

Topical Manuscript

# Association Between Hispanic Parents' Attitudes and Knowledge Regarding Obesity and Their Children's Body Mass Index

Renee Starr<sup>1</sup>,<sup>a</sup> Eva Miller<sup>2</sup>, Roy K. Chen<sup>2</sup>, Ralph Carlson<sup>2</sup>, Veronica I. Umeasiegbu<sup>2</sup>, Bruce J. Reed<sup>2</sup>

<sup>1</sup> Grand Canyon University, <sup>2</sup> University of Texas Rio Grande Valley

Keywords: obesity, Hispanic, children, knowledge, attitudes

<https://doi.org/10.52017/001c.38796>

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## Rehabilitation Counselors and Educators Journal

Vol. 11, Issue 3, 2022

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According to the Centers for Disease Control and Prevention, more than 13.7 million children experience obesity nationally and Hispanic children display the highest occurrences of obesity for all racial/ethnic groups (Hales et al., 2020). Because parents have a significant influence on their children's overall health, we were interested in examining whether parents' attitudes and knowledge about obesity impacted their child's body mass index (BMI) for their age. We surveyed 210 adult Hispanic parents whose children were receiving general healthcare services at a pediatric medical clinic located near the U.S.-Mexico border. A multiple regression analysis was conducted to evaluate the estimation between the independent variables (knowledge about obesity, socioeconomic status, education, physical activity, dietary habits, medical history, age, and gender) and the dependent variable (attitudes toward obesity). Specifically, the study examined the relationship between Hispanic children's BMI-for-age and their parents' attitudes toward obesity, and the relationship between Hispanic children's BMI-for-age and their parents' knowledge regarding obesity-related risks. The results indicated the level of physical activity, dietary habits, and level of knowledge were predictive of Hispanic parents' attitudes toward obesity. Implications of the study and recommendations for researchers, educators, and counselors to minimize the obesity epidemic are provided.

According to the World Health Organization (WHO, 2021), more than 1.9 billion adults age 18 and older are overweight (39%) and 650 million (13%) are obese. The WHO defines overweight for adults as a body mass index (BMI) greater than or equal to 25 and obesity as a BMI greater than or equal to 30. For children ages 5-19 years, overweight is defined as BMI-for-age greater than one standard deviation above the WHO Growth Reference median, and obesity is greater than two standard deviations above (WHO, 2021). The Centers for Disease Control and Prevention (CDC) showed the prevalence of obesity among U.S. adults (39.8%) was highest among African Americans (49.6%) followed by Hispanics (44.8%), non-Hispanic Whites (42.2%), and non-Hispanic Asians (17.4%) (Hales et al., 2020). Women had a higher prevalence of severe obesity (11.5%) than men (6.9%) and the prevalence was highest among adults ages 40-59 (11.5%). While obesity is the highest among adults, obesity rates among children and adolescents are also alarming. The national childhood obesity rate is 18.5% (more than 13.7 million), with approximately one in five children and adolescents reaching the obesity level. The percentage of children with obesity in the U.S.

has more than tripled since the 1970s, and Hispanic children display the highest rate of obesity (25.8%) among all racial/ethnic groups (Hales et al., 2017). Indeed, the frequency of obesity among both children and adults in the U.S. has reached epidemic proportions and has led to the development of myriad biopsychosocial considerations.

The main cause of obesity, aside from metabolic disorders, is the combination of excess caloric intake and a reduction in energy expenditures over time (WHO, 2021). Obesity affects people in many ways and often increases the risk for other health conditions among people with and without disabilities. The manifestation of obesity has been linked to major medical and psychological problems, including type-2 diabetes (Skinner et al., 2015); heart disease (Chirinos et al., 2020), cancer (Aarestrup et al., 2017), anxiety (Rajan & Menon, 2017), and depression (Brewis et al., 2017). The WHO (2021) estimated 2.8 million people die each year worldwide in obesity-related complications as individuals who experience obesity have a 50-100% increased risk of premature death.

As obesity in childhood generally tracks well into adulthood, it is noteworthy to examine the underlying sociocul-

tural causes of obesity. The main responsibility of children lies particularly with their parents. In addition to providing food for their children and deciding what their children eat, parents are influential in modeling eating behaviors and imparting attitudes toward food and exercise habits (Patil et al., 2018; Svensson et al., 2016). Addressing obesity among Hispanic children who have the highest childhood obesity rates in the U.S. is critical to their health and well-being. An examination of the attitudes and knowledge of Hispanic parents toward their children's weight may lead to opportunities for preventative and intervention measures to combat obesity among this segment of the population.

## Hispanics and Obesity

According to Velasco-Mondragon et al. (2017), the rates of obesity are especially prevalent among Hispanics residing near Mexico borders where the population is (a) heavily underserved, both medically and financially; (2) inadequately educated; and (3) experiencing higher rates of hunger and food insecurity than Hispanics residing in other areas of the U.S. The occurrence of obesity is further exacerbated by the fact that some Hispanic families strive to maintain cultural food traditions and often choose to use less than healthy food ingredients because they are readily available and are considered more appetizing than nutritional foods. Case in point, in many Latino neighborhoods, convenience stores (or small grocers like bodegas) and fast-food restaurants are widespread, but supermarkets that offer reasonably priced fresh fruits and vegetables, whole-grain products, low-fat milk, and a plethora of other healthy options are scarce (Rabbitt et al., 2016). The result is unhealthy food being available almost everywhere and, because of socioeconomic disadvantages, the choice of obtaining healthier foods (which are typically more expensive) is not always a viable option.

Abel et al. (2019) conducted in-depth interviews regarding perceptions of body weight and healthy lifestyle behaviors among 22 Hispanics diagnosed with HIV at an HIV clinic in South Texas. The authors found several participants believed obesity and diabetes were "normal;" many demonstrated an understanding of healthy diets and lifestyle, but blamed Hispanic foods for local obesity prevalence. Those who were overweight or obese expressed awareness of their weight, but felt shamed by providers. Others reported long work hours did not allow time for healthy food prep. Providers (e.g., physician, social workers, nutritionists) who worked at the same HIV clinic were also queried about their patients' lifestyle, weight loss counseling, and their perceptions of patients' desire to lose weight. The results showed many of the providers believed that, given all their other responsibilities, counseling was not a priority for many of their patients and some of the providers simply believed their patients were unmotivated to lose weight. This study underscores the need to consider the normative value of being overweight/obese among Hispanics and to consider the cultural influences surrounding food when working with Hispanics who are overweight/obese. By thoroughly understanding the associations be-

tween Hispanic parents' attitudes and knowledge regarding obesity, and the resulting impact on the status of their children's weight, interventions designed to mitigate the obesity pandemic among Hispanics can be tailored to their unique needs.

## Obesity among Hispanic Children and Adolescents

According to Hales et al. (2017), in 2015-2016, Hispanic children and adolescents ages 2 to 19 had the highest rates of obesity (25.8%) among all racial and ethnic groups in the U.S. They also found Hispanic boys had a higher prevalence of obesity than Hispanic girls (28.0% and 23.6%, respectively). Noticeable factors influencing the predominance of obesity among Hispanic children were multifaceted, including aspects such as genetic predisposition (Fowler et al., 2013), dietary habits (Arandia et al., 2018), sedentary behavior (Bai et al., 2016), parents/caregivers' level of education (Asieba, 2016), and low socioeconomic status (Hales et al., 2017).

Another cultural factor, which affects the propensity for obesity in Hispanic youth, is parents' perception of appropriate childhood weight. For example, Hernandez et al. (2016) found 54% of Hispanic mothers with an overweight/obese child perceived their child as "about the right weight" (p. 6). Another study showed the ideal child body size was lower among Mexican-origin mothers who resided in California compared to Mexican-origin mothers residing in Mexico (Guendelman et al., 2010). The researchers attributed the mothers' varied perceptions to (a) what is considered the body size norm and (b) damaging effects of obesity due to acculturation. Similarly, Foster and Hale (2015) found a correlation between Hispanic parents' perception of their children's weight and parents' health beliefs and practices, showing most (58%) of the parents misjudged their child's weight status and thought the child's weight was lower than it actually was. Findings of these and other studies (e.g., Bayles, 2010; Chaparro et al., 2011; Lundahl et al., 2014) underscore the importance of Hispanic parents' perceptions and the critical roles these perceptions play in their children's physical development.

Accordingly, if Hispanic parents fail to recognize their children as being overweight/obese or if Hispanic parents engage in what Katz (2015) referred to as "oblivobesity," they are less likely to support their child/adolescent in maintaining a healthy weight and reducing the child's risk of becoming obese. An essential component in recognizing obesity risks falls within Hispanic parents' attitudes and their corresponding levels of obesity-related knowledge. Thus, the purpose of the present study was to examine whether there was a relationship between Hispanic parents' attitudes and knowledge regarding obesity and their children's BMI-for-age. This study addressed the following research questions:

1. Do Hispanic parents' attitudes toward obesity associate with their knowledge regarding obesity-related risks, socioeconomic status (SES), education, gender,

- age, medical history (e.g., diabetes, hypertension), level of physical activity, and dietary habits?
2. Is there a relationship between Hispanic children's BMI-for-age and their parents' attitudes toward obesity?
  3. Is there a relationship between Hispanic children's BMI-for-age and their parents' knowledge regarding obesity-related risks?
  4. Is there a relationship between Hispanic children's BMI-for-age and their parents' perception of their weight status?
  5. Is there a relationship between Hispanic children's BMI-for-age and whether they visited a dietician or nutritionist due to their weight status?

## Method

### Target Population and Sampling

The present study used a convenience sampling to recruit 210 adult Hispanic parents whose children, ages two through 17, were receiving general healthcare services at a pediatric medical clinic located on the U.S.-Mexico border. Sample size was determined using G\*POWER (Erdfelder et al., 1996; Faul et al., 2009). An *a priori* power analysis was conducted for the total  $R^2$  value for a multiple regression analysis with eight predictor variables, power = .80 and an alpha = .05, yielded a sample size of 109 for a medium effect size ( $f^2 = .15$ ; Cohen, 1988). An *a priori* power analysis conducted for Pearson's  $r$  correlational analysis, power = .80 and an alpha = .05, yielded a sample size of 82 for a medium effect size ( $f^2 = .30$ ; Cohen, 1988). The required sample size chosen was the largest of the two power analyses,  $n = 109$ . However, in efforts to reduce attrition, the sample size was increased by approximately 100% and resulted in the final sample size,  $n = 210$ .

### Procedures

We took two actions to establish readability of the survey. First, accurate translation of the survey into Spanish was completed. Second, to ensure the survey was suitable for individuals with sixth to eighth-grade reading levels (as needed to complete the surveys for the study), three Spanish-speaking healthcare professionals (i.e., two physician assistants and a medical doctor) and a Hispanic parent with a child under age 18 completed the survey and provided feedback. Modifications were made based on the feedback provided. A letter of support to conduct the study at the pediatric clinic was also obtained from a local pediatric clinic's medical director.

Upon parents' arrival at the pediatric clinic to receive healthcare services for their child, either the researcher or the research assistant (RA) approached the parents to explain the nature of the study and request their participation in the study. In order to participate, parents were required to meet the inclusion criteria which consisted of being (a) at least 18 years of age, (b) of Hispanic origin, and (c) the parent of the child/adolescent seeking medical services at the pediatric clinic. Parents were informed the purpose of the study was to explore their attitudes toward obesity and

to assess their knowledge regarding obesity-related health risks.

Data collection was facilitated via Qualtrics survey software using an electronic Samsung tablet. The parents either completed the survey themselves or received assistance from the first author or RA who read the survey to them in their preferred language (i.e., English or Spanish) and inputted their selected answers. Triage personnel at the pediatric clinic obtained the child/adolescent's height and weight, as this information was used to calculate each child patient's BMI-for-age. Parents were informed that participation in the study was voluntary and they had a right to withdraw from the study and to discontinue their participation at any time.

### Instrumentation

A demographic questionnaire was designed to obtain information regarding participants' age, gender, education, and socioeconomic status, as well as participants' dietary habits, level of physical activity, and perceptions regarding their child's weight. Regarding dietary habits, participants were asked to report, on average, how many times per week they ate and/or drink unhealthy foods items comprising low fiber content, low vitamins, high tropical oils and salt, unhealthy fats, and processed items such as snacks and fast foods. With regard to level of physical activity, participants were asked about the number of times during the past week in which they engaged in physical activities (e.g., running, going to the gym, gardening, or walking) that lasted at least 30 minutes. Scores ranged from zero to more than seven. To gauge parents' perception regarding their child's weight status, they were asked whether they thought their child was overweight. Participants self-selected *Yes*, *No*, or *Unsure* responses. In addition, participants were queried about their child/adolescent patient's date of birth and gender to ascertain correlates among the aforementioned variables and the child/adolescent patient's resulting BMI. The demographic questionnaire was developed based on the CDC (2016) behavioral risk factor surveillance system (BRFSS) questionnaire regarding preventative healthcare practices and risk behaviors, an expert panel which included Spanish-speaking healthcare professionals, and the obesity-related disability literature as a means of enhancing content validity.

### Attitudes Toward Obese Persons Scale (ATOP)

The Attitudes Toward Obese Persons Scale (ATOP), developed by Allison et al. (1991), was used to assess parents' attitudes toward obesity. The ATOP consists of 20 items describing stereotypical attitudes toward obesity. The ATOP measures attitudes in three different domains: (1) personality, (2) social difficulties, and (3) self-esteem. The ATOP uses a six-point Likert rating scale in which each item asks respondents to indicate the extent of agreement or disagreement ranging from -3 (*I Strongly Disagree*) to +3 (*I Strongly Agree*) to a specific statement. For example, a sample item on the ATOP scale is, "Most obese people are not dissatisfied with themselves." Higher scores reflect more

positive attitudes toward people who are obese, whereas lower scores reflect more negative attitudes. Reliability and validity data collected in other studies have provided additional psychometric support for the use of the ATOP in adult populations (see Puhl & Brownell, 2006; Puhl & Heuer, 2010). The alpha reliability coefficient for the current study was 0.7.

### **Obesity Risk Knowledge (ORK-10)**

The Obesity Risk Knowledge (ORK-10) was developed by Swift et al. (2006) and is comprised of 10 items measuring knowledge regarding obesity-related health risks. The scale was constructed to be self-completed, with participants selecting whether they believe the 10 statements are *True* or *False*. In efforts to minimize guessing, participants are encouraged to use a *Don't Know* option. To illustrate, a sample item on the ORK-10 scale is, "There is no major health benefit if an obese person who gets diabetes loses weight." Scores on the ORK-10 scale range between zero to 10, with higher scores demonstrating a higher level of knowledge of obesity risks. Based on the work of Swift et al., the ORK-10 scale is known to have adequate internal consistency (Cronbach's alpha coefficient > 0.7), strong criterion validity, and has a Flesch-Kincaid grade level of 8.4 (Kincaid et al., 1975), indicating the language used is appropriate for individuals ages 13 and over. The alpha reliability coefficient for the current study was 0.7.

### **Data Analysis**

A multiple regression analysis was conducted to evaluate the estimation between the independent variables (i.e., knowledge, socioeconomic status, education, physical activity, dietary habits, medical history, age, and gender) and the dependent variable (attitudes). A correlational analysis was performed to measure the strength of the relationship between and among other primary and covariate variables. Specifically, the study examined the relationship between Hispanic children's BMI-for-age and their parents' attitudes toward obesity and the relationship between Hispanic children's BMI-for-age and their parents' knowledge regarding obesity-related risks. The null hypotheses for the present study were tested with both an *F* distribution and the student's *t* distribution at the .05 level of significance.

Prior to conducting the analyses, descriptive statistics (e.g., frequency distribution, mean, and standard error) and exploratory analyses (e.g., box whiskers and stem-and-leaf plots) were conducted to describe the obtained distributions. Specific statistical tests were performed and passed for primary analyses to determine and address any violations of assumptions for both hierarchical multiple regression and correlational analyses.

Normal distributions of data were determined by examining the raw data for outliers and calculating the skewness and kurtosis values. In addition, the Kolmogorov one-sample case test for normality of the distribution of scores was performed (Kolmogorov, 1933). Linear associations between the predictor and independent variables were assessed via Pearson bivariate correlations. Normal Q-Q

plots, stem-and-leaf, and scatterplots were computed to determine normal distribution of data and homoscedasticity. Furthermore, the variance inflation factor (VIF) was used to detect the amount of multicollinearity in the set of multiple regression variables (Polit, 2010) and the results are presented below.

## **Results**

### **Participants**

The study sample was comprised of 210 Hispanic parents attending a pediatric clinic located on the U.S.-Mexico border. There were 23 (11%) males and 187 (89%) females in the study, and the mean age of participants was 36.71 years ( $SD = 9.33$ ). Participants were relatively split between those who did not earn a high school degree ( $n = 111$ , 52.9%) and those who earned a high school degree and/or higher ( $n = 99$ , 47.1%). In addition, the majority of participants ( $n = 159$ , 76.81%) possessed an income status below the federal poverty level, thereby meeting the poverty threshold at an income of \$24,257 per year for a family of four and \$18,871 for a family of three (Pew Research Center, 2017). [Table 1](#) provides parents' demographic information.

The study sample also consisted of the parents' children ( $n = 209$ ). Data was missing from one parent and was excluded. Of the child sample, 48% were male ( $n = 100$ ) and 51% were female ( $n = 109$ ). The mean age for child participants was 9.59 years ( $SD = 4.31$ ). In regard to weight status, child participants were relatively split between those who were of normal or healthy weight ( $n = 95$ , 47%) and those who were overweight and obese ( $n = 102$ , 49%). A small percentage (4%) were underweight ( $n = 9$ ). See [Table 2](#) for full results.

Other demographic data indicated the majority of survey respondents did not perceive their child as being overweight or obese ( $n = 151$ , 72%), while almost one third did ( $n = 56$ , 27%) and several ( $n = 3$ , 1%) were unsure. Similarly, respondents were asked whether their child had ever seen a nutritionist or dietician. The majority of respondents indicated *No* ( $n = 132$ , 63%) and a little over a third indicated *Yes* ( $n = 77$ , 37%).

With regard to physical activity within the past week (lasting at least 30 minutes), 51 parents (25%) reported they did not participate in any physical activity, followed by those who engaged in physical activity between one and three times per week ( $n = 86$ , 41%), those who participated between four and seven times per week ( $n = 63$ , 30%), and those who engaged in physical activity more than seven times per week ( $n = 8$ , 4%). With regard to parents' medical history, most ( $n = 124$ , 59%) did not report experiencing any serious medical illness, followed by those who reported at least one medical condition ( $n = 52$ , 25%) and those who reported two or more medical conditions ( $n = 34$ , 16%).

### **Factors Related to Parent's Attitudes toward Obesity**

A multiple regression analysis was conducted in the present study to evaluate the estimation between the independent variables (i.e., knowledge, socioeconomic status, ed-

**Table 1. Parent Demographic Descriptive Statistics (N = 210)**

Demographic variable	n	Percentage
Gender		
Male	23	11
Female	187	89
Age		
20-25	25	12
26-31	26	12
32-37	82	39
38-43	40	19
44-49	20	10
50-55	9	4
56 and older	8	4
Highest level of education		
Never attended school	1	.5
Less than high school degree	110	52
High school degree or GED	47	22
Technical school/training	12	6
Some college	21	10
Associate degree	10	5
Bachelor's degree	7	3
Master's degree	2	1
Annual household income		
Less than \$10,000	81	39
\$10,000 to \$14,999	55	26
\$15,000 to \$24,999	23	11
\$25,000 to \$34,999	21	10
\$35,000 to \$49,999	13	6
\$50,000 or more	14	7

**Table 2. Child/Adolescent Demographic Descriptive Statistics (N = 209)**

Demographic variable	n	Percentage
Gender		
Male	100	48
Female	109	51
Age		
Toddlers (2-3)	18	9
Preschoolers (4-5)	27	13
Middle childhood (6-11)	93	44
Young teens (12-14)	41	20
Teenagers (15-17)	30	14
BMI-for-age		
Underweight	9	4
Normal or healthy weight	98	47
Overweight	31	15
Obese	71	34

ucation, physical activity, dietary habits, medical history, age, and gender) and the dependent variable (attitudes). The model summary presented in [Table 3](#) provides information regarding the total variability in the dependent variable that is explained and accounted for by the eight independent variables. Overall, the regression model was statistically significant,  $F(8, 196) = 4.48, p < .001$ . The  $R^2$  of .154 indicates the independent variables (e.g., knowledge, physical activity, and dietary habits) in this case accounted for and explained 15.4% of variance in the dependent variable, thereby demonstrating a mild to medium correlation. The best predictor of attitudes toward obesity (judged by the standardized regression coefficients) was obesity risk knowledge ( $\beta = -.271, t = -3.69, p < .001$ ). The next best predictor was dietary habits ( $\beta = -.207, t = -3.11, p = .002$ ) and physical activity was the third best predictor ( $\beta = -.149, t = -2.03, p = .044$ ). In other words, parents who were generally more accepting of obesity (as reflected by their favorable attitudes) had less knowledge about obesity risks, poorer dietary habits, and lower levels of physical activity than parents who displayed less favorable attitudes towards obesity.

### Relationships Between Parental Attitudes and Knowledge and Child's BMI-for-Age

Researchers also ran a correlational analysis to measure the strength of the relationship between and among the study variables. The variables examined were (a) parents' attitudes toward obesity and their children's BMI-for-age, (b) children's BMI-for-age and their parents' perception of their child weight status, (c) children's BMI-for-age and their status regarding whether they have seen a nutritionist or dietician, and (d) parents' attitudes toward obesity and their knowledge regarding obesity-related risks. [Table 4](#) presents the strength of associations using the Pearson product-moment correlation, which is denoted by the letter  $r$ .

The correlation between parents' attitudes toward obesity and their children's BMI-for-age was not statistically significant, ( $r = .06, p > .050$ ), indicating the children's BMI-for-age was not reflective of their parents' attitudes. The correlation between children's BMI-for-age and parents' perception of their child weight status was statistically significant ( $r = .44, p < .01$ ), showing that parents accurately perceived their children's weight status. The correlation between children's BMI-for-age and the status of clinical visit was statistically significant ( $r = -.41, p < .01$ ), revealing that parents were significantly more likely to take their child to see a nutritionist or dietician if they perceived their child to be overweight or obese. Lastly, a statistically significant correlation was found between parents' attitudes toward obesity and their knowledge regarding obesity-related risks ( $r = -.27, p < .01$ ), demonstrating that the more accepting parents were of obesity, the less knowledgeable they were of the risks associated with obesity.

### Discussion

Hispanic children have the highest rate of obesity among all racial/ethnic groups (Hales et al., 2017). For this study,

**Table 3. Multiple Regression Analysis for Variables Predicting Attitudes Toward Obesity**

Variable	Standardized $\beta$	<i>t</i>	<i>p</i>
Obesity risk knowledge	-.271	-3.69	.000
Physical activity	-.149	-2.03	.044
Dietary habits	-.207	-3.11	.002
Household income	.092	1.20	.232
Level of education	.007	.081	.936
Parental medical history	-.037	-.46	.648
Gender	-.90	-1.23	.220
Age	-.124	-1.56	.119

Note.  $N = 210$ .  $F(8, 196) = 4.48$ ,  $p < .001$ .  $R^2 = .15$ .

**Table 4. Correlation Matrix Among Study Variables**

	1	2	3	4	5
1. Parental perception	–				
2. Parental attitude	-.14	–			
3. Child BMI-for-age	.44*	.06	–		
4. Parental knowledge	.09	-.27*	.01	–	
5. Clinical visit	-.54*	.04	-.41*	-.26*	–

Note. \* $p < 0.01$

the researchers surveyed 210 Hispanic parents to identify factors related to parents' attitudes toward obesity and determine whether there was a relationship between parents' attitudes toward obesity and their knowledge about obesity, and their child's BMI-for-age. The results showed parents' limited knowledge about obesity-related risks (e.g., believing there is no health benefit if an obese person who gets diabetes loses weight), their low levels of physical activity, and their poor dietary habits were significantly correlated with their positive attitudes toward obesity. The implications of these findings are discussed below.

Although approximately 50% of the children in this study were overweight or obese, 72% of the parents (mostly females) did not perceive their child as being overweight/obese and a third of the parents were unsure whether their child was overweight/obese. Twenty-five percent of the parents reported they did not engage in any physical activity for at least 30 minutes per week and over half reported they had never consulted with a nutritionist about their child's weight. On average, parents indicated they engaged in poor eating habits 17 times per week, eating things such as fast food, fried chicken, and flour tortillas, and the majority of parents reported they did not know obesity is related to certain medical conditions such as high blood pressure and diabetes. The majority also believed obese people should not expect to lead normal lives.

Since parents in this study were generally accepting of obesity and were less knowledgeable regarding the obesity-related health risks, it may be surmised that their attitudes could be a product of the social influences of the environment in which they reside. To better understand these results, it is noteworthy that parents in this study lived on

the U.S.-Mexico border, half the parents did not have a high school degree, and over 75% of the parents lived below the federal poverty level. As such, their knowledge about the benefits of exercise and nutritious foods and their ability to purchase healthy (and often more expensive) foods was likely limited. Parents may have been deterred from consulting with a nutritionist about their child's weight; previous studies (e.g., Abel et al., 2019) have shown some service providers believe their Hispanic clients are unmotivated to lose weight and many Hispanic parents consider their overweight/obese child's weight as "normal." It is also likely parents' attitudes toward "healthy" lifestyles were influenced by cultural traditions and important concerns such as work and domestic responsibilities.

### Implications for Researchers, Counselor Educators, and Counselors

Since the present study was limited to a catchment area located on the U.S.-Mexico border, a similar study orchestrated on a larger scale to include different geographical locations might help to identify other predictors of Hispanic parents' attitudes toward obesity. In addition, this study did not collect parents' BMI; however, future studies should be designed to examine the relationship between parents' BMI and their children's BMI-for age, as hereditary risk factors and genetic predispositions are important for understanding obesity. Investigators are also encouraged to design studies to explore attitudes toward obesity in the context of an individual's race/ethnicity and their culture. For example, among Hispanic mothers, research demonstrates a preference for a thin figure for themselves and a plumper figure for their children (Opalinski, 2010; Rosas et

al., 2010). Such preference is culturally embedded in the belief that being large in size is a sign of health and prosperity (Baker & Altman, 2015; Lindsay et al., 2011). Qualitative studies that provide in-depth analyses of how culture influences health and lifestyle perceptions are also needed to understand the myriad barriers Hispanics who are overweight/obese tend to experience.

Keeping in mind that one's cultural views, attitudes, and weight perceptions often correlate with actions taken to prevent and/or control weight-related behaviors, future research should examine cultural differences in (a) body satisfaction, (b) weight misperception, and (c) weight-related concerns among parents, as these aspects can trickle down and contribute differently to obesity risks among their children as well. Overall, a longitudinal exploration of the impact of culture on obesity prevalence would shed valuable insights into the development of interventions to circumvent the obesity pandemic among the nation's fastest growing population.

As for educators and counselors, understanding Hispanics' attitudes toward being overweight/obese entails recognizing that many Hispanics living on or near the U.S.-Mexico border (and those who have moved from this region to other parts of the country) are often of low SES, tend to be medically underserved, and many are inadequately educated. As such, the barriers these individuals face are different from those encountered by many other Hispanics. For example, limited access to healthy food, long work hours which limits healthy food prep, a lack of medical insurance, and family traditions that involve eating unhealthy foods are common and readily influence the eating habits of Hispanics across generations. It is also important to understand that being overweight/obese is considered healthy and is the norm among many Hispanics; as such, the development of unhealthy eating habits often occurs at a very early age. In response, educators can incorporate material into their lectures that discusses the many different Hispanic cultures, including those who maintain strong family and cultural traditions that can exacerbate obesity. Encouraging students to conduct research regarding the influence of family traditions on eating habits can also facilitate understanding of attitudes and knowledge about obesity.

Similar to the present study, Abel et al. (2019) showed most Hispanics from impoverished areas of the U.S. understand what healthy lifestyles entail. As such, counselors

are encouraged to incorporate psychoeducation regarding the benefits of healthy lifestyle choices (e.g., knowledge about exercise, portion control, and Internet resources on healthy eating) into their counseling practices while respecting their Hispanic clients' cultural traditions. Including family members in counseling can provide opportunities to discuss their eating habits and can elicit support among one another for those who choose to engage in healthy lifestyles. Referrals to nutritionists may also be indicated for some clients. In addition, counselors are encouraged to advocate for clients by informing their medical colleagues about the cultural barriers that can influence overweight/obesity among their Hispanic clients and to teach self-advocacy among their clients. School personnel should be involved by offering education on good nutrition and exercise to help combat this epidemic.

Given the percentage of children with obesity in the U.S. has more than tripled since the 1970s and Hispanic children have the highest rate of obesity (25.8%) among all racial/ethnic groups (Hales et al., 2017), the benefits of designing healthy lifestyle interventions tailored to meet the needs of all Hispanics is paramount to combatting the obesity epidemic. Educators and counselors are in an excellent position to underscore the major medical and psychosocial implications associated with obesity and to influence change among underserved Hispanic communities who face unique obesity-related barriers.

### Limitations

There were limitations to the present study. One limitation in survey research involving perceptions and attitudes is the self-reporting nature of the data collected from participants who may have elected to provide socially desirable answers. In this instance, some participants may have incorrectly reported their food intake and exercise habits, either due to a lack of knowledge or a social desirability to appear healthier. In addition, the sample was primarily comprised of economically disadvantaged Hispanics who were monolingual (Spanish-speaking) and the findings may not be readily generalizable to other Hispanics who are more culturally assimilated to the U.S. and/or have higher SES backgrounds than those in the present study.

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