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The Influence of Immigrant Status and Acculturation on the Development of Overweight in Latino Families: A Qualitative Study

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Abstract

Exposure to obesogenic environments in the U.S. may foster development of overweight in immigrants with greater acculturation. Few studies document mechanisms of the acculturation process from immigrants' own perspectives or describe implications on the children of immigrants. Focus groups and in-depth interviews were conducted with immigrant Latina mothers (N=51) examining mothers' beliefs, attitudes and practices related to early child feeding and weight. Focus group participants completing the Marin Acculturation Scale more closely identified with Latino culture, although the mean score (2.04, sd=0.59) was close to "bicultural". Analysis revealed seven themes when mothers compared lifestyles between their native countries and the U.S., related to changes in 1) diet, perceived food quality and availability, 2) food and eating practices, 3) breastfeeding practices, 4) beliefs about food, child feeding and weight status, 5) weight status of mothers and children, 6) physical activity and sedentary lifestyles, and 7) social isolation and support.

Keywords

overweight; immigrants; acculturation; Latino

INTRODUCTION

Obesity is one of the most alarming health problems facing Hispanic/Latino (hereafter referred to as Latino) populations in the U.S. today. National data indicate that 36.8% of Mexican Americans are obese, compared to 30% of non-Hispanic white adults (1), with Latino adults demonstrating nearly an 80% increase in obesity prevalence from 1991 to 1998 (2). Latest data from NHANES (2003–2004) show that there is a higher prevalence of Latino children (37%) considered at risk for overweight compared to non-Hispanic black (35.1%) and non-Hispanic white children (33.5%) (1). Among 6–11 year olds, the prevalence of Latino children at risk of overweight is as high as 42.9% (1). Recent research suggests that such disparities may begin at an early age. A study of a New York City WIC

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population found Latino preschoolers more than twice as likely to be at risk for overweight or overweight compared to other groups (3). Similarly, in a recent cross-sectional study of preschool children from 20 urban U.S. cities, the highest prevalence of obesity was found among Latino children (25.8%) compared to blacks (16.2%) or whites (14.8%), controlling for sociodemographic factors (4).

However, such statistics may be limited in their treatment of Latinos as one relatively homogenous group or exclusive focus on specific subgroup (often Mexican Americans), with findings all too often generalized to all Latinos. In reality, Latinos in the U.S. represent complex, diverse groups of individuals, differing in nativity, countries of origin, population distribution in the U.S., as well as acculturation level (5). All of these factors may differentially influence obesity risk within Latinos and are thus worthy of investigation. Acculturation level is traditionally defined as the degree to which the majority culture is adopted by a minority culture (6, 7). Recent literature highlights the multi-dimensional nature of acculturation, involving simultaneous maintenance and adaptation of cultural characteristics (8). The “immigrant health paradox” (also referred to as the “Latino health paradox) argues that Latino immigrants are generally healthier than the U.S. born population, exhibiting better health outcomes compared to other groups of similar socioeconomic status, including lower mortality risk and lower risk of low birth weight infants (9). In contrast, the acculturation hypothesis posits an overall disadvantage in health outcomes for Latino immigrants over time spent living in the U.S., suggesting any protective cultural buffering offered by immigrant status may dramatically diminish with acculturation, approaching the U.S. norm (9, 10). Such may be the case with obesity, as studies document evidence of higher rates of obesity within first and second generation immigrants (9, 11, 12). Recent research from the 2000 National Health Interview Survey shows living in the U.S. for 10 to 15 years versus 15+ years is associated with an increase of 0.88 and 1.39 BMI in immigrant subgroups of adults respectively (12). In Latino immigrants, studies document a four-fold greater risk of obesity in those who have lived in the U.S. for 15 years or more (11, 13).

Yet few studies to date examine the inter-generational effects of Latino immigrant status on children and most focus on adolescence. Results indicate Latino second generation adolescents are twice as likely to be obese than first generation residents (14), with a reduced risk of obesity among Latino first generation adolescents compared to later generations overall (15). As the seeds of obesity may be rooted in early childhood, this critical period warrants further research. Estimates suggest the American population will increase by 120 million over the next fifty years, with 80 million the direct or indirect consequence of immigration, among whom Latinos are the fastest growing group (5, 16). As 1 out of every 5 children in the U.S. will be living in a newcomer family, with one or both parents foreign-born (17), there is an immediate need to study the health status of children born to Latino immigrant parents. As such, future research should begin addressing the critical inter-generational components to alternative pathways of health acculturation.

METHODS

Study Setting

The Latina Mothers’ Child Feeding Practices (LMCFP) study examined mothers’ feeding practices and perceptions of infant weight status, children’s dietary intake and the development of overweight in preschool years. Furthermore, it assessed sociodemographic, sociocultural, and feeding environment influences. The study design utilized qualitative research methods conducted in three sequential phases: 1) focus groups, 2) in-depth interviews, and 3) development of a child-feeding questionnaire. This paper reports results from the focus groups and in-depth interviews related to the influence of immigrant status

and acculturation on the development of overweight in Latino families. Detail on the research design and other study results are described elsewhere (18–20).

Participants in focus groups and in-depth interviews 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 (21, 22). The sampling criteria included: Latino ethnicity, living in the greater Boston metropolitan area, speaking Spanish as the primary language at home and having delivered a live-born baby within the last 48 months. Two non-overlapping samples for the focus groups and in-depth interviews were selected by contacting every fifth woman from participants in the randomized control trial who met these criteria. All eligible mothers were sent recruitment letters and follow-up phone calls. A focus group guide was developed to identify: a) Latina mothers' perception of their own and their child's weight status and definition of overweight; b) child feeding practices related to overweight; and c) the role of sociodemographic, sociocultural and feeding environment influences on child feeding. The topic guide also probed mothers on comparisons of their lifestyles in their native countries to the U.S. and changes they may have experienced since immigrating related to diet and child feeding practices (see Table I for sample questions).

Data Plan, Management and Analyses

Qualitative Methods—Six focus groups (N=31) and 20 in-depth interviews were conducted over a six month period (September 2005–February 2006). Focus group sessions and individual interviews were 60–120 minutes in duration, digitally-recorded and conducted by a native speaker of Latino origin with extensive training and experience conducting focus groups and interviews with Latinas on health issues. In addition, a research team member was present at all focus group sessions to take notes. Focus groups were conducted at local community health clinics during after-hours and individual interviews were conducted at participants' homes. Analysis of focus group data revealed key themes related to physical activity and sedentary behavior, in addition to diet and feeding practices. The interview guide for the individual interviews was subsequently developed, following the format for focus groups but including new questions to obtain more in-depth information on these themes.

Qualitative analysis was conducted utilizing standardized methods (23–25). Verbatim Spanish transcripts with identifiers removed were translated to English by a bilingual, independent consultant. Transcripts from focus group discussions were reviewed 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 and new themes were added to the codebook. Qualitative data are presented in this paper using direct quotes from mothers to illustrate findings.

Quantitative Analysis—All participants completed sociodemographic questionnaires and focus group participants (n=31) completed the Marin Acculturation Scale, a 12-item measure previously validated for use in Latinos with questions entailing three domains: language use, media use and ethnic social relations (26–27). An acculturation score was computed by averaging across 12 items, each item on a scale of 1–5 (1=least acculturated, 5=fully acculturated). Previous research suggests that language use and preference may be the best possible measure of cultural integration and the most reliable shorthand measure, as it accounts for the greatest portion of variance of acculturation scales (28). Language use

also represents a modifiable aspect of an individual's behavior, possibly amenable to intervention, compared to other acculturation measures.

Descriptive analyses were conducted on sociodemographic and acculturation information. Proportion of time spent living in the U.S. was computed by taking the duration of years in the U.S. for each participant divided by age of the participant. Univariate regression analyses were conducted to examine independent correlates of acculturation score.

RESULTS

Descriptive Analyses

Table II reports sociodemographic and acculturation characteristics of study participants. Nearly all were foreign-born (94%), with 41% from Central America and 33% from the Dominican Republic. Participants had lived in the U.S. for an average of nine years, and their mean age was 32 years, with 2.5 children on average. Half were married and 35% obtained an educational degree beyond a high school diploma. Of the 49% of women who were employed outside of the home, mothers worked an average of 31.8 hours/week. Forty-seven percent of mothers reported a household income less than $20,000/year.

Focus group participants resided in the U.S. an average of 11.10 years (sd=7.81). The mean acculturation score was 2.04(sd=0.59), meaning participants more closely identified with Latino culture then American culture, although on average they were close to "bicultural" (score of 2.5). Proportion of years spent living in the U.S. was significantly correlated to acculturation score (r=0.67; p=<0.0001) (Table III), as were other covariates: duration of residence in U.S. (r=0.62; p=<0.0001), socioeconomic status (r=−0.54; p=<0.0001) and number of children (r=0.26; p=0.045).

Qualitative Results

Mothers compared lifestyles between their native countries and the U.S.. Seven themes were reported related to changes since immigrating in 1) diet, perceived food quality and availability, 2) food and eating practices, 3) breastfeeding practices, 4) beliefs about food, child feeding and weight status, 5) weight status of mothers and children, 6) physical activity and sedentary lifestyles, and 7) social isolation and support.

Theme 1: Diet, Perceived Food Quality and Availability

The majority of mothers described reporting that the food quality and availability of food in their native countries was more conducive to a healthy diet. Mothers related the naturalness of food, using such phrases as being able to "pick fruit from the tree" and waiting "until the chickens laid the egg". In contrast, mothers highlighted how foods in the U.S. were often frozen and not as fresh, as recounted by one mother:

> "…I think that here (in the U.S.) they use a lot of chemicals to everything, they put too many extra things, so the things last longer…but in our country it's only water, earth and the fruit has a nice smell even from far away, it has that aroma…"

Mothers were divided over perceived availability of food in the U.S. compared to their native countries. Some emphasized their ability to procure and eat more red meat and chicken in the U.S., while in comparison, others spoke of having family and relatives who grew food themselves or owned stores in their native countries, as described here:

> "…in Puerto Rico, (where) I grow up…I had the facility, because my father was a farmer and he grows the vegetables, fruits…we had our own chickens and we always had eggs and meat…it's not so easy to get the vegetables here (in the U.S.), like it was for us there…"

Increased variety of foods also changed for many families since immigrating to the U.S.. A few mothers discussed exposure to larger portion sizes, which they believed was partially responsible for development of overweight.

Theme 2: Food and Eating Practices

Mothers discussed changes related to food and eating practices since immigrating to the U.S., although the majority reported trying to maintain traditional Latin American meals, including preparing soup, fish, rice and beans for their families. In some cases, mothers described adults eating these foods, while children were more likely to consume American foods, in particular fast food. As mothers described:

> "…The fact that we are here (in the U.S.) it does not mean that we have changed as a person or changed my roots. The only thing is that you have to adapt to a new system…but from the door of your house nothing should change. You should be able to keep your own traditions and culture the same…"

> "…one thing is what you bring from your country, but your kids are here. My kids got here four years ago, and they are from here already…here are some meals that differ from my home's menu…when I cook soup they will eat it, but it is me that eats the soup really…"

Busier schedules and time pressures in the U.S. led most mothers to changing meal routines for themselves and their families. These mothers reported little time to eat three traditional meals a day, resorting to skipping meals, eating "on the go", and relying on leftovers and snacks in order to ease time pressures, practices they viewed as unhealthy.

Theme 3: Breastfeeding Practices

All mothers reported that their native countries promoted breastfeeding more than the U.S.. Mothers described the use of exclusive breastfeeding for several years and for those who had children before coming to the U.S., these children were breastfed for a longer period of time compared to children raised in the U.S.. As one mother explained:

> "…The practice has a lot of support from the Hispanic culture…we grew up with that. Many people don't do it now (here in the U.S.)…I learned this practice from my family, that I had to do it with my kids too. Because kids that had been breastfed are healthier and stronger, that is what people say…"

The majority of mothers believed breastfeeding rates were declining in the U.S., with demands of work influencing the decision to stop breastfeeding, but not in mothers' native countries where mothers stay at home. A few mothers described how the cost of formula prohibits formula-use in their native countries, while conversely, mothers often start using formula after living in the U.S..

Theme 4: Beliefs about Food, Child Feeding and Weight Status

Cultural beliefs about food, child feeding and weight status appeared to be undergoing a transition in the lives of most mothers. Mothers discussed the strong influence of Latino culture promoting the eating of a large quantity of food and children "finishing their plates". While family members' beliefs (especially grandparents) about child feeding appeared to still hold great influence, other mothers reported transitioning away from such beliefs. Some mothers described facing resistance from older relatives when they tried to feed their children less. Mothers described how Latino culture had instructed that providing a lot of food was to be equated with good parenting, as this mother described:

> "…it is all about pride…Latino's pride and competition, we can prove that we are good parents because we feed our kids well and that is what our culture was always teaching us…give them food…"

Although Latino culture emphasized the association of fatness with health, many mothers' beliefs about weight status were also beginning to shift after living in the U.S.. A few mothers recalled stories of relatives in their native countries being shocked by their American children being thin, despite American doctors confirming child's weight status as healthy. The majority of mothers spoke of learning after immigrating to the U.S. that these cultural beliefs had not been justified and fatness is not healthy, as explained here:

> "….in my country the people think that when a person is fat is healthy and it is not like that…if they see you slim they say 'oh, but you are sick, what happened to you, or you have AIDS or tuberculosis or something like this', but if you are fat, 'oh, she is healthy, she is fine'…"

Theme 5: Weight Status of Mothers and Children

Some mothers reported changes in their own and their children's weight status since immigrating to the U.S., highlighting related changes in food, exercise and physical activity. A few mothers believed it had been "easy" to stay slim in their native countries, spending less time thinking about weight, while some mothers described never seeing fat people before they came to the U.S.. Mothers were worried about changes in their child's weight and talked about "controlling" such problems, as this mother explained:

> "…that is why I think that we have to take care of that as soon as they get to this country, because they want to eat everything they see, because in their country they did not eat it. This is where the control has to start. My girl that just got here…she was 65 pounds and now she is weighing 83 pounds…"

Theme 6: Physical Activity and Sedentary Lifestyles

Mothers noted dramatic changes in physical activity and sedentary lifestyles between their native countries and the U.S., with exercise promoted more in their native countries. Possible explanations included warmer weather, more physical labor as well as more active forms of transportation in their native countries, as one mother described:

> "…We came from a country where people can go back and forth to work riding a bicycle. Here, you are always driving, (there) is less exercise here. Here, you spend a lot of time in cars, trains or buses. In my country, you are able to go and do the grocery shopping walking. People can move more naturally…"

Some mothers emphasized that their families watch more television in the U.S compared to when mothers were growing up, with many children watching several hours of television a day. Further, a few mothers believed changes in physical activity had affected their weight status, mental health and self-esteem.

Theme 7: Social Isolation and Support

The majority of mothers discussed increased social isolation as a result of competing time pressures since immigrating to the U.S.. Mothers often felt pressure to spend time outside of the house working to provide for their families, reporting that they felt similar to "robots", as these mothers explained:

> "…here (in the U.S.) time is money, if you want to provide something better you have to stay more time away from the house working…here is all running…you are on automatic…either you roll with the system or the system throws you away"

> "…over there is more time for you, like a normal person. Here you are a mother and an employee, that is all…"

Further, most mothers believed this sense of social isolation is exacerbated by having less social support in the U.S. compared to their native countries, with many not knowing their neighbors or having contact with friends or family, as described by these mothers:

> "…I have been living in the same building for 5 years and I don't know who lives upstairs, or across the street…"

> "…I don't have any friends here, I get back from work and I eat some something, and then to rest. In our country it does not matter even if you work a lot the schedule does not break down…you always have time to go visit your neighbor and talk…"

DISCUSSION

Study results reveal the extent to which Latino mothers and their families are leading lives of adaptation since immigrating to the U.S.. Quantitative results revealed that focus group participants more closely identified with Latino culture, although the mean score (2.04, sd=0.59) was close to "bicultural" (26–27). Qualitative results help illuminate the acculturation process, describing the dual forces which constantly shape mothers' lives and highlight Latina immigrant mothers' keen awareness of the impact of such changes on lifestyles.

Although quantitative research documents an increased risk of overweight for immigrants with greater acculturation (9, 11–15), this study describes the specific processes of acculturation which may influence the development of overweight. Mothers identified changes in dietary quality and intake, physical activity and rising sedentary behaviors, factors previously associated with acculturation and development of overweight (29–34), as well as additional changes since immigrating in eating practices and routines, breastfeeding, cultural beliefs about food, child feeding and weight status, time pressures and lack of social support networks.

Study results corroborate previous research highlighting the negative impact of acculturation on diet of Latinos. Many mothers described ready access to fresh fruits and vegetables in their native countries, although availability of such foods decreased in the U.S.. Mothers further described how their lives had become increasingly busy and complex, leaving little time for preparing foods, thereby making the allure of convenience foods, often which are unhealthy, more appealing. Such findings fall in line with recent research showing that highly acculturated Latinos eat fewer servings of fruits and vegetables per day compared to low acculturated Latinos, non-Hispanic whites and non-Hispanic blacks (30, 31). Meanwhile, research suggests that some Latinos may have a tendency toward over-consumption of certain foods, including protein, sugar, carbonated beverages and fat, which may vary based on acculturation or country of origin (29, 31). In fact, recent analysis of NHANES (1988–1994) found parent's exclusive use of Spanish associated with differences in energy, protein, sodium, and folate intakes and percentages of energy from fat (35). Greater consumption of convenience and fast foods as well as salty and high fat snacks have also been associated with longer duration residence in the U.S. (31, 36–39).

Results related to changes in food and eating practices also highlight the importance of breastfeeding for the Latino culture. While national level data shows that Latinas have higher rates of in-hospital breastfeeding initiation compared to white, non-Hispanic women (73% compared to 69.5%) (40), previous research suggests an inverse association between breastfeeding initiation and duration based on acculturation within Latinas (41–46). In

accordance with such findings, an overwhelming majority of mothers in this study believed breastfeeding practices were declining in the U.S. compared to experiences in their native countries. Changes in breastfeeding practices are not only important for infant health, but critical in light of research suggesting a possible link between breastfeeding and risk of overweight later in life (47).

Studies examining the influence of acculturation on physical activity represent a relatively new, emerging area of investigation. A few studies report less exercise and overall inactivity among foreign-born immigrants (15, 33–34), especially women (32). Mothers in this study described various factors contributing to a lack of physical activity in the U.S., including colder weather, less walking for errands and greater reliance on transportation, as well as increased television use. Such reports are in accordance with previous studies documenting the relationship of factors of the built environment, including transportation use and development of overweight (48), as well as the positive relationship between television use and increased risk of child overweight, even as early as preschool age (49–52). For minority and low-income communities, evidence shows adverse effects of the built environment related to diet and physical activity being magnified by crowded streets, lack of outdoor play spaces, limited access to fresh and healthy food, and substandard housing (53–54).

Lack of personal time and increased social isolation due to competing demands of work and busier lives in the U.S. appeared as a strong influence on diet, as well as less time for families to participate in physical activity. Review of previous research indicates that as the number of women in the workforce and single-parent families increases, the value of a convenient diet is increased (55). Mothers also expressed feeling a lack of social support in the U.S., following national surveys documenting the stronger role of family in immigrants' native countries (56). Previous studies also suggest an association between social support and dietary quality. Among Mexican-Americans, women with intermediate/low levels of social support who had grown up in the U.S. had poorer diet quality compared to those who had spent their childhoods in Mexico; among those with high support, there was no such difference (57). Combined with qualitative results revealing immigrant mothers feel increased social isolation in the U.S., it is likely that eating practices may be influenced more so by bodily necessity rather than the social experience of sharing food and building relationships, as mothers may have experienced in their native countries.

CONCLUSIONS

Findings from our study are relevant to the broader context of public health practice and research focused on understanding and intervening on the dramatic increases in child obesity. Among low-income preschool children in the U.S., Latinos have the greatest prevalence of at risk and overweight compared with other racial/ethnic groups (1), despite higher rates of protective behaviors such as breastfeeding (45, 47). A growing literature suggests that maternal cultural beliefs about child feeding and weight status may shape mothers' caregiving practices and can serve as potential barriers to prevention and treatment of child obesity (18–20, 58–59). Multiple socio-contextual influences driving the incidence of obesity in pre-school Latino children (18) may in some sense reflect the larger immigrant health paradox in this population group (9). Despite evidence that some health behaviors and outcomes are better among immigrants compared with others of similar socioeconomic status, the process of acculturation appears to erode this relative advantage (9–12). Thus, however expansive the conclusions drawn through quantitative studies, qualitative approaches are needed to enrich our understanding of trends and associations by providing a more nuanced focus on experiences underlying the *process* of obesity development. Immigration and acculturation are also fundamentally a question of process, involving cultural transition, translation and adaptation. Informed by research that helps identify

beliefs, attitudes and practices related to the development of child obesity, more culturally-appropriate health interventions which consider the full range of influences affecting Latino immigrant families can ultimately be designed.

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Table 1

Sampling of Prompting Questions Used in Focus Groups and In-Depth Interviews

Comparison of Diet between Country of Origin and U.S.
♦ Do you think you would feed more “healthy” foods to your child here or in your native country?
♦ In what ways has your diet changed by moving to the US and why do you think this is the case?
Cultural Influence of Mothers’ Native Country Compared to the U.S.:
On Diet and Child Feeding Practices
♦ In what ways does the culture of your native country influence the way you and your children eat?
♦ Do you have specific traditions around foods---special recipes, kinds of foods you eat, how to prepare them?
♦ How have you changed your feeding practices since coming to the U.S. if at all?
♦ What does eating like an “American” mean to you?
On Breastfeeding Practices
♦ How does the culture of your native country relate to your decision to breastfeed?
♦ How is breastfeeding encouraged or not encouraged in your culture?
♦ How does this compare to here in the U.S. and why do you think so?
On Physical Activity/Exercise and Sedentary Habits
♦ How important is exercise in the Latino culture?
♦ How do you compare the exercise you did in your native country to what you do now in the U.S.?
♦ How does television fit into your life/your culture?

Table II

Sociodemographic and Acculturation Related Characteristics of Study Participants

	Mean (SD)	Percentage (N=51)
Age	32.05 (min 23-max 44)	
Marital Status (married)		51% (26)
Education (>high school)		35% (18)
Foreign-born		94% (48)
Country/Region of Birth		
Central America		41% (21)
Dominican Republic		33% (17)
South America		8% (4)
Mexico		6% (3)
United States		6% (3)
Puerto Rico		4% (2)
Spain		2% (1)
Duration Years in U.S	9.04 (4.45)	
Proportion Years in U.S[1]	0.35 (0.26)	
Employed		49% (25)
Work Hours (total)	15.61 (17.8)	
Work Hours (those who work)	31.84 (11.03)	
Household Income		
<$20K/year		47% (24)
Don’t know status		22% (11)
Number of People Living in Home	4.58 (1.71)	
Number of Children	2.51 (1.35)	
Marin Acculturation Score[a]	2.04 (0.59)	

[a] Focus group participants only (N=31)

Table III

Univariate Correlations of Sociodemographic Characteristics with Marin Acculturation Score[a]

Correlate	Unadjusted Correlation Coefficient r (p value)
Proportion of years living in U.S	0.67 (≤0.0001)
Duration of years in U.S.	0.62 (≤0.0001)
Education (continuous)	0.018 (0.89)
Household income (continuous)	−0.54 (≤0.0001)
Age	−0.18 (0.18)
Hours work/week	−0.02 (0.88)
Number of children	0.26 (0.05)

[a]Focus group participants only (N=31)