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Perspectives of Overweight Latinos with Serious Mental Illness on Barriers and Facilitators to Health Behavior Change

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Abstract

Serious mental illness (SMI) and Latino ethnicity can produce a compounded health disparity, placing individuals at particularly high risk for excess morbidity and premature mortality. Culturally sensitive strategies are needed to improve health behaviors, including exercise and healthy eating within this population. The purpose of this qualitative study was to explore facilitators, barriers, and preferences for health behavior change among Latinos with SMI. Semi-structured interviews were conducted with 20 Latinos with SMI who were enrolled in a randomized trial evaluating the effectiveness of a motivational health promotion intervention, In SHAPE. The interviews explored perceived facilitators and barriers to health behavior change, focusing on the role of family, and exercise preferences. The primary facilitator identified by participants was having someone (either professional or significant other) to hold them accountable for engaging in healthy behaviors. A major barrier to making lasting health behavior change was cultural influences on food. Participants preferred aerobic exercises set to music that kept their minds occupied in contrast to strenuous activities such as weight lifting. This exploratory research provides insight into the perspectives, experiences, and preferences of Latinos with SMI participating in a health promotion intervention. Findings will be used to inform future health promotion efforts adapted to meet the needs of an ethnically diverse, underserved community.

Keywords

health behavior change; Latino; serious mental illness; health promotion

INTRODUCTION

Adults with serious mental illness (SMI) experience an alarming health disparity. Adults with SMI have a 20% reduced life expectancy and disproportionately greater rates of medical comorbidity compared to the general population (Lambert, Velakoulis, & Pantelis, 2003; Beyer, Gersing, & Krishnan, 2005; Kilbourne, Cornelius, & Han, 2004). In addition, SMI is associated with a 25–30 year reduced life expectancy compared to the general

population, largely due to preventable health behaviors associated with obesity and poor fitness (Colton & Manderscheid, 2006). Premature mortality in adults with SMI is most often linked to cardiovascular disease caused by sedentary lifestyle, obesity, and poor dietary habits (Colton & Manderscheid, 2006). For example, less than one-fifth of individuals with schizophrenia engage in one or more periods of moderate exercise on a weekly basis and nearly two-fifths are physically inactive (Laursen, Munk-Olsen, & Vestergaard, 2012). Antipsychotics have been associated with significant weight gain, hyperlipidemia, and impaired glucose tolerance (Allison & Casey, 2001), and people with SMI have a nearly four-fold greater risk of developing metabolic syndrome than people without a previous psychiatric history (Consensus Development, 2004; Henderson, 2005; Saari et al., 2005).

Being a member of an underrepresented minority potentially compounds the health disparity experienced by persons with SMI. For example, Latinos experience significant disparities in physical and mental health care compared to non-Latino Whites. Latinos experience a disproportionate burden of health risk factors: they are 1.2 times more likely to be obese and 1.5 times more likely to have diabetes than non-Latino Whites (Centers for Disease Control and Prevention [CDC], 2005). Additionally, Latinos are 40% more likely to die from coronary heart disease, 41% more likely to die from diabetes, and 18% more likely to die from stroke compared to non-Latino Whites (Al Snih, Fisher, Raji, Markides, Ostir, & Goodwin, 2005; CDC, 2005; Ickes & Sharma, 2012). Latino adults with SMI have a significantly greater prevalence of metabolic syndrome compared to non-Latino Whites (74% versus 41%) with SMI (Kato, Currier, Gomez, Hall, & Gonzalez-Blanco, 2004). Together, SMI and Latino ethnicity are likely to result in a compounded health disparity placing this group at particularly high risk for excess morbidity and premature mortality. Culturally appropriate strategies are needed to improve health behaviors, including increased exercise and improved nutrition within this group.

It is well documented that regular exercise and nutrition have a beneficial effect not only on physical health, but also several aspects of mental health, including depression, anxiety, self-esteem, negative symptoms, and cognitive functioning (Stathopoulou, Powers, Berry, Smits, & Otto, 2006; Bauman, 2004). Latinos with SMI present unique challenges with respect to engagement and participation in physical exercise, dietary change, and lifestyle modifications. Latinos experience social and cultural influences (i.e., diet, family networks, access to care, language barriers) that can affect their health behavior habits. Latinos are also more likely to be sedentary compared to their non-Latino White counterparts (Pleis, Ward, & Lucas, 2010). Prior research focusing on Latinos without mental illness has shown that chronic health conditions, neighborhood safety, lack of ethnic-specific exercise facilities, weather, and inadequate transportation were perceived as barriers to increasing their physical activity (Belza, Walwick, Shiu-Thornton, Schwartz, Taylor, & LoGerfo, 2004; Dergance, Calmbach, Dhanda, Miles, Hazuda, & Mouton, 2003).

To date, few studies have focused on addressing the challenges of health promotion for Latino adults with SMI. Understanding the relationship of cultural influences (e.g. lifestyle patterns, attitudes toward exercise and food, role of family) on physical and mental health outcomes for Latinos with SMI will help to make health promotion strategies more salient to

this group. We conducted semi-structured qualitative interviews to inform the development and delivery of culturally appropriate health behavior change and health promotion interventions. The aims of this study are to: (1) identify facilitators and barriers to engaging in health behavior change and (2) identify exercise preferences among Latino adults with SMI participating in a health promotion intervention.

METHODS

Participants

Latino participants who were enrolled in a randomized trial evaluating the effectiveness of a motivational health promotion intervention (In SHAPE) were asked to participate in this qualitative study. In SHAPE is an integrated health promotion program specifically designed to improve physical fitness through dietary change and increasing exercise in adults with SMI (Van Citters et al., 2010). The program embeds health promotion within community-based mental health services by providing each participant with a one-year membership to a local fitness facility and access to a health mentor. After conducting comprehensive lifestyle and fitness evaluations, the health mentor develops personalized fitness plans for each participant using shared goal setting. Thereafter, they meet with participants weekly for 45–60 minutes at a local fitness club (YMCA) and provide fitness coaching, support, and reinforcement for physical activity. The nutrition component consists of individualized instruction during each meeting with the coach emphasizing healthy eating. Participants were randomized to either: (a) In SHAPE, or (b) a comparison condition consisting of a 12-month YMCA Health Club Membership, an on-site introduction to the exercise equipment, facilities and programs at the YMCA, and educational materials on the health benefits of exercise and healthy diet. Blinded assessments were conducted at baseline, 3-, 6-, 9-, 12-, and 18-month follow-up for weight, BMI, waist circumference, and physical activity, and at baseline, 6-, 12-, and 18-month follow-up for fitness, nutrition behaviors, and biometric measures (e.g. serum lipids).

At 12-months the gym membership was discontinued for both groups and regularly scheduled sessions with the health mentor ended for In SHAPE participants. A transitional support option to facilitate successful transitioning to community-based fitness activities was provided to In SHAPE participants at the end of the active 12-month intervention upon request. Approximately half of In SHAPE participants (46%) had at least one additional contact in the first month after the end of the intervention (most consisting of a brief office visit, phone call, or going for a walk with the coach). By 18-month follow-up (6 months following the 12-month intervention) fewer than 16% of participants were in contact with their health mentor.

To be eligible for the randomized trial, participants had to meet the following criteria: age 21 or older; diagnosis of major depression, bipolar disorder, schizoaffective disorder, or schizophrenia (based on the Structured Clinical Interview for DSM–IV); overweight as indicated by BMI > 25 or failure to adhere to the US Department of Health and Human Services Physical Activity Guidelines for adults, i.e., at least 2.5 hr/week of moderate or 75 min/week of vigorous activity in more than one session (U.S. Department of Health and Human Services, 2008). Participants were referred to In SHAPE by their psychiatrists,

clinicians, and case managers, or self-referred in response to posters and brochures. Prior to enrollment, participants had to obtain medical clearance from their primary care providers.

This qualitative study included a purposive sample of 20 Latinos: 11 men and 9 women. The sample included 9 Puerto Ricans, 6 Dominicans, 1 Colombian, and 1 who reported being “half Puerto Rican and half Dominican.” Three participants did not report their country of origin. All of the participants were bilingual (English and Spanish) speaking. Seventeen preferred to conduct the interview in English. Two preferred to conduct the interview in Spanish. One preferred the interview to be half in Spanish and half in English. All of the participants lived in the Boston metropolitan area. Age of the participants ranged from 22 to 54 with a mean (SD) of 40.25 (10.4) years. Five participants reported *>12* years of education, 6 completed high school, 7 had received some college or technical school training, and 2 had received college degrees. Thirteen participants were randomized to the In SHAPE intervention while 7 were randomized to the comparison condition. Half of the sample (10) had a diagnosis of schizoaffective disorder, 5 had schizophrenia, 3 had severe major depressive disorder, and 2 had a bipolar diagnosis. Seventeen participants were single, 1 was divorced, 1 was separated, and 1 was married. Ten participants were living independently, 7 were living in assisted/supported housing, and 3 were living with a family member or a significant other at the time of the interview. Six participants had just begun their enrollment in the study and were waiting for their 12 month gym membership to begin. Twelve were in the middle stages of the study and had gym memberships for 3 months. Two had completed the study. Four Institutional Review Boards (IRBs) approved the research across three sites. All participants provided either written or verbal consent depending on the requirements of the IRB affiliated with the organization from which they were recruited.

Procedures

Individual, semi-structured interviews were conducted with twenty In SHAPE Latino participants. The semi-structured discussions covered three major domains: (1) facilitators to health behavior change; (2) barriers to health behavior change; and (3) exercise preferences. An interview topic guide (Appendix A) was used that followed the ‘funnel structure’ described by Krueger (1994). Broad questions were asked at the beginning, with the facilitator gradually proceeding to more specific questions within each domain. Sessions lasted 60 to 90 minutes and participants were given \$25 in cash as compensation for completing the interviews. All interviews were audiotaped and transcribed. The transcriptions of the Spanish interviews were translated into English by a professional translator. Only the translated transcripts of the interviews were used for the data analysis described below.

Data Analysis

Participants consented to have their interviews audio recorded, and those interviews were then transcribed, entered into NVivo®, a qualitative software program (QSR International, 2009), and analyzed thematically (Whitley & Crawford, 2005). A theme captures something important about the data in relation to the research question, and represents some level of patterned responses within the data set (Miles & Huberman, 1994). The “keyness” of a

theme is not necessarily dependent on quantifiable measures, but rather in terms of whether it captures something important in relation to the overall research question. Themes were identified independently first, and then consolidated into a coding scheme. A descriptive coding approach was used to summarize in a word or short phrase the basic topic of each theme (Miles & Huberman, 1994). Based on the interview topic guide (Appendix A), an a priori list of codes was developed by the primary author (DJ) and used to analyze the data. Transcripts were coded by the primary author (DJ) and a bachelor's level research assistant (KB). Both coders independently examined the data before inspecting each other's coding scheme. Impressions and observations were discussed between the two coders until consensus was reached on the prominence of the themes within each domain listed in the results. This method of multiple coding is an important step in reducing investigator bias (Whitley & Crawford, 2005). NVivo® was used to systematically search for and retrieve all coded material for each theme.

RESULTS

Participants reported that preventing negative health consequences, receiving positive reinforcement, and having someone (either a professional or significant other) to hold them accountable for engaging in healthy behaviors were identified as facilitators of health behavior change. In contrast, unhealthy social environments, cultural influences on food, and financial resources were seen as the biggest barriers. Expressed preferences tended to be for non-vigorous aerobic exercise (e.g. dancing, walking) that naturally occur around the house or the community, keep the mind occupied, and can be done while listening to music. Vigorous aerobic exercise such as spinning classes or weight and resistance training were not preferred. A summary of each theme; the domain to which it is related; an operational definition of each theme developed by the authors during the analytic process; participants' own words to illustrate the thematic findings; and the frequency with which each theme was stated are presented in Table 1.

Facilitators

Preventing Negative Health Consequences—Preventing negative health consequences motivated participants to make positive changes in health behaviors. Many participants had a family history of chronic diseases (e.g., diabetes, hypertension, and high cholesterol) and health conditions, which motivated them to make lifestyle changes to reduce their own health risks and avoid experiencing a similar outcome. As one participant explained: “It seems there’s a lot of health issues with family and that plays a part in wanting to exercise and lose weight because I’m at severe risk of getting all these things.” Another perception of risk that motivated health behavior change was attributed to age-related health decline. One participant said, “I don’t want to catch diabetes so this is part of the reason why I’m trying to lose weight, too. I don’t want to catch diabetes at an older age.” While another explained, “I’m getting older, and if I go to the gym, I’ll maintain [my health]. That’s my motivation now.”

Positive Reinforcement—Participants reported feeling motivated to engage in health behavior change when they received positive reinforcement through clear indicators of

progress (i.e., weight loss, fitting in old clothes), and praise and encouragement from family members or friends for specific health behaviors and outcomes. When asked what motivates him to go to the gym, one participant responded, “The scale. It just keeps dropping weight, dropping weight. I weighed 260 when I first started. Now I think I weigh 236.” For another participant, being able to fit into old clothes motivated her to make health behavior changes: “I’m starting to lose weight and clothes are starting to fit me that didn’t fit me before.” This made her feel “happy” but motivated her to maintain her exercise and diet because she did not think her weight loss was “noticeable.” One participant described receiving praise from her mother when she lost weight: “She’s always saying, ‘Oh, you look great! You’ve been doing so well. I’m so proud of you!’ She’s really happy that I’ve been able to take off weight.” These words of “encouragement” motivated the participant and helped explain why she is “so adamant about getting back to the gym.”

Social Support and Accountability System—The primary facilitator identified by participants was having a support and accountability system in place for engaging in healthy behaviors. This included exercise partners and support for physical exercise from health promotion providers (health mentors). All of the participants asserted the need to have a friend, peer, or family member who motivates them and holds them accountable for making changes in their health behaviors. One participant explained that a friend provides the motivation she needs to go to the gym: “I have this friend, she has this attitude, if I say that I’m not going somewhere she’s like, ‘You’re so going. Get dressed.’ Then I have to go.” This participant noted that going to the gym regularly would be “so much easier” with a friend. If she had to do it alone, she “would find ways around going.” Having “a friend to call and say, ‘Get up. Let’s go [to the gym],’” would prevent her from making up an excuse. For another participant, it was helpful to have a mutually supportive relationship with a peer who was experiencing the same mental [SMI], physical [diabetes], and financial problems: “We’ll call each other early in the morning. He’ll ask, ‘Did you go to the gym?’ If I say no, he’ll say, ‘I’m disappointed at you.’ But you see, that’s all we got, is this friendship. We have nothing, so we make the best of nothing.” The shared lived experience created a “special” bond between the participant and his peer. Taking an interest in each other’s well-being facilitated going to the gym on a daily basis.

For In SHAPE participants, the health mentor was an important source of motivation along with family members and friends. As one participant stated: “I enjoyed going out and meeting with him [the health mentor]. You see, when I got an appointment or something I’m very faithful to that. Like he tells me, ‘Come tomorrow,’ I got it in my mind I gotta come to him tomorrow. So I won’t miss that appointment. I make myself a promise that I’ll see him tomorrow.” Similarly, another participant commented: “I think it was very helpful for me when I was getting out with my trainer because I had someone whom I had to meet and answer to, you know? Which was actually my intention with meeting up with that young woman [health mentor] and going together.” One participant explained how her relationship with the health mentor motivated her to maintain her exercise routine after the conclusion of the study: “I had a trainer who I met each week which is probably one of the reasons I was able to do things; because when you meet with someone it’s easier to hold yourself accountable to exercising than if you do it on your own.” For this reason, she and a friend

decided “to support each other in using the gym by planning times to go” after her participation in the study ended.

Participants remarked that it was easier to achieve dietary or exercise goals when they had reciprocal social support networks. Reciprocal social support occurred when participants and their family members or friends supported each other’s efforts to make lifestyle changes. One participant remarked that her husband has been an “immense source of support” since she was diagnosed with her mental illness. She says, “Initially, he was resistant to the diet change saying, ‘Eating all these vegetables won’t fill me up!’ He now tells me, ‘More, more. This dinner is delicious!’”

Barriers

Unhealthy Social Environment—Some participants reported that their social environment undermined their goals of maintaining a healthy lifestyle. This included repeated exposure to unhealthy behaviors of others at home and in social settings, and engaging with friends and family or significant others in poor eating habits and in a sedentary lifestyle. Participants described having different dietary practices when they are alone than when they are with their families. Many people tried to exert “self-control” when eating alone and reported making a “conscious effort” to eat smaller portions, but said they were challenged by temptations at social gatherings. Some participants said they gave into pressure from family to overeat during meals. One participant explained that the gains he was making in the program were attenuated by the impact of his family’s eating habits: “I don’t really like eating at their [his parents] house because their portion sizes are so big. They tend to make bigger portions than I am used to. When I eat over at their house, I tend to gain more weight. They have a lot of potatoes and starches.” Many participants stated that taking large portions and eating everything on their plates were cultural expectations. One participant described how his mother piled the food on his plate despite his protestations: “When I eat at my mom’s house she says, ‘You want more?’ and I say, ‘No, that’s too much.’ She don’t even ask me, she puts more on my plate.” Echoing his statements, another participant added: “Caribbean moms are the same all the way around. You say, ‘No, no, I can’t eat more’ and they don’t even bother. I don’t even know why they ask sometimes, you know?”

Culture of Food—A major barrier to changing eating habits was the “traditional” Latino diet including a reliance on rice, meat, and “few vegetables.” Participants explained that the traditional diet was “greasy” heavy in “fried foods,” and impeded them from losing weight. One participant perceived all Latino foods to be delicious, yet quite unhealthy: “Greasy, Hispanic foods, they eat a lot of different food. They’re all fried. They taste good and everything but they clog up your veins, clog up your arteries.” Despite this acknowledgment, many participants still maintained heavy doses of a “traditional” Latino diet. One participant described how much he enjoyed going to Latino restaurants and eating the deep fried food, even though he knew it was not good for him: “I like to go to Spanish restaurants and see all the food on display and I’ll say a scoop of this, a piece of that, two pieces of that. And I’m going to eat some deep fried and all that. It’s good stuff that’s no good for you.” In addition, many participants perceived the “traditional” Latino diet to be

lacking in vegetables. One participant explained that as a Latino, “one doesn’t even think about vegetables.”

For many participants, rice was the main staple of their diet and an integral component of their cultural heritage. One participant explained how rice was the foundation of his diet, even though it was detrimental to his health, and was part of his cultural identity: “And the rice... If I don’t got rice in the meal, it’s like I didn’t have no meal. So rice is very damaging for me, but I love rice. It’s a Puerto Rican thing, you gotta have rice. But, it’s killing me, the rice. If I could give up the rice I think I would lose some weight.” Another participant added, “I’m Hispanic so I like to eat lots of rice.”

The traditional diet had a much deeper meaning beyond physical sustenance. For many participants, it was seen as the “center piece” that brings the family together and is what defines the Latino culture. “That is our idiosyncrasy, as they say. It is how we identify each other; it is being together, eating our traditional food with our family, and remembering. And one begins to remember at the table, and those are the truly beautiful moments.” Another participant stated, “When we are all together, we want to celebrate and what better way to celebrate than to cook our food?” Food was seen as a link to the cultural traditions from their countries of origin and as a way to preserve the cultural traditions for future generations. One participant explained that the food served as a mechanism to cope with the difficult migratory experience: “It hasn’t always been so easy being Hispanic in this country. So, sometimes I just feel so happy to see the younger people enjoying the culture and the food, and I know my dad, especially, feels happy to see his grandson enjoying it.”

Finances—Most participants reported being on a fixed income, which made finances a barrier to making lasting healthy behavior changes. One participant explained how difficult it was for him to afford the healthy foods needed to maintain a nutritious diet: “To have a diet is not easy. Things are very expensive. That’s something that stands in my way from getting the good nutrition, from buying nutritious stuff. I don’t got the income to do it. Maybe if I had more access to things like fish, had the money to buy fish, to buy my vegetables, fresh fruit; I don’t got that. That’s the one thing that stops me from getting a diet or sticking to a diet.” Another participant described how his fixed income prevented him from consuming the recommended daily servings of vegetables: “To get the daily amount and the full benefits of the vegetables; I have to eat a lot of vegetables. Cause they say you’re supposed to get 5 servings of vegetables. Some people can eat 5 servings of vegetables. Vegetables are not cheap. If you buy fresh, raw vegetables, they’re expensive. And I’m on a fixed income.”

Preferences

Non-Vigorous Aerobic Exercise—Despite receiving a free membership to the gym through the parent study, most participants exercised outside of the gym and preferred non-vigorous aerobic exercises (e.g. dancing, walking) set to music that kept their “minds” occupied in contrast to strenuous activities such as spinning or weight and resistance training. One participant commented that she often looks for alternative activities to do around the house when she does not feel like going to the gym: “If, for example, I don’t

want to go to the gym because I am tired or I don't want to leave the house, ok, I don't go. But then, I do something in the house. I turn the music on. I put on my *merengue*, and I start to dance. I dance as a form of exercise." Another participant explained, "Actually I'm not on base entirely when it comes to exercise. This is a really challenging thing for me. What I do is doing errands. I walk from place to place rather than take the bus and the train." Participants emphasized the importance of "keeping the mind distracted" through music, dancing, cleaning the house, and walking. One participant stated, "Aerobics is almost like dancing and music is music, too. Doing exercises with music is almost like dancing except that you are actually working muscles, so that's what I like." Activities such as weightlifting, running, and spinning classes were seen as too strenuous and thus were not preferred methods of exercise. One participant described her experience in a spinning class: "I went to one bicycle class and you know how much I lasted? I thought I was going to be like riding my bike, right? Except that it's a stationary bike. The whole class was so fast! I lasted 5 minutes! Then I had to get out because it's like, I cannot do this anymore, my legs are aching, everything's aching. That's what I don't like about exercise; that it's strenuous, you feel like you're dying, you feel out of breath – I feel like I'm dying, I feel like I'm out of breath."

DISCUSSION

To our knowledge, this is the first study to identify facilitators and barriers to health behavior change as well as exercise preferences among Latinos with SMI. Latino participants' descriptions of facilitators and barriers to health behavior change were consistent with those identified in health promotion studies of people with and without SMI (Aschbrenner Bartels, Mueser, Carpenter-Song, & Kinney, 2012; Emmons, Barbeau, Gutheil, Stryker, & Stoddard, 2007; Falba & Sindelar, 2008; Novak & Webster 2011; Kiernan et al., 2012). In this study, many participants reported having a diagnosis of diabetes or were at risk for developing the disease due to current health status (obese) and family history. Preventing the negative health consequences of diabetes was frequently cited as a facilitator. Participants also described how motivating it was to have a partner who could hold them accountable for engaging in health behavior change. In contrast, the cultural influences of unhealthy traditional food and the Latino social environment were noted as prominent barriers to health behavior change in this study. Participants complained about exposure to unhealthy foods and the negative influence of family members and friends with poor eating habits and sedentary lifestyles.

These results are comparable to those from previous qualitative interviews with In SHAPE participants indicating the benefits of emotional, practical, and mutual support from family and significant others, and the challenges of unhealthy social environments to achieving their health goals (Aschbrenner et al., 2012). Our results are also consistent with studies indicating that social support from family and friends is a key factor in facilitating healthy lifestyle change among people without mental illness (Emmons et al., 2007; Falba & Sindelar, 2008; Novak & Webster 2011; Kiernan et al., 2012). Previous studies focusing on Latinos without mental illness have identified personal factors (e.g., health concerns, lack of personal safety, lack of ethnic-specific exercise facilities) and environmental factors (e.g., inclement weather, transportation) as barriers to engaging in health behavior change (Belza

et al., 2004; Dergance et al., 2003). This is in contrast to our findings that identified the social environment and finances as barriers. Our results represent a unique contribution to the literature and illustrate how health disparities and perceived cultural and family values converge to influence health behavior change in Latinos with SMI.

Disparities in cardiovascular disease risk factors among Latinos with and without SMI have been well-documented (Hellerstein et al., 2007; Kato et al., 2004; Mensah, Mokdad, Ford, Greenlund, & Croft, 2005; Romero, Romero, Shlay, Ogden, & Dabelea, 2012). Consistent with prior studies, most of the participants in our study reported either having diabetes, hypertension, or high cholesterol, or being at high risk for these conditions due to family history and current health status (i.e., obesity). Many participants believed that engaging in health behavior change would prevent the negative health consequences associated with cardiovascular disease. Our findings suggest that a population health disparity can have a positive impact on individual motivation to adopt a healthier lifestyle among those determined to reduce their own risk and prevent illness and disability associated with poor health.

Cultural values and norms have been shown to influence health behavior change in racial/ethnic minority adults in a variety of ways (Emmons et al., 2007). Latinos tend to stress the importance of *personalismo*, the cultural value that emphasizes social relationships and the mutual respect that those in the relationship have for one another (Marín & Marin, 1991). Within this social relationship, *respeto*, or respect, plays a large part. *Respeto* dictates deferential behavior toward others based on age, gender and authority (Arredondo, Toporek, Brown, Jones, Locke, Sanchez, & Stadler, 1996; Calzada, Fernandez, & Cortes, 2010). In the present context, *personalismo* and *respeto* may help explain the theme of external accountability. For example, the health mentor is seen as an authority figure. If a participant agrees to meet with the health mentor, then the participant will keep the appointment out of respect for the health mentor's time and authority. Similarly, appointments made with family, friends, or peers will be kept out of respect for the social relationship. However, not all cultural norms were viewed as positive influences on health behavior change.

Cultural traditions surrounding food were generally viewed as unhealthy and as barriers to health behavior change. Participants were unwilling to change what they ate, despite the negative impact on health. For many individuals migration and relocation involved a series of stressful experiences. While the migration may occur over a relatively short period of time, its effects can be profound and long lasting. The experience of migration transcends the physical move. Relocation is a transitional experience that affects the individuals' behaviors, feelings, values, and cognitions, and it is a pervasive condition that influences the family system and subsequent generations (Ortiz, Simmons, & Hinton, 1999). For many participants, food provided an opportunity to maintain one's cultural identity throughout the migration process, and Latino food was preserved as a tradition to be handed down to future generations. The constructs of *personalismo* and *respeto* may also impact health behaviors with respect to the challenge associated with declining unhealthy food offered by parents or other older relatives.

Caution is warranted in interpreting the results of this report due to several limitations associated with the sample, study methods, and design. First, participants were a convenience sample of Latinos with SMI who were already enrolled in a health promotion/health behavior change intervention study. As such, this group of individuals represents a select subgroup and conclusions drawn may not be generalizable to the Latino SMI population at large. Second is the relatively small sample size. However, a sample size of $n=20$ is consistent with exploratory qualitative methods (Miles & Huberman, 1994) aimed at identifying descriptive findings (Leon, Davis, & Kraemer, 2011). Third, the Latinos in this study were treated as a homogeneous group, though they were comprised of different subgroups of varying nationalities. While combining these individuals into one broad category (i.e., Latino) may make comparisons easier and elicit meaningful results, it is important to note that these participants represent vastly different cultures. The participants in this study were predominantly Dominican and Puerto Rican. Thus, the results may not be generalizable to Latinos of other nationalities. Fourth, the point in the study in which participants were interviewed was not uniform. Participants may have been at the beginning, middle or nearing the end of their time in the study. This could influence their perceptions of the facilitators, barriers, and preferences of health behavior change. This limits our interpretation and the generalizability of the findings.

While these results should be viewed with some caution, they suggest potential directions for further inquiry for racial/ethnic minority adults with SMI. Although common themes emerged across the spectrum of Latino subgroups, additional studies with larger numbers of Latinos subgroups (i.e. Mexican, Cuban, etc.) would provide a deeper understanding of the facilitators and barriers to health behavior change in these communities. Future research could also examine the interaction between gender and ethnicity on health behavior change since men and women have different sociocultural roles within most ethnic groups (Heesch et al., 2000; Im et al., 2010; Juarbe, Turok, & Perez-Stable, 2002).

The results of our study suggest strategies for developing health promotion interventions that are culturally relevant and salient in order to fit the needs of Latinos with SMI. Family members, friends, peers, health mentors, or *promotoras* – lay community members who possess an intimate understanding of community social networks, strengths, and health needs; communicate in a similar language; and recognize and incorporate culture to promote health and health outcomes – are essential partners in maximizing the potential effectiveness of these interventions. Researchers and clinicians designing future healthy lifestyle interventions for this population should understand the cultural meaning of food. This would allow for the development of a nutrition plan that accounts for the individual's need to maintain his or her cultural identity balanced with the need to be healthy and prevent negative health consequences. In addition, Latinos with SMI may find physical activity interventions that include walking or dancing as more appealing options than weight or resistant training.

The importance of addressing health behavior change among Latinos with SMI is heightened by the increasing numbers of Latinos and the health disparities experienced by this population. Listening to their voices, addressing barriers, and tailoring health promotion

programs to meet their unique needs is a promising approach to improving the health and well-being of this increasingly large number of underserved individuals.

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References

- Al Snih S, Fisher MN, Raji MA, Markides KS, Ostir GV, Goodwin JS. Diabetes mellitus and incidence of lower body disability among older Mexican Americans. *The Journals of Gerontology Series A, Biological Sciences and Medical Sciences*. 2005; 60:1152–1156.
- Allison DB, Casey DE. Antipsychotic-induced weight gain: A review of the literature. *Journal of Clinical Psychiatry*. 2001; 62(7):22–31. [PubMed: 11346192]
- Arredondo P, Toporek R, Brown SP, Jones J, Locke D, Sanchez J, Stadler H. Operationalization of the multicultural counseling competencies. *Journal of Multicultural Counseling and Development*. 1996; 24:42–78.
- Aschbrenner K, Bartels S, Mueser K, Carpenter-Song E, Kinney A. Consumer perspectives on involving family members and significant others in a healthy lifestyle intervention. *Health & Social Work*. 2012; 37:207–215. [PubMed: 23301434]
- Bauman AE. Updating the evidence that physical activity is good for health: an epidemiological review 2000–2003. *Journal of Science and Medicine in Sport*. 2004; 7:6–19. [PubMed: 15214597]
- Belza B, Walwick J, Shiu-Thornton S, Schwartz S, Taylor M, LoGerfo J. Older adult perspectives on physical activity and exercise: voices from multiple cultures. *Preventing Chronic Disease*. 2004; 1(4):1–12. Available at: http://www.cdc.gov/pcd/issues/2004/oct/04_0028.htm.
- Beyer J, Kuchibhatla M, Gersing K, Krishnan KR. Medical comorbidity in a bipolar outpatient clinical population. *Neuropsychopharmacology*. 2005; 30(2):401–404. [PubMed: 15536492]
- Calzada EJ, Fernandez Y, Cortes DE. Incorporating the cultural value of respeto into a framework of Latino parenting. *Cultural Diversity and Ethnic Minority Psychology*. 2010; 16(1):77–86. [PubMed: 20099967]
- Centers for Disease Control and Prevention. National diabetes factsheet: General information and estimates on diabetes in the United States. Atlanta, GA: U. S. Department of Health and Human Services, Centers for Disease Control and Prevention; 2005.
- Colton CW, Manderscheid RW. Congruencies in increased mortality rates, years of potential life lost, and causes of death among public mental health clients in eight states. *Public Health Research, Practice, and Policy*. 2006; 3:1–14.
- Consensus development conference on antipsychotic drugs and obesity and diabetes. *Diabetes Care*. 2004; 27(2):596–601. [PubMed: 14747245]
- Dergance JM, Calmbach WL, Dhanda R, Miles TP, Hazuda HP, Mouton CP. Barriers to and benefits of leisure time physical activity in the elderly: differences across cultures. *Journal of the American Geriatrics Society*. 2003; 51(6):863–868. [PubMed: 12757577]
- Emmons KM, Barbeau EM, Gutheil C, Stryker J, Stoddard AM. Social influences, social context, and health behaviors among working class, multi-ethnic adults. *Health Education & Behavior*. 2007; 34:315–334. [PubMed: 16740510]
- Falba TA, Sindelar JL. Spousal concordance in health behavior change. *Health Services Research*. 2008; 43:96–116. [PubMed: 18211520]
- Heesch KC, Brown DR, Blanton CJ. Perceived barriers to exercise and stage of exercise adoption in older women of different racial/ethnic groups. *Women & Health*. 2000; 30:61–76. [PubMed: 10983610]
- Hellerstein DJ, Almeida G, Devlin MJ, Mendelsohn N, Helfand S, Dragatsi D, et al. Assessing obesity and other related health problems of mentally ill Hispanic patients in an urban outpatient setting. *Psychiatric Quarterly*. 2007; 78:171–181. [PubMed: 17417734]

- Henderson DC. Schizophrenia and comorbid metabolic disorders. *Journal of Clinical Psychiatry*. 2005; 66(Suppl 6):11–20. [PubMed: 16107179]
- Ickes MK, Sharma M. A systematic review of physical activity interventions in Hispanic adults. *Journal of Environmental and Public Health*. 2012; 2012:1–15.
- Im EO, Lee B, Hwang H, Yoo KH, Chee W, Stuijbergen A, et al. “A waste of time”: Hispanic women’s attitudes toward physical activity. *Women & Health*. 2010; 50:563–579. [PubMed: 20981637]
- Juarbe T, Turok XP, Perez-Stable EJ. Perceived benefits and barriers to physical activity among older Latina women. *Western Journal of Nursing*. 2002; 24:868–886.
- Kato MM, Currier MB, Gomez CM, Hall L, Gonzalez-Blanco M. Prevalence of metabolic syndrome in Hispanic and Non-Hispanic patients with schizophrenia. *Primary Care Companion to the Journal of Clinical Psychiatry*. 2004; 6:74–77.
- Kiernan M, Moore SD, Schoffman DE, Lee K, King AC, Taylor CB, Kiernan NE, Perri MG. Social support for healthy behaviors: Scale psychometrics and prediction of weight loss among women in a behavioral program. *Obesity*. 2013; 20:756–764. [PubMed: 21996661]
- Kilbourne AM, Cornelius JR, Han X, Pincus HA, Shad M, Salloum I, et al. Burden of general medical conditions among individuals with bipolar disorder. *Bipolar Disorder*. 2004; 6(5):368–373.
- Krueger, RA. Focus groups. 2. Thousand Oaks: Sage publications; 1994.
- Lambert TJ, Velakoulis D, Pantelis C. Medical comorbidity in schizophrenia. *Medical Journal of Australia*. 2003; 178(Suppl):S67–S70. [PubMed: 12720526]
- Laursen TM, Munk-Olsen T, Vestergaard M. Life expectancy and cardiovascular mortality in persons with schizophrenia. *Current Opinion on Psychiatry*. 2012; 25:83–88.
- Leon AC, Davis LL, Kraemer HC. The role and interpretation of pilot studies in clinical research. *Journal of Psychiatric Research*. 2011; 45:626–629. [PubMed: 21035130]
- Marin, G.; Marin, BV. Research with Hispanic populations. *Applied Social Research Methods Series*. Vol. 23. Newbury Park, CA: Sage Publications; 1991.
- Mensah GA, Mokdad AH, Ford ES, Greenlund KJ, Croft JB. State of disparities in cardiovascular health in the United States. *Circulation*. 2005; 111:1233–1241. [PubMed: 15769763]
- Miles, MB.; Huberman, AM. *Qualitative Data Analysis*. 2. Thousand Oaks, CA: Sage Publications; 1994.
- Novak SA, Webster GD. Spousal social control during a weight loss attempt: A daily diary study. *Personal Relationships*. 2011; 18:224–241. [PubMed: 21666854]
- Ortiz A, Simmons J, Hinton L. Locations of remorse and homelands of resilience: Notes on grief and sense of loss of place Latino and Irish-American caregivers of demented elders. *Cultural Medicine and Psychiatry*. 1999; 23:477–500.
- Pleis J, Ward B, Lucas J. Summary health statistics for US adults: National Health Interview Survey, 2009. *Vital Health Statistics*. 2010; 10(249):1–207. Available at: http://www.cdc.gov/nchs/data/series/sr_10/sr10_249.pdf. [PubMed: 21905346]
- QSR International Pty. Ltd. NVivo 9 qualitative data analysis software (Version 9) [Computer Software]. Doncaster, Australia: Author; 2010.
- Romero CX, Romero TE, Shlay JC, Ogden LG, Dabelea D. Changing trends in the prevalence and disparities of obesity and other cardiovascular disease risk factors in three racial/ethnic groups of USA adults. *Advances in Preventive Medicine*. 2012; 2012:1–8.
- Saari KM, Lindeman SM, Viilo KM, Isohanni MK, Järvelin MR, Laurén LH, et al. *Journal of Clinical Psychiatry*. 2005; 66(5):559–563. [PubMed: 15889940]
- Stathopoulou G, Powers MB, Berry AC, Smits JAJ, Otto MW. Exercise interventions for mental health: A quantitative and qualitative review. *Clinical Psychology: Science and Practice*. 2006; 13(2):179–193.
- U.S. Department of Health & Human Services. The 2008 Physical Activity Guidelines for Americans. 2008. Retrieved from U.S. Department of Health & Human Services website: <http://www.health.gov/paguidelines/guidelines/default.aspx>

- Van Citters AD, Pratt SI, Jue K, Williams G, Miller PT, Xie H, et al. A pilot evaluation of the In SHAPE individualized health promotion intervention for adults with mental illness. *Community Mental Health Journal*. 2010; 46:540–542. [PubMed: 20012197]
- Whitley R, Crawford M. Qualitative research in psychiatry. *Canadian Journal of Psychiatry*. 2005; 50:108–14.

Appendix A. Interview Topic Guide

- What motivates you to do exercise routinely?
- What are the obstacles preventing you from having an exercise routine?
- What role does your family play in your care?
- What role does your family play in your exercise routine?
 - Do they keep you from doing exercise?
 - Do they motivate you to exercise?
 - Do they reward you for exercising?
- What is your diet like?
 - What helps you maintain a healthy diet?
 - What are some of the obstacles you face to maintaining a healthy diet?
- If you had your choice, which exercises/physical activities would you prefer to do on a regular basis?

Table 1

Influences on Health Behavior Change from the Perspectives of Latinos with Serious Mental Illness: Themes, Definitions, and Frequency Rates

Domain	Themes	Operational Definition	Illustrative Quotations	Frequency
Facilitators	Preventing Negative Health Consequences	Family history of diabetes; perceived age- related health decline	"I don't want to catch diabetes so this is part of the reason why I'm trying to lose weight, too. I don't want to catch diabetes at an older age."	(n = 15, or 75%)
	Positive Reinforcement	Seeing tangible results (weight loss, loose fitting clothing); encouragement from family members who notice and comment on specific behaviors	"She's always saying, 'Oh, you look great! You've been doing so well. I'm so proud of you!' She's really happy that I've been able to take off weight."	(n = 15, or 75%)
	Social Support and Accountability System	Having someone (e.g. health mentor, peer, friend) hold them accountable; having family members or friends to share struggles with weight, diet, physical health, and mental health; have family and friends with whom to cook/share healthy foods	"I had a trainer who I met each week which is probably one of the reasons I was able to do things; because when you meet with someone it's easier to hold yourself accountable to exercising than if you do it on your own."	(n = 20, or 100%)
Cultural Barriers	Unhealthy Social Environment	Exposure to and/or engaging in unhealthy behaviors (unhealthy eating and sedentary lifestyle) with family or significant others (e.g., parents serving more food even when participants may not want more)	"When I eat at my mom's house she says, 'You want more?' and I say, 'No, that's too much.' She don't even ask me, she puts more on my plate." "Caribbean moms are the same all the way around. You say, 'No, no, I can't eat more' and they don't even bother. I don't even know why they ask sometimes, you know?"	(n = 11, or 55%)
	Culture of Food	Traditional diet: Rice and beans, fried food, pork; Meaning of food: 1) a way to bring families together (kids come over requesting specific dish, family celebrations/ holidays surround food); 2) link to cultural heritage	"That is our idiosyncrasy, as they say. It is how we identify each other; it is being together, eating our traditional food with our family, and remembering. And one begins to remember at the table, and those are the truly beautiful moments."	(n = 17, or 85%)
	Finances	Fruits and vegetables seen as expensive (unwillingness to experiment with them);	"To have a diet is not easy. Things are very expensive. That's something that stands in my way from getting the good nutrition, from buying nutritious stuff. I don't got the income to do it. Maybe if I had more access to things like fish, had the money to buy fish, to buy my vegetables, fresh fruit; I don't got that. That's the one thing that stops me from getting a diet or sticking to a diet."	(n = 9, or 45%)
Preferences	Non-Vigorous Aerobic Exercise	Exercises that keep the mind occupied, preferably while listening to music (treadmill, walking, dancing)	"Actually I'm not on base entirely when it comes to exercise. This is a really challenging thing for me. What I do is doing errands. I walk from place to place rather than take the bus and the train."	(n = 14, or 60%)