

# “It Hurts a Latina When They Tell Us Anything About Our Children”: Implications of Mexican-Origin Mothers’ Maternal Identities, Aspirations, and Attitudes About Cultural Transmission for Childhood Obesity Prevention

Rachel E. Davis, PhD,<sup>1</sup> Suzanne M. Cole, PhD,<sup>2</sup> Ligia I. Reyes, MPH,<sup>1</sup>  
Shannon J. McKenney-Shubert, MPH,<sup>3</sup> and Karen E. Peterson, DSc<sup>2</sup>

## Abstract

**Background:** This qualitative study explored values, attitudes, and beliefs held by Mexican-origin mothers of preschool-aged children to enhance understanding of cultural influences on behaviors associated with childhood obesity risk.

**Methods:** During face-to-face interviews, 39 Mexican-origin mothers of preschool-aged children discussed their hopes for their children, their image of the perfect mother, Mexican and American foods, why they taught their children about these foods, and their opinions about television (TV) viewing language.

**Results:** Participants wanted their children to become successful, “good” people, which necessitated doing well in school. Mothers also wanted their children to know them, which required understanding the mothers’ Mexican backgrounds. Mothers wanted their children to maintain Mexican values and identities. Some mothers viewed American culture as harmful. Many participants prepared their child for going to Mexico by exposing them to Mexican culture and foods. Some mothers fed their children American foods to prepare them for school. Perceptions of American foods generally reflected stereotypical unhealthy foods. TV helped teach children Spanish and English. Being a good mother was core to participants’ identities; thus, hearing about child overweight made some mothers feel like failures.

**Conclusions:** Health promotion programs may be more salient to mothers if they: underscore how a healthy weight can help children in school; teach mothers to prepare healthy American foods that their children will encounter in kindergarten; assist mothers in teaching their children about Mexico; and present information about childhood obesity in ways that reinforce what mothers are doing well, enhance mothers’ self-efficacy, and allay feelings of failure.

## Introduction

Approximately 33% of Mexican American children ages 2–5 are overweight or obese,<sup>1</sup> and Hispanic children, who are predominantly of Mexican descent,<sup>2</sup> have a higher prevalence of overweight and obesity than children from other races and ethnicities.<sup>3</sup> Along with other factors, researchers often mention culture as a possible

determinant of behaviors associated with obesity risk among immigrant and minority Latino children.<sup>4–7</sup> This reasoning suggests that culture may be partially accountable for ethnic disparities in childhood obesity. However, further research is needed to determine whether or not and how culture influences behaviors associated with childhood obesity risk.

Approximately 69% of Mexican Americans are foreign-born or have at least one parent who was foreign-born,<sup>2</sup>

<sup>1</sup>Department of Health Promotion, Education, and Behavior, Arnold School of Public Health, University of South Carolina, Columbia, SC.

<sup>2</sup>Department of Nutritional Sciences, School of Public Health, University of Michigan, Ann Arbor, MI.

<sup>3</sup>The Community Health and Social Services Center, Inc., Detroit, MI.

indicating that the majority of Mexican American children are raised in families in which immigration is a relatively recent experience. As Mexican immigrants adopt the dominant language, culture, and customs of the United States, they evince poorer health, whereas an opposite pattern may be found among other Latino ethnic groups.<sup>8</sup> A growing body of literature indicates that acculturation among Latinos is associated with decreased fruit and vegetable intake and increased sugar and fast food consumption.<sup>9</sup> Less research has focused on understanding how immigration and culture affect parental behaviors associated with childhood obesity risk. Sussner and colleagues<sup>10</sup> found that immigrant Latina mothers face several barriers in the United States in preventing childhood obesity: larger portion sizes; increased access to unhealthy foods; attitudes supporting child overweight; and more time spent in sedentary activities. Cultural beliefs and norms may also influence the foods that Latina parents make available,<sup>11–16</sup> modeling of dietary behaviors and food-related parenting styles,<sup>4,17–19</sup> beliefs about child weight,<sup>5,16,20</sup> and the meaning imparted to foods.<sup>21</sup> However, these behaviors and beliefs are likely rooted in more deeply held, underlying cultural values and norms, which are shaped by parents' cultures of origin as well as their immigration experiences and personal identities. For preschool-aged children, behaviors associated with childhood obesity risk are largely determined by the environments their parents create.<sup>22,23</sup> Thus, it is important to understand whether or not and how core cultural values, attitudes, and beliefs held by Mexican-origin parents influence the health behavior environments they create for their children in the United States.

This qualitative study sought to identify and understand core values, attitudes, and beliefs held by Mexican-origin mothers of preschool-aged children in the United States that may influence behaviors associated with childhood obesity risk. This article explores mothers' hopes for their children and images of the perfect mother. It then examines why and how mothers teach their children about Mexican culture, mothers' conceptualizations of Mexican and American foods, why mothers teach their children about these foods, and mothers' opinions about Spanish- and English-language television (TV) viewing. Finally, implications for working with Mexican-origin mothers to prevent childhood obesity are discussed.

## Methods

### *Participants*

Participants consisted of 39 low-income, Mexican-origin mothers recruited from a Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) in Detroit. Eligible participants were 18 or older, spoke English or Spanish, were born in Mexico, had parents and/or grandparents born in Mexico, and had a child aged 3–4 years whose sugar-sweetened beverage (SSB) or juice intake exceeded current recommendations.

### *Data Collection*

Participants completed two face-to-face interviews in Spanish in a private room in the WIC clinic. A 30-minute survey was administered during the first interview. The second interview lasted approximately 90 minutes and was audio recorded. Three interviewers were involved in the data collection. All three interviewers were bilingual (English and Spanish) students pursuing a Master's in Public Health degree at a nearby university. They were similar in age to the study participants, but not in education level or ethnicity. This study was approved by the University of Michigan Institutional Review Board.

### *Measures*

Child TV viewing was measured using two items validated in Mexican youth.<sup>24</sup> Acculturation was assessed using the Brief Acculturation Rating Scale for Mexican Americans-II,<sup>25</sup> which classified participants into four categories: strong Mexican orientation; strong Anglo orientation; weak Mexican and Anglo orientation; and strong Mexican and Anglo orientation.<sup>25,26</sup>

The interview guide included a number of prescribed, open-ended questions and follow-up probes. For example, when exploring participants' hopes for their children, the following questions were asked: "What are your hopes for (child) when (he/she) grows up?" and "What kind of person do you hope (he/she) will be when (he/she) is an adult?" Participants were asked similarly structured questions about their image of the perfect mother, teaching their child about Mexican culture, teaching their child about Mexican and American foods, and their child's TV-viewing language. Throughout these discussions, interviewers used probes to clarify and explore participants' comments.

The questionnaire used in the first interview and the interview guide used in the second interview were both initially translated by a team of two bilingual study staff, including one of the authors (L.I.R.). These translations were reviewed by two of the other bilingual authors, both of whom currently or had previously worked in a WIC clinic with Latina mothers (K.E.P and S.J.M.-S.). Comments received from the review were discussed and resolved through a committee process with the original two translators and investigative team.

### *Statistical Analysis*

Audio recordings of the second interviews were transcribed and translated into English by a bilingual member of the study team (L.I.R.), who made contextual comments in parentheses when it was felt that the meaning needed additional clarification or explanation to be appropriately interpreted in English. This method is similar to that proposed by Lopez and colleagues for conducting translations for bilingual qualitative analysis with Spanish speakers.<sup>27</sup> The English transcripts were deidentified and imported into NVivo version 10,<sup>28</sup> which was used to organize and code participants' comments and develop emergent themes. Interviews

were read line by line to identify possible themes. Next, themes were compared across participants to further compare and refine the coding scheme. Themes were then explored to see whether additional or overarching themes emerged. The coding was reviewed and discussed by three of the authors (R.E.D., S.M.C., and K.E.P.) until consensus on the coding scheme, identified themes, and data interpretation was reached. The results presented in the article were also reviewed by the study team member who conducted the interview translations (L.I.R.) to further ensure that no errors in interpretation were made when conducting the analysis in English.

## Results

Participants had lived in the United States for an average of 11.8 years (Table 1). Most participants had a strong orientation to Mexican culture (83%) and a high school education or less (90%).

**Table 1. Participant Characteristics (n = 39)**

Age of participating mothers and their children	
Mean mother age in years (SD)	32.0 (5.5)
Mean child age in years (SD)	3.6 (0.5)
Child gender, male, %	62
Mean no. of children under the age of 18 living in the home (SD)	2.8 (1.6)
Mean number of hours of child television viewing per day (SD)	4.1 (1.3)
Married or living with a partner, %	85
Educational status, %	
Less than high school	39
High school diploma or GED	51
Some college or college graduate	10
Mean number of years lived in the United States (SD)	11.8 (5.0)
Ancestry, %	
Participant's mother was born in Mexico	100
Participant's father was born in Mexico	100
Both of participant's maternal grandparents were born in Mexico	100
Both of participant's paternal grandparents were born in Mexico	100
Acculturation, %	
Strong Mexican orientation	82.5
Strong Anglo orientation	5.0
Weak Mexican and Anglo orientation	2.5
Strong Mexican and Anglo orientation	10.0
SD, standard deviation; GED, General Educational Development.	

### *Mothers' Hopes for Their Children*

Participants' hopes for their child as an adult converged under two themes: (1) that their child would be successful and (2) that their child would be a "good person." For many mothers, success was defined as having a career, as opposed to a job, and choosing a career for themselves. Mothers' comments evoked an image of an adult who is able to make independent and fulfilling life choices. Only a few participants wanted their child to follow a specific career. Participants also wished for their child to be able to support him- or herself. Several participants hoped their child would surpass their own achievements. Participants described succeeding in and completing school as strategies for achieving career success. Almost every participant wanted their son or daughter to do well in school. In fact, doing well in school appeared to be the strongest desire that participants held, given that it was typically the first thing that participants said and the most frequent comment that participants made when talking about their hopes for their child. Most participants also wanted their child to be "a good person." Mothers wanted their child to have good relationships, particularly with family members, and mentioned personal qualities related to interacting with other people, such as being kind, loving, respectful, honest, and humble.

### *The Perfect Mother*

Many participants remarked that the perfect mother did not exist, which was expressed with regret and acceptance. It was important to some mothers to strive for perfection, even if this goal was inherently unattainable. Many participants described the perfect mother as someone who was broadly attentive to her child's needs and assisted the child in leading a successful and happy life. The perfect mother did her best, was loving, cared for herself, communicated well, obtained information she needed, got her child to behave, was patient, worried about her child, and spent time with her child. Mothers generally described themselves as being attentive, loving, and communicative, but felt lacking in terms of knowing how to get their child to do what they asked, being patient, and spending time with their child.

### *Teaching About Mexican Culture*

Almost every participant said it was important to teach her child about Mexican culture. The most common reason for this was a desire for the child to carry on the family's culture. As one mother explained:

"I like for her to learn both the culture from here and the Mexican culture. I like it because she sees the differences and, mainly because we live here, cultures are lost, and I don't want that to happen. I want her to follow the same culture."

The desire for cultural preservation was motivated by the mother's desire for her child to share her culture, valuing of Mexican culture, and desire for her child to have a sense of belonging. Another reason for teaching children about Mexican culture was mothers' desire for their child to know them. Participants wanted their child to develop an

**Table 2. Mexican and American Foods that Mothers Mentioned (Listed by Number of Mentions)**

Types of foods	No. of mentions
<b>Mexican foods</b>	
Soups, chili, and stews	22
Tamales	14
Mole sauce	13
Beans	12
Enchiladas	12
Rice	8
Tacos	6
Meats cooked in different ways	5
Salsa	4
Vegetables (general)	4
Chiles rellenos	3
Chicken cooked in different ways	2
Chilaquiles	2
Tortillas	1
Buñuelos	1
Fritangas	1
Gorditas	1
Quesadillas	1
Nopales	1
Salad	1
<b>American foods</b>	
Hamburgers	22
Pizza	12
Hot dogs	9
Spaghetti or other pasta	8
Fast food (generic)	7
French fries	5
Soups and chili	4
Salad	3
Processed, canned, or frozen foods	3
Fried, barbecued, or parmesan chicken	3
Vegetables (generic)	2
Chicken nuggets	2
High-fat foods with fat, butter, and cream (generic)	2
Mashed potatoes (sometimes with gravy)	2
Macaroni and cheese	1

**Table 2. Mexican and American Foods that Mothers Mentioned (Listed by Number of Mentions) *continued***

Types of foods	No. of mentions
Sandwiches	1
Bread	1
Buffet food	1
Burritos	1
Quesadillas	1
Healthy food (generic)	1
Juice	1
Turkey	1
Sweet potatoes	1
Stuffing	1
Foods in which meats are mixed with vegetables	1

understanding of their parents as individuals with their own experiences, values, hopes, and desires. Participants seemed to feel that if their child understood them, they would be more deeply connected in their relationships and more likely to share common values. Mothers also wanted to prepare their children for visiting or moving to Mexico. A few participants felt that Mexican culture would protect their child from harmful influences in American culture.

Participants reported several strategies for teaching their children about Mexican culture: talking with or sharing memories with their child; watching shows on a TV or computer; doing activities such as games; serving Mexican foods; spending time with family members or in Mexico; celebrating holidays; reading books or magazines; listening to music; and speaking Spanish.

#### *Conceptualizations of Mexican and American Foods*

The foods that participants considered as Mexican and American, respectively, are listed in Table 2 according to the numbers of mentions. Soups and stews appeared to best represent participants' conceptualizations of Mexican foods, followed by tamales, dishes with mole, beans, and enchiladas. The most frequently mentioned American foods were hamburgers, pizza, hot dogs, pasta, fast food, and French fries. When compared to the most frequently listed Mexican foods, the most frequently mentioned American foods included more processed and restaurant foods. Participants' preference for homemade foods was also evident in comments throughout the interviews.

#### *Teaching About Mexican Foods*

Most participants said it was important to teach their child about Mexican foods, although the intensity of this

importance varied. Many mothers taught their child about Mexican foods as part of passing on the child's Mexican heritage (Table 3). Some mothers said their child had to learn to eat Mexican foods because those were the foods they cooked. Many mothers exclusively cooked Mexican foods. Some mothers believed that Mexican foods were healthier than American foods. Several mothers wanted to prepare their child for visiting Mexico. As one mother explained:

“...it's very important to me that when they go visit their grandparents, my parents, that they eat what they're given and not be like some kids that reject or 'yuck' the food because they

think it's less than. That's why I feed them what people eat in Mexico as well as what they eat here ...”

Few mothers said it was not important to teach their children about Mexican foods. Of these, most felt that Mexican foods were unhealthy.

### *Teaching About American Foods*

Approximately two thirds of participants said that teaching their child about American foods was not important. These mothers reported a lack of familiarity with American foods, considered American foods unhealthy,

**Table 3. Why It Was Important to Mothers To Teach Their Child About Mexican and American Foods (Sample Quotes)**

#### **Reasons why it was important to teach child about Mexican foods**

To pass on the child's cultural heritage

*You teach it to them because if you don't teach it to them then they can't carry it with them, so it's very important because that's our tradition.*

I cook Mexican foods for the family

*Because I cook (Mexican foods), I tell him that he needs to learn how to eat it because that's what we eat ...*

To prepare child to visit Mexico

*Because in the future, she will go to Mexico and she will look around and ask why, if her parents were Mexican, did they not teach her about Mexican food? She will say that she was born in the United States, grew up in the United States, but wonder why if her parents were from Mexico, did they not teach her things about Mexico? She will get to Mexico and they will ask her, “[Name], do you want to eat this?” and she will answer no, that she doesn't like that and then they will ask her “How come?,” if her parents were Mexican. Her response would be that her parents never taught her ...*

Child likes Mexican foods

*... I cook for him what I know how to cook and that's the food that he's going to grow up with, and he likes it, he really likes it, especially because I know that beans have a lot of protein, they're very good and all and he likes it.*

Mexican foods are healthier

*Because sometimes it's healthier... Yes, Mexican food because you eat more vegetables, well, maybe, but I don't know, and the American is good but it's more flour than the Mexican.*

#### **Reasons why it was important to teach child about American foods**

To assist child in making a successful transition to school

*(Teaching my child about American foods) is very important... the food at school is mainly American... I try to buy him carrots, vegetables, or fruit so he learns to eat this. Or the bread that they sell here, I want to get it for him so he becomes accustomed to eating it at school ... (This is) not very important for me, but for my child. How can I put it? I want to do it for my son, but I don't like it (laughing).*

We live here

*It's important, well, I think because we're in this country it's something that he's also going to learn. That's more of his decision as he grows older to learn that, too. I think that both parts are going to grow in his life because he was born here. Mine, Mexican, and his, this one, both things. I think it's about 50% American and Mexican, that's a mixture of cultures.*

So child will be open-minded toward different foods

*I like for them to learn to eat everything ...*

Child likes American foods

*They like it, so sometimes I prepare it for them.*

American foods are healthier

*... I've seen that American food is healthier, they are more concerned about the nutrition of children.*

American foods are faster to prepare

*Mexican food is very elaborate and you don't always have time, so you find something easier, like pastas. That I usually make when I don't have a lot of time, like twice a month.*

**Table 4. The Importance of Television Viewing in Spanish and English (Sample Quotes)****Reasons why it was important for child to watch Spanish-language television**

Mother wants child to learn/maintain Spanish

*... I prefer for him to watch in Spanish. When I have the opportunity to change the language, I change it. I change it because at this point it's still my decision what language he gets to watch on TV. When he grows up, I know that he's going to prefer English. I know that he will prefer it because he's growing up in this country ... and English will be easier for him. But what he learns before he gets to decide will be my decision, and I want it to be Spanish as much as possible ... I know that it will help him a little, some Spanish will stay in his head, besides what I talk to him. So, daily, I'm about 25% Spanish, and 75% is English because of (preschool) and everything else, so I want another 25% to be TV. That way, it would be half Spanish and half (preschool) with English.*

Child will be exposed to English at school

*Yes, it's important to me ... So she doesn't forget Spanish. At school, they only speak English. In order for her not to forget Spanish, so she continues learning it and doesn't forget it.*

Child needs to communicate with the mother and other family members

*It's important to me so he learns the language better because English, as they say, he's going to pick it up at school, and I need for him to learn Spanish well because when he talks to my family in Mexico, they only speak Spanish, so it's very important to me.*

Child can learn now in Spanish before starting school

*It's very important ... Because he'll learn more that way. Well, he's going to learn both languages, but it's important because right now he could learn more things in Spanish and once he starts school, I know that they're going to teach him both, but they mostly teach them English more so than Spanish.*

**Reasons why it was important for child to watch English-language television**

It is easier to learn English when children are young

*That too, a little important, because he learns a lot of things ... sometimes the pronunciation of words that he didn't know, things stick to him the most now that he's little.*

Mother can teach Spanish, television can teach English

*It's also important because this way he's learning both languages, Spanish and English, and I know that he will pick up on English little by little and Spanish, even if he wanted to forget it, he won't forget it because I mainly speak Spanish at home. I don't allow either him or my daughter to talk to me in English. At home, I'm Spanish, Spanish, Spanish (laughing).*

Child can learn English before starting school

*Very, very important because, for the same reason, so he learns English because at home we mainly speak Spanish and mainly so he doesn't struggle in school by not speaking English, it's very important.*

and felt it unnecessary to provide American foods given that their child would be exposed to them elsewhere.

Motivations for teaching children about American foods are listed in Table 3. Several mothers said that serving American foods would prepare their child for school, where such foods would predominate. Other mothers wanted their child to be familiar with both Mexican and American cultures.

### Television Viewing Language

Most mothers wanted their child to be fluent in Spanish and English and valued TV viewing as a means of preserving and enhancing their child's language skills (Table 4). Given that their child would be exposed to English at school, some mothers felt it was their responsibility to teach Spanish at home. One mother commented that she wanted her children to watch Spanish-language television "(s)o they learn how to properly speak Spanish. Being here they easily forget, so they don't speak it well; they adapt the language that is from here." TV provided a resource for teaching children English at a young age before they started school, when mothers believed it would be easier for children to pick up the language.

Several mothers explained that because they could not teach their child English, TV served as an important teaching resource for teaching English to prepare their child for school.

### Hearing About Child Overweight

Participants were not asked about being told that their child was overweight or learning about behavior-related obesity risks; however, many mothers mentioned these experiences. Many mothers said that being told that their child was overweight made them feel like bad mothers. Mothers described having "an ugly feeling" and feeling sad, worried, anguished, heavy-hearted, hurt, and guilty for not taking care of their child. Similarly, one participant said that being told about SSBs that increased children's risk of obesity made her feel "something like desperate, desperate to not want to learn more."

### Discussion

The Mexican-origin mothers who participated in this study indicated two primary goals for their preschool-aged children as adults: (1) for them to be successful and (2) for

them to be good people. Mothers saw themselves as influencing these outcomes with education functioning as a mediator of success. The perfect mother helped her child to achieve these goals by being attentive to his or her needs. Mothers aspired to be perfect while simultaneously viewing this outcome as unattainable. Thus, investing effort in the attempt was highly valued.

Participants aspired to raise children who were monocultural in some respects and bicultural in others. Most mothers prized Mexican values and felt that transmitting these values would enhance their child's well-being. Some felt that Mexican values would protect their child from American culture, which a few viewed as harmful. Most mothers wanted their child to be able to successfully navigate American and Mexican social settings. This biculturality was viewed as a mediator of becoming a successful, good person. In fostering this biculturality, most mothers were actively engaged in ensuring that their child learned Spanish and English. TV provided an important resource for teaching language skills. Mothers were less interested in teaching their child about American foods. In contrast, teaching their child about Mexican foods was important to most mothers, who felt that Mexican foods were healthier and would strengthen their child's cultural identity. Many participants tried to prepare their child for visiting or moving to Mexico. This is important to note, given that the public immigration debate does not always consider that immigrants may wish to return to their home countries.

Findings from this study suggest several implications for promoting childhood obesity prevention among Mexican-origin mothers. First, public health programs may be more salient to mothers if they underscore how healthy behaviors and a healthy weight can help children to do well in school and become successful, good people. Health communication messages are most effective when they tap into recipients' core values. No participants in this study mentioned health or nutrition when discussing their hopes for their child. Mothers saw themselves as responsible for their child's health, but health was viewed less as an outcome than as a necessity for becoming a successful, good person.

Second, childhood obesity messages may be more effective if they address mothers' needs and desires. There is a temptation for health programs to treat parents, and particularly mothers, as selfless beings who care only about the well-being of their child. Mothers in this study were highly motivated to ensure their child's well-being; however, they also had their own needs and desires. Mothers wanted their children to really know them, which necessitated understanding the mothers' cultural backgrounds. This desire to be understood may be accentuated among immigrant mothers. This sample of Mexican-origin mothers made significant efforts to teach their children about their culture, language, and histories, but the young age of the children and living in the United States made these efforts more difficult. Childhood obesity programs may be more appealing to Mexican-origin mothers when

they assist mothers in teaching their children about Mexico, deepening their relationships with their children, and actualizing their goals of being more perfect mothers.

Third, health professionals must be wary of upsetting mothers to the extent that they disengage. Being a good mother was a core element of participants' personal identities. Thus, when mothers heard that their child was overweight, they were beset with strong emotions ranging from distrust of the message to worry, sadness, anguish, guilt, and, ultimately, feeling they had failed as mothers. Mothers in such a state may be understandably unwilling to engage with health professionals to avoid feeling ashamed or judged. Health professionals must be cognizant of these potential reactions. Information about childhood obesity should be presented in ways that reinforce what mothers are doing well, enhance mothers' self-efficacy, and allay feelings of failure.

Fourth, Mexican-origin mothers who wish to teach their children about American foods may need assistance in learning how to prepare healthy American foods. The list of American foods from this study reflects stereotypes of American foods, as well as foods that are inexpensive, plentiful, and well advertised in low-income communities. This finding is consistent with previous research, which indicates that low-income minority children tend to live in neighborhoods with more fast food establishments and fewer supermarkets.<sup>7</sup> Mexican-origin mothers may be interested in learning to prepare healthy American foods that their children will encounter in kindergarten, as well as healthy, homemade foods they can include in school lunches.

This study has several limitations. Participants were WIC clients, which may have influenced responses. All participants were low-income Mexican-origin mothers of a child aged 3–4 living in the same community. Thus, findings may not be representative of other Mexican-origin or Latino populations. This study did not obtain data from fathers, mothers from other racial or ethnic groups, or Mexican-descent mothers born in the United States. As a result, no comparisons may be made with parents from other racial or ethnic backgrounds. Last, this investigation was focused on exploring specific cultural influences and maternal behaviors. Other factors, such as structural inequalities and poverty, were not explored.

## Conclusions

This study provides a rare exploration of how Mexican-origin mothers' core values, attitudes, beliefs, and hopes for their young children may influence behaviors associated with childhood obesity risk. This study also provides useful information for developing childhood obesity prevention programs and for conveying childhood obesity risk information. It is our hope that findings from this study will be useful in enhancing the effectiveness of childhood obesity prevention programs, eliminating ethnic disparities in childhood obesity for Mexican-descent children, and supporting the valuable roles of mothers.

## Acknowledgments

This work was supported by the National Cancer Institute (P50 CA101451) through a pilot grant from the University of Michigan Center for Health Communications Research.

## Author Disclosure Statement

No competing financial interests exist.

## References

- Ogden CL, Carroll MD, Kit BK, et al. (2012). Prevalence of obesity and trends in body mass index among US children and adolescents, 1999–2010. *JAMA* 2012;307:E1–E8.
- US Census Bureau. The Hispanic Population in the United States: 2012. 2012. Available at [www.census.gov/population/hispanic/data/2012.html](http://www.census.gov/population/hispanic/data/2012.html) Last accessed September 15, 2014.
- Ogden CL, Carroll MD, Kit BK, et al. Prevalence of childhood and adult obesity in the United States, 2011–2012. *JAMA* 2014;311:806–814.
- Arredondo EM, Elder JP, Ayala GX, et al. Is parenting style related to children's healthy eating and physical activity in Latino families? *Health Educ Res* 2006;21:862–871.
- Crawford PB, Gosliner W, Anderson C, et al. Counseling Latina mothers of preschool children about weight issues: Suggestions for a new framework. *J Am Diet Assoc* 2004;104:387–394.
- Hernández-Valero MA, Bustamante-Montes LP, Hernández M, et al. Higher risk for obesity among Mexican-American and Mexican immigrant children and adolescents than among peers in Mexico. *J Immigr Minor Health* 2012;14:517–522.
- Kumanyika S, and Grier S. Targeting interventions for ethnic minority and low-income populations. *Future Child* 2006;16:187–207.
- Zsembik BA, Fennell D. Ethnic variation in health and the determinants of health among Latinos. *Soc Sci Med* 2005;61:53–63.
- Ayala GX, Baquero B, Klinger S. (2008). A systematic review of the relationship between acculturation and diet among Latinos in the United States: Implications for future research. *J Am Diet Assoc* 2008;108:1330–1344.
- Sussner KM, Lindsay AC, Greaney ML, et al. The influence of immigrant status and acculturation on the development of overweight in Latino families: A qualitative study. *J Immigr Minor Health* 2008;10:497–505.
- Ayala GX, Elder JP, Campbell NR, et al. Nutrition communication for a Latino community: Formative research foundations. *Fam Community Health* 2001;24:72–87.
- Cullen KW, Baranowski T, Rittenberry L, et al. Social-environmental influences on children's diets: Results from focus groups with African-, Euro- and Mexican-American children and their parents. *Health Educ Res* 2000;15:581–590.
- Gallagher MR. Maternal perspectives on lifestyle habits that put children of Mexican descent at risk for obesity. *J Spec Pediatr Nurs* 2010;15:16–25.
- Lindsay AC, Sussner KM, Greaney ML, et al. Influence of social context on eating, physical activity, and sedentary behaviors of Latina mothers and their preschool-age children. *Health Educ Behav* 2009;36:81–96.
- Mendelson C. Creating healthy environments: Household-based health behaviors of contemporary Mexican American women. *J Community Health Nurs* 2003;20:147–159.
- Sherry B, McDivitt J, Birch LL, et al. Attitudes, practices, and concerns about child feeding and child weight status among socioeconomically diverse white, Hispanic, and African-American mothers. *J Am Diet Assoc* 2004;104:215–221.
- Contento IR, Zybert P, Williams SS. Relationship of cognitive restraint of eating and disinhibition to the quality of food choices of Latina women and their young children. *Prev Med* 2005;40:326–336.
- Gomel JN, Zamora A. English- and Spanish-speaking Latina mothers' beliefs about food, health, and mothering. *J Immigr Minor Health*, 2007;9:359–367.
- Hughes SO, Power TG, Fisher JO, et al. Revisiting a neglected construct: Parenting styles in a child-feeding context. *Appetite* 2005;44:83–92.
- McGarvey EL, Collie KR, Fraser G, et al. Using focus group results to inform preschool childhood obesity prevention programming. *Ethn Health*, 2006;11:265–285.
- Devine CM, Sobal J, Bisogni CA, et al. Food choices in three ethnic groups: Interactions of ideals, identities, and roles. *J Nutr Educ* 1999;31:86–93.
- Birch L, Fisher J. (1998). Development of eating behaviors among children and adolescents. *Pediatrics* 1998;101:539–549.
- Birch LL, Davison KK. Family environmental factors influencing the developing behavioral controls of food intake and childhood overweight. *Pediatr Clin North Am* 2001;48:893–907.
- Hernández-Prado B, Gortmaker S, Colditz GA, et al. Association of obesity with physical activity, television programs and other forms of video viewing among children in Mexico City. *International Journal of Obesity and Related Metabolic Disorders*, 1999;23:845–854.
- Bauman S. The reliability and validity of the Brief Acculturation Rating Scale for Mexican Americans-II for Children and Adolescents. *Hisp J Behav Sci* 2005;27:426–441.
- Cuellar I, Arnold B, Maldonado R. Acculturation rating scale for Mexican Americans-II: A revision of the original ARSMA scale. *Hisp J Behav Sci* 1995;17:275–304.
- Lopez GI, Figueroa M, Connor SE, et al. Translation barriers in conducting qualitative research with Spanish speakers. *Qual Health Res* 2008;18:1729–1737.
- QSR International. NVivo qualitative data analysis software (Version 10). QSR International: Burlington, MA, 2012.

Address correspondence to:

Rachel E. Davis, PhD

Assistant Professor

Department of Health Promotion, Education,  
and Behavior

Arnold School of Public Health

University of South Carolina

915 Greene Street

Room 529

Columbia, SC 29208

E-mail: [rdavis@mailbox.sc.edu](mailto:rdavis@mailbox.sc.edu)