample items include “identify possible illnesses from a list of symptoms” and Students were given the following instruction: “For each statement below, please read carefully and indicate how much confidence you have that you could accomplish each of these tasks”; participants indicated their answers on a 7-point Likert scale (1 = *completely unconfident*; 7 = *completely confident*). Total scores were used for the present study, with higher scores indicating higher levels of healthcare-related task self-efficacy beliefs. Ali and colleagues (2019) reported a Cronbach’s alpha coefficient ranging from .89 to .92, and in the present study, the Cronbach’s alpha coefficient was .88 in the pretest and .94 in the posttest.

Healthcare Career Search Self-Efficacy

The Healthcare Career Search Self-Efficacy (HCSSE) scale assesses students’ beliefs in their ability to search for career information related to healthcare occupations

(Ali et al., 2019). The HCSSE consists of 20 items, and sample items include “I feel confident I can find information about healthcare jobs that fit my career interests.” Participants rated their confidence in their ability to perform a given task on a 7-point Likert scale (1 = completely unconfident; 7 = completely confident). Previous research (Ali et al., 2019) reported an internal consistency estimate (Cronbach alpha) ranging from .87 to .91, in the present study, Cronbach alpha was .90 in the pretest and .93 in the posttest.

Healthcare Career Outcome Expectations

Healthcare Career Outcome Expectations (HCOE; Ali et al., 2019) is a 15-item self-report measure designed to assess how students believe their actions will impact their future school and career choices. Directions within this scale are framed as “if, then” statements (e.g., “If I choose a major with a lot of math and science, *then* I will be able to pursue a career in healthcare”) and participants rated the extent to which they agree or disagree with each statement on a 7-point Likert-type scale of 1 (*strongly disagree*) to 7 (*strongly agree*). Total scores were used in this study, with higher scores indicating higher Healthcare Career Outcome Expectations. Ali and colleagues (2019) reported a Cronbach’s alpha coefficient ranging from .86 to .94, and in the present study, the Cronbach’s alpha coefficient was .86 in the pretest and .93 in the posttest.

Healthcare Career Interests

The Healthcare Career Interests (HCI) scale (Ali et al., 2019) measures the degree to which students are interested in pursuing healthcare careers. Participants responded to 14 items and rate the extent to which they like a healthcare-related activity (e.g., “Talking with professionals in my chosen career path”) on a 6-point Likert-type scale of 1 (*dislike extremely*) to 7 (*like extremely*). In the present study, total scores were used, with higher scores representing higher levels of interest in healthcare career-related activities. Previous research (Ali et al., 2019) reported a Cronbach’s alpha coefficient ranging from .94 to .95. In the current study, the Cronbach’s alpha coefficient was .96 in the both pretest and posttest.

Data analysis

A repeated measures analysis of variance (ANOVA) was conducted using SPSS to determine whether there was a statistically significant difference between the pretest scores and posttest scores in overall samples. To take a closer look at the differences by racial groups (White students vs. students of color), a split-repeated measures ANOVA was conducted. All tests were conducted with an alpha level of .05 in the following analyses. For effect sizes, partial eta-squared (η_p^2) effect sizes were obtained and interpreted as suggested by Cohen’s (1969) guidelines: small, $\eta_p^2 = .01$; medium, $\eta_p^2 = .06$; and large $\eta_p^2 = .14$.

Results

Preliminary results indicated that there are no statistical differences between two cohorts in terms of the outcome variables, which suggests that both cohorts are homogeneous. Hypothesis one, which stated students overall would demonstrate increases in SCCT outcome variables from pretest to posttest, was examined by a one-way repeated measure analysis of variance (Table 1). Results demonstrated that on the HCTSE scale, students reported a 3.87-point ($SE=1.13$) increase from pretest ($M=47.59$, $SE=1.32$) to posttest ($M=51.45$, $SE=1.54$); $F=11.67$, $p<.001$, 95% Confidence Interval (CI)=1.61, 6.12; large effect size ($\eta_p^2=.14$). Results also indicate that overall participants reported a 4.82-point ($SE=1.38$) increase in HCI from pretest ($M=56.92$, $SE=2.45$) to posttest ($M=61.74$, $SE=2.24$); $F=12.24$, $p<.001$; 95% CI=2.08, 7.56; large effect size ($\eta_p^2=.14$). No significant changes were observed in HCSSE and HCOE (all $ps=ns$).

Hypothesis two stated students of color ($n=52$) would report greater gains of social cognitive career beliefs from pretest to posttest than White students ($n=23$); the hypothesis was examined by a split-plot repeated ANOVA. Two distinctive results were found when considering the race/ethnicity variable (Table 2). First, on the HCTSE scale, while White students reported a 3.04-point ($SE=2.22$) increase from pretest ($M=49.13$, $SE=2.50$) to posttest ($M=52.17$, $SE=3.14$), the increase was not statistically significant at an alpha level of .05, $F=1.88$, $p=.18$, 95% CI=−1.56, 7.65. However, for students of color, there was a 4.24-point ($SE=1.32$) increase from pretest ($M=46.90$, $SE=1.56$) to posttest ($M=51.14$, $SE=1.76$); the increase was statistically significant, $F=10.34$, $p<.01$, 95% CI=1.59, 6.87, large effect size ($\eta_p^2=.17$). Second, the opposite patterns were found on the HCI scale: White students reported a 9.17-point ($SE=2.85$) increase from pretest ($M=50.83$, $SE=4.81$) to posttest ($M=60.00$, $SE=4.65$); the increase was statistically significant, $F=10.39$, $p<.01$, 95% CI=3.27, 15.08; large effect size ($\eta_p^2=.32$). However, on the same HCI scale, students of color reported a 2.89-point ($SE=1.48$) increase from pretest ($M=59.62$, $SE=2.89$) to posttest ($M=62.51$, $SE=2.52$); however, the increase was not statistically significant at an alpha level of .05, $F=3.83$, $p=.06$, 95% CI=−.08, 5.86. No significant changes in HCSSE and HCOE were observed in both groups (all $ps=ns$).

Table 1 Results of repeated analyses of variance by measurement time

Variable	Pretest		Posttest		Difference		<i>F</i>	Partial η^2
	<i>M</i>	<i>SE</i>	<i>M</i>	<i>SE</i>	<i>M</i>	<i>SE</i>		
HC task self-efficacy	47.59	1.32	51.45	1.54	3.87	1.13	11.67*	.14
HC search self-efficacy	100.32	2.32	103.72	2.39	3.40	2.24	2.31	.03
HC outcome expectations	81.72	1.39	81.35	1.70	− 0.37	1.37	0.07	.00
HC interests	56.92	2.25	61.74	2.24	4.82	1.38	12.24*	.14

Note $N=75$. HC Healthcare Career, * $p<.01$, effect size: small, $\eta_p^2=.0099$; medium, $\eta_p^2=.0588$; and large $\eta_p^2=.137$ (Cohen, 1969)

Table 2 Results of split-plot repeated measures analyses of variance in the White and students of color groups

Variable	Group	Pretest <i>M (SE)</i>	Posttest <i>M (SE)</i>	Difference <i>M (SE)</i>	<i>F</i>	Partial η^2
HC task self-efficacy	White students	49.13 (2.50)	52.17 (3.14)	3.04 (2.22)	1.88	.08
	Students of color	46.90 (1.56)	51.14 (1.76)	4.24 (1.32)	10.34*	.17
HC search self-efficacy	White students	96.95 (4.30)	104.26 (3.80)	7.61 (4.11)	3.44	.14
	Students of color	101.94 (2.76)	103.48 (3.03)	1.54 (2.66)	0.34	.01
HC outcome expectations	White students	83.00 (2.73)	86.87 (2.84)	3.87 (2.17)	3.18	.13
	Students of color	81.15 (1.61)	78.90 (2.02)	– 2.25 (1.67)	1.81	.03
HC interests	White students	50.83 (4.81)	60.00 (4.65)	9.17 (2.85)	10.39*	.32
	Students of color	59.62 (2.39)	62.51 (2.52)	2.89 (1.48)	3.83	.07

Note *N* (White students)=23, *N* (Students of color)=52; *HC* Healthcare Career, *Difference* posttest scores minus pretest score

* $p < .01$, effect size: small, $\eta_p^2 = .0099$; medium, $\eta_p^2 = .0588$; and large $\eta_p^2 = .137$ (Cohen, 1969)

Discussion

The present pilot study examined the overall effectiveness of Project HOPE (the SCCT-informed career intervention based on multimodal creative curriculum) on social cognitive career outcomes for eighth grade students living in predominantly Latinx rural communities. The results indicate that both Healthcare Career Task Self-Efficacy and Healthcare Career Interests increased from pretest to posttest for overall samples. As intended, the strong emphasis on healthcare career exploration and multimodal creative activities throughout the intervention may have contributed to the observed increase in Healthcare Career Task Self-Efficacy and Healthcare Career Interests. This finding suggests that the multimodal creative curriculum (i.e., exploring healthcare career opportunities and expressing their potential healthcare career narratives freely and creatively) may be an effective career programming strategy when working with youth in rural settings.

An additional hypothesis exploring the effectiveness of the intervention by racial group (i.e., Student of color vs. White) was tested to see whether racial background had a significant impact on score changes. Results indicate that there may be some association between the changes and students' racial background. Specifically, students of color reported increased levels of Healthcare Task Self-Efficacy from pretest to posttest; however, the change was not statistically significant for White students. Conversely, White students reported an increase in Healthcare Career Interests from pretest to posttest; however, no significant increase was observed for students of color. In contrast, students of color reported a higher level of Healthcare Career Interests and lower Healthcare Career Task Self-Efficacy at pretest when compared to their White counterparts. This finding may reflect different levels of previous career exposure among the students and the relative changes between time depending on the students' racial background. At pretest, students of color continued to report a higher level of Healthcare Career Interests than White students, and White students reported a slightly higher

level of Healthcare Task Self-Efficacy when compared to students of color. Between pretest and posttest, students of color reported greater increased levels of Healthcare Task Self-Efficacy, and White students reported a greater increase in Healthcare Career Interests.

This finding may suggest that even though the career intervention effectively provided students the opportunity to explore healthcare careers, students from different racial backgrounds may benefit from the intervention in different ways. This finding diverges from the study (Ali et al., 2017) that evaluated the same intervention without the creative activity component. Ali and colleagues (2017) found that White American students reported increased levels of health science career self-efficacy beliefs, while Latinx American students reported increased levels of health science career interests. As the literature suggests, it is possible that while students of color may show some interest in healthcare careers, they do not necessarily see themselves having the capacity or resources to thrive in such career paths (Abrego, 2006; Ali & Menke, 2014; Farmer et al., 2006; Martinez & Coronado, 2018). The creative activity-based multimodal curriculum may be able to offer students of color the opportunity to explore and express their identities and interests more freely; as such, this approach may contribute to the increase of task self-efficacy for students of color by active verbal persuasion congruent with the SCCT construct, such as feeling encouraged, supported, and affirmed by peers and facilitators. Additionally, the collaborations among facilitators of color may also demonstrate the possibility of overcoming cultural barriers in the healthcare world of work. This aligns with a consideration raised by Ali and colleagues (2017) upon evaluating the health science career intervention. They suggest that incorporating meaningful interaction with culturally similar role models into the sessions may be helpful to building the task self-efficacy of students of color. Similarly, the SCCT model suggests that having support from role models (e.g., vicarious learning) is helpful for overcoming barriers (Ireland & Lent, 2018).

Besides the increase in Healthcare Career Task Self-Efficacy and Healthcare Career Interests, there are no significant changes observed in Healthcare Career Search Self-Efficacy and Healthcare Career Outcome Expectations. One possible explanation for this is that to incorporate a creative activity component into the existing career intervention, a previous design of career search using the Internet was excluded in the curriculum. The exclusion of search specific activity may contribute to the finding. As for the results related to students' outcome expectations, this finding aligns with the SCCT model that outcome expectations occur over time and that self-efficacy occurs prior to outcome expectation (Lent et al., 1994). Additionally, the measure of outcome expectations tends to be tied to academic skills. It is possible that the creative activity component affords students free storytelling instead of structured searching skills and predictable academic performance (Tuck & Yang, 2014).

Limitations

While this pilot study provides meaningful contributions to the literature regarding career interventions for youth in rural settings, there are some limitations that should be addressed. A primary limitation of this study is its lack of control group.

As the study was conducted in naturalistic settings rather than as a randomized control trial, there can be no conclusions of causality. A second limitation is that a total of twenty-one students who participated in the entire intervention did not complete either the pre- or post-test; though the data of these students may have provided significant information for the effectiveness of the intervention, the dataset is not available. An additional limitation is that not all facilitators were present each day to implement the intervention. Furthermore, facilitators implementing the intervention differed both in their years of experience and their familiarity with the career intervention; the effects of these inconsistencies are unknown. Moreover, since the present pilot study focused on the intervention as a whole, the effects of each session are unknown. For instance, there is insufficient evidence to claim that game-based sessions, collage-making sessions, or field trips independently contributed to changes in the participants' scores.

Implications for career interventions

The findings of this pilot study suggest a shift in the ways that career interventions can be adapted for racially diverse students in rural settings in the U.S., as well as other rural communities across the globe. Career interventions that have been found to be effective in addressing the career development of students in urban communities may have utility in rural settings when modified for the presented unique cultural contexts and environmental factors (Ali et al., 2017). As is consistent with previous findings (Ali et al., 2017; Lent & Brown, 2013; Leong & Flores, 2013), this study's finding of differential effectiveness for students of color (predominantly Latinx) and White students in a rural community suggests that students could benefit from career interventions that value and attend to the social identities of the students and the cultural dynamics of collectivistic and individualistic practices. It is essential that career interventions empower individuals to cope effectively with career development tasks (Niles & Harris-Bowlsbey, 2002), and to provide guidance, resources, and support with regard to personal, academic, and choices in future career endeavors (Rosenbaum & Person, 2003). The impact of the global pandemic (COVID-19) on rural immigrant communities and their access to healthcare services is an important contextual factor (Page et al., 2020); therefore, practitioners may need to design an in-person and virtual career programing environment that facilitates the creative forms of healthcare career exploration for youth in rural settings.

Suggestions for future research

This pilot intervention study offers multiple avenues for future research for career researchers. First, replication of the study using a control group (no career intervention), and treatment as usual (SCCT-based intervention without creative activity) could bolster the findings of this pilot study. Second, qualitative studies should be considered, as they may allow for a richer understanding of participants' perspectives of their social cognitive career beliefs and interests. Additionally, a qualitative inquiry on the reflexive processes of rural youth's participation may provide

important insight for career researchers developing career programming in their communities. Finally, quantitative investigations are warranted to better understand how change can occur in these kinds of career interventions by exploring process-oriented measures, such as therapeutic factors in group settings (e.g., instillation of hope, awareness of relational impact; Joyce et al., 2011) and the working alliance between participants and facilitators (Meara & Patton, 1994).

Conclusion

The present study explored a pilot career intervention for eighth graders in a predominantly Latinx rural community in the U.S. by incorporating multimodal creative activities into the social cognitive career theory-based intervention. Participants of the study demonstrated a significant increase in healthcare career task self-efficacy and interests overall; White students reported a significant increase in healthcare interest; and students of color reported a significant increase in healthcare career task self-efficacy. The findings suggest that the creative version of Project HOPE intervention may effectively increase self-efficacy and interests in healthcare careers for students in the rural community. The ever-changing economy and socio-cultural contexts in the U.S. have reformed both education and work and, by extension, have altered the ways in which career interventions need to be offered within educational settings for students. This flexibility does not equate to multimodal creative activity-based interventions, but rather an openness to incorporate various ways for rural students to communicate and develop self-confidence and interests in various disciplines for career planning.

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