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Lindsay, Ana Cristina; Ferarro, Mabel; Franchello, Alejandra; de La Barrera, Raul; Tavares Machado,
Marcia Maria; Pfeiffer, Martha Erin; Peterson, Karen Eileen

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Child feeding practices and household food insecurity among low-income mothers in Buenos Aires, Argentina

Práticas de alimentação infantil e insegurança alimentar doméstica entre mães de baixa renda em Buenos Aires, Argentina

Ana Cristina Lindsay¹
Mabel Ferraro²
Alejandra Franchello²
Raul de La Barrera³
Marcia Maria Tavares Machado⁴
Martha Erin Pfeiffer⁵
Karen Eileen Peterson⁶

Abstract *This qualitative study of low-income mothers in Buenos Aires, Argentina, examines the influence of socio-economic conditions, organizational structures, family relationships, and food insecurity on child feeding practices and weight status. Thirty-eight mothers of preschool children living in urban Buenos Aires participated in four focus group discussions. The results indicated that many mothers were aware that obesity may be detrimental to the child's health, but most of them are unclear about the specific consequences. Maternal employment, family pressures, food insecurity and financial worries seem to influence child feeding practices. These findings have important implications for developing strategies for nutritional assistance that could benefit the health of children and provide opportunities for educational programs that are directed to nutritional awareness in Buenos Aires, Argentina. The right to eat regularly and properly is an obligation of the State and must be implemented taking into account the notion of food sovereignty and respecting the importance of preserving the culture and eating habits of a country and its diverse population groups*

Key words *Qualitative research, Child feeding, Food insecurity, Mothers, Argentina*

Resumo *Estudo qualitativo realizado com mães de baixa renda em Buenos Aires, Argentina, que examina a influência das condições socioeconômicas, da estrutura organizacional, das relações familiares e da insegurança alimentar sobre as práticas de alimentação infantil e o padrão de peso. Trinta e oito mães de crianças pré-escolares que vivem em áreas urbanas de Buenos Aires participaram de quatro discussões em grupos focais. Os resultados indicaram que muitas mães estavam cientes de que a obesidade pode ser prejudicial para a saúde da criança, mas a maioria não tem clareza sobre as consequências. O trabalho materno, as pressões familiares, a insegurança alimentar e as preocupações financeiras parecem influenciar as práticas de alimentação infantil. Esses achados têm importantes implicações para o desenvolvimento de estratégias de assistência nutricional, que poderão beneficiar a saúde das crianças e as oportunidades de educação nutricional dos programas que são direcionados à transição nutricional em Buenos Aires. O direito de se alimentar regular e adequadamente é obrigação do Estado e deve ser exercida tomando em consideração a noção de soberania alimentar e respeitando a importância a preservação da cultura e hábitos alimentares de um país e seus diversos grupos populacionais.*

Palavras-chave *Pesquisa qualitativa, Práticas alimentares, Mães, Segurança alimentar, Argentina*

¹ Nutrition Department, Harvard School of Public Health, 677 Huntington Avenue, 02115 Boston MA USA.

alindsay@hsph.harvard.edu

² Nutricion y Diabetes; Hospital General de Niños Pedro de Elizalde

³ Hospital General de Niños Pedro de Elizalde.

⁴ Departamento Saúde Comunitária, Faculdade de Medicina, Universidade Federal do Ceará

⁵ Curamericas Global Inc.

⁶ Human Nutrition, Department of Environmental Health Sciences, University of Michigan School of Public Health

Introduction

Argentina, like many other countries in Latin America, is facing a demographic and nutritional transition. In Argentina, trends in the nutritional status reflect that of the region¹⁻³ that is, a decrease in protein-energy malnutrition (PEM) is associated with a rise in obesity prevalence. Argentina ranks fifth among food exporting countries in the world⁴. However, the prevalence of chronic malnutrition (expressed as stunting) varies according to the geographical regions; the highest prevalence in the north eastern and western provinces as a clear expression of a lower social economic status of the populations in these regions. In fact, obesity and its health-related problems are becoming public health problems and the new face of poverty affecting families of large peri-urban settlements exposed to poor quality diets and low physical activity²⁻⁴.

Household food insecurity is a critical variable for understanding the nutritional status of low-income populations, particularly in developing economies undergoing the demographic transition. Low socioeconomic status is associated with poor diet, food insecurity, and poor child health⁵⁻⁹. In countries like Argentina that have faced recent and repeated economic crises and restructuring of its social services, the urban poor may face food insecurity and poor diet^{5-7,10}. Since food insecurity, as defined as the limited or uncertain availability of nutritionally adequate and safe foods, may be associated with poor diet, it has the potential for increasing risk for obesity and health problems^{5,10-15}. To date, limited research is available on the influences of household food insecurity and children's diet and nutritional status among low-income families in Argentina. In addition, the role that changing health and social services may play in ensuring healthy diets is unknown.

In response to this need, we conducted a formative, qualitative research study to explore and describe mothers' child feeding practices including how food insecurity affects these practices among low-income, urban families in the municipality of Buenos Aires, Argentina.

Methods

In the present study, qualitative methods are ideal for initial efforts to understand influences on child feeding and weight status in various socio-cultural contexts given that the nutrition transi-

tion appears to proceed differently in different country settings. The rigorous qualitative approach used in the present study was designed to support later quantitative testing.

We employed qualitative methods including focus groups with low-income mothers living in urban areas of Buenos Aires, Argentina to explore and understand issues related to food insecurity, child feeding practices and mothers' perception of child weight status.

Criteria for focus group participation included being a mother of a child between 2 and 5 years of age attending child health and nutrition services in the Pedro Elizalde Hospital in the municipality of Buenos Aires, Argentina. Participants were informed about the qualitative study being conducted by health professionals working in child clinics of the PE Hospital. Flyers explaining the purpose of the study, the voluntary nature and extent of the participation and dates of the focus groups discussions were given to mothers who showed an interest in participating. In addition, interested participants were provided with an informed consent form with instructions to read, sign and bring the form to the focus group session. Two health professionals working with the research team were available to answer any questions mothers had about the study and extent of their participation. The study protocol was reviewed and approved by the Human Subjects Committee of the Harvard School of Public Health and the Pedro Elizalde Hospital in Buenos Aires, Argentina.

Focus groups were conducted during December 2006 at the hospital which was identified by hospital health professionals as a convenient location for participants. Child care was offered to mothers who needed it. Before the start of the discussion, the facilitator obtained signed informed consents from all participants. Each focus group lasted between 90-120 minutes and was led by an experienced, trained, Argentine moderator (ABK) fluent in Spanish. The discussion guide covered four main topic areas: 1) mothers' perceptions of child health, their child's weight status, and obesity; 2) mothers' feeding practices; 3) the role of socio-demographic, socio-cultural and food insecurity in influencing mothers' child feeding practices; and 4) the role of food supplementation programs available to the study population (e.g., Ciudad Portena).

Analysis

Throughout this study, we applied standard methods in qualitative research¹⁶. Verbatim Span-

ish transcripts with identifiers removed were developed and translated to English by a bilingual independent consultant with experience in qualitative research. Transcripts were reviewed by an experienced qualitative researcher in order to develop a codebook. Two coders trained in qualitative methods independently read and manually analyzed the transcripts using content analysis to identify similar phrases and common themes. Inconsistencies in coding were discussed and resolved. Using methods from participatory qualitative research designed to inform behavioral interventions¹⁷, twenty-eight emergent sub-themes were organized by four main categories of themes included in the focus group guide. Data are documented textually with representative quotes to illustrate findings.

Results

Participants

Thirty-eight mothers participated in four focus groups (8, 12, 10, 6 mothers per group). The majority (90%) were native to Argentina. Ninety-two percent of the mothers were married and 62% had obtained a high school diploma. The average age of participants was 32 years of age (22 – 43 years), and participants had an average of 2 children. Approximately 30% of the mothers worked outside of the home. Those who did work outside the home worked an average of 30 hours per week. When asked about their socioeconomic status, approximately 90% of participants reported a household income of less than US \$3,000/year, while 5% of participants did not report their household incomes.

Fourteen sub-themes under four main topic areas emerged from content analysis of focus group transcripts including: 1) mothers' perceptions of their children's overall health and weight status as well as their beliefs and understanding of obesity and its related health and social consequences; 2) mothers' child feeding practices and related beliefs; 3) socio-demographic, socio-cultural, and environmental influences on child feeding practices; and 4) issues related to household food insecurity. Although we selected mothers with preschool-age children (2-5 years of age) 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 their preschool chil-

dren as well as older children and extended family members.

I. Mothers' Perceptions of Child Health, Weight Status, and Obesity

In describing perceptions of their child's weight status, mothers expressed a range of views. Some mothers believed their child to be underweight and/or eating too little, while a few mothers reported that their child was overweight. Mothers who perceived their child as underweight were concerned with the child having abnormal growth and mental development, overall negative health, and also suffering social stigmatization by others such as teachers who may think that they were not providing sufficient nutrients for their children.

The teachers call you sometimes when they see the kids too skinny, they think that you don't have enough food to feed them. The teachers attack you as if you did not want to provide to the child...

Mothers who reported having an overweight child were worried about their child's performance at school and facing ridicule from other children.

If they are overweight they don't do good in school...the other kids make fun of them...

When probed further about cultural issues related to overweight and obesity, mothers had various views on the problem of obesity and overweight in young children. Some believed that being overweight is expected among young children, and once they reach adolescence, they will have a normal weight. Others believed that even when children are very young, being "heavy", as some mothers referred to being overweight, can affect their health. As one mother reported:

Little babies that are too heavy and overweight have more problems on learning how to walk, they can't sit well, and they take longer to do many things.

Several mothers cited both financial limitations to buying healthy foods and the unhealthy foods offered in school as factors that contributed to childhood obesity.

The economic situation is an important factor, because right now it's very difficult, to provide what they need...

The food that the school provides is very bad; is the kind of food that makes you fat.

II. Mothers' Child Feeding Practices and Related Beliefs

The majority of mothers were aware of the importance and long-term effects of early diet

on children's future eating habits. Mothers also talked about the importance of parenting in helping children develop healthy eating habits, which according to mothers included exposing children to healthy foods, explaining to them the importance of eating certain types of foods, being positive role models and teaching by example. As a couple of mothers reported:

I think that you have to explain to them what kind of food is good for them and what kind is not good and provide them with a good base.

In practice, mothers reported that children's food preferences and parental choices were influential factors in the types of foods that mothers fed their child. Some discussed that parents should pick foods that are nutritious for the child even if the child doesn't like them; others talked about how their children refuse to eat foods that they don't like; others reported the importance of having variety in diet but allowing their child a treat once in a while.

If you give to the kids what they want to eat, they want hot dogs or hamburger, but that does not have the nutrition that they need.

Some mothers also discussed using food to entice their children to do something they wanted.

I just tell her if you eat I take you to the park, or the amusement park.

When asked about issues related to monitoring and/or controlling the types of foods and amounts their children eat, mothers talked about several issues. Some believed monitoring should begin at a young age, such as birth or when they start eating, whereas others stated that monitoring should begin only when a problem becomes evident, such as under-eating or over-eating.

I have to stop my daughter from eating too much. She finishes eating her regular meal and she wants more food.

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

Mine does like this: looks to another direction when he does not want to eat anymore...

Mothers reported many reasons for monitoring their children's eating, including the importance of ensuring that they were eating a variety of healthy foods, that children who are picky eaters or who "don't eat enough" were eating "enough", and that children did not consume too much unhealthy food.

You have to sit at the table with them and see how and what they eat to make sure they are eating enough and the right kinds of food.

A couple of mothers reported family history of diet-related problems as a reason for having to closely monitor what their children ate.

In my case there is a history of diabetes and high cholesterol in my family...

A few mothers believed that too much monitoring could lead to their children having eating disorders.

You need to be careful though because then later they have other problems such as "bulimia".

When asked if and how child gender may influence their feeding practices, most mothers believed that gender does not make a difference in how they feed their children, although a few reported that boys tend to eat more.

I think that boys eat more...they also need more...

Most mothers agreed however that the main differences in feeding are related to children at different ages needing and eating different kinds of food.

I have an older girl, a young boy and a baby...at one point I was cooking three different kinds of food...they each just needed different foods...

Mothers' discussions about feeding practices indicated that the family played a central role in household decisions regarding eating. Several mothers commented that other family members, such as an aunt or a grandmother, would give advice on how to feed their child, while a few reported doctors giving advice on what their child should eat.

It used to be my mother the one that would tell me different things about feeding the children...

Most mothers reported that they were responsible for food cooking and purchasing, while a few talked about making joint decisions with other family members, such as their spouse or grandmother.

In my house, we think about what are we going to eat, and then I do all the shopping and cooking.

Family meal practices varied among the participants: some reported that meals were eaten together as a family at specific times; others reported never eating out at restaurants; some families fed the kids first; and some watched TV during mealtimes whereas others did not.

We feed the children first and then we sit together, my husband and me and have dinner after they already ate...

Most mothers reported that their financial situation did not allow for eating out on a regular basis. A few mothers reported eating out or ordering "take-out" food every now and then.

Every now and then we order some take out...

III. Socio-demographic, Socio-cultural, and Environmental Influences on Child Feeding Practices

Work demands, financial concerns, family pressures were all cited as constraints or limitations to mothers providing healthy foods for their children.

...my problem is that I work in a hospital and 3 times a week I'm not at home... and cannot be closely involved with what my children are eating...

Furthermore, several mothers reported being out of work and/or having limited work and several also reported their husbands being out of work. According to these mothers' statements, the lack of work and consequent limited finances were the main reasons that compromised families' ability to buy healthy foods for their children.

When my husband does not have a regular job and does not bring home money regularly, we can't eat certain kinds of food...

A few mothers also stated that any extra money they had needed to be spent on other necessities, such as rent and school supplies.

I have two kids and I have to pay the rent, buy what they need, because I'm by myself...

Several mothers also talked about high price of healthy foods such as fruits and vegetables.

Fruit and vegetables are expensive... everything is going up on prices. Sometimes they want fruit, so if I have any money left I bring some fruit home...

In addition, work and scheduling demands were reported as obstacles that prevented them from being more involved in their children daily eating.

I needed to quit my job because I could not take good care of my children: control what the kids were eating, follow up on their school...

A few mothers discussed family and social pressures as a difficulty in feeding their children healthy foods, such as when a family member constantly bring unhealthy food over when he/she visits.

...I have a problem with my sister whom every time she comes over brings candy to my kids and I say no, please don't give them that ... but she gives them the candy anyways.

Although several mothers reported having a supportive social network of family, friends, and neighbors that help them out, most mothers described being unhappy with the lack of adequate government support or reported having no support.

When times are difficult you need to count on your family...some members of my family bring us meat...others bring pasta...and we live like that...

IV. Issues Related to Household Insecurity

Mothers talked about a variety of issues related to household insecurity. Several mothers expressed concerns about not having enough money to purchase food for their families, having had their children go to bed hungry, or another household member going for a day without eating anything because of the lack of food.

...one time we did not have anything to eat, and the kids went to eat to the house of family members and then the following morning they went to school and they ate there at school...

Mothers' comments also revealed that dealing with issues of food insecurity is worse when schools are closed due to vacation. As one mother stated:

On vacation sometimes you don't have a job, and they don't go to school, so it is difficult.

Generally, these mothers felt helpless and terrible for not being able to provide food for their children, and some tried to compensate by serving milk or other liquids.

...you feel like the world goes down, the kids ask you for something to eat and you don't have it, you feel bad...

Mothers also discussed how certain household members, such as themselves or their husbands, were not able to eat the kinds of food they preferred or they ate foods that they preferred not to eat because of a lack of resources.

I feed the girls first and then if there is anything left, we eat...

Financial difficulties also limited the choice of foods they consumed. For example, a few mothers mentioned that they would have liked to eat more fruits and vegetables but the higher cost of these foods limited their ability to buy and eat such foods.

Fruits and vegetables are expensive ... everything is going up on prices. Sometimes they want fruit, so if I have any money left I bring some fruit home...

A few mothers reported having to choose between purchasing food or medicine for their children, and others cited certain times when money for food was limited, such as when bills were due or when they were waiting for their paychecks.

... sometimes between the 15th and the 20th of each month you don't have more money ... you need to wait until the next pay check ...

... you either buy the medicine or you feed them. I think that is more important to get the medicine and cook something very simple to eat ...

Those who faced financial hardships reported turning to family, friends, or nutrition assis-

tance programs for help with feeding their families. A couple of mothers reported facing issues related to social stigma for being enrolled in food assistance programs and thus preferred not seeking assistance from the government.

if you get help everybody in the neighborhood knows and they start talking that you husband doesn't work and that you cannot feed your family ... sometimes I prefer not to get anything ...

A few mothers reported participating in food assistance programs, which as described by the mothers included milk programs, box of bread program, community soup kitchens, and *Ciudad Portena*. Denial from or lack of access to a food assistance program or lack of access was cited as a problem by a few mothers. Mothers also stated that food assistance programs needed improvement, since some were too exclusive (need to have a certain number of children and certain amount of money to get food) and had inconvenient schedules for getting food.

...there is a schedule for us to get the milk, and it changes in every town, this morning I left too early so I could not get it from where they were giving it away ...

When asked about any additional information they would like to receive from programs designed to help mothers make healthy decisions about feeding their children, several mothers mentioned they would like to have more opportunities for educational workshops with other women on child nutrition, the benefits of certain foods, etc.

... it would be nice to learn more about feeding and nutrition for the kids and to know what foods are not good for them ...

Discussion

The present qualitative study explored mothers' child feeding practices and how food insecurity affects these practices among low-income, urban families in Buenos Aires, Argentina. The results indicated that mothers' child feeding practices, perceptions, and beliefs are influenced by food preferences, parental choices, work demands, financial concerns, family pressures, and issues of household insecurity.

Our findings revealed a wide scope of perceptions regarding their own child's weight, ranging from underweight to overweight. These results are consistent with research on the nutrition transition showing increased trends that under- and over-nutrition may co-exist in the same popula-

tion group^{9,18-26} and therefore both malnutrition and obesity may exist among children of low-income families in Argentina⁴. Despite the overall awareness of obesity as a health problem for children, several mother believed overweight in childhood is normal and will dissipate as the child ages. Others saw overweight as an immediate concern that could significantly affect a child's health even when they are young, but were unsure what these consequences were.

Focus group mothers reported that child feeding practices are often influenced by their child's food preferences. Many mothers discussed the difficulties in getting children to eat healthy food, particularly when it was not a food the child preferred. The issue of monitoring and controlling food was a significant subject for participants. For mothers whose children were perceived as underweight or "picky" eaters, monitoring was a practice used to ensure that their children were getting enough to eat with enough variety. While a few women believed that regulating children's food is unnecessary or harmful when excessive, other mothers thought monitoring and controlling food was important so that their children did not eat too much food or too many unhealthy foods. Many recognized the importance of their parenting practices in helping children develop healthy eating habits, such as exposing children to healthy foods, explaining the importance of eating certain foods, and serving as a role model. These findings are in line with that of previous studies documenting the importance of early food habits and the role of parents in fostering healthy eating habits in their children²⁷⁻³⁴.

Focus group mothers indicated that decision making about child feeding is often done jointly among family members under advice from an aunt, grandmother, or spouse. At times, family members were reported to place constraints on providing nutritious foods for children by bringing unhealthy foods into the home or not adhering to previously-established food regulations. These findings are in line with previous studies that show that familial relationships play a central role regarding child feeding practices as families are important social environments within which food-related behaviors among infants and young children are developed.^{27-31, 35-37}

For mothers who worked outside the home, the limited time spent with their children largely affected their ability to monitor and be involved in their child's eating. For parents who lacked or had limited work opportunities, financial constraints dictated the foods that could be pur-

chased and often limited the healthfulness of their choices. Many mothers reported the difficulty in purchasing produce because of the high price of fruits and vegetables. Regardless of work status, several mothers expressed concerns about not having enough money to buy food for their families, having children who frequently go to bed hungry, or having family members sacrifice eating for significant portions of time. These statements indicated that uncertainty about daily food availability plays a large role in the lives of low-income families.

Many mothers indicated that they did not have enough money to purchase food for their families, often leaving children or other family members hungry. School vacations were additional barriers to providing adequate food for the family since children are not at school, presumably receiving a meal there, and since some parents do not work during school holidays. Being unable to provide for their families led many mothers to feel helpless and guilty. For those families who also relied on medication, the economic choice was between buying food or medicine. Some families turned to relatives during time of financial hardship, while others relied on nutrition assistance programs.

Government nutrition assistance programs appeared to be an important resource for mothers; however, these programs appeared to evoke conflicting emotions for mothers in the study. Some were eager to utilize milk programs, box of bread programs, community soup kitchens, or the *Ciudad Portena* program to address their family's food needs. Yet for others, the social stigma of being enrolled in such programs was so great that it prevented them from seeking governmental help. Still others wanted assistance, but were denied access to the programs because of ineligibility or being able to conform to the program's reimbursement schedule. Many mothers mentioned a desire for the opportunity for educational workshops with other mothers on child nutrition. Food assistance programs may serve as a resource not only for the provision of food to families in need, but also has a valuable source of education and training for families that can build parenting capacity and skills in providing a healthy food environment. Other studies in Latin America have also suggested obesity prevention be incorporated into government nutrition programs, since providing food may be advantageous for the health of some low-income families but harmful for others by potentially inducing obesity^{8, 38-40}. In many countries in Latin

America, governments have recognized that the right of healthy eating and food security should be an obligation of the government to its people and not dependent on philanthropic actions. Within the context of food security, many scholars and governments in Latin America also agree that the right to healthy eating and food security should also take into consideration and respect the importance of preservation of cultural values related to food habits of population groups.

The study's findings indicate first the importance for public health interventions to address the health belief systems of low-income families. Nutrition programs should provide detailed explanations of the health consequences of both under- and overweight in children and the importance of proper nutrition and a healthy weight status. Families should also be taught the proper methods to identify if a child is healthy or unhealthy such as weight and nutrition intake, rather than solely by external observations of their child. Nutrition interventions should address parenting techniques that help mothers balance healthy choices with their child's food preferences. Understanding theories of moderation may be beneficial. Nutrition programs should also be cost- and time- effective to address the barriers many low-income families face in providing healthy foods for their families, including family pressures, work demands, and financial concerns. Normalization of government program utilization may be important for combating stigma associated with enrollment.

In conclusion, mothers' belief systems of health and nutrition, family and social influences, and food insecurity all play a significant role in child feeding practices among low-income families in Buenos Aires, Argentina. Public health interventions targeted at this population must address these cultural and social determinants of behavior and should account for both underweight and overweight that can exist, even within the same family. An important consideration for any public health intervention addressing food insecurity and the right to healthy eating is the importance of respecting and preserving cultural values related to food habits of population groups. This qualitative study provides valuable information on the barriers families face in creating a healthy food environment for their children. Nutrition education interventions implemented through existing governmental food subsidy programs seem to be a promising opportunity for empowering mothers to improve the health of their families. These methods could be

crucial for improving the health of children in Argentina and other Latin American countries with similar epidemiological profiles.

Collaborations

AC Lindsay, M Ferraro, A Franchello, RL Barrera, MMT Machado, ME Pfeiffer e KE Peterson participated equally in all stages of preparation of the article.

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References

1. de Onis M, Blossner M. Prevalence and trends of overweight among preschool children in developing countries. *Am J Clin Nutr* 2000; 72(4):1032-1039.
2. Duran P, Mangialavori G, Biglieri A, Kogan L, Abeya Gilardon E. Nutrition status in Argentinean children 6 to 72 months old: results from the National Nutrition and Health Survey (ENNyS). *Arch Argent Pediatr* 2009; 107(5):397-404.
3. Oyhenart EE, Castro LE, Forte LM, Sicre ML, Quintero FA, Luis MA, Torres MF, Luna ME, Cesani MF, Orden AB. Socioenvironmental conditions and nutritional status in urban and rural school-children. *Am J Hum Biol* 2008; 20(4):399-405.
4. Mercer R. The Argentinean paradox: the case of contradictory child malnutrition epidemics. *J Epidemiol Community Health* 2003; 57(2):83.
5. Cook JT, Frank DA, Berkowitz C, Black MM, Casey PH, Cutts DB, Meyers AF, Zaldivar N, Skalicky A, Levenson S, Heeren T, Nord M. Food insecurity is associated with adverse health outcomes among human infants and toddlers. *J Nutr* 2004; 134(6):1432-1438.
6. Bickel G, Nord M, Price C, Hamilton W, Cook J. *Guide to Measuring Household Food Security*. Office of Analysis, Nutrition, and Evaluation: United States Department of Agriculture; 2000.
7. Kendall A, Olson CM, Frongillo Junior EA. Relationship of hunger and food insecurity to food availability and consumption. *J Am Diet Assoc* 1996; 96(10):1019-1024.
8. Uauy R, Monteiro CA. The challenge of improving food and nutrition in Latin America. *Food Nutr Bull* 2004; 25(2):175-182.
9. Popkin BM, Gordon-Larsen P. The nutrition transition: worldwide obesity dynamics and their determinants. *Int J Obes Relat Metab Disord* 2004; 28(Supl. 3):2-9.
10. Olson CM. Nutrition and health outcomes associated with food insecurity and hunger. *J Nutr* 1999; 129(2S Supl.):521S-524S.

11. Matheson DM, Varady J, Varady A, Killen JD. Household food security and nutritional status of Hispanic children in the fifth grade. *Am J Clin Nutr* 2002; 76(1):210-217.
12. Oh SY, Hong MJ. Food insecurity is associated with dietary intake and body size of Korean children from low-income families in urban areas. *Eur J Clin Nutr* 2003; 57(12):1598-1604.
13. Freedman DS, Dietz WH, Srinivasan SR, Berenson GS. The relation of overweight to cardiovascular risk factors among children and adolescents: the Bogalusa Heart Study. *Pediatrics* 1999; 103(6 Pt 1):1175-1182.
14. Kursmark M, Weitzman M. Recent findings concerning childhood food insecurity. *Curr Opin Clin Nutr Metab Care* 2009; 12(3):310-316.
15. Ortiz LP. Health conditions for mothers and infants in Ceara. An assessment of the information system for mothers. *Rev Bras Estud Popul* 1990; 7(1):54-73.
16. Maxwell JA. *Qualitative research design: an interactive approach*. Sage Publications Applied Social Science Methods Series. V. 41. Thousand Oaks: Sage; 2005.
17. Eyler AA, Matson-Koffman D, Young DR, Wilcox S, Wilbur J, Thompson JL, Sanderson B, Evenson KR. Quantitative study of correlates of physical activity in women from diverse racial/ethnic groups: The Women's Cardiovascular Health Network Project—summary and conclusions. *Am J Prev Med* 2003; 25(3 Supl. 1):93-103.
18. Popkin BM. The nutrition transition and its health implications in lower-income countries. *Public Health Nutr* 1998; 1(1):5-21.
19. Popkin BM, Horton S, Kim S, Mahal A, Shuigao J. Trends in diet, nutritional status, and diet-related noncommunicable diseases in China and India: the economic costs of the nutrition transition. *Nutr Rev* 2001; 59(12):379-390.
20. Popkin BM. The shift in stages of the nutrition transition in the developing world differs from past experiences! *Public Health Nutr* 2002; 5(1A):205-214.
21. Popkin BM. Global nutrition dynamics: the world is shifting rapidly toward a diet linked with non-communicable diseases. *Am J Clin Nutr* 2006; 84(2):289-298.
22. Popkin BM. Global changes in diet and activity patterns as drivers of the nutrition transition. *Nestle Nutr Workshop Ser Pediatr Program* 2009; 63:1-10.[discussion 10-14, 259-268]
23. Popkin BM. Nutrition in transition: the changing global nutrition challenge. *Asia Pac J Clin Nutr* 2001; 10(Supl.):S13-S18.
24. Monteiro CA, Mondini L, de Souza AL, Popkin BM. The nutrition transition in Brazil. *Eur J Clin Nutr* 1995; 49(2):105-113.
25. Monteiro CA, Conde WL, Popkin BM. Is obesity replacing or adding to undernutrition? Evidence from different social classes in Brazil. *Public Health Nutr* 2002; 5(1A):105-112.
26. Monteiro CA, Conde WL, Popkin BM. The burden of disease from undernutrition and overnutrition in countries undergoing rapid nutrition transition: a view from Brazil. *Am J Public Health* 2004; 94(3):433-434.
27. Birch LL. Development of food acceptance patterns in the first years of life. *Proc Nutr Soc*. Nov 1998; 57(4):617-624.
28. Birch LL. Development of food preferences. *Annu Rev Nutr* 1999; 19:41-62.
29. Birch LL, Davison KK. Family environmental factors influencing the developing behavioral controls of food intake and childhood overweight. *Pediatr Clin North Am* 2001; 48(4):893-907.
30. Jain A, Sherman SN, Chamberlin LA, Carter Y, Powers SW, Whitaker RC. Why don't low-income mothers worry about their preschoolers being overweight? *Pediatrics* 2001; 107(5):1138-1146.
31. Wardle J, Sanderson S, Guthrie CA, Rapoport L, Plomin R. Parental feeding style and the inter-generational transmission of obesity risk. *Obes Res* 2002; 10(6):453-462.
32. Lindsay AC, Machado MT, Sussner KM, Hardwick CK, Peterson KE. Infant-feeding practices and beliefs about complementary feeding among low-income Brazilian mothers: a qualitative study. *Food Nutr Bull* 2008; 29(1):15-24.
33. Lindsay AC, Machado MT, Sussner KM, Hardwick CK, Kerr LR, Peterson KE. Brazilian mothers' beliefs, attitudes and practices related to child weight status and early feeding within the context of nutrition transition. *J Biosoc Sci* 2009; 41(1):21-37.
34. Lindsay AC, Sussner KM, Greaney ML, Peterson KE. Influence of social context on eating, physical activity, and sedentary behaviors of latina mothers and their preschool-age children. *Health Educ Behav* 2009; 36(1):81-96.
35. Birch LL, Fisher JO. Development of eating behaviors among children and adolescents. *Pediatrics* 1998; 101(3 Pt 2):539-549.
36. Birch LL, Fisher JO. Mothers' child-feeding practices influence daughters' eating and weight. *Am J Clin Nutr* 2000; 71(5):1054-1061.
37. Westenhoefer J. Establishing dietary habits during childhood for long-term weight control. *Ann Nutr Metab* 2002; 46(Supl. 1):18-23.
38. Uauy R, Albala C, Kain J. Obesity trends in Latin America: transiting from under- to overweight. *J Nutr* 2001; 131(3):893S-899S.
39. Uauy R, Kain J. The epidemiological transition: need to incorporate obesity prevention into nutrition programmes. *Public Health Nutr* 2002; 5(1A):223-229.
40. Uauy R, Diaz E. Consequences of food energy excess and positive energy balance. *Public Health Nutr* 2005; 8(7A):1077-1099.

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