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## Latina Mothers' Beliefs and Practices Related to Weight Status, Feeding and the Development of Child Overweight

### Abstract

**Objective**—To examine maternal beliefs and practices related to weight status, child feeding, and child overweight in the Latino culture that may contribute to the rising rates of overweight among preschool Latino children in the U.S.

**Design and sample**—This two-phase qualitative study relies on data obtained in 6 focus groups with a total of 31 primarily Spanish-speaking, low income mothers, followed by 20 individual, in-depth interviews with women participating in a health promotion educational program.

**Measures**—Child-feeding beliefs, practices and weight status perceptions were elicited.

**Results**—Findings indicated that most respondents reported personal struggles with weight gain, particularly during and after pregnancy, and were concerned that their children would become obese. Although subjects understood the health and social consequences related to overweight, many discussed the pressures of familial and cultural influences endorsing a “chubby child.”

**Conclusions**—Education and interventions that incorporate “culturally mediated” pathways to address mothers' feeding practices are essential for prevention and control of childhood overweight among low-income Latinos. Nurses should be aware of social and cultural influences on Latina mothers' beliefs and practices related to weight status and feeding practices and address these in their education approaches to prevent childhood overweight and obesity with this population group.

### Keywords

childhood overweight; Latino; beliefs; feeding practices

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Overweight and obesity have become a serious public health problem in the United States (U.S.), affecting children of all ages (Ogden et al., 2002; Ogden et al., 2006). Overweight in children is defined as a body mass index (BMI) greater than the 85<sup>th</sup> percentile and less than the 95<sup>th</sup> percentile and obesity as a BMI at or above the 95<sup>th</sup> percentile of age and sex-specific 2000 CDC reference growth curves (Centers for Disease Control and Prevention, 2000). Among low (Mei et al., 1998) and middle-income (Kim et al., 2006) preschool children, increases in overweight and obesity are highest among Latino children. In 2004, the Pediatric Nutrition Surveillance System classified 36% of Latino children aged 2 to 5 years as overweight or obese, compared with 27% of non-Latino children (Polhamus et al., 2003). Among middle-income preschool children, the greatest relative increase in obesity prevalence over a 22-year period was seen among Latinos; a 129% increase, from 7.2% to 16.5%, compared with relative increases of 32% in white and 36% in black children (Kim et al., 2006). These trends underscore the importance of research on factors driving early incidence of overweight and obesity in Latino children.

Parents, especially mothers, are key players in preventing childhood obesity by developing a home environment that fosters healthful eating behaviors among children (Skinner et al., 2002; Birch, 1998; Birch, 1999; Birch & Davison, 2001; Birch & Fisher, 1995, 1998, 2000). Parents' knowledge of nutrition; their influence over food selection and meal structure; and their own modeling of eating, physical activity and sedentary behaviors, including television

viewing, are all influential in their children's development of lifelong habits that contribute to normal weight or to overweight and obesity (Francis et al., 2001; Drucker et al., 1999; Lindsay et al., 2006; Davison & Birch, 2001, 2002; Davison et al., 2005). Parents' role in preventing childhood obesity changes at different stages of a child's development, but may be especially important for young children, given the potential to shape dietary and other behaviors as they are formed (Birch & Fisher, 1998; Birch & Davison, 2001; Lindsay et al., 2006).

Maternal perceptions and beliefs about their children's weight and health status can provide valuable insights on social and cultural influences on child feeding practices (Alexander et al., 1999; Reifsnider et al., 2006; Hackie & Bowles, 2007). Research indicates that Latina mothers often incorrectly perceive their children to be at appropriate weight levels when the children are actually overweight or obese. Among 143 Mexican-American families, mothers of obese children were more likely to select a chubby baby as ideal compared to mothers of non-obese children (Alexander et al., 1999). Sixty-one percent of Latino mothers who had overweight preschool-age children did not recognize their children as being overweight, and 50% of these mothers reported taking no measures to control or limit what their children ate (Hackie & Bowles, 2007). When 25 Latino mothers were provided with pictures of children of different sizes and asked to select which one matched their own child's BMI, 36% selected the picture of a child that was heavier than their child, based on measured weight status (Reifsnider et al., 2006). The study also found that 18% of mothers thought the obese child was the healthiest, followed by 36% selecting the overweight child and 45% selecting the normal-sized child. Similarly, Myers and Vargas (2000) found that 36% of 200 parents of primarily Latino overweight children participating in a WIC program did not recognize excess weight in their children aged 2–5 years. Others have reported that Latina mothers often perceive heavier children to be healthier children (Baughcum et al., 1998; Reifsnider et al., 2006). These findings suggest that opportunities exist to educate Latino mothers about the importance of evaluating their child's weight status, but that a culturally sensitive approach must be taken.

Overall, few studies have explored and documented maternal child feeding beliefs and practices among Latino families. The existing literature suggests that these beliefs and practices are partially influenced by ethnic, cultural, and socioeconomic factors. Sherry and colleagues (2004) found that Latina mothers, compared to African American and White mothers, had unique beliefs about child feeding, including concerns about processed foods and a belief in the importance of preparing traditional foods. Latina mothers in this study also considered the foods their children ate and their children's general health status to be more important determinants of child health than weight status. An observational study of 38 obese mothers found that mothers encouraged sons to eat more than daughters, and that higher maternal education was associated with serving healthier foods, using reasoning strategies, prohibiting consumption of unhealthy foods, monitoring child food consumption away from home, and allowing child input into the eating situation (Olvera-Ezzell et al., 1990).

In contrast to the association of parental restrictiveness with childhood obesity among non-Latino White families, free access to food in the home has been related to this outcome among Latino families (Ariza et al., 2004). Others have shown that child-led snacking and pressuring children to eat through frequent use of bribes and threats were more common in Latino households (Melgar-Quionez & Kaiser, 2004), whereas parent-restricted access to snack foods was less common (Kaiser et al., 1999; Kaiser et al., 2001). Themes emerging from focus groups with English-speaking and Spanish-speaking low-income Latina mothers have highlighted a lack of connection between the domains of eating, weight, and health outcomes, the role of parent modeling of eating behaviors, and the use of feeding strategies

that may not be conducive to the development of healthy eating behaviors (Gomel et al., 2007). Findings from this study also suggested there may be distinctions in child feeding practices and beliefs based on language preference and that a “one-size-fits-all” approach to modeling Latino mothers’ feeding beliefs is inappropriate.

## Research Questions

Given the influence of maternal child feeding beliefs and practices on development of child obesity, public health nursing can play a crucial role by working with parents to gain the knowledge and parenting skills and creating a family environment that is conducive to the development of healthy eating habits. To optimize their effectiveness, nurses nevertheless must understand the social and cultural influences shaping mothers’ beliefs and practices related to weight status and feeding and incorporate this knowledge into educational approaches to prevent child obesity. (Hackie & Bowles, 2007; Gomel et al., 2007). Research aimed at understanding the child feeding beliefs and practices specific to the Latino culture can provide insights into factors underlying the rising prevalence of child obesity in this population group. Through qualitative methods including focus group discussions and in-depth interviews, the present study examined questions related to Latina mothers’ feeding practices and perceptions of weight status and considered how these factors may influence their children’s dietary intake and the development of obesity in preschool years.

## Methods

### Design & Sample

The Latina Mothers’ Child Feeding Practices (LMCFP) study was designed to assess child feeding practices in relation to child obesity among low-income, Latino families, by incorporating ecologic perspectives (Davison & Birch, 2001; Novilla et al., 2006; Christensen, 2004) that explore and identify influences of social class, culture, and family and community environments on health behavior.

We conducted qualitative research in two sequential phases, including focus groups and in-depth interviews (Lindsay et al., 2009). The two-phase design allows more in-depth exploration of themes that may emerge in focus group discussions and that are not *a priori* included in the focus group guide. Participants in both phases were purposively selected from women enrolled in a randomized, controlled trial of a non-formal educational model designed to improve diet and physical activity behaviors of low income mothers (Peterson, Sorensen, Pearson, Hebert, Gottlieb & McCormick, 2002). LMCFP sampling criteria included: Latino ethnicity, living in the greater Boston urban metropolitan area, speaking Spanish as the primary language at home and having delivered a live-born baby in the past 48 months. We selected two non-overlapping samples of women for the focus groups and for in-depth interviews by contacting every fifth woman from participants in the randomized controlled trial who met these criteria. All eligible mothers were sent recruitment letters and follow-up phone calls were made.

### Measures

This study was initially designed to examine perceptions of weight, child feeding beliefs and practices, role of socio-demographic, socio-cultural and feeding environment on child feeding practices. In a second phase of this qualitative research, we also examined role of physical activity and sedentary behaviors on weight status, child care influences on child feeding practices.

We developed a focus group guide (Phase I) to identify: a) Latina mothers’ perceptions of their own and their child’s weight status and definition of overweight; b) child feeding

beliefs and practices related to overweight; and c) the role of socio-demographic, socio-cultural and feeding environment influences on mothers' child feeding. Preliminary analysis of focus group data revealed key themes related to physical activity, sedentary behavior and the influence of child care on mothers' feeding practices and children's eating habits. The interview guide (Phase II) was then developed, following format used for focus group guidelines but including new questions to obtain more in-depth information on these themes.

Over a six-month period from September 2005 to February 2006, we conducted six focus groups with 31 women in Phase I (September – December'05) and 20 in-depth interviews in Phase II (December' 05 – February'06). Women participating in the focus groups were not eligible to participate in the in-depth interviews. Focus group sessions and individual interviews about 60–120 minutes in duration were conducted by a native speaker of Latino origin and audio-taped. Focus groups were conducted at local Boston-area community health clinics during after-hours and individual interviews were conducted at participants' homes.

Before beginning the discussion and interview, the facilitator and interviewer, respectively, discussed procedures, provided participants with information about the research project, assured participants that responses would remain confidential and obtained signed informed consent. The focus group moderator's guide is shown in Table 1. At the conclusion of the focus groups and interviews, participants completed a brief self-administered questionnaire that included items on socio-demographic characteristics (e.g., age, household income, marital status, number of children), and received a \$35 cash incentive for their participation. Institutional Review Board approval was obtained from the Harvard School of Public Health Human Subjects Committee.

### Analytic Strategy

Throughout the LMCFP study, we applied standard methods in qualitative research (Maxwell, 1996). Verbatim Spanish transcripts with identifiers removed were developed and translated to English. A bilingual independent consultant with experience in qualitative research transcribed and translated the Spanish transcripts. The data analysis for Phase I (i.e., focus group discussions) and Phase II (i.e., individual, in-depth interviews) were conducted separately. For the purpose of the writing of the manuscript, results from both focus groups and interviews were combined because the themes that emerged from the focus group analysis were explored further in the in-depth interviews. The analysis plan was the same for focus groups and in-depth interviews and included transcription of all data from focus group discussions and interviews and then review by an anthropologist (KMS) in order to develop a codebook. Two coders (KMS, MG) trained in qualitative methods independently read and manually analyzed focus group transcripts using content analysis to identify similar phrases and common themes. Inconsistencies in coding were discussed and resolved. The same protocol was followed for analysis of the in-depth interviews (Phase II), and new themes were added to the codebook. Using methods from qualitative research designed to inform behavioral interventions (Eyler et al., 2003), 5 emergent themes were organized by domains of the socio-ecological and social-contextual models (McLeroy et al., 1998; Sorensen et al., 2003). Data are presented textually with quotes to illustrate findings.

### Results

Nearly all of the 51 study participants were foreign-born (94%), and had lived in the U.S. for an average of nine years; 47% immigrated from Central America and 33% from the Dominican Republic. Participants' mean age was 32 years (range 23–44), and they had an average of 2.5 children. Half were married (51%) and 72% of mothers had obtained a high school diploma. The 49% of women who were employed outside of the home worked 32

hours weekly on average. Forty-six percent of the sample reported a household income less than \$20,000/year.

Five main themes emerged from the focus group discussions and in-depth interviews: 1) mothers' perceptions of their own weight status; 2) mothers' perceptions and concerns of their children's weight status; 3) mothers' beliefs and understanding of obesity and its related health and social consequences; 4) mothers' child feeding beliefs and concerns; and 5) mothers' child feeding practices. Although we selected mothers with children aged two to four years and developed a focus group guide to focus on feeding practices of preschool children, in many instances, mothers discussed their feeding beliefs, perceptions and practices within the context of the whole family, considering not only their preschool children but also older children and extended family members.

### **Mothers' Perceptions of Their Own Weight Status**

Most participants reported personal struggles with weight gain and obesity. Mothers reported feeling depressed and isolated, as well as facing social embarrassment from their family and friends.

My mother always tells me that I'm fat and that gets me a little depressed but it also motivates me...when you see yourself fat it is one thing but if someone else tells you that, you take it more seriously.

Their motivation to lose weight was often triggered by others telling them they were overweight.

When my husband told me then is when I got worried. I say, 'I must be overweight'...that made me think I have to eat more vegetables and more fruits and change to healthier food, but also to exercise.

Most mothers cited pregnancy and post-pregnancy as a critical period in which they experienced weight gain.

When I got pregnant I gained a lot of weight, I was 180 pounds and before then I was 115 pounds and I used to eat a lot and never got fat, but after I had my child my metabolism changed a lot.

Several mothers described their efforts to change their diets and to incorporate exercise into their daily routine in order to lose weight, acknowledging that lifestyle changes need to be long-term in order to maintain successful weight loss.

This is not magic...to lose weight you have to change your lifestyle, a lifestyle that is not for 3 months but is forever.

Some, however, expressed frustration with weight loss efforts.

I bought everything that was out there, I did all the diets and nothing worked...I was spending a lot of money and no results.

### **Mothers' Perceptions & Concerns of Their Children's Weight Status**

As a whole, mothers struggling with their own experiences of overweight and obesity expressed greater concern that their children would become obese. As one mother reported:

I try to take care of my daughters, they are not overweight but in my family there are people that are obese so I watch their diet.

The majority of mothers spoke of family and cultural influences that equate having a chubby child with being a good parent. As a couple of mothers reported:

Some people get confused because they think the kid who is chubby is healthy and it is not.

In the Latino culture we have the tendency to think that the kids are healthy when they are fat...like my girl, she is not fat, and the people said that she does not look healthy, and I say how come if she never gets sick.

Several mothers spoke of grandmothers' perceptions of their children being too "skinny" even when their children had normal weights.

My mother in Puerto Rico thinks my daughter is so skinny...but she is fine.

### **Mothers' Beliefs and Understanding Related to Obesity and Its Health and Social Consequences**

Most mothers believed that obesity was causally related to an individual's choices, lifestyle and "personal control" rather than to an "illness" unrelated to eating and physical activity behaviors.

I think that you don't get it from your family and it's not an illness...it is what you do. When I lost weight it was because of the bread, I can't eat bread. I'm conscious of that because I lost 60 pounds and if this is an illness I could not lose the 60 pounds.

Some mothers framed consequences of obesity in terms of physical health, i.e., fatigue and cardiovascular problems and diabetes, while others highlighted negative psychosocial consequences including depressed mood and social rejection.

Those kids suffer, because they feel rejected. People look at them in a bad way, and they are limited.

Among all mothers, there was a strong belief that maintaining an optimal weight was important for the physical, emotional and mental well being of children and families. When asked to define a "healthy" child, most mothers spoke of a healthy child as being active, intelligent, well behaved and a good learner. Only one mother used weight status to define a "healthy" child and, in this case, it was evident that this perception was influenced by a medical professional's opinion.

A healthy child is the one that you can see health in every aspect, behavior, learning abilities, if it does not have any illnesses.

Several mothers were very concerned that their children were already becoming overweight, especially since coming to this country. Only one mother worried that her daughter was not eating enough as a result of becoming more preoccupied with thinness in the U.S..

I have a problem with my oldest boy, when he came from my country, he was so, so skinny and here he started to gain weight. I see that he is getting fat.

### **Mothers' Child Feeding Beliefs & Concerns**

Mothers were aware chubbiness in infants and toddlers may set the stage for the development of overweight later in childhood.

When little they look cute fat, but when older you realize that she is going to remain fat.

Most mothers were aware of the importance and long-term effects of early diet on children's health and psycho-social well being.



I think that if you give them healthy food, nutritious meals, they will continue...it is more likely that they will continue with the same pattern...their bodies will get used to that way of eating.

Mothers talked about the important role of parenting in contributing to the health of a child. In particular, mothers mentioned the importance of parents being positive role models and teaching their children healthy eating habits early in life, so that they do not become accustomed to the taste of unhealthy or “bad” foods.

We are all adults and the ones that have to be conscious about that, we are the parents, and the parents are the example and if we learn about that the kids will have a good education about nutrition.

Mothers’ discussions about child feeding practices were deeply rooted in Latino cultural beliefs passed on to them by their parents and other family members. They explained how their parents in their native country had taught them that it was important to eat a hearty amount of food in order for children to grow up strong and healthy.

This is how our parents educated us, if there is not a specific amount of food they believe that you were not eating well. Beans has to be a lot, rice has to be a lot, they believe that if you eat well in your childhood you were going to grow stronger.

Mothers also spoke of grandmothers (who often functioned as child care providers) challenging eating habits they had set for their children by giving the children foods (e.g., candy) they were not allowed to eat at home.

Children say grandma is better. Grandmother feeds them candy and soda...they know they can have soda at grandma’s house.

Despite these deeply rooted cultural beliefs, mothers were aware that some common practices set in their culture were not healthy and might have negative consequences for their children’s health and well being.

### **Mothers’ Child Feeding Practices**

Many participants described their efforts to provide healthy food options by preparing meals at home and by avoiding high fat and fast foods. For example, several mothers spoke of reducing the amount of greasy, fatty foods given to children, making sure that children eat enough fruits and vegetables, restricting access to sodas and sweets, switching to low-fat milk, and not eating out as often.

I give to him healthy food because I try to give to him less food with grease and also the nutritionist told me that is better to give to him milk with less fat.

A few mothers felt that not only could they not “control” their own eating but also felt their own problems with over-eating influenced their child’s eating habits, particularly their daughters.

I always made the food myself, all natural, natural vegetables, no salt...even the chicken has to be natural. I don’t want for them to have any problems like that and at home is where everything starts, and if you don’t take care of that they will get like me.

Several mothers perceived that their children are able to successfully regulate their own food intake according to cues of hunger and satiation.

When they don’t want any more they just say no, that they don’t want anymore and I don’t require that my kids eat if they don’t feel like it.

In addition, mothers commented on the importance of not restricting or pushing food onto their children in an attempt to be a “good” parent.

It is not good to give the children more food, force them if they don't want more food. Sometimes we think that to be good mothers we have to push the food.

Mothers who perceived their children to be overweight reported worrying about how much their children ate, making sure that they did not “eat too much”, and controlling the amount and the types of foods their children ate.

In my case I give them food but I put some limits to the one that is a little overweight and sometimes he is still hungry and he looks for food...I tell him to eat a banana or an apple so he can feel better.

A few mothers reported worrying about their older girls not eating enough since moving to the United States.

I have problem with my daughter who doesn't want to eat... sometimes I get worried that she does not eat much.

My girl is now 8 years old and after we moved to the States sometimes she tells me, ‘mom, I don't want to eat a lot of that because I'm going to get fat’ so she is worried also...she wants to see herself slim and nice.

Most mothers reported using food as a parenting tool, to reward good behavior, entice the child to perform a certain task, or punish bad behavior. Most often mothers reported promising their children sweets and ice cream to reward a good behavior or to get them to do something. In some cases, mothers also reported using “bad foods” to get their children to eat “good foods”.

I tell them that they have to eat the food for me to give them ice cream.

The majority of mothers believed that gender should not and did not affect how they fed their children. While the majority did not see a reason for boys or girls to be fed differently, in practice, mothers observed that their older girls (ages 8 and up) were more likely to diet and be concerned about their weight in comparison to boys.

My girl does not have any extra fat in her body, but she loves looking at herself in the mirror and if I have to give my opinion, she needs to gain weight. She always wants to do diets, but I'm on top of that—a diet? Not over my dead body. And if I have to sit her down and feed her, 14 years old and with a boyfriend even...I have that kind of control over her.

A few mothers expressed that differential child feeding practices for boys and girls may be related to different rates of sexual development and varying levels of participation in sports and other activities which may require supplementary food or a special diet.

I think it depends if they participate in sports, the agility of the kids, the hours of sleep...because if you think of a mother that has either boy or girl that is doing ice skating, that kid needs a special diet.

## Discussion

Mothers in this study discussed their child feeding practices and beliefs related to child weight status within the broader context of family. They spoke not only about beliefs and practices with respect to their preschool children but also referred to older children and extended family members. This finding underscoring the central importance of the family in the Latino culture has been reported by others (Crawford et. al, 2004), and suggests that



successful nutrition education interventions for Latina mothers will need to address child feeding behaviors within the context of the family as a whole.

This study found that cultural beliefs, social pressures and mothers' immediate social support networks, especially grandmothers, strongly influenced mothers' feeding practices and beliefs about child weight status. Participants reported that in the Latino culture children's weight status reflects parenting skills, and that having a "skinny" child is a sign of bad parenting and poor health. Our findings are in line with other studies showing socio-cultural differences among mothers are reflected different perceptions of their child's obesity-related health risks (Baughcum et. al, 2000; Sherry et. al, 2004; Jain et. al, 2001). Maternal perceptions in this realm may vary by cultural constructs that determine the overall accepted body type (Young-Hyman et. al, 2000) as well as an ideal body type based on gender of their child (Tiggermann & Lowes, 2002).

Previous research (Birch & Fisher, 2000; Francis et. al, 2001; Saelens et. al, 2000) has documented the influence of mothers' weight status and eating behaviors on child feeding practices and child's risk of overweight. Mothers in this study who reported struggling with their own weight and eating behavior also expressed strong concern about their children becoming overweight and the potential negative consequences for children's health. These concerns in turn appeared to influence use of controlling and restrictive feeding strategies to regulate the amount and the types of foods their children ate, especially daughters. Mothers in our study stated that it is a "parent's responsibility to make sure that their children ate properly" early in life, in order to instill healthy habits. Mothers often described their sacrifices and a sense of pride in being able to provide the best care for their children, including good nutrition. Believing they were doing what is best for their children, mothers reported using food as a parenting tool to shape children's behaviors, using "bad" foods (e.g., sweets) to get children to eat "good" foods, pushing the child to eat more, deciding how much the child should eat, and worrying about their child's overweight and overeating. These findings emphasize the essential role that parents play in preventing childhood obesity by offering a variety of healthy foods (Satter, 1996; Dietz & Stern, 1999). Nevertheless, contrary to what Latino mothers may expect, restrictive feeding practices can have a negative effect on children's ability to self-regulate their food intake and increase children's risk of child obesity (Birch & Fisher, 1998; 2000; Francis et. al, 2001; Satter, 1996; Sherry et. al, 2004; Baughcum et. al, 1998; Davison & Birch, 2002; Tiggermann & Lowes, 2002).

Our findings are consistent with others (Sherry et. al, 2004; Baughcum et. al, 1998; Kaiser et. al, 2001; Kaiser et. al, 2002) suggesting that culturally appropriate interventions addressing child obesity among Latinos should provide guidance to parents and extended family members about the importance of healthy feeding practices. Such guidance should include information about well intended but potentially harmful strategies that may increase children's obesity risk. Nurses can provide parents with the knowledge and skills that they need to prevent obesity in their children by taking into account the complex influences of culture and family. Successful interventions for Latino mothers will be those that help parents to develop and maintain healthy child feeding practices and to model healthful eating to prevent child obesity and disordered eating, especially among daughters. In particular, nurses should provide guidance to parents on how to establish a nurturing feeding environment and on setting family goals around health, through healthy eating, eating to satiation, physical activity and other positive lifestyle changes.

Findings from this study should be considered in light of some limitations. The qualitative approach necessarily limits its generalizability. Respondents were purposively sampled from low-income, postpartum women enrolled in a health promotion trial who were income-eligible for the Special Nutrition Program for Women, Infants and Children (WIC), e.g., had

a household income less than or equal to 185% of federal poverty guidelines. Nevertheless, the multiethnic composition of the 51 respondents in focus groups and in-depth interviews (Sussner, et al., 2008) strengthens applicability of findings to women from several Latino population groups living in the urban Northeast. Although we used an experienced and trained facilitator, it is possible that the opinions and responses of mothers participating in the focus group discussions may have been influenced by some of the more vocal mothers at the discussion, rather than voicing their own unique and opinions. In addition, mothers who were recruited to participate in this study could have been those who were more involved and concerned about child feeding issues in general.

## Implications for Research & Practice

Results from this study add to the existing information on Latina mothers' feeding practices and related beliefs in relation to the development of child obesity. Our findings highlight the central role of cultural traditions and family influences in shaping mothers' beliefs and feeding practices and suggest that educational interventions that address "culturally mediated" pathways (Christensen, 2004) will be essential to prevention and control child obesity in low-income, Latino families. Results show that child feeding is seen as an essential component of parenting within Latino culture and that interventions developed for this population should offer information and support relevant to every day cultural and family traditions. Thus, nurses should be aware that culturally appropriate educational strategies will integrate an understanding of the specific social context in which Latino mothers' feeding practices are developed. Absent an understanding of the factors impacting low-income, Latino families, it is possible that efforts to prevent of child obesity will seen as just another stress among a multitude of daily challenges (Dubowitz, et.al, 2007).

In this research, we relied on social ecological and social contextual models (McLeroy, et al., 1998; Sorensen, et al., 2003) to provide a systematic consideration of obesity as a chronic, multi-factorial condition determined by a range of personal, family, organizational and community influences that are potentially modifiable through interventions (WHO, 2000; IOM, 2005). Our results suggest that public health nursing can effectively address child feeding and child obesity at different levels of influence, including individual (e.g., increasing mothers' knowledge and skills related to child feeding practices), intrapersonal (e.g., addressing the influence of extended family on mothers' child feeding practices), organizational (e.g., referral to programs such as the WIC that support education and provision of healthy eating alternatives for children) and neighborhood (formulating strategies to provide healthy foods in face of barriers such as presence of fast-food restaurants). Key messages that public health nurses could share with Latino families when addressing child feeding and weight status are shown in Table 2, along with areas needing further research.

In the broader research context provided by the LMCFP study, qualitative methods supported the study aims and amplified theoretical frameworks positing a role for social contextual factors across the multiple levels of influence, by revealing 'how and why' these factors may contribute to the etiology of childhood obesity in Latino or other ethnic groups. An important contribution of our research is that it emphasizes the expression of cultural pathways in terms of everyday practices and routines (Saarilehto, et. al, 2001) that are understandable to families participating in this qualitative research and can explicitly inform the design of health promotion interventions. Nurses and other health care professionals working with Latino families must keep these specific behaviors as well as the determinants of these practices in mind. Future research is needed to quantify the association of maternal feeding behaviors associated with child obesity in Latino population groups.

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**Table 1**

## Sample of Prompting Questions Used in Focus Groups

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*Perceptions and Understanding of Overweight and Obesity*

- What do the words overweight and obesity mean to you?
- What causes a person to be overweight and obese?
- What has been your personal experience with overweight or obesity?

*Child Feeding Practices*

- How do you decide how much food to feed your child?
- How can you tell if a child is still hungry or full?
- Do you think that what you feed your child today can influence your child's eating habits later in life?

*Eating Environment and Meal Structure*

- Who does the cooking?
- Who decides what to eat?
- Do you plan your meals in advance? Who does the food shopping?

*Socio-Cultural Influences on Child Feeding Practices*

- Do you think your cultural background affects how you feed your child? How?
  - What are the constraints or limitations you have in providing your child with a healthy diet?
  - Have you ever been in a situation when you didn't have enough money to buy food for your family?
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**Table 2**

Key messages and areas that need further research based on study results

Key messages from this study that nurses could share with Latino families:	Key areas that need further research:
<ol style="list-style-type: none"> <li>1 Provide information, guidance and support to Latino mothers about healthy eating and healthy weight prior, during, and after pregnancy.</li> <li>2 Provide support and encouragement if families are struggling with weight gain and obesity.</li> <li>3 Inquire about current child feeding practices and address them within the context of the family.</li> <li>4 Understand the important roles that cultural and familial influences and economic constraints may have on child feeding practices and beliefs.</li> <li>5 Emphasize to parents and extended family members (i.e. grandmother) that they play a very important role in preventing childhood obesity by developing a home environment that fosters healthful eating behaviors at an early age.</li> <li>6 Ask parents what current health goals they have for themselves and for their children, and try to incorporate these goals into the conversation.</li> <li>7 Provide guidance to parents on setting family goals around health and not necessarily weight.</li> <li>8 Provide specific details about potentially harmful yet well-intended practices that can increase children’s risk of overweight.</li> <li>9 Provide parents with knowledge and skills on healthy eating, eating to satiation, physical activity and other positive lifestyle changes.</li> <li>10 Encourage parents in their efforts.</li> </ol>	<ol style="list-style-type: none"> <li>1 How to approach incorrect child weight perceptions in a culturally sensitive manner.</li> <li>2 How to create motivating educational strategies around healthy family nutrition while taking into consideration cultural and socioeconomic influences.</li> <li>3 How to incorporate “culturally mediated” pathways in education and intervention to address mothers’ feeding practices among low-income, Latino population groups.</li> <li>4 Develop quantitative measures of maternal beliefs and practices related to child feeding that take into account every day socio-cultural influences on low-income, Latino mothers suitable for administering in organizational settings such as the WIC Program.</li> </ol>