


# Mexican Origin Hispanic Men's Perspectives of Physical Activity–Related Health Behaviors

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Luis A. Valdez, PhD, MPH<sup>1</sup>, Kristin E. Morrill, BS<sup>2</sup>,  
Derek M. Griffith, PhD<sup>3</sup>, Nangel M. Lindberg, PhD<sup>4</sup>,  
Steven P. Hooker, PhD, FACSM, FNAK<sup>5</sup>, and David O. Garcia, PhD<sup>6</sup>

## Abstract

Approximately 83% of Hispanic men of Mexican origin are overweight or obese, which are both associated with increased risk of chronic disease and all-cause mortality. Consequently, men of Mexican origin have some of the highest prevalence rates of obesity-related comorbidities. Physical activity (PA) may be an important strategy for Hispanic men of Mexican origin in reducing incidence and risk factors of lifestyle diseases. The current study engaged Spanish-speaking, Hispanic men of Mexican origin aged 24–64 years with overweight/obesity to examine perspectives of health behaviors related to PA. A total of 14 in-depth semistructured individual interviews were completed between September and November of 2015 and data analyzed using an iterative deductive–inductive thematic assessment strategy. The men suggested that their PA was hindered by (a) work-related energy and time constraints, (b) socioeconomic status (SES) and the need to prioritize work, (c) adaptations to majority population lifestyle norms, and (d) perceived lack of suitable access to PA-promoting spaces. The men provided valuable insight for strategies to improve PA interventions such as (a) accurately accounting for current PA levels of participants, including occupational and transportation PA, (b) considerations of family dynamics that influence PA-based behavior change, and (c) considerations of economic and geographical constraints that can be remediated. To improve effectiveness, future PA-related intervention research with Hispanic men of Mexican origin should consider methods that (a) account for transportation and occupational PA to better tailor PA to individual needs, (b) consider sociocultural and socioeconomic influences, (c) account for social support and accountability, and (d) consider economic and geographical constraints.

## Keywords

physical activity, gender, cultural competency, Hispanic, interviews, men's health

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The Hispanic population is one of the fastest growing racial/ethnic groups in the United States and comprises nearly 18% of the population (Daviglius, Pirzada, & Talavera, 2014). Among all men in the United States, Hispanic men have the highest rate of obesity (40%) when compared to their non-Hispanic White (NHW; 33.1%) and non-Hispanic black (NHB; 37%) counterparts (National Center for Health Statistics, Centers for Disease Control and Prevention [NCHS CDC], 2016). Approximately 83% of Hispanic men of Mexican origin are overweight (body mass index [BMI]  $\geq 25.0$  kg/m<sup>2</sup>) or obese (BMI  $\geq 30.0$  kg/m<sup>2</sup>; NCHS CDC, 2016), which are both associated with increased risk of chronic disease (Finkelstein, Trogon, Cohen, & Dietz, 2009) and

<sup>1</sup>School of Public Health and Health Sciences, Department of Health Promotion and Policy, University of Massachusetts, Amherst, MA, USA

<sup>2</sup>College of Agriculture & Life Sciences, Department of Nutritional Sciences, University of Arizona, Tucson, AZ, USA

<sup>3</sup>Center for Research on Men's Health, Center for Medicine, Health and Society, Vanderbilt University, Nashville, TN, USA

<sup>4</sup>Center for Health Research, Kaiser Permanente, Portland, OR, USA

<sup>5</sup>College of Health and Human Services, San Diego State University, CA, USA

<sup>6</sup>Mel and Enid Zuckerman College of Public Health, Department of Health Promotion Sciences, University of Arizona, Tucson, AZ, USA

## Corresponding Author:

Luis A. Valdez, PhD, MPH, School of Public Health and Health Sciences, Department of Health Promotion and Policy, University of Massachusetts, Amherst, MA, USA.

Email: lvaldez@umass.edu



all-cause mortality (Flegal, Kit, Orpana, & Graubard, 2013). As a result, Hispanic men of Mexican origin have some of the highest prevalence rates of obesity-related comorbidities, including type 2 diabetes, hypercholesterolemia, hypertriglyceridemia, and nonalcoholic fatty liver disease when compared to their NHW and NHB counterparts (Daviglius et al., 2014; Flegal et al., 2013; Lazo et al., 2013).

It has been well documented that weight management reduces a number of cardiovascular disease risk factors, including diabetes, complications of diabetes, and coronary heart disease (Garvey et al., 2011; Saaristo et al., 2010; Unick et al., 2011). Physical activity (PA) has long been demonstrated to be an effective weight management strategy (Wadden, Webb, Moran, & Bailer, 2012), which remains a key component in both primary and secondary prevention of obesity and obesity-related disease (Warburton, Nicol, & Bredin, 2006). PA may be an important strategy for Hispanic men in reducing incidence and risk factors of lifestyle diseases. Adherence to PA guidelines has been associated with reduced allostatic load, decreased inflammation (Gay et al., 2015), and lower risk of metabolic syndrome (Wu, Fisher-Hoch, Reininger, & McCormick, 2016) in Hispanic adult males. When PA domains are explored independently, however, differences are observed between the effects of leisure-time PA (LTPA) and occupational PA. LTPA has been reported to bestow a range of positive health benefits both independently (Clays et al., 2012; Tsenkova, 2017) and in comparison to occupational PA (Clays et al., 2012; Harari, Green, & Zelber-Sagi, 2015; Tsenkova, 2017). Despite these benefits, research suggests that only an estimated 33% of Hispanic adults met the 2008 *Physical Activity Guidelines for Americans* for recommended levels of LTPA compared to 47% of NHWs (Carlson, Fulton, Schoenborn, & Loustalot, 2010). Low LTPA in Hispanic adult men has been attributed to perceived barriers such as environments not conducive to PA and strenuous, physically tasking jobs (Garcia, Valdez, & Hooker, 2015). National estimates from 2014 indicate that among occupational groups, 43.4% of workers in fishing, farming, and forestry, 36.7% of workers in maintenance occupations, and 32.3% of workers in construction and extraction occupations were Hispanic (Bureau of Labor Statistics, 2018). When compared to Hispanic men of Mexican origin engaging in low occupational PA, Hispanic men of Mexican origin engaging in high occupational PA had a 2.3 times greater risk of all-cause mortality (Richard, Martin, Wanner, Eichholzer, & Rohrmann, 2015). Considered in unison, these findings suggest that the benefits of LTPA may be hindered by high levels of occupational PA in Hispanic men.

The purpose of this study was to examine perspectives of health behaviors related to PA among Spanish-speaking

overweight and obese men of Mexican origin. Hispanics with limited English proficiency are 50% less likely than NHWs to report receiving advice on PA in clinical settings (Lopez-Quintero, Berry, & Neumark, 2009), presenting a potential knowledge gap in this population. This qualitative assessment served to further refine a gender- and culture-adapted weight loss intervention for Hispanic men of Mexican origin with obesity (Garcia et al., 2018).

A brief note on terminology: The terms "Hispanic" of "Latino" are representative of people who classify themselves as persons of Cuban, Mexican, Puerto Rican South or Central American, or Other Spanish culture or origin regardless of race. In the current study, "Hispanic men of Mexican origin" is used to characterize the current sample within the heterogeneous Hispanic population of the United States.

## Methods

### *Participants and Recruitment*

In total, 14 in-depth semistructured interviews with Hispanic men of Mexican origin were completed between September and November of 2015. Participants were recruited at the Tanque Verde Swap Meet (an outdoor marketplace) in Tucson, Arizona, USA. Eligible participants were Mexican origin, Spanish-speaking men between the ages of 18 and 64 years with overweight or obesity ( $BMI \geq 25.0 \text{ kg/m}^2$ ). Eligibility for participation was determined by an initial telephone screening process conducted by a trained bilingual and bicultural member of the research staff. Screening for this study included brief, self-reported demographic information (gender, age, language spoken at home, race/ethnicity, height, and weight), history of weight-related surgical procedures, and past or current participation in weight management-related research. After determination of eligibility, participants were invited to attend an in-person meeting where the study was further explained. A Spanish-speaking, male member of the research team (LAV) completed a written consent with all participants.

### *Data Collection*

Qualitative inquiry employed a previously used semistructured interview guide (Table 1) to elicit perspectives of general health, diet and PA behaviors, and willingness to use mobile health (mHealth) technology (e.g., smart phone, wearable activity monitors; Garcia et al., 2015). Upon completion of the interview, participants were asked to complete a brief questionnaire related to (a) basic demographics (e.g., age, Hispanic heritage, schooling, employment, income, marital status, and time lived in the United States), (b) behaviors related to general health, (c) current use of technology (e.g., cell phone use, text

**Table 1.** Semistructured Interview Guide.

Domain and questions
<p>General health beliefs</p> <ul style="list-style-type: none"> <li>• What disease or illness do you think is the leading cause of death for Hispanic males in the United States?</li> </ul> <p>Weight management and health outcomes</p> <ul style="list-style-type: none"> <li>• What role do you think weight management plays in the likelihood of getting chronic illness such as type 2 diabetes or heart disease?</li> <li>• What health actions or steps can men take to reduce their likelihood of getting chronic illness?</li> <li>• Would you be interested in participating in weight management programs targeting diet and exercise behaviors? <i>Why or why not?</i></li> </ul> <p>Exercise and health</p> <ul style="list-style-type: none"> <li>• What role do you think exercise plays in weight management and protecting one against developing chronic illnesses such as type 2 diabetes or heart disease?</li> <li>• What types of exercise may prevent someone from developing chronic illness?</li> <li>• On average, Hispanic men engage in less health-promoting physical activity in their leisure or free time compared with non-Hispanic Whites. The media, doctors, and health professionals have explanations for this but we are interested in your thoughts. Why do you think Hispanic men engage in less health-promoting physical activity or exercise than non-Hispanic Whites?</li> <li>• In general, what influences Hispanic men to engage in regular exercise?</li> </ul> <p>Barriers to PA?</p> <ul style="list-style-type: none"> <li>• What gets in the way of exercise for Hispanic men</li> </ul> <p>Motivators of PA</p> <ul style="list-style-type: none"> <li>• What makes Hispanic men want to exercise?</li> </ul> <p>Tailoring programs</p> <ul style="list-style-type: none"> <li>• How do you think Hispanic men should be recruited for weight management programs?</li> <li>• Should physical activity information be related to cultural norms of Hispanic men? <i>Why or why not?</i></li> </ul> <p>Use of mobile health technology</p> <ul style="list-style-type: none"> <li>• Would you be willing to consider using wearable technology in order to measure and record your level of daily physical activity? <i>Why or why not?</i></li> </ul>

Note. PA = physical activity

messages), (d) PA intervention delivery preferences, and (e) acculturation using the Acculturation Rating Scales for Mexican Americans-II (ARSMA-II). A Spanish-speaking, male member of the research team (LAV) conducted all interviews, administered questionnaires, and measured participant height and weight. Height was measured to the nearest 0.01 cm using a wall-mounted stadiometer and body weight was measured to the nearest 0.1 kg on a calibrated digital scale while participants wore light clothing and no shoes. The consenting process, interview, questionnaires, and height/weight measurements lasted approximately 60 min, and participants were modestly compensated for their time. All interviews occurred in a private room within a well-known public building located in an area of the city that is predominantly populated by the Hispanic community. All procedures were approved by the University of Arizona's Internal Review Board.

### Data Analysis

All interviews were audio-recorded and successively transcribed. The initial assessment of data transcripts was approached with a combined deductive–inductive thematic analysis strategy (Patton, 1999) in which the

process was started with a predefined codebook based on the objectives of the analysis and supplemented with emerging themes. The deductive process included the development of an a priori codebook that was developed using broad topics included in the interview guide based on study objectives. The preliminary codebook underwent ongoing supplementation with themes that emerged through iterative thematic analysis of all transcripts. Four transcripts chosen at random were used for ongoing theme and code discussion by two of the authors (LAV, DOG) and a final codebook used for comprehensive analysis was reached through iterative analysis and discussion of each transcript and confirmation of coding structure. This process also facilitated the establishment of inter-rater reliability of coding strategies reaching a consensus of approximately 82%. All remaining transcripts were coded by a single member of the research team (LAV); nevertheless, 20% of each transcript was reviewed by DOG to minimize the potential of analytic drift by a single coder. Diminishing variation in coded transcripts suggested saturation of themes in the analysis (Patton, 1999); recruitment was halted once saturation of themes was achieved. NVivo 13 (QSR International, Cambridge, MA, USA) was used to facilitate data

**Table 2.** Participant Characteristics ( $n = 14$ ).

Characteristics	$n$ /mean	%/SD (range)
Age (years)	46	9.8 (24–64)
Weight (kg)	100	21.5 (74.8–145.2)
BMI ( $\text{kg}/\text{m}^2$ )	34.2	6.5 (27.6–47.3)
Foreign born	14	100
Years in the United States	14.7	9.2 (3–35)
Currently married or living with domestic partner	13	92.9
Employed	13	92.9
Income		
<\$29,999	8	61.5
\$30,000–59,999	4	30.8
>\$60,000	1	3.7
Primary language		
Spanish	12	85.7
Bilingual	2	14.3
Educational attainment		
Some high school	2	14.3
High school graduate	7	50.0
Some college	3	21.4
Bachelor's degree	1	7.1
Graduate degree +	1	7.1
Weekly physical activity		
Less than 150 min/week	9	64.3
Self-reported health conditions		
Diabetes	1	7.1%
Hypertension	2	14.3%
ARSMA-II acculturation level <sup>a</sup>		
Level I	11	84.6%
Level II	2	15.4%

Note. ARSMA = Acculturation Rating Scales for Mexican Americans-II.

<sup>a</sup>There were no participants with a calculated ARSMA level of 3–5.

organization, management, and analysis. STATA 13 (Stata Corp., College Station, TX, USA) was used to calculate all questionnaire-based demographic statistics presented in Table 2.

## Results

### Participant Characteristics

Recruitment for this work took place between September and November of 2015. In total, 76 men were interested in participating and provided contact information to study staff. Study staff successfully contacted 52 (68%) of those men, and 33 (63%) of them continued to show interest in participating and were screened. Of those, 22 (67%) were eligible to participate and were scheduled

for interviews. Four of these men (18%) were unable to attend their scheduled interview and were not interested in rescheduling due to family/work constraints. Study staff lost contact with an additional four of these men (18%). In total, 14 interviews were completed with Spanish-speaking men, all of whom were born in Mexico and had spent an average of  $14.7 \pm 9.2$  years in the United States. The average age of participants was  $45 \pm 9.8$  years. Out of 13 participants (1 refusal due to time constraints) who completed the ARSMA-II, 11 (85%) were scored at an ARSMA-II Level I, which is *Very Mexican Oriented*, which suggests low acculturation (Cuellar, Arnold, & Maldonado, 1995). Eight participants (57%) reported a yearly income of less than \$29,999. Nine participants (64%) reported having less than a high school education.

**Table 3.** Select Quotes Regarding Perceived Barriers to Physical Activity.

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Perceived barriers to physical activity (PA)	
PA and strenuous work	
•	“Muchos creen que ya en el trabajo hacen suficiente ejercicio” (Another reason is lack of exercise; a lot of people think that they get enough exercise at work.)
SES and the need to prioritize work	
•	“Estoy convencido que las personas que tienen un mejor estatus [económico] se preocupan más por su salud porque ya no tienen que preocuparse por sobrevivir.” (I am convinced that people that have a better [economic] status worry about their health because they do not have to worry about surviving.)
Adjusting to majority population lifestyle norms	
•	“Por ejemplo, uno en su pueblo sabía que tiene que jugar y estar afuera y ahora no porque la tecnología gana, ya la vida no es tan activa como antes desde chiquitos. Aquí [Estados Unidos] la vida ya está más sedentaria, la gente llega su casa y solo quieren ver televisión.” (e.g., back in our villages one knew that we needed to play and be outside and it is no longer like that because technology has won, and now life is no longer as active as it was when we were small. Here [United States] life is more sedentary, people get home and all they want to do is watch television)
PA norms and access	
•	“No hay para donde ir para nosotros. La gente no sale de su casa, o ahí de su barrio. Los gimnasios son muy caros, y apenas alcanza para lo de la casa. No se le puede poner prioridad. Y si hay programas pero la gente no va. Es muy de vez en cuando y nosotros vivimos en Sahuarita y nos queda muy lejos.” (There is nowhere to go for us. People do not leave their house or their neighborhood. Gyms are too expensive, and we can barely afford our home’s expenses. We cannot prioritize that. And there are programs but people do not go. They happen every once in a while, and we live in Sahuarita and it is too far)
Family and accountability	
•	“Mira, si enganchas a las señoras o a los niños enganchas a la familia y el padre viene, a fuerzas. Si las esposas dicen que hay que salir al parque a jugar o hacer algo con los niños el papa sale. Igual como los doctores, si el doctor dice que hagas algo lo haces. Los doctores dicen y las señoras se encargan de reforzar.” (Look, if you hook the spouses and the children you’ll hook the family and the father comes, by force. If the spouses say that we must go to the park and play or do something with the kids the father will go out. Same with doctors, if the doctor says to do something you do it. Doctors say it and spouses make sure to reinforce.)

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## Qualitative Results

In brief, the men suggested that their PA is hindered by (a) work-related energy and time constraints, (b) socioeconomic status (SES) and the need to prioritize work, (c) adaptations to majority population lifestyle norms, and (d) perceived lack of suitable access to PA-promoting spaces. However, participants also provided suggestions for the improvement of LTPA in Hispanic men of Mexican origin. Table 3 highlights quotes selected to provide additional context to the abbreviated findings in the transcribed words of the participants.

### PA and Strenuous Work

The men who participated in the study often described time and energy constraints as barriers to LTPA because they had physically demanding jobs. Participants commented on their perceptions that Hispanic men of Mexican origin make up the local manual labor force and that some men may have to hold multiple physically strenuous jobs to ensure the livelihood of their families. Consequently, because of the strenuous nature of the work, men considered their work to provide a large amount of LTPA.

It was common to hear men speak about constantly feeling too fatigued to complete LTPA at the end of a long work day. There was also a shared perception that it is difficult to be motivated to do anything other than rest because men are either recovering from or preparing for a long, physically demanding day of work.

### SES and the Need to Prioritize Work

Participants mentioned that they find it difficult to prioritize PA over work and family-oriented activities they perceive as more valuable. It was not uncommon for the men to explain that they see PA as a waste of time given and that they could use that time to work and earn more money to support their families. Participants also spoke about a perceived cultural and socioeconomic divide that perpetuates differences in the levels of LTPA that Hispanic men of Mexican origin engage in relative to their NHW counterparts. Data suggested that participants see themselves and their lives to be very different than those of NHW men due to perceived SES gaps. The men reported not having jobs that allow them the privilege of leisure time or disposable income to prioritize LTPA. Some participants believed that if they had been able to obtain

higher education, they would have better jobs allowing them to live a more healthful lifestyle where they have the time to be physically active in their leisure time and not just at work. These participants also mentioned that people with a higher income can preoccupy themselves with improving their health because they no longer have to focus simply on surviving.

### *Adjusting to Majority Population Lifestyle Norms*

In speaking about perceptions of culturally different lifestyles, many of the participants remembered a distinct and more active way of life they led before coming to the United States.

The men expressed that life in the United States, outside of work, was very sedentary compared to life in Mexico. The reasons they cited for this varied. Some mentioned that the communities they came from were more cohesive and people led active lives; they visited with neighbors, played sports, and walked or biked as a form of transportation that is not feasible in the communities they currently live in. The men also spoke about how they perceive to have differential access to places that foster active lifestyles, claiming limited access to parks and gyms relative to NHW men.

### *PA Norms and Access*

Responses suggested that men are more likely to participate in competitive sports rather than individualized structured activity like walking or jogging, a factor that could be a hindrance to PA if access to participation in team sports is limited. Conversely, the men expressed a desire to participate in structured LTPA only when the primary aim is to gain muscle mass. Because PA is seen as centered in competitive sports or structured exercise to improve muscle mass, there was a perceived lack of access to adequate facilities for LTPA. The men perceived access to a gym as a need, which they reported not being able to afford and not having adequate parks or gyms nearby, which creates transportation-driven barriers.

### *Levels of Accountability*

When questioned about health-promoting behavior change, particularly increasing LTPA, participants often mentioned the necessity to feel accountable to someone other than themselves. The men explained they could imagine themselves increasing their LTPA, but that it may not be a change they are willing to take on alone. Men further clarified that they prefer to exercise in groups or with a friend to keep themselves accountable to somebody. Many of the men identified their spouse as

a motivating factor for engagement in LTPA, explaining that it is much easier for them to take on PA goals if joined by their spouse and if LTPA was a normalized family activity. Finally, health professional-driven accountability was also a topic of dialogue as men stated their LTPA behaviors would change if only recommended by a doctor or other health professional. Diversely, when probed about the use of wearable technology as an intervention tool, participants were familiar with consumer-wearable activity trackers and shared positive views on this technology. The men shared positive views about having the ability to track progress, receive activity completion reminders, and be conscious about meeting daily activity goals. Participants expressed excitement at the idea of receiving reminders of how much activity they must complete to meet their goals, keeping them accountable to a specific amount of daily PA. A few of the men mentioned that difficulties may arise from wearing activity monitors while doing manual labor. For example, some men were worried about damaging the tracking monitor when pouring concrete or reaching into deep water-filled holes while repairing municipal plumbing. Finally, cost of purchasing and perceived necessary maintenance (e.g., batteries, broken parts) were also mentioned as potential barriers to the use of activity trackers.

## **Discussion**

The purpose of this study was to examine the perspectives of health behaviors related to LTPA of Spanish-speaking, Hispanic men of Mexican origin. The findings suggest the men face significant barriers to PA. Participants suggested that their activity is hindered by (a) work-related energy and time constraints, (b) SES and the need to prioritize work, (c) adaptations to majority population lifestyle norms, and (d) perceived lack of suitable access to PA-promoting spaces.

Work ethic is a strong value in Hispanic culture, and compared to the general public of the United States, Hispanics hold strong beliefs that persistent hard work can result in economic advancement (Taylor, Lopez, Martínez, & Velasco, 2012). A culture of hard work combined with an imbalanced landscape of Hispanics in low-wage job markets may lead segments of this population living in lower socioeconomic strata to overprioritize work and underprioritize their physical health (Pager, Western, & Pedulla, 2015). As suggested by participants, work constraints related to time and energy can lead men to not prioritize making time for LTPA as part of their daily routine. The interviews indicate that a culture of hard work coupled with relatively strenuous employment can generate perceptions that the activity completed at work is sufficient and LTPA is unnecessary.

Interestingly, a study by Singer et al. observed that increasing weekly occupational PA and total hours worked were independently and significantly associated with overweight and obesity in a heterogeneous Hispanic/Latino population from the Hispanic Community Health Study/Study of Latinos (HCHS/SOL; Singer et al., 2016). In that study, total hours worked was reported to be a particularly important indicator of overweight/obesity relative to occupational activity levels, suggesting that time spent at work, regardless of PA expenditure, may contribute more to perceived work-related energy expenditure, ultimately leading to lower engagement in LTPA. It is possible that working more hours leads men to engage in less-healthy behaviors once they are home, including consumption of alcohol beverages and energy-dense foods, shifting the men into consecutive days of positive energy balance, resulting in weight gain. Similar findings highlighting the potentially deleterious effects on the physical body as a result of stressors faced while trying to fulfill perceived social, cultural, and gender-bound roles were observed in African American men (Griffith, Ellis, & Allen, 2013).

In addition to barriers related to physically strenuous employment, more nuanced LTPA barriers such as work and family commitments augmented by stress, as well as lack of time and energy due to these commitments mirror previous findings in groups of middle-aged African American men (Griffith, Gunter, & Allen, 2011; Griffith, King, & Allen, 2013; Hooker, Wilcox, Rheaume, Burroughs, & Friedman, 2011). Griffith et al. suggested that a perceived need to prioritize work and family commitments created a barrier to men's participation in and motivation to engage in LTPA (Griffith et al., 2011). This is consistent with the current study's findings elucidating that LTPA barriers are driven by a need to make work a priority and fulfill the role of head of household and sole provider above all else. Prioritizing a perceived role as household leader and sole provider and underprioritizing health is a notion that cuts across samples of men of color, as these findings parallel those in several previous studies with African American and Hispanic men (Garcia et al., 2015; Griffith, Brinkley-Rubinstein, Bruce, Thorpe, & Metzl, 2015; Griffith, Ellis, et al., 2013; Griffith et al., 2011; Griffith, King, et al., 2013; Hooker, Wilcox, et al., 2011; Valdez, Amezcuita, Hooker, & Garcia, 2017). Nevertheless, the self-conceptualizations of manhood, its expressions, and the underpinnings of health-related behaviors can be used to influence health-promoting behavior change in men. Health-promoting message framing can be based on how well these men adhere to notions of manhood by leveraging their status as head of households, family leaders, or sole providers as found in the current study. For instance, when communicating a necessary increase in LTPA to men who closely adhere to

these characteristics, messaging can express the vulnerabilities of their status as providers, for example, "Did you know that working out just 30 minutes a day can help your job performance?"

Findings from the interviews also suggest that effectiveness of future weight management-based PA intervention efforts with this population may rest on three overarching factors: (a) accurately accounting for current PA levels of participants, including occupational and transportation PA, (b) considerations of family dynamics that may influence PA-based behavior change, and (c) considerations of economic and geographical constraints. First, it is imperative that interventionists consider triangulated measures of baseline PA to comprehensively account for PA related to work, transportation, and leisure time. Men in the current study and parallel literature often cite LTPA barriers emerging from physically strenuous work and work-related constraints. Some participants may unknowingly already be exceeding recommended moderate-to-vigorous PA (MVPA) guidelines when entering an intervention. Therefore, it may be beneficial for investigators to assess levels of PA in all domains before the start of the intervention to ensure PA goals, if included, are realistic and tailored to the needs of that particular group of participants or even to the level of the individual participant. In this way, blanket PA intervention goals for an entire study arm may not be the most appropriate and may prove futile for weight management as men may already be completing the recommended quantities of PA with large amounts of work-related PA.

Future interventions should consider emphasizing dietary changes while objectively measuring work- and transportation-related PA to better recommend obtainable supplemental PA behavior changes. Research indicates that there are difficulties in measuring PA outside of leisure time among Hispanics, because PA measures do not always include transportation and occupational activities (Hulme et al., 2003). Notably, when measured objectively by accelerometry, it was observed that Mexican American men participated in the highest amount of PA (counts per minute) compared to NHWs and NHBs, despite previous reports of lower LTPA (Matthews, 2008). These results, combined with a potential tendency to overestimate or underestimate time spent in more physically demanding tasks during discontinuous work patterns (Barrero et al., 2009), emphasize the importance of using PA assessment tools that capture all forms of PA to provide an accurate accounting of PA-related energy expenditure in Hispanic men when designing an intervention.

Importantly, the men did express an interest in competitive sports and efforts to increase muscle mass, providing strategies for future investigators interested in modifying PA behaviors in this population. Physical fitness may protect men from the increased risk of

cardiovascular and all-cause mortality associated with high physical work demands (Holtermann et al., 2010). Efforts to increase LTPA may therefore prove particularly important for those with physically demanding jobs, many of whom are Hispanic (Bureau of Labor Statistics, 2018). Future researchers may benefit from addressing the misconception that perceived work-related PA levels are sufficient to achieve positive health effects and from integrating organized competitive sport activities or resistance training as components in PA interventions for Hispanic men of Mexican origin.

SES and geographical barriers were a common thread of conversation; therefore, it is essential that these be considered when making PA recommendations for Hispanic men of Mexican origin. As is seen in the current study, some men perceived barriers to LTPA as rooted in their lack of economic or geographical access to places that promote LTPA. It is well documented that disadvantaged groups often live in environments where PA is hindered by traffic and crime-related safety concerns and lack of places to exercise (Lovasi, Hutson, Guerra, & Neckerman, 2009). Research suggests that residing in neighborhoods perceived to be unsafe is a barrier to regular PA, which may limit the effectiveness of PA promotion strategies delivered in these settings (Bennett et al., 2007). Therefore, it may be vital that PA interventions include activities that can be performed at home with little or no access to PA equipment, or otherwise ease access by providing gym memberships and/or transportation vouchers as part of an intervention.

Study findings also indicate the need to consider how family dynamics may affect engagement in PA, which aligns with findings in African American males (Griffith et al., 2011). Much like in the current study, Griffith et al. (2011) reported that family is a central priority in African American men's daily lives, which drove men to prioritize their roles as spouses and fathers above being physically active. Thus, interventionists could consider including the spouse and/or family in weight loss interventions for Hispanic men of Mexican origin. Although no current research exists assessing the effectiveness of a family-based weight loss intervention compared to a more traditional individual-focused program for Hispanic men of Mexican origin, the inclusion of spouses or the family as a whole has been reported to lead to greater weight loss in Mexican American women (Cousins et al., 1992). Further, Mier, Ory, and Medina (2010) reported that interventions for Hispanic populations involving family members for social support, accounting for appropriate literacy levels, and incorporating cultural values produced significant differences in behavioral outcomes related to healthy eating and PA compared to those that did not include these components (Mier et al., 2010). The current study reiterates the

importance of *familismo*, a theme and deep-structure intervention component (Resnicow, Baranowski, Ahluwalia, & Braithwaite, 1999) critical to the development of culturally sensitive interventions involving the Hispanic population in health promotion and disease treatment efforts (Garcia et al., 2015). The men indicated that their spouses may exert great influence on their own PA efforts, mirroring findings from previous reports demonstrating the important role of the spouse in health-related decision-making (Gast & Peak, 2012; Holland, Bradley, & Khoury, 2005).

Taking further advantage of the need for social support expressed by the men, strategies that emphasize mutual or peer-to-peer accountability may also prove useful. This could manifest itself through a program focused on peer-based support in which participants are accountable to fellow participants having similar experiences. Men could exchange ideas of successful strategies with fellow participants, providing them alternative means of understanding program materials and program goals. Nevertheless, the notion of peer support and group-based activities and their potential use with men of color is an idea that mirrors previous findings. Hooker et al. recommend that community-based LTPA programs for men should build social support, camaraderie, and accountability among men (Hooker, Wilcox, et al., 2011). Group-based activities could be supplemented into individual-based intervention models to create a space where participants have opportunities to foster supportive relationships with others, an approach that has been successful with male samples in the United Kingdom (Hunt et al., 2014) and NHB men (Griffith, Allen, Johnson-Lawrence, & Langford, 2014; Hooker, Harmon, Burroughs, Rheaume, & Wilcox, 2011).

The concept of accountability was not only attributed to social support as mHealth technology also was mentioned as a potential mode of triggering accountability through self-monitoring practices. Research implies that self-monitoring can be improved with the supplementation of traditional interventions with PA tracking technology (Burke et al., 2011, 2012). Burke et al. (2012) reported that supplementing a traditional weight loss intervention with technology-based self-monitoring enhanced weight loss over a 24-week intervention period. Further, Crane, Lutes, Ward, Bowling, and Tate (2015) used Web-based contacts to deliver a weight loss intervention to a group of primarily NHW men, which yielded positive results in adherence, completion, and weight change. Conversely, one large randomized controlled trial found the use of tracking devices to lead to poor weight loss (Jakicic et al., 2016). No studies using mHealth technology to enhance self-monitoring have been conducted exclusively with overweight Hispanic males (Crane et al., 2015).



## Strengths and Limitations

This study's strengths arise from the novelty of the collected data. There is much value to the knowledge base that comes from the addition of perspectives and opinions of this chronically understudied and health-disparate population. The findings from this study add instrumental insight that will aid in the formulation of improved gender- and culture-tailored weight management-based prevention and treatment approaches for this population. Nevertheless, this study does have its limitations. This was a small sample composed of Hispanic men of Mexican origin and does not fully consider the cultural, socioeconomic, dietary, and lifestyle heterogeneity that exists in the Hispanic population, which limits the application of the results to other Hispanic subgroups.

## Conclusion

As efforts to address health disparities among racial/ethnic subgroups continue, accounting for culturally bound perceptions regarding LTPA will be important to inform the development of culturally responsive interventions. The work presented here sheds light on factors that continue to impede positive PA-related behaviors in some Hispanic men of Mexican origin. Nevertheless, it adds to the efforts to determine viable LTPA and disease prevention and treatment approaches for this population. As such, future LTPA intervention efforts with this population may rest on four overarching factors: (a) accurately accounting for LTPA levels of participants, including occupational and transportation LTPA domains and tailoring LTPA recommendations to the individuals' needs; (b) considering sociocultural and gendered norms that may govern LTPA-related behavior; (c) considering the role of social support (e.g., family and peer) and accountability (e.g., mHealth technology) that may influence PA-based behavior change; and (d) accounting for economic and geographical constraints that influence PA behaviors.

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