Title

Maternal Attitudes and Behaviors Regarding Feeding Practices in Elementary School–Aged Latino Children: A Pilot Qualitative Study on the Impact of the Cultural Role of Mothers in the US–Mexican Border Region of San Diego, California

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ABSTRACT

This study aimed to explore the attitudes and behaviors of Latino mothers around feeding their children. Using qualitative methods, we conducted 4 focus groups in Spanish with 41 Latino mothers of elementary school-age children in San Diego County (CA). Latino mothers' mean age was 41 years; 90% were foreign-born; 74% had a high school education or less. We explored cultural viewpoints around feeding and cooking and feeding strategies used. Focus groups were analyzed based on *a priori* and emergent themes. Two themes around feeding emerged, including: 1) feeding attitudes central to the maternal responsibility of having well-fed children; and 2) feeding behaviors that centered on cooking methods, supportive behaviors and reinforcement strategies for "eating well". These findings increase our understanding of the Latino maternal role to feed children and may help to inform more culturally appropriate research to effectively address nutritional issues and obesity prevention in Latino children.

Latinos are the largest and fastest growing minority group in the U.S. (16.3% of the population)(1) and are expected to triple by 2050 (2). They comprise one-quarter of U.S. newborns (3) and by age five, 33% are overweight/obese (hereafter referred to as overweight) compared to 25% of non-Latino white 5-year-olds (4). Overweight children are more likely to be overweight throughout the life course (5), contributing to the rapid increase in metabolic disturbances and type 2 diabetes in adolescents (6-9) and adulthood (5, 10-12). With the disproportionate impact of obesity and type 2 diabetes among Latinos, the *NIH Health Disparities Strategic Plan* (13) has urged research in childhood obesity to create effective interventions for minority groups. Because parents play a critical role in the development of child eating behaviors (14-17), understanding how Latino parents approach feeding their children is a primary step in this process. Identifying Latino mothers' attitudes and behaviors around feeding their children is necessary to determine whether there are specific practices to address in this population.

To date, there has been limited data on Latino feeding behaviors. Most studies have focused on parental behaviors known to influence childhood obesity and have therefore focused on understanding methods for decreasing fat intake and increasing fruit and vegetable consumption (18-20). In some reports, Latino mothers promote the consumption of hearty, high calorie meals so that children can become "big and strong" (19, 21). Consequently, Latino mothers do not often limit their children from eating foods, be it healthy or unhealthy, and may use more coercive parenting practices such as bribes, threats, and punishment to get their children to eat (22). Such parent-

centered directives promote control over children's eating through external means and are less focused on the child (23). In contrast, others have found that Latino mothers are more likely to be indulgent in their feeding practice and permissive in parenting (23-26). This type of feeding style, characterized by few rules and demands on children, has been associated with higher child weight status (23). However, another group recently found that among Mexican mothers, positive involvement in eating, which is characterized by more authoritative parenting styles and includes such behaviors as monitoring the child's intake and limiting consumption of high-calorie foods, was associated with lower child weight status (27).

Given these variances in the literature to date, research is needed to understand the underlying attitudes and behaviors Latino mothers demonstrate around feeding their children. Previous studies have included Latinos living in Boston, Northern California, and Houston, thus representing a diverse Latino culture (23, 25, 26). The diversity of U.S. Latinos may present different attitudes or behaviors among them, resulting in different study findings. Research focusing on Latino mothers in the U.S.-Mexican border region could provide unique information about Mexican American feeding behaviors and attitudes as the border region is a unique cross-cultural context, with the existence of two cultures and combined practices from both. For instance, in a qualitative study of 10 Mexican mothers living in *colonias* (neighborhoods) along the U.S.-Texas border, researchers found that mothers primarily focused on their children, and that their goal was to provide the best available resources for their children and engage in food practices that would make their children happy, healthy, and well-fed.

(28) Thus, our goal was to better understand attitudes and feeding behaviors of Latino mothers living in San Diego, a U.S.-Mexican border region, using focus group methodology.

METHODS

Design and sample

We conducted four focus groups between April and May 2011. Mothers were recruited through flyers distributed in two low- to middle-income elementary school districts and Spanish-language parent groups, in East and South San Diego County. All parents who responded to the flyers were allowed to participate. Forty-one Latino mothers with elementary school-aged children participated. Upon completing the focus group and short questionnaire, mothers received a $20 gift card. The study was approved by the Institutional Review Board at the University of California, San Diego.

Focus group discussions were conducted in Spanish, consisted of 10-11 participants, and lasted 1-1.5 hours. Two occurred at an elementary school on a school day during morning hours and two occurred at the school district office during after-school hours. Prior to the start of the focus groups, each mother completed an informed consent and self-administered questionnaire that assessed maternal demographics including age, education, family income, and employment status.

Focus groups were facilitated by two Mexican-American bilingual (Spanish/English) researchers trained in qualitative methods and experienced in conducting focus groups.

Each facilitator had a note taker, who assisted with follow-up questions. To explore the maternal role in feeding, as well as feeding behaviors and attitudes, we developed a guide of focus group questions that was based on researcher expertise, previously conducted key informant interviews and empirical literature. Facilitators followed the guide that included questions about maternal attitudes towards feeding and specific feeding behaviors, including cooking practices and reinforcement methods (Table 1). For the purpose of confidentiality and coding, women were assigned a number, which they said out loud every time they spoke. Focus group discussions were audio and video taped. Audio-tapes were transcribed verbatim by a certified Spanish translator. When the audio was unclear, the transcriber stated “inaudible”. Transcripts were played back to confirm the “inaudible” segments, and video recordings were then accessed to clarify these segments. A second translator reviewed the tapes and included information regarding context, such as laughter among participants and head nods in the video tapes. Videos were used to quantify hand raises when answering country of birth. Head nods were noted and provided reassurance of specific themes that were being verbalized by participants.

(Table 1 about here)

Analytic strategy

We used focus group methodology and qualitative methods (29). Focus groups were transcribed verbatim, in Spanish, to maintain the integrity of the participants’ responses. Only quotes included in this article were translated into English and back-translated to Spanish by EB to check for accuracy. Authors (SM and EB) independently coded

Spanish transcripts for major themes to develop a reliable coding scheme. First, one investigator read all transcribed focus groups and applied the principles of *microanalysis* (30), an in-depth analysis of the text to generate initial themes to create a preliminary coding scheme. The second investigator (EB) then attempted to apply the initial coding scheme to each transcription. Then the investigators together refined the coding scheme, discussed new emergent themes using the constant comparison method (30), and reached consensus on the definition and application of each code. Codes were associated with segments of dialogue based on *a priori* (i.e. questions asked in the focus group) or emergent themes (i.e. central ideas from the data). Different codes could be applied to the same segment of dialogue. Both investigators coded each focus group and reached consensus on coding discrepancies. We used the qualitative data analysis software, Atlas.ti Version 6.1 (2011, Scientific Software Development GmbH, Berlin), to organize codes and their subcategories. To obtain descriptive statistics from the survey data, we used SPSS/PASW Version 18 (Chicago, IL).

RESULTS

Sample characteristics

Participant characteristics are presented in Table 2. Demographics did not differ by location of focus group. Most mothers were Mexican born.

(Table 2 about here)

Focus group results

Emergent themes regarding feeding included: 1) feeding attitudes central to the maternal responsibility of having well-fed children; and 2) feeding behaviors that centered on cooking methods, supportive behaviors and reinforcement strategies for eating well. Table 3 includes key quotes supporting these themes.

Feeding attitudes:

Maternal responsibility of feeding children well

Mothers described that their primary responsibility was to feed the family. In this vein, mothers expressed being responsible for teaching their children how to "*eat well"* (Table 3) and teaching their children nutritious eating habits at an early age. Traditionally, mothers learned how to prepare, cook and eat wholesome foods and this cultural practice was generally passed on to their children. Nevertheless, it was expressed that in Mexico this tradition was manageable because mothers typically did not work outside their homes or family business. Several mothers stated that eating a meal as a family was important for family time. Mothers also reported that they followed a more traditional Mexican eating schedule. This would include *la comida*, which was usually consumed between 3-4pm when children arrived from school and comprised a heavier, well-rounded meal (equivalent to a dinner-time meal among other US families), and *la cena*, a lighter meal consumed before bedtime. Some examples of *la cena* options included pancakes, waffles and cookies. Typically, mothers would prepare these meals for their family, but in the U.S. this was harder to do because women were working. Instead, many relied on fast/ready-made foods.

(Table 3 about here)

Feeding behaviors:

Cooking strategies

Mothers revealed several strategies for preparing what they considered to be healthful meals (Table 3). Many mothers were knowledgeable about serving their children fruits and vegetables (FV), whole grains and low-fat foods. Some mothers reported sneaking vegetables into foods (e.g., blending vegetables into fruit smoothies), trying to make them appealing by disguising/decorating vegetables as figures, and making them savory by adding lemon and/or chili. Some mothers reported that they steamed foods rather than fried them and several mothers either used little oil or only olive oil when cooking. Several mothers involved their children in meal preparation by having them chop vegetables, make salads, plan menus or go grocery shopping. However, while discussing food preparation, mothers reported several possible misperceptions in the effort to feed their children. Some mothers considered snacks high in sugar, such as children's yogurt and jello, to be "healthy" and that homemade *aguas frescas naturales* (fresh-squeezed juices that are made with added sugar) were healthier than store bought juices. One mother thought that all fruit was high in sugar, so she limited their consumption.

Behaviors to support "eating well"

Most mothers thought that it was important for their children to see them eat FV themselves, yet few mothers revealed that they role modeled this behavior. Many mothers reported using *persuasion tactics* for motivating their child to eat well (Table 3). Several mothers made a connection for their children between eating certain foods

(e.g., FV, soup with vegetables) and feeling energetic. Other mothers appealed to their children's desire to be popular or pretty and linked eating vegetables to being like superheroes or famous idols (e.g., Barbie, Thalia - Mexican pop star).

Other mothers reported having *food rules* in the house. Mothers stated that it could be difficult to get children to try new foods, so some mothers required that children had to taste a food before they could decide not to eat it. Alternatively, several mothers reported setting limits on what and how much food their children ate. When asking for seconds, others limited the quantity of some foods, particularly tortillas and bread, but did not limit FV. Other mothers mentioned that they did not provide alternative food options; everyone was expected to eat what they were served.

Several mothers spoke about strategies they used to *control the home food environment* to encourage their children to eat well (Table 3). For instance, one mother reported having prepared FV accessible in the refrigerator in clear view so that her children would be prompted to eat these foods when they were hungry. Several mothers revealed that they did not buy cookies/chips/sodas/junk food (*comida chatarra)* and did not allow or limited candy in the home (e.g., 5 candies from party bags/Halloween candy). Other mothers focused on sodas and other sugar-sweetened beverages, which were not allowed in the home/limited to special occasions/once a week. Despite efforts to control the home food environment, many mothers expressed that television viewing was a problem and some mothers reported allowing their children to eat while watching

television. Only one mother revealed turning off the television during meal time as a healthy eating habit.

Reinforcement strategies

Mothers used various reinforcement strategies to feed their children well. Negotiating with the child to eat something healthy often entailed using an unhealthful food as a motivator. For example, when dining out, several mothers reported that they allowed their child to eat an unhealthful food (e.g., pizza, french fries) if they ate something healthful such as FV. Several mothers would go out of their way to provide unhealthful treats as rewards in exchange for their child eating something healthy or finishing a meal. Several mothers reported using ice cream/candy/fast food as treats. At the end of the week, several mothers would reward their children by taking them out to eat. Because eating out could be expensive, their children would opt for one-dollar hamburgers, which they admitted was unhealthy. Other forms of reinforcement included allotting minutes for videogames/extra computer time for every vegetable eaten and allowing the television to be on during dinner if the child promised to eat his/her meal.

Almost half of mothers reported using punishment when their children did not want to eat. A few mothers reported taking away privileges (e.g., play time, favorite doll/toy, videogame/television) if children did not eat. Also, several mothers discussed using fear tactics/threats, such as statements about getting fat or diabetes. However, one mother stated finding these sorts of tactics to be ineffective and now she used positive and encouraging verbal support to get her daughter to eat less junk food.

DISCUSSION

This qualitative study sought to understand attitudes and feeding behaviors of Latino mothers in a U.S.-Mexican border region. We found that mothers felt primarily responsible for feeding their children and making sure they were well-fed. This attitude may have stemmed from the traditional practice of women staying home and caring for their family and the idea that children should be “big and strong”. Similarly, Sussner and colleagues found that Latino mothers equate providing a lot of food with good parenting, which can be a source of pride and competition (31). In Latino culture, having a well-fed child is a sign of prosperity and the means to contribute to their child’s well-being (32). Because of these values, it may be difficult to change feeding practices that are viewed as contrary to their traditional beliefs; changing these feeding practices may have greater implications regarding their parenting competence and ability to provide for their family. Future interventions may need to address this cultural attitude so that mothers feel like they are feeding their child well, but doing so in a healthful manner.

With this feeling of responsibility, other more culturally-tied behaviors and attitudes emerged. The practice of having two afternoon/evening meals a day (*la comida* and *la cena*) has not been well documented. This traditional feeding practice is standard in Mexico where the school day is shorter. Therefore children eat a light snack at school and have their heavier meal at home after school. La comida is typically equivalent to a full dinner-time meal in more traditional western families. Given that the American school day is traditionally longer, the required school lunch ranges from 650-850 calories. In 2009, 77% of Latino 4th-graders (public school) were eligible for

free/reduced-price lunches. As such, it is possible that children with traditional Mexican mothers are overfed as they may be eating a calorically-dense school lunch, followed by an equally, if not more, calorie-dense *la comida* and then *la cena*. Furthermore, mothers reported giving their children foods that were calorically dense and low in nutritional value during *la cena*. This late night eating has been shown to increase children's saturated fat intake (33) and may add to the child's obesity risk. Addressing this issue as a point of intervention and explaining the consequences of such eating patterns could be beneficial in modifying the traditional meal pattern to decrease obesity in Latino children.

In a study of parent feeding in Latino toddlers, Chaidez and colleagues found that mothers catered to her child's cues of hunger or thirst as well as food preferences rather than attempting to reintroduce her child to previously unaccepted foods or exposing the child to new foods (34). In our sample of Latino mothers of a U.S.-Mexican border community, many were knowledgeable about healthy cooking strategies and feeding techniques, like increasing the availability of FV so children would eat them (35), and controlling the home environment by limiting the availability of unhealthful foods (19, 36). Faith et al. found that both Latino and African American mothers allot fewer food choices to their child at breakfast or lunch compared with non-Latino/non-African American white mothers (37). These behaviors allowed parents to control the quality of the child's intake more covertly, without confrontation. This type of control has been associated with decreased intake of unhealthful snacks (38) and greater intake of healthful snacks (16). Despite these behaviors, there were some possible

misperceptions regarding what mothers considered a healthful food. For example, *aguas frescas naturales* are considered healthy among Latinos because they are made from fresh-squeezed fruits. While they might be free of preservatives and contain more vitamins, they can still have as much sugar as commercial juices. For example, one cup of agua de limón (made from the 1.5 fluid ounces of “lime juice, raw” and 2 tablespoons of granulated sugar) contains 35.38 grams compared to 1 cup of “limeade, frozen concentrate, prepared with water,” which contains 34.06 grams of sugar (39). The addition of sugar to make these drinks sweeter can detract from their health benefits and make them as calorie-dense as a bottle of soda or other sugar-sweetened beverage. In addition, foods like flavored yogurt can contain several grams of sugar, particularly brands of yogurt that are marketed to children. Consequently, they are calorie-dense and may not be an optimal choice for snacking among overweight children. Educating parents about nutritional facts and teaching them how to read nutrition labels may be necessary to develop healthier eating practices. For instance, tools such as *Choose My Plate* (en español), may help to increase mothers’ knowledge about planning healthier meals (40). However, this tool may only be applicable to mothers’ who have internet access, who are literate and have some health literacy. Other more practical approaches may be necessary such as live cooking demonstrations or practice reading nutrition labels.

Mothers reported using reinforcement strategies that generally were not as positive as their feeding and cooking strategies. As mentioned above, many mothers spoke about using unhealthful foods (e.g., candy) as a reward for eating healthful foods, which

supports findings by others showing that Latino mothers use rewards to promote control over children's eating (19, 22, 23, 26). Although rewards can be immediately effective in getting children to eat, several studies have demonstrated that using food rewards may lead to unhealthy consequences, such as decreasing one's sensitivity and responsiveness to the energy density of food and increasing preference for the reward food while decreasing preference for healthful food items in young children (41, 42). This behavior can therefore have the unintended consequence of excessive caloric intake and preference for unhealthful foods and thereby increase the risk of obesity (26). Mothers also used threats/punishments to shape child eating behaviors, which may be ineffective for creating long-term behavior changes and could have unintended consequences. Without the threat of punishment, children are unlikely to engage in the desired behaviors and these behaviors do not become part of the child's natural habits. Additionally, the use of external motivators to change behavior could disengage children from their own internal cues of satiety. Whether or not the use of parent-centered feeding stemmed from cultural beliefs or traditions is uncertain. One study examined racial and ethnic differences in parent feeding strategies and found that Latino parents used more parent-centered and more child-centered feeding strategies than did African American mothers (43). Likewise, other studies, have found that Latino parents often use rewards and punishments to enforce behavior change (19, 22, 44). Addressing these parenting strategies in the course of an intervention to prevent or treat obesity may be beneficial towards helping parents develop positive and supportive strategies to encourage healthful eating behaviors among children.

The current study had some limitations that may impact the generalizability of our findings. First, our sample size was small and only mothers were included; the views of other family members are not represented. Also, each focus group had 10 to 11 participants, which can result in unequal participation. However, focus group leaders encouraged equal participation during the discussions in an effort to bypass this problem. Focus groups may have discouraged mothers from sharing due to social pressures or could have resulted in social acceptability bias. We also did not assess body mass index of mothers or their children, nor did we ask parents to report the number of children in their household. This information could have couched our findings within a more-specified demographic group. In addition, Latino mothers were from San Diego, which may not reflect findings from other Latino groups around the country and therefore limit generalizability of our findings. Finally, as in any study concerning one's children, there is the issue of social desirability. Nonetheless, these findings encourage further exploration of Latino parents' feeding style and practices, perceptions about healthful foods and how children develop eating behaviors.

Our study contributes to the understanding of the traditional role of Latino mothers' and their feeding attitudes and behaviors. Mothers in this study appeared to be conflicted as they felt responsible for having well-fed children, but realized they did not always provide them with optimal choices. Some mothers used coercive/negative reinforcement strategies that were less than ideal for developing long-term healthful eating habits. Understanding the cultural context behind these feeding attitudes and behaviors may help us better tailor our messages and provide Latino mothers with more suitable

behavioral strategies. Parents should be educated about the following: 1) it is better to have children who are “healthy and strong” as opposed to children who are “big and strong”; 2) how much their children eat at school and at home and tailor their cultural feeding pattern accordingly to avoid overconsumption among children; 3) what makes a food healthful/unhealthful; and 4) how to promote strategies that control what foods are in the house as a more effective tool rather than teaching parents to limit portion sizes. These types of strategies may be more amenable for Latino mothers because it allows them to fulfill their sense of responsibility to feed their child, but at the same time, ensure that they are providing healthful foods. Lastly, teaching mothers strategies (reasoning, praise, compliments) that do not involve food may help them feel like they are more effective parents and thereby creating a more interconnected and cohesive family, which is culturally important (45-47). These findings may help to inform culturally-appropriate research in Mexican-American mothers to improve child nutrition and eating behaviors.

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514**Table 1.** Focus group guide for Latina mothers of school-age children in San Diego, CA.

- When do your children eat and who feeds them?
- What strategies do you use to feed your children?
- How do you get your children to eat?
- Who does the cooking in your home?
- Who does the grocery shopping in your home?
- What do you think about healthy eating, cooking, and shopping?
- In the past few months, has anyone made changes in the way they shop or cook to make food healthier?
  - Do you think you could change the way you cook, shop and eat?
- What do your children eat after school? What types of snacks do they eat?
- How do you motivate your child to eat healthful foods?
- How many of you set or try to set limits on when or what your children should eat?
  - What kind of limits? How do you do it (e.g., do you use rules)?

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Table 2. Sociodemographic characteristics of focus group participants in Region 1* and Region 2* – Latino mothers of school-age children in San Diego, CA

	Total (n=41)	Region 1 (n=20)	Region 2 (n= 21)	*p*-value
	n (%)	n (%)	n (%)	
Mean age (SD)†	40.7 (6.7)	37.3 (3.7)	44.0 (7.3)	0.07
32-39	19 (49)	14 (74)	5 (25)	
40-49	17 (43)	5 (26)	12 (60)	
50-62	3 (8)	--	3 (15)	
Married/living as married	30 (73)	17 (85)	13 (62)	0.10
Education†				0.24
< High school	16 (42)	9 (53)	7 (33)	
High school/equivalent	12 (32)	3 (18)	8 (43)	
> High school	10 (26)	5 (29)	5 (26)	
Unemployed/homemaker	23 (56)	11 (61)	12 (57)	0.80
Yearly household income†				0.08
≤ $20,000	14 (41)	8 (53)	6 (32)	
$20,001-40,000	15 (44)	7 (47)	8 (42)	
>$40,001	5 (15)	--	5 (26)	
Country of Birth‡				--
U.S.	9.3	--	14.3	
Mexico	87.8	100	76.2	
Argentina	4.9	--	9.5	

*Region 1 (East San Diego School District); Region 2 (West San Diego School District)

† Missing data: n = 2 participants did not report age; 3 participants did not report education level; 7 participants did not report income.

‡Country of birth was obtained by hand raising during the focus group.

Themes	Quotes
1) Feeding attitudes	***Maternal responsibility*** "Well, from when they're little… 2 or 3 years when they begin to walk, I think one [mother] can start teaching them [to eat healthy] so that when they are 6 or 7 years, they know what vegetables are." "If they [mothers] did not give their children what is healthy then their children would never learn how to eat." "I think that part of our cultural experience involves learning how to eat, and to feed our children… it begins in the home." "…as a mother, one should prepare foods that don't have a lot of fat, try not to use so much bread, try to eat more fruits, more vegetables…"
2) Feeding behaviors	***Cooking strategies*** "… I use a lot of vegetables and beans, which is what my children have seen me eat, and what they have learned to eat." "…I throw away the yellow part, I only eat the [egg] whites" "…they [children] don't eat food with grease. I give them vegetables." "We eat vegetables or grill things that don't have grease - the grease drips off." "I like to make *aguas [frescas naturales]/*natural juices with oranges." "…sometimes when we buy juice by the gallon,…I give [them] half juice with half water."

	“I cook with water…and try not to fry too many things.” “…eat what you want but there’s always a serving of protein in the morning.” ***Behaviors to support “eating well”*** Persuasion: “I had to slowly get the apple slice near him, week by week, week by week, until he tolerated looking at it on his plate and then he tolerated tasting it [food].” “Want to be like Thalia? Eat your vegetables.” “My daughter is a real flirt, so I explain to her that food [like carrots] will benefit her… and [I] always tell her ‘this will help your hair grow, and this will make your eyes real pretty’.” “You can, you know you have the ability to do it [not eat junk food]… [you have] will power… and if you try, you can.” Food rules: “It’s hard, my daughters say, ‘I don’t like it’, but in my house we don’t use ‘I don’t like it’ if you haven’t tried it.” “If it’s something healthy, they have permission, but for chips, *churritos*/fritters and stuff, they have to ask permission.” Controlling the home food environment:

	“In the refrigerator, which they have the habit of opening, there are the grapes and strawberries” “Once a week when we go out, we buy a small 99-cent bag [chips] and I let them eat, but in the house, there is no big bag of chips….” “...sodas are not permitted in my house, candy isn’t permitted unless I give it to them.” “In my house they [children] even have to ask for water.” “…I usually have jellos, yogurt, and things like that, which is what they get because there are no candies and things like that.…” ***Reinforcement strategies*** “You can have a first slice of pizza, but if you want a second, you have to have a serving of vegetables.” “I’ll tell him, ‘if you eat all of your vegetables… later when we go to the store, [you can] pick out something’, and then [afterwards] I’ll tell him: ‘see, that’s for eating all of your vegetables’.” “Don’t eat…. when your friends come… you won’t get to play outside, no computer and you’ll sit in the room.” “Don’t eat that, because you’re going to get fatter.” “Watch what you eat, because you [plural] could get diabetes.”

Table 3. Themes and important quotes related to Latino mothers beliefs and practices for encouraging their children to eat in San Diego County (n=41).