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Opportunities to Strengthen Childhood Obesity Prevention in Two Mexican Health Care Settings

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Abstract

Background—The purpose of this study was to examine Mexican caregivers' perceptions of the role of primary care in childhood obesity management, understand the barriers and facilitators of behavior change, and identify opportunities to strengthen obesity prevention and treatment in clinical settings.

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Methods—We conducted 52 in-depth interviews with parents and caregivers of overweight and obese children age 2–5 years in 4 Ministry of Health (public, low SES) and 4 Social Security Institute (insured, higher SES) primary care clinics in Mexico City and did systematic thematic analysis.

Results—In both health systems, caregivers acknowledged childhood overweight but not its adverse health consequences. Although the majority of parents had not received nutrition or physical activity recommendations from health providers, many were open to clinician guidance. Despite knowledge of healthful nutrition and physical activity, parents identified several barriers to change including child feeding occurring in the context of competing priorities (work schedules, spouses' food preferences), and cultural norms (heavy as healthy, food as nurturance) that take precedence over adherence to dietary guidelines. Physical activity, while viewed favorably, is not a structured part of most preschooler's routines as reported by parents.

Conclusions—The likelihood of success for clinic-based obesity prevention among Mexican preschoolers will be higher by addressing contextual barriers such as cultural norms regarding children's weight and support of family members for behavior change. Similarities in caregivers' perceptions across 2 health systems highlight the possibility of developing comprehensive interventions for the population as a whole.

Index Terms

Mexico; childhood obesity; clinical settings; qualitative research; pediatric; behavior

Introduction

Overweight and obesity among Mexican preschool age children is prevalent, increasing, and of consequence. [1] In 2010, the Mexican Institute of Social Security (IMSS) conducted a nationwide survey in which the prevalence of overweight and obesity in children 5–9 years were 18.5%, and 16.9% respectively. [2] According to Mexico's 2006 National Nutrition Survey, the prevalence of overweight and obesity among preschool children was 16.7% using the International Obesity Task Force Classification System. [3, 4] Upward trends in obesity prevalence have also been observed in school-age children and adolescents at the national level and in all subpopulations. Though under-nutrition continues to be an important issue in Mexico among lower income groups, obesity impacts all economic groups and is increasing at greater rates within low-income than high-income populations. [5, 6] Overweight and obesity have immediate and long-term psychosocial and health consequences for children. More than 80% of overweight children reach adult age with overweight. [7] Potential health consequences include social stigmatization, increased risk of chronic conditions (i.e., cardiovascular diseases and diabetes) and reduced life expectancy, among other problems. [8]

Primary health care is a potentially pivotal setting for prevention and management of childhood obesity in Mexico. Regular contacts during childhood for immunizations and well-child visits allow both detection of elevated weight status in the child and offer opportunities for prevention and treatment. [9] Most preventive care for young children is provided during well-child visits, which offer opportunities for developmental assessment,

anthropometric measurement, screening tests, and parental health education .[10] Across insured and uninsured populations, an estimated 11,609,162 well-child visits and 27,073,979 nutrition-related visits for preschool-aged children occur annually in Mexico. Ministry of Health (MoH) guidelines recommend six routine primary care visits in the first year of life, every six months for 1–4 year old children and annually thereafter. [9] In 2004, the National Coverage Surveys carried out with children affiliated with IMSS reported that >84% of children <2 years old had one or more well-child visits .[11] The role of the parents in these visits is crucial to prevent or manage childhood overweight or obesity. While some studies have looked at health care providers' perceptions, little is known about parents' perceptions of the role of the health care system in obesity prevention. [12, 13] Furthermore, for effective health interventions, clinicians must learn about barriers and facilitators to behavioral change, parental readiness to change their families' behaviors for obesity prevention, and parental confidence and motivation to change. [14]

The purpose of this study was to examine perceptions of the role of the health care system in obesity prevention and treatment and barriers and facilitators to behavior change among caregivers of overweight and obese children receiving healthcare in two different health systems in Mexico City: MoH, a publicly funded health system serving people without social security, and Mexican Social Security Institute (IMSS), an insurance-based health system serving formally employed workers and their families. [15]

Methods

Participants

From July 2010 to June 2011, we conducted 52 in-depth interviews with adults accompanying overweight and obese preschool children receiving preventive or curative healthcare for problems unrelated to weight. The interviews took place in 4 primary care clinics managed by IMSS and 4 operated by the MoH. We purposively sampled children from different geographic areas of the city and of diverse socioeconomic status. In each clinic, nurses measured child height and weight, obtained verbal informed consent and invited caregivers of overweight children 2–5 years old to participate in an in-depth interview (overweight defined as body mass index (BMI) > 2 Z score of WHO growth standard). After obtaining written informed consent, study staff conducted interviews in consult rooms of clinics or scheduled interviews for a later date at participants' homes; each interview lasted on average 40 minutes.

Conducting the Interviews

Trained research staff conducted in-depth interviews in Spanish (the local language) by using a structured discussion guide developed by the project team and using standard interviewing techniques. We asked caregivers what recommendations they had received from their physician regarding their child's weight status. We also asked about their perceptions of their child's weight status, nutritional beliefs, feeding practices (including the familial context and influence of other caregivers), desired changes in the child's nutrition and physical activity status, and facilitators and barriers to making those changes. Interview questions used in this analysis are shown in Table 1.

Analysis

Each interview was audio-recorded and transcribed verbatim by research staff. Using a random sample of 15 interviews, three researchers developed a thematic catalogue of Spanish-language codes. Interviews were then coded using Atlas.ti Software, version 6.2, by a team of three Spanish-speaking psychologists at the National Institute of Public Health (Instituto Nacional de Salud Pública, Mexico) with experience and training in qualitative analysis. As a quality control measure, we estimated inter-coder reliability by selecting five interviews to be coded by all three coders and comparing results to ensure standardized coding processes. There was agreement among 92% of the codes. Through content analysis of the coded results, the research team developed conceptual matrices of main themes, subthemes and emerging themes including textual citations from the interviews. Results were analyzed independently by type of health care system (IMSS versus MoH) and then compared.

Results

We interviewed 52 caregivers, 32 affiliated with IMSS and 20 with the MoH.

Approximately 75% of those invited chose to participate; the primary reason for not participating was lack of time due to work schedules. Interviewees were predominantly mothers (83%); aunts, grandmothers and fathers also participated. Mean (range) age was 33 (20–66) years. Education level varied among participants; in the MoH sample 50% of interviewees completed primary school or less, 25% completed 9th grade, 10% completed high school and 15% at least some university or advanced technical training; whereas in the IMSS sample 18% of interviewees completed primary school, 25% completed 9th grade, 39% completed high school, and 18% at least some university or advanced technical training. In the MoH sample, 45% of those interviewed reported their occupation as homemaker, compared with 60% at IMSS. Among the children, mean (SD) age was 40.8 (12.9) months, 60% were female. All children were overweight or obese (BMI >2 Z score of WHO growth standard). As stated previously, this was an urban sample drawn from two health systems that serve socioeconomically different populations. While we analyzed the two samples separately, the results are presented together because caregivers' perceptions were consistent across health systems.

Parents' perceptions of the role of the health care system in obesity prevention

Table 2 lists the main themes regarding caregivers' perceptions of the role of the healthcare services in obesity, including illustrative quotes. Though a few interviewees were not aware of their child's problematic weight status prior to the study visit, the majority knew beforehand, either from a provider diagnosis or their own observations. Despite expressing concern about the child's overweight status, only a minority recognized that childhood obesity was an important health concern requiring behavior modification and clinical attention. Some interviewees, particularly those receiving care at the MoH, expressed that overweight was normal and would resolve on its own with growth. Others had been told by health personnel not to be concerned about overweight status because the child was tall.

These caregivers took their children to the clinic only when they were "sick," and did not consider abnormal weight status a reason to seek medical advice.

Most caregivers reported learning of the short and long-term consequences of childhood obesity from health personnel or from television, magazines, newspapers, and public health messaging. Many caregivers had received recommendations from health providers regarding nutrition, including limiting consumption of sugar-sweetened beverages and junk food and increasing fruits and vegetables. Several caregivers had previously sought clinical attention for their own weight or the obesity-linked health concerns of another adult family member, such as diabetes or asthma. In some instances, caregivers reported acting on prior recommendations from a health provider regarding their child's weight-related behaviors (physician, nurse or nutritionist). Few interviewees had received recommendations regarding their children's physical activity.

Facilitators and barriers to behavior change

Table 3 describes behavior change facilitators reported by interviewees. Many caregivers had already tried strategies to change their child's weight-related behaviors. Examples of these efforts included having more family meals at home with the television turned off, consistently offering vegetables as a core part of the meal, preparing a healthier dish for the overweight child, roasting or boiling rather frying or breading meats, drinking more water, limiting consumption of fast food, soda and snacks high in fat, reducing portion sizes, limiting TV time, or enrolling the child in a sports activity. Some caregivers reported routinely taking their children for walks, to play in the park or visit a sport or recreation center. Others intentionally modeled physical activity behavior by teaching children how to play sports.

The second part of Table 4 summarizes the most common barriers to behavior change expressed by interviewees in this study. As illustrated below, competing priorities and cultural norms in the home, work and community settings presented barriers to acting on concerns about child weight. Other family members (e.g. grandparents and fathers) violated recommended diets by offering the overweight/obese child sweets or junk food. Often, inlaws or other family members considered restricting the child's diet to interfere with growth. Caregivers often prepared food for the entire family, not specifically for the overweight child; preferences of adult family members - especially spouses - took precedence over adherence to a recommended diet. Child food preferences also shaped decisions over what food was prepared; in some cases children demanded soda and junk food and rejected healthier foods (fruits and vegetables, or water in place of sugar-sweetened beverages). Families' traditional consumption patterns favored multiple helpings and frequent consumption of breaded and fried foods. Varied work and activity schedules made it difficult to establish set family meal times. Caregivers perceived several influences on children's preferences for and consumption of unhealthful foods to be outside parental control, including the wide availability of junk food, television food advertising, cost, and psychological factors such as the stress of familial conflicts and the child's anxiety over entering kindergarten. Some caregivers mentioned that television viewing interfered with

mealtime routines, observing that children hurried when eating to return to watching television, or protested when the television was shut off during meals.

While some parents described physical activity as an essential component of a healthy lifestyle, most did not report that physical activity was a structured part of their preschooler's routine. Many caregivers did not consider additional activity necessary or desirable, or lacked sufficient time or appropriate space. Caregivers reported that children often preferred sedentary activities like puzzles or television. Cost was a barrier to enrolling children in activities such as swimming lessons; in general, physical activity programs did not accept preschool-aged children.

Opportunities in the Primary Care Setting

Though parents and caregivers sought clinical attention most often for non-weight related health concerns, for some interviewees the medical appointment had provided an opportunity for health providers to communicate that the child's weight status necessitated action. Existing concerns about tooth decay in children and obesity-linked diseases in family members provided motivation to limit sweets and sugary drinks. While most caregivers of overweight/obese children had not received nutrition or physical activity recommendations from health personnel, those who had hoped health personnel would provide specific strategies to promote healthy growth in their children. Caregivers wanted health providers to provide greater detail than the suggestion of "a balanced diet" or to "cut out the bad things." No interviewee had been referred to or participated in any program specific to childhood obesity. While some caregivers had not kept or read educational materials given to them during prior clinical visits, many of them, especially at IMSS, expressed interest in health education sessions from a physician or nutritionist on proper nutrition for healthy growth, recommended foods and appropriate portion sizes.

Discussion

In this study of caregivers of overweight and obese preschool age children in Mexico City, we found that most were aware of childhood obesity but only a few were concerned about its health consequences. Caregivers reported that contextual and environmental barriers in the home and community settings undermined behavioral changes. Facilitators and barriers to change were largely common across two different Mexican health systems: MoH, which serves a lower socioeconomic status population, and IMSS, which serves a more highly educated population.

To our knowledge, no previous studies have examined Mexican caregivers' perceptions of the clinical role in obesity treatment and prevention. Previous studies indicate misperceptions about child weight status, and/or lack of concern over child overweight/ obesity as a health issue among Latina mothers; [16-21] in most studies, beliefs that heavier babies are healthier than thin ones and that larger size is genetic and will self-resolve through growth are pervasive, [22–25] though one study suggests perceptions that overweight is desirable in childhood might be changing. [26] The results presented here add a clinical focus to the limited literature describing Mexican caregivers' perceptions of barriers and facilitators of physical activity, adequate nutrition, and child growth. [27, 28]

Studies in the U.S. that have explored factors associated with parental readiness to make behavioral changes found parental motivation to be an important predictor of treatment completion and treatment response in childhood obesity prevention interventions. [29, 30] Additional studies of provider-assessed parental confidence and readiness to change in the primary care setting have found clinician assessment of parental confidence and readiness to change to be associated with higher parent confidence in making overweight changes. [31] This study extends previous research in this area by highlighting several environmental barriers and facilitators that shape opportunities for motivating parents to change early childhood overweight behaviors in Mexican clinical settings. Other U.S. studies examining youth perceptions of overweight-related counseling suggest that counseling to prevent overweight in youth may be more acceptable to younger children; the findings presented here could inform efforts to make overweight prevention topics a routine part of preventive care programs focused on early childhood.

Our results suggest that insufficient information from clinicians about the importance of children's nutritional health prevents caregivers from making appropriate decisions regarding healthy feeding practices, exercise and seeking healthcare. As mentioned above, no interviewee reported referral to or participation in any program with childhood obesity as a central focus, and most caregivers of overweight/obese children in this sample had not received nutrition or physical activity recommendations from health providers. Interviewees from the MoH were more likely to have discussed overweight/obesity with a healthcare provider, but, according to parent report, recommendations were not sufficient to result in behavioral change in most cases. Further, cost is a factor in unhealthy diets: caregivers in both health systems reported that they did not have the economic resources to apply the information they did have in purchasing food for their children or engaging in physical activities.

Mexican pediatric preventive care programs address the majority of children's health needs and the population is accustomed to attending these services; however, nutritional status is not being addressed thoroughly through promotion and prevention activities. An implication of our findings is that reinforcement of comprehensive programs within the Mexican health system specifically for the prevention, control and treatment of childhood obesity would fill an important gap. If a formal program to address childhood obesity were created, screening and referral to such a program could be built into existing well-child visits in both systems. Based on caregivers' responses, medical consultations could be an opportunity to motivate and provide strategies for behavioral change. Previous intervention studies have also identified the primary care setting is as a potential venue to build caregiver confidence to overcome environmental barriers to healthful habits. [32] Practitioners can motivate family members to make changes by emphasizing the multiple benefits of health behaviors: for example, active play or regular meals taken as a family can provide multiple benefits outside of maintaining healthy weight, such as opportunities to interact with and promote the social and emotional development of the child. Our findings suggest that such structured efforts should address barriers to nutrition and physical activity in the home and community environment, and attempt to build the confidence of parent and caregivers to make behavioral changes and gain the support of family members.

Opportunities exist within both health systems to strengthen childhood obesity prevention: MoH nutritional guidelines, which already emphasize breastfeeding duration and the timing of introduction of solids, could include additional recommendations for childhood obesity screening and nutrition and physical activity counseling. Some participants interviewed at the MoH received "Estimulación temprana," an early intervention program focused on motor and cognitive development as part of a larger early childhood health initiative. [33] Given its focus on growth and development, this initiative could potentially integrate childhood obesity prevention themes. The PREVENIMSS program, which is the main preventive care strategy within IMSS includes "Control del niño sano" a well-child program providing health promotion and prevention activities, including health education; this represents another structure which could be strengthened to target childhood obesity. [9] These efforts would complement national policies to combat childhood obesity. In 2010 the federal government launched the National Agreement for Nutritional Health, which included as a 2012 priority to reduce the rate of increase in overweight/obesity amongst preschoolers to 2006 levels. [34] The broad objectives are to promote healthful habits (reducing consumption of sugar and fat in beverages and food), increase consumption of vegetables and fruits, and promote easy to understand food labeling and physical exercise.

The findings of our study regarding environmental barriers to behavior change highlight the need for intervention in multiple settings: primary care, home, childcare and community. Already, efforts to create combined intervention strategies within Mexican health systems are underway: the data analyzed here are part of formative research for a clinic-based intervention strategy, which is complemented by an existing pilot intervention to improve nutrition and physical activity environments within IMSS-managed childcare centers and in the homes of families receiving childcare services. If successful, the combined intervention will provide a novel and sustainable obesity prevention strategy that could be disseminated nationwide beginning through the IMSS childcare and clinical systems.

Limitations

The sample size and in-depth interview methods are not designed to determine the precise percentage of caregivers in each health system that holds a given belief about childhood obesity. As stated previously, this was an urban sample; rural populations may have different barriers to behavior change. Finally, the families agreed to participate in interviews after being invited by study staff: it is possible that their perceptions are non-representative. However, the 75% participation rate and similarity in perception across the two populations support the claim that these results accurately reflect the perceptions and challenges of most parents and caregivers of overweight and obese children in Mexico City and suggest that the barriers to behavior change are environmental and common across class and occupation.

Conclusions

Mexican clinical settings offer untapped opportunities to strengthen existing efforts for the prevention, screening and treatment of childhood obesity. The design of a clinical intervention to help families manage their children's weight must take into account the home and community settings. This study provides evidence that there are common challenges

faced by parents and caregivers in Mexico that justify the development of an intervention applicable in both the publicly funded and insurance-based health systems.

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TABLE 1

Sample Questions Used in Interviews of Parents and Caregivers

Physician Recommendations for Childhood Nutrition

What recommendations have you received from a health care provider?

Which recommendations have you followed? Why?

Which recommendations haven't you followed? Why?

Has anyone else made other recommendations for childhood nutrition? Who?

Caregiver Attitude Regarding Child's Weight Status

Did you know that your child was overweight?

How do you see your child? Do you perceive him/her to be overweight?

Have you made any changes to how you care for your child since you were told your child was overweight?

Child's Nutritional Routine

Who feeds the child?

Where does the child eat?

Who drinks soft drinks in the house? Which soft drinks? How many per day?

Do you use powders to give your water flavor? Which ones? How often?

Does your family drink flavored or sweetened milk? Do you add chocolate or sugar? How often?

Does your family drink plain water? In what quantities?

Does he/she have an established eating schedule?

What foods does the child prefer?

What foods does the child reject? Why?

If you could make a change in the nutritional habits of your family, what would it be?

Child's Physical Activity Routine

What do you think of physical activity for children?

Has anyone recommended any physical activity to you? Who?

Is there anyone in the family who plays sports or another physical activity? Who?

What are the limitations for your child in pursuing physical activity?

What games or sports is the child able to play?

Is there a space in your house where the child can play?

In the area near your home is there a place where the child can play?

What toys does the child play with?

What sports equipment does the child have?

Do you think it is necessary for the child to realize physical activities? Why?

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TABLE 2

Parents and Caregivers' Perception of the Clinical Role in Childhood Obesity

middleics of Interest	Represen	stative Quotes
Not all caregivers consider childhood overweight/obesity to warrant clinical attention/behavioral change	•	They have told me that my son is obese, but I am not very worried about it – as they grow their weight goes down; if he gets to be [my daughter's age] and he's still chubby well then yes I'll be worried.
Medical appointments provide an	•	When I bring him in for vaccinations, they scold me, 'why is your son so overweight? He's very overweight you have to bring him to nutrition and put him on a diet.'
opportunity to make caregivers aware or their child's weight status and the need to address it	•	I don't see her as so chubby At first I didn't think so, but the doctor weighed her and told me she was a little chubby and that was when I knew that she was overweight and I had to take care of her she could have health problems.
	•	I think that [a lack of orientation/education by health personnel] also influenced why we didn't realize - yes I saw that he was chubby, but I said 'well, it's that he's a baby.' What am I going to do? Make him exercise or something? Because I can't deny him food.
Caregivers expect the clinical setting to provide nutrition and weight-management	•	I asked the doctor if he'd send me to the nutritionist for an orientation [health education session], and he told me no, that I should just smiddle feeding him foods that I consider bad I think there's a lack of information we're not feeling well- oriented [to nutrition]
strategies	•	It was her [the doctor] that told us he was overweight and needed to lose weight, but she didn't give us anything concrete, like what to give him, she just told us to watch what he ate.
Many caregivers are already attempting behavioral changes due to clinician		My husband is diabetic, and they've told us that my son is overweight and that we should avoid breaded and fried foods. They've told me I should give him more proteins, chicken broth, fish, eggs and all thatthey took a lot of things [foods] away from my husband they gave him a diet and so I make the food like they tell him.
recommendations regarding their own weight-related health concerns or those of a family member	•	I look at myself and say, 'I don't want to see my children that way.' It's time to achieve and maintain their weight, have stable nutrition, we're going to do it look at her; she's the biggest in all of the kindergarten and the chubbiest.

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Common Facilitators of Behavior Change

middleics of Interest	Facilitators Representative Quotes
The majority of caregivers acknowledge child overweight status though not its consequences	• I worry that she will become obese; I don't want to see her fat, her father is chubby and his family is chubby, well, all of them. I don't want to see her that way. It makes me afraid she'll have some [health] problem; her paternal grandmother has asthma.
Many caregivers consider limiting sweets and sugar-sweetened beverages to be desirable	• [Candy] in great quantities principally they damage the teeth; more than anything that's why I limit them, because of their teeth • [Candy and sweets] are tasty, but they're junk foods, in addition to skimping on money
Many caregivers are aware of the benefits of physical activity and have sought out structured and unstructured ways to maintain an active lifestyle	 The boy likes it a lot, kicking a ball around, running, and my husband likes exercising, and then he [the son] imitates us doing sit ups and abdominal work outs or running. I would like him to swim, to exercise and to learn something for when he's older, or it could be dance, or gymnastics. Well, sometimes he goes out to play on the patio, he runs and runs or rides his tricycle.
Many caregivers are aware that television viewing is a sedentary activity that exposes their children to advertising	 Well, yes they get a lot fatter and the television influences their consumption a lot, because at times she's really calm and she'll just begin to watch and right away she wants it, because if she doesn't see it she doesn't ask us for it, in other words, she says 'oh I want to snack on this.' I feel it does him good to exercise, run, well at the very least he isn't sitting or watching television.

TABLE 4

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Common Barriers to Behavior Change

middleics of Interest	Barriers	Barriers Representative Quotes
Caregivers cook according to family preferences, not health needs	•	Vegetables, I don't think we even make them here, no one likes vegetables, and it's been really difficult to instill the habit of eating vegetables.
For some caregivers, cost is a barrier to following health recommendations	•	The pediatrician put him on a diet, but then I don't keep the diet because I don't have the means to follow it. I try to buy what I can there are some foods that are expensive; I buy what they tell me for him and then I don't have enough to buy other things.
Work schedules and multiple		Truthfully, [we eat together] only at dinner, or on the weekends because my husband works, I work, and my children eat with my mother who picks them up for me.
caregives create barriers to control of child feeding	•	My son turned two and we brought him to the doctor; he weighed 29 kg and 190 g so that was when we began to teach him how to eat because my in-laws gave him food and five minutes later they give him food again, and they don't give him fruit, they give him solid food, so my son eats it, and so it cost me a lot of work to teach him to eat on a schedule again.
	•	He drinks a lot of bottled juices and eats French fries a lot of sweets. When he's with his grandmother she is very permissive and buys him everything he asks for; she promotes his bad habits. She tells me "My role is to say yes to him, your role is to educate him; so don't say anything to me when I am with him."
Social and familial norms equate proper care with quantity and frequency of meals, and reward the image of the heavy child	•	I breast fed and I felt that my son was healthy while he was breastfeeding but then my mother in law came and gave him juice, and baby food since my mother-in-law is a little heavy, they told me "chubby children look cuter," and then my son got to the point where he couldn't walk he could walk, but my son was really fat.
,	•	I tell him, "I'm only going to give you one tortilla" - he sits down to eat really angry, and my husband hears me and scolds me, and he says to me, "why aren't you giving it to him, he's growing."
Physical activity and active play are not a consistent family norms		My children are restless So what I want sometimes, well, is to have them be a little calm, doing other thingsI can't get my little girl to be calm, not even with the television. So, that's one of the reasons [she isn't more physically active], the fact that well I don't want so much movement in the house.