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CONTEXTUAL AND CULTURAL INFLUENCES ON PARENTAL FEEDING PRACTICES AND INVOVLEMENT IN CHILD-CARE CENTERS AMONG HISPANICS

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ABSTRACT

Background: Hispanic preschool children in the United States are at greater risk for obesity compared to non-Hispanic whites. The objectives of our study were to explore two factors that may be important for obesity prevention in young children: 1) precursors and contextual influences on parental feeding and 2) parental engagement within the child-care setting food environment.

Methods: Four focus groups (n=37) were held with Hispanic parents of preschool-aged children at two child-care centers. Guiding questions focused on factors that influenced what and how parents feed their child, awareness of the child-care center feeding environment, and current involvement in the child-care center. Themes were coded for using NVivo10. Content analysis was used to analyze final themes.

Results: Participants' childhood experience was found to influence feeding practices. Many of them shared similar childhood stories of having the "rule" to finish your plate. However, they reported using different feeding practices with their own children. The children's grandparents' indulgent behaviors were described as interfering with healthful dietary changes in the home. Husband's food preferences also influenced what was served in the home. The participants reported wanting to be more involved in the child-care center but time was presented as the main barrier. The participants reported that the child-care feeding environment did have influences in the home. It was evident that the participants were aware of healthful behaviors.

Conclusion: Cultural and environmental factors influence parental feeding and involvement in the child-care setting. Using the socio-ecological model might provide more understanding to the different levels of influences on parental feeding.

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PREFACE

This thesis was written to comply with the University of Rhode Island graduate school Manuscript Thesis Format. This thesis contains one manuscript: *Contextual and cultural influences on parental feeding practices and involvement in child-care centers among Hispanics.* This manuscript has been written in a form suitable for publication in Childhood Obesity.

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CHAPTER 1

Contextual and cultural influences on parental feeding practices and involvement in child-care centers among Hispanics

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Background: Hispanic preschool children in the United States are at greater risk for obesity compared to non-Hispanic whites. The objectives of this study were to explore two factors that may be important for obesity prevention in young children: 1) precursors and contextual influences on parental feeding and 2) parental engagement within the child-care setting food environment.

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Conclusion: Cultural and environmental factors influence parental feeding and involvement in the child-care setting. Using the socio-ecological model might provide more understanding to the different levels of influences on parental feeding.

Introduction:

Obesity among preschool-aged children in the United States (US) has nearly tripled over the last 30 years.[1] The most recent national data (2011-2012) show that 8.4% of children between the ages of 2-5 are obese.[2] Obesity is of great public health concern given that children overweight by age 5 are more susceptible to obesity later in life.[3] The ethnic disparity in the prevalence of obesity in the US is clear, whereby 17% of Hispanic children ages 2-5 are obese compared to 3.5% of their white non-Hispanic counterparts.[2] That is five times greater than white non-Hispanic counterparts and almost double the national average among this age group.[2] This is alarming given that Hispanics are now the fastest growing and largest minority population in the US.[4,5] It is expected that by 2050, they will represent 29% of the US population[5]. The Academy of Nutrition and Dietetics cites that preschool age is a critical period for obesity prevention as children at this age are more likely to change behaviors compared to older children.[6] Therefore, early prevention of obesity is critical among Hispanic populations.[7]

Childhood obesity is complex and can be attributed to many different factors, influencing energy balance. Parents play a critical role in the development of dietary behaviors in young children.[7-13] Overall, evidence suggests that controlling feeding practices (restriction and pressure to eat) can negatively impact children's eating behaviors and weight status. [14-17]Although much of the literature has focused on white middle-class families, some studies have found that feeding practices may vary by socio-economic status and ethnicity. [18,19] For example, food insecurity, an indicator of socio-economic status[20] has been associated with maternal reports of using

compensatory feeding practices, that is, giving children extra food or more energy-dense foods such as soda[15], although research is limited. Similarly, some studies have found that Hispanic parents are more likely to engage in permissive and indulgent feeding practices during meal times compared to other racial and ethnic groups.[18,21-24] These feeding practices are in turn significantly associated with greater body mass index in Hispanic preschool children.[18,19] A further understanding of precursors to parental feeding may help inform future interventions to improve healthy eating among Hispanics.

Others have not used the socio-ecological model to understand the different levels of influences on parental feeding.[25] Recent findings from an intervention designed to explore low-income parent's willingness to adopt healthy feeding practices, found family resistance, cost, food preference, and habit as barriers to healthy parental feeding practices[26]. It appears that different social and environmental factors influence parental feeding, and can be intervened upon to improve dietary behaviors[27]; yet how these factors influence parental feeding remains largely unexplored, in particular among low-income Hispanic populations. In addition, exploring how feeding in the home environment and child-care environment influence one another is of importance as about half of the 60% of children in the US at the age of 4 who are enrolled in child-care identify as Hispanic[28] and spend time in both of these environments.

While understanding the environmental and cultural influences on parental feeding is crucial, it is also important to explore how to engage with Hispanic parents of preschool children. Although some interventions with Hispanics have tried to

involve parents, they have not been entirely successful.[29] Other interventions with preschool-aged children have not actively involved parents at all.[7] Therefore, it is important to find the best way to engage parents in addition to exploring what topics would motivate them to become engaged. A review conducted by Larson et al., concluded that child-care settings provide an opportunity to promote healthful eating behaviors; however, in order to improve the nutritional quality of the foods provided, nutrition education, and mealtime practices, we need to further understand how parents engage with their children during meal times.[30]

To help inform future obesity prevention efforts, cultural and environmental influences on parental feeding and involvement in child-care settings need to be better understood.[31,32] With this information, efforts can be appropriately tailored to the target population's needs. Therefore the goals of this exploratory qualitative analysis were to: 1) explore precursors and contextual influences on parental feeding and 2) explore ways to engage parents within the child-care setting food environment.

Methods:

Key informant interviews with day care directors

The Rhode Island Department of Education provided a list of 6 child-care centers that served primarily Hispanic families. All 6 centers were contacted and only four of the directors responded. The four directors were then interviewed at each of the child-care centers in order to learn about the target population and current nutrition policies and practices in their center. All agreed to participant and consent forms were reviewed and signed by all directors at each location. All interviews were digitally recorded.

Participant Recruitment

Recruitment flyers were placed in all four centers with contact information for those that were interested in participating. Drop-off and pick-up hours were designated as high volume hours by the directors, thus the independent researcher (NM) actively recruited participants during this time. Caregivers were approached by NM and asked if they would like to participate in a parent group discussion regarding healthy eating and involvement in the child-care center. Two possible dates and times for the focus group were offered to each participant. Recruitment lasted approximately four weeks. After four weeks, enough participants were recruited from only two centers given the difficulty recruiting at the other two centers. Eligibility criteria for participants included: 18 years or older, a child between the ages of 2-5 enrolled at the day care, and self-identified as Hispanic/Latino ethnicity. Approximately a total of 60 participants between both centers were approached. Of those, 37 participated between the four groups held at the two centers. The remaining chose to not participate or did not attend the focus group even though they registered. A $35 incentive to a local super market was provided for their participation.

Setting and investigators

Four focus groups were conducted with parents of preschool-aged children enrolled in child-care centers that predominately served Hispanic families in Cranston and Central Falls, Rhode Island. Both sites provide breakfast, lunch, and snacks for the children per the Child and Adult Care Food Program guidelines which provides facilities nutritious foods as well as nutrition guidelines for meals served in child-care centers.[33]

The focus groups were conducted in either English or Spanish depending on the language preference for the majority of the group. All participants had to speak and understand Spanish and/or English if the focus group was held in that language. The independent researcher (NM) moderated the focus groups in English. The principle investigator (AT) moderated the focus groups in Spanish. The data analysis process was led by NM. Our study was reviewed and approved by International Review Board at the University of Rhode Island, Kingston, Rhode Island.

Moderator Guide

The content of the moderator guide used to lead the focus group discussions was informed by the key informant interviews with directors, literature review, and from discussions with study investigators. After multiple revisions, the questions were pilot tested with 8 participants in August 2013 at a local clinic in Providence, RI. The participants recruited for the pilot test were of similar demographics as the target population for our study. Moderator questions were then revised, reviewed again by the research team, and then finalized. Once finalized, the moderator guide was translated into Spanish for the focus groups that were to be conducted in Spanish. The moderator guide (**Table 1**) focused on four domains: 1) factors that influence what and how parents feed their child, 2) awareness of the child-care center feeding environment, 3) awareness of healthy behaviors and 4) current involvement in the child-care center.

Data Collection

Four focus groups with a total of 34 mothers, two grandmothers, and one father (n=37), were held at the two participating centers. The first two focus groups had 11 participants each. A total of nine participated in the third and six participated in

the fourth. Two researchers participated in each focus group, one as a moderator, and one as the assistant moderator. Focus groups were moderated by trained, bilingual researchers. The assistant moderator took notes, operated the digital recorder, and provided logistical support. All focus groups were conducted in the early evening (4.30-6 pm) and child-care was provided for the children in a separate room. The facilitator began each group by emphasizing the purpose of the focus group, which was to gather information on "parental involvement in healthy nutrition programs in the center and the factors that influence how and what they feed their child". During the focus groups, open-ended questions were posed to stimulate discussion. The focus groups were conducted around a large table to allow for the assistant moderator to observe participants. Consent forms were reviewed and signed by the participants prior to the beginning of each focus group. Each focus group was digitally recorded and lasted approximately 60 minutes.

After each focus group, each participant was instructed to complete a brief demographic survey. Questions included: age, race/ethnicity, level of education, relationship status, number of children in the household ages 2-7, and employment status. A total of 36 surveys were collected, one participant chose not to complete the survey.

Data Analysis

The independent researcher (NM) and AT met after each focus group to discuss initial findings and impressions. The two English focus group audio recordings were transcribed verbatim by two trained undergraduate research assistants. The remaining Spanish audio recordings were translated and transcribed verbatim by a trained staff member. The electronic transcripts were then imported into NVivo (QSR)

version 10. NVivo is a software program that assists in the organization of qualitative data for further analysis. First all transcripts were read and reviewed by NM who was trained in qualitative data analysis and initial concepts and themes were identified[34]. Then structural coding was used to categorize the data. Using the moderator guide as a starting point, questions and key phrases were used as structural codes[35]. With these codes, the transcripts were systematically reviewed. For example, the first structural code was*: parents are aware of healthful behaviors* and *parents are aware of the food served in child-care.* Using this code, the transcripts were reviewed and evidence that supported this was then coded for that particular code. During the initial coding process, several themes that emerged included: *current and family health concerns influence how parents feed their child, family,* and *culture and childhood experience influences what and how parents feed their child*. Additional themes emerged from the data and were added to the existing themes. These additional themes included: *Spouse preferences and grandparents indulgent behavior make dietary changes in the home difficult, cross-over environment influences on the child's feeding environment.* In the second phase of the analysis, concepts and themes were reviewed and discussed with AT and her research team. Subsequently, a second pass review of the transcripts was completed by NM in order to ensure that all of the a priori and emergent themes were captured. In the final phase, themes were again reviewed, modified, and condensed as needed.

Descriptive statistics were computed from the survey data, using SPSS version 22(IBM, Armonk, New York).

Results:

The following results reflect data from 36 surveys. Thirty-three identified as mothers, two identified as grandmothers and one identified as the father of the child. The majority of the participants were female (n=35). All of the mothers and grandmothers self-identified as Hispanic or Latina. Almost 31% identified as Dominican, 11% as Colombian, 11% as Guatemalan, and 6% as Puerto Rican (**Table 2**). The remaining chose not to specify their ethnicity. More than half of the participants (57%) were not born in the US but had been living in the US for an average of 14.5 years. Seventy-five percent of the participants were over the age 26 the remaining were between the ages 18 and 25. Thirty-nine percent reported being married and 36% reported never being married. The remaining were separated, divorced, widowed, or chose not to answer. One quarter of the participants reported having only a high school degree and 36% reported having a college degree or higher. The qualitative results are presented according to the moderator guide domains. Additional themes are incorporated within the each of those domains.

Factors that influence what and how parents feed their child

Childhood experience

Participants' childhood experiences influenced how participants fed their child. Many of them described that as children growing up in their household, they weren't allowed to waste food. Many of them shared similar stories where the "rule" was to finish your plate, even if that meant having their parents use physical force. The participants shared that the fear of "wasting food" was somehow ingrained in them. Although the participants acknowledged how their parents fed them as children, many

made a conscious decision to use different feeding strategies as their own parents. For example:

"(My dad), he made us eat it and if we didn't eat it, he would spank us. But I learned that with my daughter I don't have to be like that."

This however could lead to feelings of guilt of not eating all of the food that they served. For example:

"Sometimes I feel guilty because I don't want to push her to do anything she doesn't want to…I say sometimes am I horrible that I'm not pushing her to eat her plate? Like oh my God, I'm wasting food! You know?"

One mother even expressed how she would end up eating the leftovers her children would leave on their plates:

"I have to be honest because [although I don't do this anymore], last year I was at the point where my kids had to sit there and eat their food, because in my home, we were brought up that wasting food was a very bad thing, you know, when others didn't have something to eat, you were just throwing it away…But I noticed I would end up eating all the leftovers, and that wasn't doing me any good."

Family health concerns

Family health concerns, related to chronic disease, influenced what these participants fed their children. The most common health concern was diabetes. Although diabetes was discussed by most participants, obesity as a cause of diabetes did not come up. Regardless, their concern of having their child develop a chronic

disease influenced what they served. For example, some participants mentioned not allowing sweets in the home environment or restricting how much and how often the children could have sweets. For example:

"The sugar and the diabetes because my mom has diabetes so that's kind of like a concern in my family so I try to watch out what my kids are getting as far as like sugary foods."

and…

"…When people give me goodie bags I don't see it because I'm almost throwing it out the window…I just don't want my children to be diabetic like me. I wasn't born diabetic… if I could prevent it now that's what I want."

Husband's food preferences

Husband's food preferences influenced what was served to the child in the home, and often these preferences were reported to interfere with creating a more healthful food environment for themselves and their children. For example:

"My meals consist of rice, beans, and meat because that is what my husband likes to eat."

In particular, mothers mentioned how their husband was often modeling the wrong behaviors, such as drinking soda, in front of their children. For example:

"My husband is a soda fanatic…it was a struggle because I wouldn't let the girls drink it and they would want it, but every time they would see him with a glass of soda,

if he wasn't looking, they would run and try to grab a sip... it's harder when everyone else around you is not on the same page."

Time and work schedules

Both lack of time and busy work schedules influenced what and how the participants fed their children and families. The consensus was that home-cooked meals required a lot of time, and there just wasn't enough time in the day to fit in cooking. For example:

"You've got to do something quick. And when you do something quick, it's usually not the full course meal…I have to cook on the days that I know I'm off that night because it's…a lot of work."

When describing how time and work schedules influenced their diets in the home, the participants associated less healthful eating habits with pre-prepared foods. For example:

"…if I get in late from work…I find whatever is in the kitchen. I cannot lie, we are all human and sometimes we do not eat correctly but sometimes I give them something fast. I get out the chicken nuggets from the freezer, or potato puffs and I put them in the oven."

Culture/background

A recurrent theme throughout the focus groups was how culture and bi-generational differences between the primary caregivers (mothers in majority of cases) and grandparents influenced what their child eats. The mothers in all of the focus

groups expressed their struggle with their own parents when they fed their child non-traditional foods. One mother stated:

"When you take them to WIC, the nutritionist tells you what's healthier… so I go by [what she tells me]. My mom doesn't think I should because she goes back to 'oh she needs rice and beans'".

All of the mothers agreed that grandparent's indulgent behaviors were an issue for them as it contradicted their efforts to promote healthy eating habits for their child. For example:

"When my son goes to visit my parent's house, you've got the cookies, the juice, the cereals, the chocolate milk, the Oreos, whatever he wants, he gets. There's never a limit. So that's my struggle.

and…

"At los abuelos (grandparents)…it's horrible. I would have to tell them to stop giving him candy and junk food before meals...so basically we also have to be on top of other people letting them know, to avoid all that."

Not indulging their grandchildren was taken very seriously and was even called abusive because eating sweets should be part of being a child. As one mother stated:

"My family said that I was abusing her because I wouldn't let her eat sweets. I wouldn't let her eat doughnuts… I wouldn't let her drink soda. And they said that it wasn't fair, that every child should be able to have those kinds of things…"

Awareness of the child-care center feeding environment

Overall, the participants were well aware of the center's feeding environment and felt the foods being served were healthy. The participants also acknowledged that the child-care center feeding environment influenced their home food environment. Many of them even suggested monthly workshops either in the evenings or weekends, where they could engage in hands-on activities with their child to help reinforce healthful messages taught at the center. They also felt that learning about nutrition facts and age-appropriate portion sizes would be beneficial information that could be provided by the center to help continue healthful eating in the home. They discussed making healthful dietary changes in the home, but acknowledged that there were external influences on their child's dietary preferences.

The participants reported that the child-care environment had both positive and negative influences. Some reported that even though they did not purchase juice for their household, as a result of seeing other children drinking juice at the center, their child would ask for juice in the house and then would buy it. For example:

"She started going to day care where there were older kids, and they drank juice. You know she sees them, and she wants juice…and so then I buy juice."

They voiced frustration over external influences and how this could lead to conflict around food even though they try to encourage healthy behaviors at home. For example:

"…And even if I treat her right and she sees another kid doing something, she'll copy that behavior. So like as far as sugar and juice, I don't give her juice, but she's seen one person and that's my fight right now."

However, the child-care center also positively influenced what was eaten at home. For example:

"*At home when my son sees it (broccoli), he's like 'I want that', and I'm like you eat that now? And he's like 'Yeah they gave it to me at school'."*

It was evident that the participants were also aware that their child would eat certain foods at the center and not in the home. They attributed this to peer influence. Many of the participants agreed when one of them stated:

"I think my daughter eats better here (child-care center) because she sees other kids eating. My daughter is an only child…I go home and I cook basically the same thing as here and she won't eat it. But then I ask the teacher if she ate yesterday and she's tell me 'Yeah! She ate well!' So I guess it's probably because she sees the other kids eating."

They felt that having a healthy child-care center would influence their family choices and home environment. One participant responded: *"...start doing it in the day care, it will be easier for us to give them those foods without them saying ew! Or no! I don't want it!"* when asked how they felt about the center serving more healthful foods like fruits and vegetables. Despite the positive aspects related to healthy changes at the center, some were not so enthusiastic; some felt that "healthy foods" were not "heavy" enough to sustain their child throughout the day. Some even believed that

their child would lose weight and be more susceptible to getting sick, as one participated stated:

"But the problem is they start eating those foods (more healthy foods) and get used to that, they are going to lose weight. Imagine…they are going to get sick."

Interestingly, a few participants were concerned that their child was not being adequately fed during the day when at the child-care center. Some felt portion sizes were too small compared to portions served at home. The following captures some of these concerns:

"I think mine is still hungry after she eats breakfast here because she is used to eating bigger portions at breakfast (at home)."

Despite their concerns over their child not being provided adequate amounts of food, many agreed that they did not follow-up with the child-care staff to confirm what and how much their child ate throughout the day. Many reported that although their child was most likely unreliable, they relied on them to provide diet information throughout the day, as many stated: *"I usually ask him/her if she ate and what she ate"*

Awareness of healthy behaviors

It was evident that the participants were aware of healthful behaviors. They voiced their efforts to eliminate both the consumption of juice with added sugars and soda.

"I'll just buy the orange and then I just make it homemade. It's just like a healthier option and it's just natural sugar so instead of buying all of that added ingredients you just have a natural juice."

and

"…I try to engrain the "Cola is bad for you" message every way that I can. So when we go out to restaurants to eat, they are going to pick something else like juice, or another type of soda, or something else, but they can never ask for Cola."

The participants also reported using both overt and covert strategies to improve their child's diet in the home. Overt strategies included removing "inappropriate foods" from the home environment. For example:

"Well I've been trying to take away all the sodas, the juices, so no more buying soda and juices just leave it at water. So they open the refrigerators and be like 'I have to drink water', so that there's nothing, just water and milk."

The most common covert strategies were hiding mixed vegetables within meals so the child was unaware of its presence, and watering down juices and soda without the child's knowledge, before serving it to them. For example:

"I blend the soup…I'll add corn and things that he won't eat. I do the same with my daughter, because they don't eat vegetables."

Current involvement in the child-care center

Participants expressed wanting to be actively involved in nutrition program at the child-care center. However, time constraints and hectic schedules were the major factor in preventing them from being more involved. As one participant expressed:

"My schedule doesn't allow it (to be involved), but I try…"

and

"Most of us, our kids are here because we are either working or in class, or we are doing something. So if they have activities during the day time, I can't come. Sorry, you know? I can't miss a day of work, of class to come."

Given their busy work and family schedules they acknowledged barriers to in-person participation. They suggested the possibility of using email and text messages as alternatives as many reported using these frequently. The majority of the responses included: "*Email's great!*" and "*Yeah text messages…that's easier for me*." Some even suggested weekend workshops to attend with their child, a center blog where parents could view daily lesson plans, and tips on how to reinforce the lessons on different fruits and vegetables introduced at the center within the home.

Discussion:

The goals of our study were to explore precursors and contextual influences on parental feeding and to explore ways to engage parents within the child-care setting. We found that current feeding practices were influenced by past childhood experiences, cultural beliefs and current medical concerns. Participants also felt that external influences such as their child's peer interactions within the child-care center influenced the home feeding environment. Although participants were aware of healthy behaviors, their efforts to provide a healthful feeding environment for their child felt undermined by the grandparents' indulgence or father's preferences to eat unhealthy foods. Surprisingly, although many participants expressed concerns about

diabetes, none of them mentioned obesity as a health concern in their family. The participants reported wanting to be more involved in the child-care center, however, as expected time constraints were the major barrier. These findings highlight the complexity of factors that influence a child's feeding environment.

We found that childhood memories of mealtimes strongly influenced how caregivers currently feed their child. Many felt that the message "wasting food was bad" was somehow engrained in them. Given that 57% of the participants were born outside the US, it is possible that this could be related to their upbringing, many in countries where poverty is evident. Regardless, growing up in an environment where "wasting" food wasn't allowed, the participants expressed that they made the conscious decision not to use the same feeding strategies. Compared to their own parents, participants reported utilizing different practices, which appeared to be more consistent with encouragement of healthy foods and promotion of self-regulation.

Consistent with other qualitative studies, our findings suggest that a mother's reaction to negative childhood experiences may bring about positive changes in family traditions for their children.[36-38] Prior literature has found that Hispanic parents are more likely to engage in permissive and indulgent practices during meal times compared to other racial and ethnic groups.[18,21-24] One study found permissive and indulgent practices among a diverse immigrant population as well.[39] However, feeding practices were not assessed as part of our study. Future studies would benefit from exploring how past experiences influence current feeding practices.

Influences on why parents feed their children in a certain way have not been thoroughly explored.[27] Given the multiple layers of influence on feeding, using the

socio-ecological model to understand how these factors influence parental feeding is of importance.[25,40] Our findings suggest that the child-care environment may influence the child's home food environment. Because children observed their peers consuming certain foods or beverages in the child-care center, they wanted the same products and were able to persuade their parents to purchase them. Although peer influences might be negative, like the consumption of juice, which the participants discussed, the participant's reported positive influences. For example, the participants reported their child wanting to eat vegetables, such as broccoli, because their friends were eating them at the child-care center.

Our findings are consistent with the prior literature in that a child's peer social network influences dietary behaviors.[41] There is lack of evidence, however, on how a child's different environments are related or how environments influence interpersonal interactions such as child-parent feeding. Future work may try to "bridge the gap" in continuity between the home and child-care environment. It is important to understand how the child-care environment influences feeding in the home among this population because nearly 50% of the children enrolled in child-care at the age of four identify as Hispanic.[28] The majority of obesity prevention interventions within child-care and preschool settings to date have focused on changing the child-care environment[7]. It would be important to further explore how the child-care feeding environment influences child's diet quality in the home and vice-versa. In addition, it is clear that there is a bidirectional relationship in that parents influence their child's eating behaviors and children influence parental feeding, yet this is still poorly understood.

Findings from our study suggest that grandparents' indulgent behaviors were perceived as a barrier to healthful dietary changes in the home. This is consistent with other studies. [42-44] For example one study found that disagreement around food between parents and the child's grandparents was a significant predictor for higher child body weight among Hispanic families.[42]. Another study conducted among Australian families also found that parents felt undermined by the child's grandparents and that the child's grandparents consciously ignored any food rules set forth by the parent.[43] In addition, Roberts et al. found that grandparents appeared to have just as much, if not more of an impact on child's dietary intake.[43] Interestingly, they also found that indulgent behaviors were embedded within the message that "time spent with grandparents was rewarding" as opposed to spending time with other caregivers.[43]

It is possible that intergenerational differences and or racial and ethnic differences exist. For example a study conducted among three-generation of Chinese families found that grandparents influenced young children's eating habits.[44] These grandparents also used food as an emotional tool to express their love. In addition, their own experiences of poverty and ideals of obesity being a sign of health influenced their view of a "healthy child".[44] These findings suggest that grandparents' influences on a child's feeding environment are not just limited to Hispanics, but other racial and ethnic families as well, and that intergenerational influences exist. However, it's important to note that a grandparents' occasional indulgence shouldn't be viewed as something bad, but many of these families may cohabit with grandparents and therefore may become problematic.[44] Grandparents' may undermine parental health

goals with indulgent behaviors, but this dynamic could be used as a target for behavior change and education among grandparents. As stated by Jingxiong et al., "nutrition education involving grandparents is a potential framework for developing healthy dietary behaviors in young children".[44]

Contrary to previous findings that showed an inverse relationship between grandparent involvement and child weight status,[42-44] Pulgarón et al., found that among non-Cuban Hispanic children, grandparent involvement was associated with lower child weight status.[42] However, they also found no association between grandparent involvement and child weight status among those who were of Cuban descent suggesting the possibility of a difference between attitudes regarding nutrition among Hispanic subgroups.[42] Although generational differences influence a child's diet, it is possible that cultural aspects may also come into play. For example, among Hispanic families, the concept of *familismo* is of importance. This emphasizes the familial interconnectedness and loyalty among family members.[45] Family, including extended family, influence both unhealthful and healthful behaviors.[46] Thus, more research is needed to understand how *familismo* influences a child's feeding environment.

Mothers also reported that their husband's food preferences and poor dietary habits also made it difficult for them to make positive dietary changes in the home. While most agreed that soda was unhealthy, it was surprising to see many of the mothers associate "rice and beans" as negative foods. Whether this is a result of misinformation or acculturation, this misconception can serve as an opportunity to provide nutrition education among parents. However, many interventions have not

incorporated acculturation into their design.[47] How fathers' influence the child's feeding environment also warrants further research as noted by a recent review that concluded that fathers were less likely to monitor food intake and limit access to certain foods.[48]

To our knowledge the literature has focused on how maternal perceptions, knowledge, attitudes, beliefs, and diet influence child's health outcomes.[49-52] However, more research is needed to explore how spouses influence foods served and consumed in the home, which may affect the child's home food environment. Most of the mothers reported that their child looked up to their fathers although they did not model healthy dietary behaviors. It is important to understand the complexities of family interactions around feeding in order to design successful interventions among Hispanics.

Other contextual influences on child feeding include cultural beliefs on healthy body weight.[51,53,54] Similar to another study,[30] we found that participants were concerned that their child was not being fed adequately and that the portion sizes served at the centers were too small. It is possible that this concern is rooted in a parent's misperceptions of their child's body weight. Recent evidence suggests that parents, especially low-income minority parents, underestimate their child's body weight.[49,51,54-57] These misperceptions can still occur despite mother's receiving information on their child's weight status.[57] Perceptions on body weight may be influenced by acculturation, as one study found Mexican mothers in the US preferred to have a thinner child, compared to Mexican mothers living in Mexico.[54] Over half of the participants in this study were non-US born; it is possible that these beliefs were

associated with a less acculturated view on body weight. It is also possible that these families are food insecure and are concerned about their child getting enough food. Regardless, these findings highlight the need for parental education on age-appropriate portion sizes. The child-care environment could provide parents and other caregivers with relevant information on age-appropriate portion sizes and other relevant nutrition information.

Our results suggest that participants were aware of healthful behaviors. Participants expressed limiting and even eliminating foods from the household that were high-energy and non-nutritive, like juice and candy. This is important given that consumption of energy dense, low-nutrient foods are major dietary factors that influence risk for overweight and obesity.[58,59] Our findings are suggest that these participants are aware of healthful eating behaviors such as variety of foods from all food groups, low fat foods, and limiting the consumption of sugar, consistent with prior literature.[60,61] It is interesting to note that although healthy eating was discussed, obesity did not come up as health concern for their families despite several prompts. This might suggest that our participants are not concerned with obesity but rather healthy lifestyles, or that there is a need to increase awareness of child body weight status and obesity. Our study also reveals that parents do want to be involved in nutrition programs in the child-care center but time and work schedules, as expected, posed as a major barriers. Given their enthusiasm to suggest alternative ways to be involved without in-person participation, further research should focus on more innovative ways to involve parents within the child-care setting such as using blogs or other technology mediums like emails and text messages.

Nonetheless, our study is not without limitations. Although our study was meant to be inclusive of all parents and caregivers among this population, our participants were predominately women. Although gender roles are shifting, mothers in this population continue to be primary caregiver and in charge of food preparation in the home.[62,63] We also did not assess food-insecurity, and it is unclear if this influenced participants concern related to under nutrition at the child-care center. Also, we could not determine if our participants failed to acknowledge if their child was overweight or obese because we did not assess their child's body weight status or obtain caregiver's perception of their child body's weight to make a comparison. Finally, our sample size was limited and the majority of the women in our study identified as either Dominican or Colombian, thus findings may not be generalizable to other Hispanic or Latino subgroups.

Conclusion

Cultural and environmental factors influence parental feeding and involvement in the child-care setting. Using the socio-ecological model might provide more understanding to the different levels of influences on parental feeding. Efforts should also target health promotion and obesity awareness among this population.

Author Disclosure Statement

The authors declare they that have no competing financial interests.

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Table 1. Focus group moderator guide questions

Domain	Questions
Factors that influence what and how parents feed their child	1. What influences what and how you feed your child every day? **Probes:** How you were fed when you were a child? Your culture? Rules at the table? Your environment? Where you live? Your family?
Awareness of child-care center feeding environment	1. What do you know about the food served at your child's day care? 2. What do you think about the food served at your child's day care? **Probes**: Do you think the foods provided are healthy? Do you feel that the amount of food provided is enough for your child? 3. How would you compare the food that is served in your child's day care to the food you serve your child at home? **Probes**: Are there foods served currently at the facility that you don't or wouldn't serve at home? Has the food that your child is served at the facility influenced the foods you buy and prepare in the home? Can you give me some examples?
Awareness of healthful behaviors	1. What comes to mind when you think about your family's health? **Probes**: Main priorities as a family – health, happiness, food, exercise? 2. What does the term "healthy food" mean to you?
Involvement in the child-care center	1. How are you currently involved at your child's day care center? **Probes**: Workshops, Parent/teacher night, parent groups? Whom do you communicate the most with? Teachers, director? 2. How would you like to be involved in the change to healthier eating in the day care center?

Table 2. Characteristics of the focus groups participants (n=36)

Characteristic	n(%)
Age, years	
18-25	9(25)
>26	27(75)
Race	
White	15(41.7)
Other	6(16.7)
Wish to not answer/I don't know	15(19.4)
Hispanic or Latino	
Yes	35(97%)
No	1(3%)
US Born	
Yes	15(42%)
No	20(56%)
Did not answer	1(2%)
Country of Origin	
Dominican Republic	11(31%)
Colombia	4(11%)
Puerto Rico	2(6%)
Other	4(11%)
Did not answer	15(41%)
Marital Status	
Never married	13(36%)
Married	14(39%)
Separated or Divorced	5(14%)
Widowed	3(8%)
Did not answer	1(2%)
Employment status	
Employed, full time	16(44%)
Employed, part time	5(14%)
Unemployed	8(22%)
Seasonal, Student or Homemaker	7(19%)
Years in US (mean, SD)	14.53±10

APPENDIX A:

LITERATURE REVIEW

I. Introduction:

Obesity among children and adolescents in the United States (US) has nearly tripled over the last 30 years[1]. National data from 2011-2012 show that 23% of children between 2-5 years of age are overweight or obese and 8.4% are obese[2]. The ethnic disparity in the prevalence of obesity in the US is alarming, whereby 17% of Hispanic children ages 2-5 are obese compared to 3.5% of their white non-Hispanic counterparts; nearly five times greater than that of white-non Hispanic children, and double the national average[2]. This is troubling given that Hispanics are now the fastest growing and largest minority population in the US[3,4]. It is expected that by 2050, they will represent 29% of the US population[4]. The disparity in the prevalence of obesity among the Hispanic/Latino population has been attributed to many factors such as socioeconomic and environmental conditions that do not promote healthful eating or physical activity[5-7].

In 2005, 47% of Hispanic children living in Rhode Island (RI) were living in poverty compared to the national rate of 29%[8]. Hispanics/Latino children living in low-income communities have several risk-factors which contribute to the higher rates of obesity such as a greater prevalence of sedentary behavior (lack of physical activity) compared to non-Hispanic whites African American children[9], higher rates of screen time compared to non-Hispanic white[10,11], and poor diet quality[12-15]. All of these factors will be discussed in greater detail later in this paper. The environment in which children grow up in can influence these risk factors. The environments which children are most often exposed to

are the home and school environment, places where obesity related behaviors are often promoted[16].

Obesity is an important public health issue. For the first time in the history of the US, the current generation will suffer from greater morbidity and die before their parents[17]. When compared to a child of healthy BMI, obese children are two times more likely to die before the age of 55[18]. They are also more likely to become overweight/obese adults and develop obesity related co-morbidities[15,16,19,20].

Children who are obese after the age of six experience a 50% greater chance of becoming obese adults[21]. Along with the associated co-morbidities, the cost of obesity puts a large burden on the health care system in the US with an estimated direct cost of $14.1 billion annually[22]. Obesity prevention in the early stages of life is pertinent given that healthy lifestyle habits are established early in life[23].

In 2009, 35% of Hispanic RI kindergarten children were overweight or obese compared to 31% of non-Hispanic white children within the same age group[24]. Twenty percent of RI kindergarten children will begin the school year overweight[25]. This is important because, as previously stated, children who are obese after the age of six, experience a 50% greater chance of becoming obese adults[21]. This increases the likelihood of developing obesity related co-morbidities[16,20].

Recent data suggests a leveling off in overall obesity prevalence[26,27] and a decrease in obesity rates among US preschool-aged children[2]. Also, for the first time in recent years, a decrease in obesity and extreme obesity has been observed among US low-income preschool-aged children[1]. This may be due to more public awareness of the childhood obesity epidemic in the US.

However, disparities persist among all racial/ethnic minorities[26,28,29]. Therefore, continued intervention and program efforts to prevent obesity among Hispanics are needed as this population continues to grow[3]. Unfortunately, some of the disparities continue to exist among ethnic minority groups like the Hispanic population because the determinants of these disparities are still poorly understood[20].

Parents have an important role in shaping the preferences and attitudes of a child's eating behavior[23,30-32]. Due to parents influence on a child's dietary habits, preventative childhood obesity measures that include a parental component may be more effective than efforts without a parental component[33]. Parental involvement has been shown to produce greater effects in both obesity prevention measures and weight loss treatment[33-36]. However, there is limited research on how to best engage Hispanic parents in obesity prevention[37]. Hispanic parents also frequently fail to perceive that their children are overweight[38-43], thus, finding appropriate obesity prevention strategies is a challenge in this population[44].

Research has not determined how to best involve Hispanic parents of young children in obesity prevention interventions and if misperceptions about childhood obesity influence parental involvement in obesity prevention strategies. In order to create an effective intervention around obesity prevention, cultural and environmental influences on feeding and parental involvement in the child-care setting need to be understood[45,46]. The goal of this project will be to conduct qualitative research to understand what influences perceptions about obesity and health of Hispanic parents of young children who are enrolled in child-care centers in RI, and to explore how they would like to be involved in nutrition interventions involving their child.

Findings from this study will be used to develop a culturally relevant intervention, including a parental component. Preventative measures aimed to decrease and prevent childhood obesity is critical to curb the country's healthcare costs and improve the future health of our nation[47].

II. Childhood Obesity – A Public Health Problem

Prevalence of childhood obesity has been increasing among preschool-aged children[17]. It has nearly tripled over the last three decades[48,49]. This increasing trend in childhood obesity has spawned a movement to prevent obesity earlier in life[50,51]. In order to understand the scope of the childhood obesity problem and the interventions needed early in life among Hispanics, this literature review will describe the following areas: 1) childhood obesity rates and disparities among low-income preschool-aged children, particularly Hispanic children, 2) the modifiable behaviors associated with obesity risk, 3) current childhood obesity prevention efforts, and 4) the significant role of parental involvement in both obesity intervention and prevention efforts.

What is Obesity?

Obesity is defined as excess body fat, and this excess body fat usually has negative effects on a person's health[52]. Several studies have shown that even a sustained energy imbalance of an excess of as little as 30-50 calories per day can promote obesity[53,54]. As Faith et al. stated, extra sips of soda or bites of cookies can achieve this energy imbalance[55].

Defining Childhood Obesity

Obesity is usually measured using body mass index (BMI)[52]**.** To account for the growth and development during childhood, age- and sex-specific percentiles for BMI rather than BMI categories used for adults. The Center for Disease Control and Prevention (CDC) defines childhood overweight at or above the 85th and below the 95th percentile, and obesity as ≥95th percentile[51,56]. Although BMI is the most common and most cost-effective tool to measure obesity, there are limitations to using BMI. Body mass index uses height and weight to measure obesity, but does not measure adipose tissue directly[52]. Body mass index does not differentiate between adipose tissue and fat-free mass, which can also influence the accuracy when used to measure obesity in children[57].

Risks associated with childhood obesity

Childhood obesity is not only strongly associated with the risk of being an obese adult[21], but it burdens one's health and quality of life[58]**.** Obese children are at greater risk of developing obesity-related co-morbidities such as, hypertension and hyperlipidemia, type 2 diabetes[48,59-61], and even some cancers[59,62,63]. This is significant because high blood pressure, high cholesterol and type 2 diabetes are risk factors for cardiovascular diseases (CVD). Cardiovascular diseases are the leading cause of mortality in the US[64]. Other problems related to childhood obesity include: sleep apnea, orthopedic problems, and psychological effects like low self-esteem, depression, discrimination, negative body image, and teasing and bullying[61]. Obese children, who become obese adults, are at greater risk as adults for developing these obesity-related comorbidities when compared to obese adults who were not obese as children[21]. Thus, prevention of childhood obesity is essential to prevent not only co-morbidities early in life, but later in the life cycle as well.

Disparities in Obesity

Disparities still persist among racial/ethnic and socioeconomically disadvantaged US children[65]. Greater prevalence of obesity has been observed in population groups of low-socioeconomic status (SES) as low-SES has been associated with the consumption of lower quality diets[66,67]. However, despite SES, obesity prevalence remains higher among Hispanic and non-Hispanic black children and adolescents when compared to non-Hispanic white youth[17]. Hispanic children between the ages of 2-5 years, experience a higher prevalence for both overweight and obesity (33%), compared to the 26.7% prevalence among children from all racial/ethnic groups[17]. In Rhode Island, according to data from 2009, 25% of Hispanic kindergarten children are obese compared to the 14% of non-Hispanic white kindergarteners[24]. Along with being burdened with low-SES and these environmental factors in the US, Hispanics experience other risk factors for childhood obesity such as: acculturation to the obesogenic US environment, parental obesity and suboptimal health insurance coverage and access to medical care[68].

According to the National Health and Nutrition Examination Survey, obesity prevalence among Mexican-American children and adolescents (2-19 years of age) is among the highest[69]. Although recent CDC data highlights that obesity and extreme obesity has decreased for the first time in years among non-Hispanic white preschool-aged children enrolled in The Special Supplemental Nutrition Program for Women, Infants and Children (WIC), obesity continues to increase and/or has leveled off among Hispanic children enrolled[1].

Although Mexican-Americans make up a large proportion of the Hispanics in the US, other subgroups such as Puerto Ricans, Cubans, Salvadorans, and Dominicans, are also

large and growing[70]. In particular in RI, according to the 2012 US Census data, a little over 13% of Rhode Islanders are Hispanic[71]. Puerto Ricans are the largest Hispanic/Latino population, followed by Dominicans and Colombians, living in RI[8]. The largest concentrations of Hispanics living in RI, are found in the urban cities of Central Falls, Pawtucket, and Providence – where 47% of RI Hispanic children live[8,72]. Puerto Ricans are the largest Hispanic/Latino population, followed by Dominicans and Colombians, living in RI[8].

Unfortunately, a bulk of the childhood obesity research has been conducted primarily among Mexican-American population. Latinos in the US are made up of a complex, diverse group, differing in country of origin, nativity, and population distribution in the US[73]. It is unclear if the findings from these studies are generalizable to other Hispanic subgroups and populations[74]. In addition, even though Mexican-Americans are a Spanish-speaking sub-group, it does not necessarily mean that they are representative of the entire Hispanic/Latino US population. This indicates a need for research targeting different Hispanics/Latino subgroups.

The terms Hispanics and Latinos are used interchangeably throughout the literature; however, a difference does exist between Hispanic and Latino. Those who are Spanish speaking people living in the US are considered "Hispanic". The term "Latino" is used to describe individuals from the Caribbean, South and Central America. This includes the Dominican Republic, Puerto Rico, Bolivia, Colombia, Honduras and Costa Rican[75]. However, it should be noted that the majority of the existing literature regarding childhood obesity and health outcomes has been primarily conducted in Mexican-American children[74].

Obesity among low-income preschool-aged children

Between 2009-2010, 12.1% of US children between ages 2-5 were obese, however obesity prevalence among US Hispanic children within the same age group at this time was 16.2%[17]. According to the Pediatric Nutrition Surveillance System, 1.2 million of the low-income preschool-aged children surveyed were overweight or obese with 15% of those children being obese[76]. A preschool-aged child is defined as a child between the ages of 2 and 5[77,78]**.** However, in contrary to past trends in obesity prevalence, for the first time in recent years, the first national study of 2013 revealed that obesity and extreme obesity among U.S, low-income preschool-aged children, has decreased[1]. Recent data also reveals that the child obesity rate among low-income preschool-aged children have remained stagnant in RI[79]. However, despite that obesity rates are stagnant, childhood obesity continues to be an important public health issue.

III. Obesity Related Behaviors – Modifiable vs. Non-Modifiable Risk Factors

There are both modifiable and non-modifiable risk factors that put a child at greater risk for becoming obese[80-82]. Modifiable risk factors for obesity include diet, physical inactivity, screen time[83-85], lack of sleep[80,82], and the child-care environment[86]. Non-modifiable risk factors for obesity are age, gender, race/ethnicity, and genetics/family history[81,82]. For the purpose of this paper, the focus will be on modifiable risk factors for obesity.

The ongoing increases in obesity prevalence can be linked to SES and environmental conditions that do not promote physical activity and encourage excessive consumption of

energy-dense, low-nutrient foods[5-7]. A term first coined by Swinburn et al. in the 90's, these types of environments are called "obesogenic"[87]. The US is well known for promoting this type of environment, that even now, the CDC refers to the US environment as "obesogenic"[48]. Childhood obesity is multifactorial and complex[80]. Obesity-promoting behaviors like consumption of high-energy dense foods, poor diet quality, an increase in sedentary behavior, and decrease in physical activity behaviors have been implicated to persist in early childhood[88]. Non-modifiable factors cannot be changed therefore, it is important to focus on preventive measures for the modifiable risk factors of childhood obesity. Most of these modifiable risk factors can be referred to as energy balance-related behavior, including diet and physical activity[89].

Diet

When assessing risk factors for obesity, it's important to understand that dietary intake is only part of the equation. Excess caloric intake has been associated with risk of obesity as a positive energy balance can lead to weight gain. The most recent (2010) dietary guidelines for Americans, currently recommends to increase foods such as fruit and vegetable and to decrease intake of calories from solid fats and added sugars. It also recommends limiting the intake of those foods that are primarily refined grains that contain solid fats, added sugars, and sodium[90].

Results from a study conducted in 2004 to assess diet quality among American preschoolers between 1977 and 1980, indicated a small yet significant improvement in diet quality over the past three decades[91]. However, the research suggests that preschool-aged children's intake of added sugars and fruit juices is excessive, while intake of fruits, vegetables, and whole grains are inadequate[92,93]. Consumption of energy dense, low-

nutrient foods such as high-fat snacks, sugar-sweetened beverages (SSBs), and large portion sizes are major dietary factors that influence risk for overweight and obesity[94,95].

Two studies conducted by Ayala, Baquero et al., show that the consumption of a less healthful diet among Hispanics living in the US is more prevalent when compared with other racial/ethnic groups living in the U.S[13,14]. A cross-sectional study (VIVA LA FAMILIA), that assessed nutrient adequacy and diet quality 993 of 1030 Hispanic children of both normal and overweight Hispanic children of low-SES between the ages of 4 and 19, found that diet quality among their target population was not congruent with US dietary guidelines[69]. The diets in low-SES Hispanic children were observed to be adequate in most nutrients, but found to not meet the dietary guidelines and recommendations for fat, added sugars, fiber, fruits, and vegetables[69]. The findings of this study highlight the importance of targeting certain dietary behaviors in obesity prevention interventions among high-risk families.

Added sugars, which has been shown to be consumed in excess among Hispanic children[69] may lead to weight gain as they contribute to excess energy intake. The amount of added sugar consumed appears to be associated with income and education with lower intakes among more educated parents[96]. A significant source of added sugars comes from sugar-sweetened beverages. One study found that SSBs contributed almost 50% of added sugars in the diet of children and adolescents from all racial, ethnic, and income groups[97]. Sugar sweetened beverages include fruit juices, sodas, and energy drinks, and are the primary sources of added sugars in the diet across all racial and ethnic groups[97], but as mentioned above, are consumed in excess among Hispanic children[69]. A study conducted by Larowe et al. in 2007 found that nutrient-dense diets were inversely related with fruit

juice consumption among preschool-aged children[98]. Along with the increase in obesity the consumption of SSBs has also increased suggesting an association between the two[99]. Dietary intake behaviors are established early in childhood[23]. Thus during these early childhood, preschool years (ages 2-5), the establishment of healthy eating habits is crucial.

Physical Activity

Physical activity behaviors are established early in childhood[23]. As previously highlighted, establishment of positive physical activity behaviors during the preschool school years is important. Physical activity is important because it is how the majority of calories are expended. When caloric intake exceeds those that are expended, an energy imbalance (and usually weight gain) occurs. Sedentary behaviors have been shown to be associated with lack of physical activity, thus increasing risk for obesity[13,100]. Trost et al. found that overweight preschool-aged children were less physically active than their non-overweight peers; results also indicated that they were at a greater risk for adiposity gains[101].

Parents can influence activity both in positive and negative ways. One study found that parental enjoyment of physical activity was positively associated with activity level[102]. Another reported an inverse relationship on having play rules, such as not going to far from the house or not having balls in the house[103]. The amount of time the father spend on the computer was also found to be inversely related to activity levels[104].

A review conducted by De Craemer et al. concluded that parental influence on physical activity remains unclear with some studies reporting an inverse relationship between parenting and total physical activity[89]. One study did find higher levels of physical activity when children acted as initiators of the physical activity[105]. This study by

Brown et al. highlights the importance that parents may have in encouraging their child to want to be physically active without being prompted[105]. However, as concluded by De Craemer et al., the review produced little support for correlates of physical activity in preschool-aged children[89].

In 2007, a review published by Timmons et al. concluded that the obesity epidemic in preschool-aged children was greatly attributed to engaging in high levels of sedentary behavior, specifically screen time, coupled with low activity levels[106]. However, it remains unclear if increasing current activities that decrease sedentary levels and behaviors preschool-aged children will significantly reduce obesity[88,106]. It is particularly important to address Hispanic children, as they also tend to be less physically active than African American or white children[9].

Screen Time

Over the last three decades, the increased total amount of sedentary screen time that young children engage in per week has been attributed to readily available televisions, computers and video game consoles[99]. The availability of tablets (e.g. Ipads), cellphones, and other devices that engage individuals through an interactive screen has also increased . In 2010, the Kaiser Family Foundation reported that the constant access to technology has increased the amount of time children and adolescents spend with these devices dramatically, especially among young minorities[107].

For the purposes of this project, screen time refers to the amount of time spent with these electronic devices and screens. Excessive screen time (more than two hours per day as recommended by the American Association of Pediatrics[108]), has been positively associated with overweight/obesity[109]. And although various other forms of screen time

have emerged since the 1980's, a 2007 study found that preschool-aged children do not displace television viewing time with these newer technologies, they actually exceed the recommendations for total screen time per day[110].

As reviewed by De Craemer et al. in 2012, higher levels of screen time among 4-6 year old children were associated with heavier parents and having bigger families[89]. Two articles reviewed found a positive association with parental screen time and child's screen-time engagement[111,112]. Screen time has also been associated with adverse dietary outcomes[113]. A positive association has been found between screen time and snacking frequency[114,115]. While watching television children are more likely to consume more sweet snacks[116], energy-dense drinks[117], SSBs, fruit juice, fast foods[118], and higher energy dense snack foods[117,119,120]. A total of 12 articles were reviewed to assess the evidence regarding the association between screen time and diet in children between the ages of 2-6[89]. Six studies found a significant inverse relationship between screen time and consumption of fruits and/or vegetables[115,116,118,121-123]. However, two studies only found this significant association only in boys[115,123]. This review suggested that obesity in childhood could also be influenced by an increase in caloric intake resulting from exposure to food advertising, as some studies have shown[124].

Although a large sample size of 13,386 children between the ages of 2-6 years of age were included in this review[113], it should be noted that only one study specifically looked at Hispanic children (n=250) and found no significant relationship between television viewing and diet quality in their sample[125]. Ethnicity and race were not specified in the other articles represented in the review, thus it is difficult to conclude the total amount of Hispanic children included in the total review analysis and how generalizable these

findings can be. However, one study did find significant disparities in the types of food advertised towards Hispanic children[126]. Nearly all food items advertised being considered not part of a healthful diet and should be only consumed on "special occasions" when compared to the US dietary guidelines[126]. Even though this study did find significantly less food advertising in Spanish[126], it should be noted that Hispanic children do engage in greater screen time than non-Hispanic white children[10] thus exposure to unhealthy food advertisements among Hispanic children is greater[126].

In 2009, Vader et al. examined the relationships between television viewing during the weekday, snack consumption, consumption of the advertised foods, and overweight status in a multiethnic sample that consisted of fourth and eighth-graders in Texas[127]. Positive associations were found with both snack frequency and television viewing and consumption of foods advertised and television viewing[127]. Overall, time spent watching television was positively associated with being overweight[127]. This relationship was found to be significant among the eighth-graders who engaged in 1-2 hours of watching television a day[127]. However, regardless of the amount of television these students engaged in, frequency of consumption of snacks and foods advertised on television was associated with a lower risk of being overweight; again, this relationship was more prominent among the eighth-graders[127]. A total of 6,235 fourth-graders were observed, 45.3% were Hispanic. Of the 5,359 eighth-graders, 40.3% were Hispanic[127]. This study represented a multiethnic population. However, analyses did not control for other confounding variables that could be associated with obesity (e.g. SES and diet)[127]. Also, because this study includes only data from fourth- and eighth-graders, the findings most likely are not applicable to the preschool-aged population in the US. Research has also

indicated that Hispanic children tend to engage in greater screen time than do white children[10], thus targeting this high-risk population is critical.

Sleep

Recent findings suggest that sleep duration affects regulation of body weight and metabolism via changes in hormones that control appetite such as ghrelin and leptin[128,129]. In 2013 Hart et al. conducted a crossover study among 37 children between the ages of 8-11 years to assess the impact of sleep duration on reported food intake, appetite hormones and weight[130]. Lower reported food intake, fasting leptin levels, and weight was associated with greater sleep duration[130]. However, the children in this study were not of preschool age, thus more research is warranted in regards to sleep duration and obesity prevention efforts in early childhood.

Sekine et al. conducted a study to identify how parental and lifestyle factors, specifically sleeping habits was associated with obesity in Japanese children. A total of 8,274 Japanese children between 6-7 years of age were assessed[131]. They found that there was a significant dose-response relationship between shorter sleep duration and obesity in the children[131]. Another study found a significant inverse relationship between sleep duration and body weight, BMI, and waist circumference among 422 children between the ages of 5 and 10 in Quebec[132]. However, because these studies were cross-sectional, future longitudinal studies need to be conducted to confirm causality. Also, further studies should focus on preschool-aged children.

Child-care environment

A review conducted by Larson et al., concluded that child-care settings are an opportunity to promote healthful eating behaviors; however, improving the nutritional

quality of the foods provided, nutrition education and mealtime practices among caregivers is needed[86].

Small significant changes have been made in the last 30 years in diet quality among preschoolers in the US[91] but intake of added sugars and fruit juices is excessive, while intake of fruits, vegetables, and whole grains are inadequate[92,93]. A cross-sectional study assessed the dietary intake of 117 young children between 2-5 years across 20 child-care centers in North Carolina[133]. The type and amount food served, and any foods dropped, traded, or added to the child's meal was recorded via direct observation. Using Nutrition Data System for Research to assess their dietary intake, it was found that about 50% of the recommend daily amount of 100% fruit juice was consumed while in child care and only 7% of the MyPyramid daily recommendation of dark vegetables was met[133].

To gather more information on their current nutrition practices and to also provide a copy of their current menu[134]. Copeland et al. conducted telephone interviews with directors from 258 child-care centers in two urban areas in Ohio. . From the interviews and menus, it was concluded that the meals provided, especially snacks, were inadequate in fruits and vegetables, and contained added fats and sugars[134]. They suggested that snacks could be targeted to improve diet quality in the foods served[134].

A larger study conducted among 303 child-care sites in California compared the foods and beverages served at sites enrolled in the Child and Adult Care Food Program (CACFP) to sites not enrolled in the program[135]. The CACFP provides the nation's most vulnerable populations (over 3 million infants and children and over 100,000 disabled or older adults, primarily from low-income households) with high-quality nutritious foods[136]. This study found that those enrolled in the CACFP reported serving more milk than non-

CACFP sites ($p<0.001$)[135]. Non-CACFP sites served more SSBs than CACFP sites (14% vs. 3%, $p<0.001$), and over half of the sites surveyed served 100% juice, especially at snack time but CACFP sites served less juice when compared to non-CACFP sites ($p<0.05$)[135].

Although not all food comparisons proved to be a healthier option in CACFP sites, it was evident that CACFP sites, particularly Head Start centers, served more nutritious food items when compared to non-CACFP sites[135]. It is evident that these guidelines do influence the foods served in child-care centers thus more specific guidelines can help improve the child-care environment and help prevent childhood obesity[135].

IV. Parental Perceptions

The literature consistently continues to show that Hispanic/Latino perceptions of childhood obesity and child body weight differ from their child's actual body size[39,40,42,43]. One study, conducted among a predominately Hispanic population (95%) of obese preschool children found that 36% of the parents did not perceive their child as overweight even though their child would be considered overweight when compared to the national standards[42]. This study used a questionnaire to guide interviews with the parents[42]. Staff perception at the health center in which these parents received WIC or child health services was also obtained[42]. It was found that even though the perceptions were more accurate than the parents', cultural and social views of obesity influenced their response[42]. Another study conducted with low-income Hispanic parents of overweight preschool-aged children, found that 50% of the participants were not concerned about their child's weight[43]. These studies demonstrate that Hispanic parents have

misperceptions about their child's weight. It is unknown however if these misperceptions influence parent's obesity prevention strategies with their young child.

Another cross-sectional study, which asked mothers if they considered themselves or their child overweight, found that only 20% of the mothers surveyed actually recognized their child who was considered obese by national standards, was indeed obese[39]. This misperception was found primarily among mothers with less education. This might suggest that parental knowledge is important for identifying and understanding childhood obesity and child body weight status[39]. In 2005, the Academy of Nutrition and Dietetics stated that communication between parents and child-care providers is key the prevention of obesity among preschool-aged children[137]. It can be concluded from the literature that obesity prevention efforts are unlikely to be successful, especially in Hispanic parents, without fully understanding how the parents/caretakers perceive their child's weight[39,41-43].

Parental influences on preschoolers' dietary behaviors – Feeding Practices

A systematic review from 2010 found that although the majority of preschools and child-care settings were the most common focus for interventions, most failed to include an effective parental component[88]. Caregivers play an important role in the development of both dietary and physical activity behaviors in young children[23,30,88,89,138]. Parental feeding practices influence dietary behaviors in young children[139].

Overall, evidence suggests that controlling feeding practices (restriction and pressure to eat) can negatively impact children's eating behaviors and weight status[140-143]. Restrictive and controlling feeding practices have been shown to promote a preference for high-fat, energy dense foods in young children which may increase the risk for overweight

and obesity[140]. Although much of the literature has focused on white middle-class families, some studies have found that feeding practices may vary by socio-economic status and ethnicity. [144,145] For example, food insecurity, an indicator of socio-economic status[146] has been associated with maternal reports of using compensatory feeding practices, that is, giving children extra food or more energy-dense foods such as soda[141], although research is limited. Worobey et al., used the Child Feeding Questionnaire (CFQ) to assess responses to "restriction" and "pressure to eat" among 51 white middle-income mothers and 46 Hispanic low-income mothers[147]. The 46 Hispanic mothers were determined by their enrollment in the New Jersey WIC program[147]. It was found that white middle-income mothers reported significantly less restriction and pressure to eat when compared to the Hispanic low-income mothers[147]. Gross et al., had similar findings where CFQ responses were more restrictive among mother-infant pairs enrolled in WIC among those mothers who reported higher food insecurity[148]. Some studies have found that Hispanic parents are more likely to engage in permissive and indulgent feeding practices during meal times compared to other racial and ethnic groups.[144,149-152] Chaidez et al., conducted 18 in-depth home interviews among Mexican American mothers and found their responses to be overall indulgent or permissive when asked questions around 'what', 'when', and 'how much' to feed their toddlers[150]. Most of the mothers reported giving their child sips of soda even though they viewed soda as a "bad food", and some even offered a sweetened beverage daily, and mostly more than once a day[150]. These feeding practices are in turn significantly associated with greater body mass index in Hispanic preschool children.[144,145] Hughes et al., conducted a cross-sectional study to assess the association between indulgent feeding style and weight status in preschool-aged

children[145]. The participants were 718 parents (29% Hispanic, 93% mothers) of children enrolled in Head Start programs in Texas and Alabama. The CFQ and the Caregiver's Feeding Style Questionnaire was used to assess feeding styles and practices, and it was found that indulgent feeding styles was significantly, positively associated with child BMI[145]. Meaning, the more indulgent a parent was, the higher the child's body weight status. Further understanding of precursors to parental feeding may help inform future efforts to improve healthy eating among Hispanics.

Parenting styles also influence dietary behaviors in young children[153-156]. The literature shows that involved parenting styles are associated with more positive outcomes in regards to childhood obesity[154,155]. Negative outcomes have been associated with permissive or neglectful parenting styles[156]. Since parents have such an important role in a child's development of eating preferences, gathering information on parents' preferences on how they would like to be involved in obesity prevention interventions for their young child may result in more effective interventions[23,88,89,138].

V. Interventions to Prevent Childhood Obesity

The childhood obesity epidemic in the United States has gained national attention. First Lady Michelle Obama launched a national effort to combat childhood obesity with the Let's Move initiative in 2010. The priority of this movement is to reinforce and develop new efforts to eliminate obesity in a generation. The Let's Move initiative seeks to empower parents and caregivers, encourage healthy foods in schools, and to improve access to nutritious foods at affordable prices[38,157].

In a review published in 2010, it was noted that the majority of obesity prevention interventions among young children were done in preschool/child-care settings and the home environments[88]. Most of the interventions in preschool settings focused on increasing physical activity, which is reasonable given the low levels of physical activity usually observed in this environment[105]. Targeting the child-care setting for obesity prevention makes sense, considering that almost 60% of children in the US at the age of 4 are enrolled in center-based care, with nearly 50% of those children identifying as Hispanic[158]. It was noted in the review, that those interventions found to be most successful were those that were designed to increase knowledge among parents along with enhancing skills and competencies of parents to be able to provide a more healthful home environment[88]. Thus, not only do interventions need to provide education, they also need to incorporate behavior change for parents so that they are able to make more healthful foods accessible.

There is still limited evidence on how to generalize program success to different population groups especially those that target obesity prevention in young Hispanic children[88,159]. However, it was found throughout the literature that interventions aimed at Hispanic children are more likely to be successful when they involve a parental component, are based on a behavioral theory and if the parents perceive themselves as obese[159]. BOUNCE, a community-based lifestyle intervention that targeted mother-daughter dyads in low-income Hispanic families is a good example of a successful intervention where parents were included[29]. A significant reduction in body weight, BMI, waist circumference, and also improvement in physical fitness was found in the experimental daughters compared to the control group[29]. The parental component

involved the mothers attending education sessions on how to incorporate healthy lifestyle habits for their daughters in the home environment[29].

Although this was a successful intervention, this study was conducted among already overweight children; thus not providing insight on how to prevent obesity among high-risk populations, like Hispanic children. It is unclear how to engage with parents around obesity prevention as a lot of the literature reveals success in obesity interventions (weight loss). There is little evidence of obesity prevention in young children, and engaging parents of low-income children in the development of obesity prevention strategies can make obesity prevention efforts more effective[160,161].

Another example of parental involvement in a study was a pilot study developed to better understand the challenges of reaching and engaging parents in obesity prevention strategies[160]. This study allowed both parents and community-based organizations to actively contribute to the development, implementation, and evaluation of the program. Parents conducted community assessments and developed a program based on their findings along with the research team. Post intervention results revealed a decrease in BMI z-scores and a significant reduction obesity rates. Also, there was a significant increase in recorded light physical activity and a significant decrease in the amount of minutes engaged in screen time. Parents also reported significantly greater self-efficacy in encouraging positive healthy eating habits in their children and greater support for physical activity engagement. The results are promising, but one of the limitations of this study is the lack of a control group[160]. Parents from another study reported that being engaged in obesity prevention strategies with community organizations allowed them to become more confident in utilizing resources provided by the community[161].

Slusser et al. provided low-income Latino parents of 2-4 year old children with seven weekly classes that included healthy nutrition and physical activity messages via parent training program. Compared to the wait-list subjects group, the parent-training program was effective in reducing risk overweight in the children[162]. Despite interventions that involve parents, it is still unclear how to best engage parents as inconsistencies in the effectiveness of parental components in interventions aimed to impact children's health are reported throughout the literature[37,163].

Some studies have reported positive outcomes with parental components developed based on the preferences provided by the target population[160-162], but not all parental components developed specifically for the target population may be effective. For example, in the Family-Based Hip-Hop to Health intervention, parental participation was very low (38%), and although there was a downward trend in obesity, when compared to the national average, obesity rates among the children were still higher at 1-year follow-up[44]. Even though the intervention was developed to align with the needs of the target population, the intervention may have not been reflective of the common perception among Hispanic families that larger body sizes for young children reflect a healthier child[164]. Parental perceptions are important because they could influence feeding behaviors, their motivation to obtain nutrition and healthy eating information and also physical activity opportunities for their children[165].

Child-care based interventions

As stated previously, child-care settings for obesity prevention among this target population is ideal because nearly 60% of children in the US at the age of 4 are enrolled in child-care, with nearly 50% of them identifying as Hispanic[158]. One way to impact child-

care centers is through a worksite wellness program. Gosliner et al. specifically wanted to assess whether a wellness program directed towards child-care center staff members would have an impact on the nutrition and physical activity environment[166]. Using a quasi-experimental design, 13 child-care centers were entered into the intervention group (n=6) or the control (n=7)[166]. Both groups had received nutrition and physical activity policies along with training on children's health and nutrition[166]. The intervention group received an additional four activities that included monthly newsletters, a walking program and follow-up visits for the staff[166].

After the intervention, staff members from the intervention centers were more likely to report that they included more fresh fruits (p=0.004) and vegetables (p=0.03) as part of the children's meals. They also were more likely to include fresh fruits (p=0.05) and vegetables during celebrations when compared to the control[166]. These findings suggest that nutrition knowledge among child-care staff is important to child health as providing child-care center staff with health and nutrition messages increases the likelihood of creating a more healthful child-care environment.

At the request of the Institute of Medicine, current dietary guidelines for child-care food programs under the CACFP are under revision by the United States of Agriculture[167]. Child-care providers could use this opportunity to understand how parents would like to be involved in nutrition reform in child-care settings. This could help child-care facilities to develop more effective ways to involve parents in this transition to more healthful guidelines. Involving parents of young children in nutrition reform in child-care settings could help achieve positive dietary changes in young children.

Addressing the obesity trends early in the life cycle has now become vitally important[88]. The Academy of Nutrition and Dietetics cites that preschool age is a critical period for obesity preventions as children at this age are more likely to change behaviors than older children[168]. Preschool-aged, child care and community-based interventions are ideal for this target population, and over the years have received increased attention from researchers[88]. Previous primary prevention interventions have been primarily home-based or conducted in child-care settings[169], with nutrition and/or physical activity as target behaviors[88,170].

A review conducted by Hesketh et al., found that preschools and child-care settings were the most common focus for interventions aimed at young children[88]. The 23 studies included used multiple study designs, half of those interventions targeted families of low-SES[88], and two targeted specifically low-income Hispanic/Latino children[171,172] As reviewed by Hesketh et al., 33% of the studies that targeted a preschool/child-care setting, successfully achieved their desired outcomes: decrease in fat intake, increase in physical activity, and reduced physical inactivity[88]. However, due to variations within the preschool and child-care setting (structured vs. unstructured, half-day vs. long-day) generalizability may be limited.

A pilot randomized controlled trial by Alhassan et al. discussed in the review, sought to increase physical activity in 3-5 year-old low-income Latino children[171]. The children in the intervention group (n=18) were given 4 x 30 min sessions of outdoor free play time in their structured preschool setting, for two consecutive days. The control group received the usual playing time of 2 x 30-min sessions. Both groups exhibited similar physical activity levels, with >90% of their time spent being sedentary. Even though the

intervention group was given twice the amount of usual outdoor free play time, between group differences were not found for changes in physical activity and physical inactivity[171].

Another study included 12 Head Start preschools that primarily served Latino children. The schools were randomized into either a control group (n=199) or the weight control intervention group (n=202)[172]. The control group received a 20-min general health lesson once a week for a total of 14 weeks. Parents of the children in the control group received a weekly general health newsletter. The intervention group received three 40-min sessions once a week for 14 weeks. The sessions were broken down into 20-min healthy eating or physical activity lessons and a 20-min aerobic exercise. Parents of the children in the intervention group received weekly homework and newsletters that provided additional diet and physical activity information. The parents were also offered weekly aerobic classes twice a week[172]. Differences at baseline were found – the control group had higher BMI z-scores, and the group was mostly comprised of Latino children[172]. However, no differences were found between the groups regarding BMI, diet, physical activity, or engagement in screen time at the 1 – or – 2 year follow-ups. One of the benefits of this study however, is the large sample size that makes it more generalizable. Although no differences were found between groups post-intervention[172], parental inclusion is beneficial because parents influence dietary and physical activity behavior development in children[172,173].

As stated earlier, most of the preschool and child care based interventions, did not include a parental component[88]. The literature has suggested that parental involvement is critical during these early years as they can continue to reinforce the messages learned in

the home environment to encourage permanent changes in childhood dietary and physical activity behaviors[88]. It was found that the most successful interventions were those that targeted knowledge along with skills and competencies thus implicating a social behavioral theory as the foundation for these studies[88]. Targeting more than one area (e.g. diet quality and physical activity behaviors in both the home and child-care environment) is ideal, and incorporating a parental component into an intervention may be more beneficial when designing an intervention aimed to reduce such a complex thing like childhood obesity[88,89].

VI. CONCLUSION

The Institute of Medicine has identified parents as key players in promoting healthful dietary behaviors and physical activity in their children[174] because, as highlighted throughout this paper, parents influence dietary and physical activity behavior development in children[172,173]. A review conducted by Golan and Crow suggested that because parents play such a key role in the development of these habits in preschool-aged children, that interventions should include skills to help parents promote a more healthful environment[175].

Interventions among young children that involve parents may be more effective at reducing and/or preventing childhood obesity, but there is limited evidence on how to best engage parents especially those of Hispanic/Latino children, and this is important because of the evident disparities in childhood overweight and obesity. A recent study pointed out that variability in family function can pose a challenge to parents who want to be involved in family-based interventions[176].

Weight perceptions, preferences and self-efficacy of parents' and parents should be evaluated as these have been shown to impact a child's eating and physical activity behavior[44,88,165], and a parents' desire to be involved in obesity prevention efforts[39,41-43]. As stated previously, child-care centers can be opportunities to promote healthful eating behaviors[86]; however, it is important to understand the perceptions of obesity and child health of both the parents and child-care providers for obesity prevention efforts[137]. Parental perceptions can influence a parent's motivation to engage in obesity prevention efforts[165], and child-care provider's staff nutrition knowledge has been associated with the likelihood of creating a more healthful environment[166].

As previously stated, there is a need to for research on how to better engage parents of Hispanic families in obesity prevention strategies. The literature reveals that more comprehensive research is needed to understand the views and perceptions of parents and other caregivers in the home (i.e. grandparents) and in the child-care environment[45]. There is also limited information on both food related behaviors among different ethnic groups and parental feeding practices influence a young child's diet[46]. With this project, an understanding of environmental and cultural influences on parental feeding and parental involvement will be established. Understanding these contexts can help create more effective interventions for obesity prevention by identifying culturally appropriate and relevant strategies. These strategies can empower these parents to be more effective agents of change for their preschool child.

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APPENDIX B:

Extended Methods

Setting and investigators

Four focus groups were conducted with parents of preschool-aged children enrolled in child-care centers that predominately served Hispanic families in Cranston and Central Falls, Rhode Island. Both sites provided breakfast, lunch, and snacks for the children per the Child and Adult Care Food Program guidelines. This program provides the nation's most vulnerable populations (over 3 million infants and children and over 100,000 disabled or older adults, primarily from low-income households) with high-quality nutritious foods and they also provide nutrition guidelines to meals served in child care.[1]

The independent researcher (NM) moderated the focus groups in English. The principle investigator (AT) moderated the focus groups in Spanish. The data analysis process was led by NM. Our study was reviewed and approved by International Review Board at the University of Rhode Island, Kingston, Rhode Island.

Recruitment of child-care center directors: May 2013 – August 2013

A list of five child-care centers, serving predominately Hispanic families, and their director's contact information was provided by the Rhode Island Department of Education. Using the list, all directors were contacted via email and telephone calls by the Principle Investigator to inquire about their interest in the study. These five centers were located in Providence, Cranston, Pawtucket, and Central Falls, Rhode Island.

Key informant interviews with day care directors

Four directors responded with interest to participate in the study. Directors were first approached and asked to participate as a key informant interviewer in order to develop a relationship with them, and to learn more about the target population. An interview guide was developed in June 2013 prior to conducting the interviews. The interview guide was revised multiple times prior to the first interview.

Directors were contacted by the Principle Investigator via telephone and email in order to set up a date/time for the interview. Interviews were conducted at the child-care centers. Consent forms (**Appendix C**) were reviewed and signed by all participating directors at each location. Two tape recorders were used to record the interviews. The audio files were then transferred onto the computer and transcribed by the student investigator. The files associated with the recording were kept on password-protected computer and both tape recorders were then kept in a locked drawer.

Development of Moderator Guide: June – September 2013

The content of the moderator guide used to lead the focus group discussions was informed by the key informant interviews with directors, literature review and by having discussions with university investigators. After multiple revisions, the questions were pilot test in August 2013 at *Clinica Esperanza* in Providence, RI. The participants recruited for the pilot test were of similar demographics of the target population for the study. After the pilot, modifications and revisions were made to the moderator guide, which included omitting some questions. The questions were piloted for second time with URI graduate students in September 2013. Students were asked

to enact being a parent/guardian of a preschool-aged child enrolled in a child-care. Moderator guide questions were once again modified to be at a more appropriate reading level and for cultural appropriateness. In September 2013, the moderator guide was sent out to colleagues at a local University for feedback. Revisions were made and the moderator guide was finalized at the end of September 2013. Once the moderator guide was finalized, it was translated into Spanish by the student investigator, and then reviewed by the principle investigator.

The moderator guide (**Table 1**) focused on four domains: 1) awareness of healthy behaviors, 2) involvement in the child-care center 3) awareness of the feeding environment and 4) factors that influence what and how parents feed their child. The full moderator guide is located in **Appendix D**.

Participant Recruitment:

Recruitment began at the end of August 2013. Proposed focus group dates discussed with directors were set two weeks after initial recruitment at the facility. Recruitment flyers were created in order to provide potential participants with information regarding the study (**Appendix E**). The incentive ($35 gift card to a local supermarket) was listed along with contact information to register for the focus group. Each center was unique in terms of recruitment. Flyers were modified as needed as proposed dates for the focus groups at certain day care centers had to be changed to provide more time to recruit enough participants.

Recruitment lasted approximately four weeks. Focus groups were conducted simultaneously as recruitment for other the other child-care centers were ongoing.

Initial eligibility criteria for parents included the following: 18 years and/or older, a child between the ages of 2-5 years of age enrolled at the participating center, and of Hispanic/Latino ethnicity. Due to difficulties in recruiting enough parents to participate at two of the centers, the criteria were expanded to include Hispanic parents with children between the ages of 2-7. An IRB amendment was submitted and approved. After much discussion with the research team, it was also decided that eligibility criteria would no longer include of Hispanic/Latino ethnicity. This was done to encourage more parents to register for the scheduled focus groups. Another amendment was submitted to and approved by IRB in September 2013. Therefore, at two of the four child-care centers, it was advertised to recruit parents that identified at Hispanic and/or Latino with children enrolled at the day care between the ages of 2 and 7. The remaining two centers where recruitment was more challenging, recruitment was expanded to include all parents with children between the ages of 2 – 7 years old enrolled at that particular day care. Recruitment flyers were updated to reflect the changes. Updated flyers were again distributed to the day care centers. However, after an additional 2 weeks of recruitment, enough parents did not sign up in these remaining sites, therefore both were excluded, and eligibility criteria were once again updated to reflect the original criteria. The directors and staff were thanked for their efforts and as a thank you for their support through the recruitment process, nutrition handouts on healthy snacks were provided to give to the parents. Handouts provided were based on the director's opinion on what information would benefit parents the most.

Data Collection

Four focus groups with a total of 34 mothers, two grandmothers, and one father (n=37), were held in at the child-care center their child was enrolled at. Although these focus groups were open to all caregivers, only one of the focus groups was attended by a father. The father was invited by the mother of one the children at the center, and she also participated. The first two focus groups had 11 participants. A total of 9 participated in the third and 6 participated in the fourth. Focus groups were moderated by trained, bilingual moderators. A second research team member took notes, operated the digital recorder, and provided logistical support. All focus groups were conducted in the early evening (4.30-6 pm). The facilitator began each group by emphasizing the purpose of the focus group, which was to gather information on parental involvement in healthy nutrition programs in the center and what influences how and what they feed their child. During the focus groups, open-ended questions were posed to stimulate discussion. The focus groups were conducted in a separate room from the children around a large table to allow for the assistant moderator to observe participants. Child-care was provided for the participants' children in a separate room. Each focus group was digitally recorded and lasted approximately 60 minutes. Consent forms were reviewed and signed by the participants prior to beginning each focus group (**Appendix C**).

After each focus group, each participant was instructed to complete a brief demographics survey (**Appendix F**). They survey asked the following questions about themselves: age, race/ethnicity, place of birth, level of education, relationship status, number of children in the household between the ages of 2 and 5, and employment

status. The participants' perception of healthy children body sizes was assessed using silhouettes of 4 and 5 year old children (**Appendix G**). The silhouettes, both boys and girls, were developed by Killion et al[2]. The silhouettes were developed via cognitive interviews with three sets of African-American and Hispanic parents with children enrolled in Head Start centers[2]. The parents were asked to confirm if the facial features and hair of the children were ethnically appropriate[2]. The parents also scaled the silhouettes from the thinnest to the heaviest[2]. Once the silhouettes were arranged, the authors used reverse lettering (G-A) to label the silhouettes[2]. There were at total of 14 silhouettes (7 boys and 7 girls)[2]. The participants of this study were asked to choose which of the 14, based on the gender of their child, was an ideal body size for their child. The silhouettes were coded with the numbers (1-7), with G being 1, for data analysis purposes. After each focus group, each participant was instructed to complete a brief demographics survey. Questions included: age, race/ethnicity, level of education, relationship status, number of children in the household ages 2-7, and employment status. A total of 36 surveys were collected, one participant chose not to complete the survey.

Data Analysis

Data Analysis

The independent researcher and principle investigator met after each focus group to discuss initial findings and impressions. The two English focus group audio recordings were transcribed verbatim by two trained undergraduate research assistants. The remaining Spanish audio recordings were translated and transcribed verbatim by a trained staff member. The electronic transcripts were then imported into NVivo (QSR)

version 10. NVivo is a software program that assists in the organization of qualitative data for further analysis. Descriptive coding was used to categorize the data. First NM, trained in qualitative data analysis, identified concepts and themes in the transcribed narratives[3]. A hypothesis driven approach was taken whereby, based on the moderator, guide questions and key phrases were coded for the transcripts. For example*: parents are aware of healthful behaviors* and *parents are aware of the food served in child-care.* During the initial coding process, several themes that emerged included: *current and family health concerns influence how parents feed their child, family,* and *culture and childhood experience influences what and how parents feed their child*. Additional themes emerged from the data and were added to the existing themes. These additional themes included: *Spouse preferences and grandparents indulgent behavior make dietary changes in the home difficult, cross-over environment influences on the child's feeding environment.* In the second phase of the analysis, concepts and themes were reviewed and discussed with AT and her research team. Subsequently, a second pass of the transcripts was completed in order to ensure that all of the a priori and emergent themes were captured. In the final phase, themes were again reviewed, modified, and condensed as needed.

Descriptive statistics were computed from the survey data, using SPSS (IBM, Armonk, New York), version 22.

A one-way analysis of variance was used to assess if there was a difference of child body size perceptions between the focus groups and between genders of the silhouettes. Alpha was set at 0.05. Voices from the focus group recordings could not be linked to the voices of individual participants.

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APPENDIX C:
Consent forms

Consent for Participation
THE UNIVERSITY OF RHODE ISLAND

Interviews on How Parents of Young Children Are Currently Involved the Child-care Setting

You have been invited to take part in a research project described below. The researcher will explain the project to you in detail. You should feel free to ask questions. If you have more questions later, Alison Tovar, PhD, the person mainly responsible for this study, (401) 874-9855, will discuss them with you. You must be at least 18 years old to be in this research project.

Description of this project:
This interview is designed to gather feedback from Daycare Directors to obtain a better understanding on how parents are currently engaged in the daycare setting in terms of health promotion and nutrition reform. We will gather information about how currently your childcare facility currently engages parents of those children between the ages 2-5 years old. These interviews are a part of a research project aimed at better understanding how we can more effectively involve parents/caretakers, specifically from predominantly Hispanic families, in health promotion and healthy eating/nutrition reform in the childcare setting. Your input will help us learn how to recruit parents and also how to better engage parents at your facility.

What will happen if I decided to participate in a personal interview?
If you agree to participate in a personal interview, the following will happen:

1. You will participate in a personal interview for about thirty to forty-five minutes. You will be asked questions regarding the activities currently offered at your facility that encourage parental engagement/participation.

2. Your discussion will be audiotaped with a digital tape recorder. Notes also will be taken. The tapes will be used to provide additional detail to the notes. Identifiers will be removed, so no one will be able to identify you personally or anything that you have said. Tapes will be retained for three years following the completion of the project and then destroyed. The tapes will be stored securely at the University of Rhode Island in Ranger Hall room 305

3. *Incentive:*
At the end of the interview, you will receive a $40 gift certificate to compensate you for your time.

Benefits or risks:
If you do decide to participate in this interview, you will be helping research project staff to help develop programs that include parents in future nutrition interventions at daycare center. There is minimal risk in participating.

Confidentiality:
Any information that is gathered from the interview in which you participate will be kept confidential--that is, no one else will know how you answered the questions. Tapes will be retained for three years following the completion of the project and then destroyed. The tapes will be stored at the University of Rhode Island in Ranger Hall room 305**.**

Right to quit at any time:
The decision to participate in this study is voluntary and is up to you. You can quit the interview at any time, simply by telling us that you no longer want to participate.

In case of injury:
If this study causes you any injury, you should tell student investigator Noereem Mena (401) 854-6076. You should also write or call the office of the URI Vice-President for Graduate Studies, Research, and Outreach, Suite 2, 70 Lower College Road, The University of Rhode Island, Kingston, RI 02881; Telephone (401) 874-4328.

Rights and Complaints:
If you are not satisfied with the way this study is performed, you may discuss your complaints with Alison Tovar (401) 874-9855 anonymously, if you choose. In addition, if you have questions about your rights as a research participant, you may contact the office of the Vice President for Research, 70 Lower College Road, Suite 2, University of Rhode Island, Kingston, Rhode Island, telephone: (401) 874-4328.

You have read the Consent Form. Your questions have been answered. Your signature on this form means that you understand the information and you agree to participate in this study.

_____	_____
Signature of Participant	Signature of Researcher
_____	_____
Typed/printed Name	Typed/printed name
_____	_____
Date	Date

I give permission to be audiotaped.

_____
Signature of Participant

_____
Typed/Printed Name

_____
Date

Please sign both consent forms, and keep one for yourself.

Consent for Participation
THE UNIVERSITY OF RHODE ISLAND

Focus Groups on Healthy Eating and Health Promotion in Hispanic Families with Preschool-aged Children

You have been invited to take part in a research project described below. The researcher will explain the project to you in detail. You should feel free to ask questions. If you have more questions later, Alison Tovar, PhD, the person mainly responsible for this study, (401) 874-9855, will discuss them with you. You must be at least 18 years old to be in this research project.

Description of this project:
This small group activity has been designed to gather feedback from parents/caretakers of young children who are enrolled in childcare. We will gather information about how you would like to be involved and included in future nutrition interventions. Your input will help develop programs to allow you to be a part of future nutrition interventions at your child's daycare center.

What will happen if I decide to participate in a focus group?
If you agree to participate in this focus group, the following will happen:

1. You will participate in one focus group (a small informal group discussion) for about an hour and a half at your child's daycare facility. Six to ten parents/caretakers will be asked to discuss some general questions about healthy eating (in respect to their child), in both the childcare setting and in the home.

2. Your group discussion will be audiotaped with a digital tape recorder. Notes also will be taken. The tapes will be used to provide additional detail to the notes. Identifiers will be removed, so no one will be able to identify you personally or anything that you have said. Tapes will be retained for three years following the completion of the project and then destroyed. The tapes will be stored securely at the University of Rhode Island in Ranger Hall room 305.

3. In order to maintain confidentiality, please do not discuss what you hear in this group with people outside this group in any way that might identify the people you met here

4. At the end of the group meeting, you will receive a $35 gift certificate to (location TBD), to compensate you for your time.

Benefits or risks:
If you do decide to participate in this focus group, you will be helping research project staff to help develop programs to allow you to be a part of future nutrition interventions at your child's daycare center. There is minimal risk in participating.

Confidentiality:

Any information that is gathered from the group discussions in which you participate will be kept confidential--that is, no one else will know how you answered the questions. Tapes will be retained for three years following the completion of the project and then destroyed. The tapes will be stored at the University of Rhode Island in Ranger Hall room 305**.**

Right to quit at any time:
The decision to participate in this study is voluntary and is up to you. You can quit the focus group at any time, simply by telling us that you no longer want to participate. If you decide not to participate in this focus group, or leave during the focus group, nothing will happen and you will still be eligible for any services to which you are entitled.

In case of injury:
If this study causes you any injury, you should tell student investigator Noereem Mena (401) 854-6076. You should also write or call the office of the URI Vice-President for Graduate Studies, Research, and Outreach, Suite 2, 70 Lower College Road, The University of Rhode Island, Kingston, RI 02881; Telephone (401) 874-4328.

Rights and Complaints:
If you are not satisfied with the way this study is performed, you may discuss your complaints with Alison Tovar (401) 874-9855 anonymously, if you choose. In addition, if you have questions about your rights as a research participant, you may contact the office of the Vice President for Research, 70 Lower College Road, Suite 2, University of Rhode Island, Kingston, Rhode Island, telephone: (401) 874-4328.

You have read the Consent Form. Your questions have been answered. Your signature on this form means that you understand the information and you agree to participate in this study.

_____	_____
Signature of Participant	Signature of Researcher
_____	_____
Typed/printed Name	Typed/printed name
_____	_____
Date	Date

I give permission to be audiotaped.

_____
Signature of Participant

_____
Typed/Printed Name

_____
Date

Please sign both consent forms, and keep one for yourself.

FORMA DE CONSENTIMIENTO INFORMADO

La Universidad de Rhode Island

Grupos de Foco sobre la Alimentación Saludable y la Promoción de La Salud en Las Familias Hispanas con Hijos Preescolares

Usted ha sido invitado para participar en la investigación descrita en este documento. Los investigadores le explicaran el proyecto en detalle. Siéntase libre de hacer preguntas. Si tiene preguntas más tarde puede comunicarse con Alison Tovar, PhD, la persona responsable de este proyecto, 401-874-9855. Usted debe tener por lo menos 18 años para participar en este proyecto.

Descripción del Proyecto:
Esta discusión de grupo has sido diseñada para recolectar información acerca de pensamientos y creencias con respecto a la obesidad como padres de niños jóvenes que participan en daycare. Queremos saber cómo le gustaría estar involucrado en intervenciones de nutrición en el daycare de su hijo/a.

Que pasara si decido participar en este grupo de foco?
Si decide participar lo siguiente pasara:

1. Usted participara en uno de los grupos de foco (una discusión informal) durante aproximadamente una hora y media. Seis a doce padres estarán con usted para discutir unas preguntas acerca de las necesidades de salud y nutricionales de sus hijo/a. También le aremos algunas preguntas acerca de cómo quisiera estar involucrado en intervenciones nutricionales en el daycare de su hijo/a.
2. La discusión será grabada con una grabadora digital. También estaremos tomando notas. Las grabaciones nos ayudaran para obtener más detalles de las discusiones. Eliminaremos identificaciones personales para que nadie pueda identificar quien es. Las grabaciones serán guardadas durante tres años después de que completemos el estudio y luego serán destruidas. Las grabaciones serán guardadas en un archivo bajo llave en las oficinas de Dr. Tovar en Ranger Hall, 305 en la Universidad de Rhode Island.
3. Por favor, no hable de lo que se dio durant la reunión parpa proteger la confidencialidad de los demás que participaron en este grupo.
4. Al final de las discusión, usted recibirá una tarjeta de regalo por $35 por su tiempo.

Beneficios o Riesgos:
Si usted decide participar en este grupo, usted estará ayudando a crear intervenciones que pueden involucrar padres para poder mejorar la salud de su hijo/a. El riesgo de participar es mínimo.

Confidencialidad:
Cualquier información recolectada será guardad confidencialmente- eso quiere decir que nadie más sabrá como respondió a las preguntas. Las grabaciones serán guardadas durante tres años después de que completemos el estudio y luego serán destruidas. Las

grabaciones serán guardadas en un archivo bajo llave en las oficinas de Dr. Tovar en Ranger Hall 305, en la Universidad de Rhode Island.

Su Derecho a Parar de Participar en Cualquier Momento:
La participación en este proyecto es voluntaria. Puede decidir no participar o retirarse del proyecto en cualquier momento, simplemente infórmenos que no quiere participar. Si decide no participar nada pasara y todavía será elegible para los servicios correspondientes.

En caso de lesiones:
Si este estudio le causa algún tipo de lesión, deberá informarle a la persona responsable, Noereem Mena al (401) 854-6105. También, si tiene preguntas acerca de sus derechos como participante, puede contactar Vice President for Research, 70 Lower College Road, Suite 2, University of Rhode Island, Kingston, Rhode Island, telefono: (401) 874-4328.

Derechos y Quejas:
Si usted no está satisfecho con este estudio, puede discutirlo con Alison Tovar (401) 874-9855 anónimamente, si usted decide. También, si tiene preguntas acerca de sus derechos como participante, puede contactar Vice President for Research, 70 Lower College Road, Suite 2, University of Rhode Island, Kingston, Rhode Island, teléfono: (401) 874-4328.

Confirmo que el propósito del estudio, los procedimientos de investigación, los riesgos e incomodidades posibles así como los beneficios han sido explicados a la participante. Todas las preguntas se han contestado. La participante ha estado de acuerdo con participar en el estudio.

_____	_____
Firma del Participante	Firma del Investigador
_____	_____
Nombre el letra de imprenta	Nombre el letra de imprenta
_____	_____
Fecha	Fecha

Le da permiso al investigador grabar este grupo.

Firma del Participante	Firma del Investigador
_____	_____
Nombre el letra de imprenta	Nombre el letra de imprenta
_____	_____
Fecha	Fecha

Por favor firme ambas copias y guarde una copia para usted.

APPENDIX D:
Moderator Guide

Healthy Eating and Health Promotion in Hispanic Families
University of Rhode Island Nutrition and Food Sciences Department
Focus Group Moderator Guide

General Information
The purpose of this part of the guide is to welcome the parents, and make them as comfortable as possible by explaining the process of a focus group and letting them know what to expect from the experience. Facilitators can also set ground rules for confidentiality, and explain how data will be dealt with (stored, transcribed, and analyzed).

About the topic: Parental involvement is important in the development of eating habits in young children. The purpose of this focus group is to find out more about healthy eating in families and how parents would like to be involved in healthy nutrition programs in the daycare.

1. Ground rules:
    a. Respect all opinions. There are no wrong answers, only different points of view.
    b. Contributions are voluntary; please feel free to express opinions and share ideas.
    c. Confidentiality: we ask that you respect the private nature of what you might hear and not discuss it outside the meeting in any way that might identify the people you met here.
    d. Talking one at a time: we want to be able to hear everyone's thoughts and opinions. Please try not to "talk over each other".

2. Purpose of the focus group:
    a. To learn about how parents would like to be involved in healthy programs at their child's daycare.
    b. Explore the barriers perceived that prevent these parents from being able to be involved in healthy programs at the daycare.
    c. To learn what influences the parents' perceptions of a healthy child body weight.
3. Audiotapes:
    a. The tapes are kept private and safe.
    b. When the tapes are transcribed, participants will be identified by a code.
    c. Anonymous quotations may go into reports or publications.

Format of Focus Group

Overall Design

Have participants help themselves to food and beverages

1. Pre-focus group consent form and survey	(10 minutes)
2. Welcome	(5 minutes)
3. Introductions	(5 minutes)
4. Questions	(50 minutes)
7. Compensation	(10 minutes)
Total:	1.5 hours

(Above times are estimates)

Opening

Welcome (~ 5 minutes)

My name is Noereem. I am a graduate student in Nutrition at the University of Rhode Island. I am conducting these interviews as part of a research project aimed at learning more about healthy eating and health promotion in Hispanic families. I hope to better understand how we might better involve Hispanic families in healthy programs in the daycares .I appreciate the time you've set aside and willingness to participate in the focus groups.

Very quickly, I want to explain what we will be doing here. A focus group is a group discussion. We want you to know that each of your opinions and perspectives are important to us. There are no right or wrong answers. We only ask that you be as open and honest with us as possible. You have been chosen to participate in this focus group because you are a parent/guardian to one or more children enrolled at this daycare. At the end of the focus group, I will ask that you fill out this demographic form just to provide us with some more information about you.

My role is to be your guide by asking questions and keeping us on time; but this is really YOUR time to talk. You will notice that we are taping this group in order to accurately report all ideas. Your name will NOT be associated with anything you say. Also, the tapes will be kept private and safe. When the tapes are transcribed, participants will be identified by a code.

At this point, I will ask that you please turn off your cell phones if you have not done so already.

In addition, guidelines for participating in focus groups should be clarified and expressed. Focus group members should be told:

It is important to 'be a good group member'. This means that participants should be non-judgmental and not critical of others. Please speak when you have something to

say, even if it is a different opinion than others might have. You are allowed to disagree, but please be sure not to interrupt other members.

Bathrooms*

Also, if you notice that I am not giving you eye contact, I am not trying to be rude, I just want you to speak to the other people here, not to me.

In order to maintain confidentiality, please do not discuss what you hear in this group with people outside this group in any way that might identify the people you met here.

You have all already signed the consent; please let me know if you have not. This form just confirms in writing that you are willing to participate in the focus group and also will maintain confidentiality of what is said here today in this room. At the end of this discussion you will fill out a demographics survey. It will just give us more information about yourself – please let me know if you have not.

Finally, there is a lot of information that we would like to cover today, so there may be times that I need to stop you and move on to a new topic. We expect this will take about 1.5 hours. At the end of the focus group, you will each receive a $35 gift card as a thank you and appreciation for your participation.

Are there any questions before we get started?

Introductions (~ 5 minutes)

Now, we are going to start with some introductions. We will not go in order, just jump in when you'd like to. I would like for you share with us:

1. Your first name
2. Your favorite food

To get things started, I will introduce myself first. *Say your name and your favorite food.*

Content (~ 50 minutes)

Now that we are getting to know each other, let's go to the questions we have for you today.

Note: Sub-letters are probes only.

1. What comes to mind when you think about your family's health?
    a. Main priorities as a family – health, happiness, food, exercise?
2. What does the term "healthy food" mean to you?

Now we are going to talk a little bit about your child's daycare and your involvement with them.

3. How are you currently involved at your child's daycare?
    a. Workshops, Parent/teacher night, parent groups?

    b. Whom do you communicate the most with? Teachers, director?
    c. What do you discuss?
    d. How do you engage with other parents?
    e. Would you like to be involved in a different way? If so, what is getting in the way of doing that?
4. What do you know about the food served at your child's daycare?
5. What do you think about the food served at your child's daycare?
    a. Are you made aware of the foods that are served (i.e. provided with a menu)?
    b. Do you like the foods that are provided?
    c. Do you think the foods provided are healthy?
    d. Do you feel that the amount of food provided is enough for your child?
6. How would you compare the food that is served in your child's daycare to the food you serve your child at home?
    a. Are there foods served currently at the facility that you don't or wouldn't serve at home?
    b. Are there particular foods your child eats at the daycare but won't eat at home? Why do you think this happens?
    c. Has the food that your child is served at the facility influenced the foods you buy and prepare in the home? Can you give me some examples?
    d. Do you ever bring/send food with your child to the facility? If so, why do you do this rather than have your child eat the food that is served?
7. How would you feel if the daycare were to start serving your child more healthy foods based on new nutrition guidelines?
8. If you wanted to be involved, how would you like to be involved in this change to more healthy eating in the daycare?
    a. What would you like for the daycare to offer for you to be involved
        i. (i.e. workshops, trainings, newsletters, email, texting etc.)?
    b. What would you like for the daycare to provide you with to continue and/or healthful eating in the home
        i. (i.e. newsletters, training, handouts, workshops, etc.)?
9. What are some of the things that might make it difficult for you to be involved?

We are almost done; we would just like to ask you one more question around feeding your children.

10. What influences what and how you feed your child every day?
    a. How you were fed when you were a child?
    b. Your culture?
    c. Rules at the table?
    d. Your environment? Where you live?
    e. Your family?

Thank you all very much for helping us today! We enjoyed your participation, and I learned a lot that will greatly help us.

Please now fill out this demographics form that I am going to pass out.

As a thank you from us, please do not forget to pick up your incentive.

La Alimentación Saludable y la Promoción de La Salud en Las Familias Hispanas con Hijos Preescolares
University of Rhode Island, Nutrition and Food Sciences Department
Protocolo para el "Grupo de dialogo"

I Bienvenida (~5 min)

"Gracias por participar en este grupo de discusión. Mi nombre es Alison Tovar y trabajo con la Universidad de Rhode Island. Estoy trabajando con mi estudiante de maestría, Noereem Mena. Queremos que sepan que cada una de sus opiniones e ideas son importantes para nosotros. No hay respuestas correctas o incorrectas. Solo le pedimos que traten de ser honestas y francas con sus respuestas. Ustedes han sido elegidas para participar en este grupo porque ustedes tienes niños preescolares (entre las edades 2-7 años) .

Mi participación en este grupo es como moderadora- estaré haciéndoles preguntas y manteniéndonos a tiempo para que ustedes hablen y dialoguen sobre la alimentación de su hijos en el daycare y como ustedes querían involucrase en el daycare. Si no hay objeción con ninguna de ustedes nos gustaría grabar para poder reportar sus ideas con precisión. Nada de lo que compartan en este grupo estará asociado con sus nombres. Adicionalmente, las grabaciones serán guardadas en un lugar privado y seguro. Cuando hagamos el reporte de las grabaciones, ustedes serán identificadas por medio un código, no por nombres.

Es importante ser "respetuoso en este grupo." Esto quiere decir que debemos tratar de no juzgar o ser crítico de lo que digan las otras personas. Por favor hablen cuando tengan algo que decir, aunque su opinión sea diferente de lo que las otras personas piensan. Recuerde que las opiniones pueden ser diferentes- y pedimos que no interrumpan a la persona que esté hablando en ese momento. También se si dan cuenta que no les estoy dando contacto visual, no es porque quiero ser grosera, solo quiero que se hablen entre ustedes y que no me hablen a mi. Todo lo que se diga en este grupo es confidencial y se les pide discreción al no comentar o compartir ninguna información dicha en este grupo o que pueda identificar a cualquier participante de este grupo. Antes de empezar nuestro dialogo les pedimos que por favor mantengan sus celulares en silencio o apagado. ¿Tienen alguna pregunta antes de empezar?

II. Presentaciones (~ 5 MIN)

Vamos a empezar con una introducción. No iremos en orden, así que la que quiera empezar puede hacerlo y cada una puede participar cuando lo desee.

Por favor comparta con nosotros:

1) Su nombre (primer nombre solamente)
2) y ¿Cuál es su comida favorita?

Contenido

1. ¿Cuándo piensa en la salud de su familia, que se le viene a la mente?
    a. Principales prioridades como una familia - la salud, la felicidad, la alimentación, el ejercicio?
2. ¿ Cuando escucha el término "alimentos saludables" en que piensa?

Ahora vamos a hablar un poco acerca de el daycare de su hijo y su participación.

3. ¿Cómo está usted involucrado en el daycare de su hijo en este momento?
    a. ¿Grupos de padres? Reuniones con la maestra?
    b. ¿Con quién se comunica más? Los maestros, el director?
    c. ¿Cuáles son algunas de las cosas que ustedes discuten?
    d. ¿Cómo se involucra con otros padres?
    e. ¿Le gustaría participar de una manera diferente? Si es así, ¿cómo lo haría?

4. ¿Qué ***sabe*** usted acerca de la comida que se sirve en el daycare de su hijo?

5. ¿Qué ***piensa*** usted acerca de la comida que se sirve en la guardería de su hijo?
    a. ¿Le dejan saber acerca de los alimentos que se sirven (provisto de un menú)?
    b. ¿Le gustan los alimentos que se ofrecen?
    c. ¿Cree usted que los alimentos proporcionados son saludables?
    d. ¿Cree usted que la cantidad de comida proporcionada es suficiente para su hijo?

6. ¿Cómo compararía la comida que se sirve en el daycare de su hijo a la comida que sirven en casa?
    a. ¿Hay alimentos que se sirven en el daycare pero que usted no sirve en su casa?
    b. ¿Hay alimentos particulares que come su hijo en el daycare, pero no va a comer en casa? ¿Por qué crees que sucede?
    c. ¿Ha tenido una influencia la comida que sirven su hijo en el daycare en la comida que compra y preparar en casa? ¿Puede darme algunos ejemplos?
    d. ¿Prefiere empacar el almuerzo de su hijo? Si es así, ¿por qué hace esto en vez de dejar que su hijo coma la comida que sirven en el daycare?

7. ¿Cómo se sentiría si el daycare tuviera que empezar a servir comidas más saludables a su hijo dado que hay nuevas reglas de nutrición?

8. Si quiere participar, ¿cómo le gustaría participar en este cambio para una alimentación más saludable en el daycare?
    a. ¿Como le gustaría estar involucrado?
        i. (por ejemplo, talleres, cursos de formación, boletines de noticias, correo electrónico, mensajes de texto, etc.)?

b. ¿Qué le gustaría que le ofrecieran para que pudiera continuar a comer saludablemente en casa?
    i. (por ejemplo, boletines de noticias, formación, folletos, talleres, etc.)?

9. ¿Qué obstáculos se les presentan para poder involucrarse?

Ya casi terminamos, nos gustaría simplemente hacerle una pregunta más en torno a la alimentación de sus hijos.

10. ¿Qué influye en qué y cómo alimenta a su hijo/a todos los días?
    a. Cómo comió cuando eras un niño?
    b. Su cultura?
    c. Reglas en la mesa?
    d. Su medio ambiente? ¿Dónde vives?
    e. Su familia?

Gracias a todos ustedes por ayudarnos hoy! Disfrutamos de su participación, y yo aprendimos mucho que en gran medida nos ayudará.
Por favor, ahora llene este formulario demográfico

Como agradecimiento de nuestra parte, por favor no se olvide de recoger su **incentivo**.

APPENDIX E:
Recruitment Flyers

If you are a **parent of a young child who is between the ages of 2-5 years old** and is **enrolled** at ***Henderson Learning Center***, we would like to invite you to **participate in a focus group**.

RECEIVE **$35** GIFT CARD FOR YOUR PARTICIPATION!!

The **University of Rhode Island** would like to learn more about healthy eating in Hispanic families.

This small group discussion will **last for about 1-1.5 hours** and will be held at:

Where: Henderson Leaning Center, 74 Alton Ave, Cranston, RI

When: Wednesday, September 18th, 2013 – 400 pm

You will receive a **$35 gift card** for your participation. **REFRESHMENTS WILL BE SERVED.** Childcare will be provided.

To register for the focus group, please contact:

Noereem Mena at 401-484-8542 to see if you are eligible.

Si usted es un **padre** de un **niño pequeño que está entre las edades de 2-5 años** de edad en ***Henderson Learning Center,*** nos gustaría invitarlo a participar en un grupo de discusión.

TARJETA REGALO de $35 POR SU PARTICIPACIÓN!

La Universidad de Rhode Island le gustaría aprender más acerca de la alimentación saludable en las familias Hispanas.

Este pequeño grupo de discusión tendrá una duración de **aproximadamente 1 a 1.5 horas.**

Henderson Learning Center, 74 Alton Ave, Cranston, RI

Cuando: Martes, 17 de Septiembre 2013 al las 5:30 pm

Usted recibirá una tarjeta de regalo de $35 por su participación. Se servirán refrescos y se proveerá cuidado de niños.

Para registrarse, póngase en contacto con:

Noereem Mena 401-484-8542 para ver si usted es elegible.

THE UNIVERSITY OF RHODE ISLAND

RECEIVE $35 GIFT CARD FOR YOUR PARTICIPATION!!

If you are a **parent of a young child who is between the ages of 3-7 years old** and is **enrolled** at ***Progreso Latino Preschool,*** we would like to invite you to **participate in a focus group**.

The **University of Rhode Island** would like to learn more about **healthy eating in Hispanic families.**

This small group discussion will **last for about 1-1.5 hours** and will be held at:

Where: Progreso Latino, 626 Broad St., Central Falls, RI 02888

Tuesday, October 8th, 2013 at 4 pm

Receive a **$35 gift card** for your participation.
REFRESHMENTS WILL BE SERVED.

Childcare will be provided.

To register for the focus group, please contact:

Noereem Mena at 401-874-7602 to see if you are eligible.

THE UNIVERSITY OF RHODE ISLAND

$35 TARJETA REGALO por su participación!

Si usted es un **padre** de un **niño pequeño que está entre las edades de 3-7 años** de edad en ***Progreso Latino Preschool***, nos gustaría invitarlo a participar en un grupo de discusión.

La Universidad de Rhode Island le gustaría aprender más acerca de la **alimentación saludable en las familias Hispanas**.

Este pequeño grupo de discusión tendrá una duración de **aproximadamente 1 a 1.5 horas.**

Progreso Latino, 626 Broad St., Central Falls, RI 02888

Cuando: Martes, 8 de Octubre a las 4:00

Usted recibirá una tarjeta de regalo de $35 por su participación. Se servirán refrescos y se proveerá cuidado de niños.

Para registrarse, póngase en contacto con:

Noereem Mena 401-874-7602 para ver si usted es elegible.

THE UNIVERSITY OF RHODE ISLAND

$35 TARJETA REGALO de WALMART!

Si usted es un **padre** de un **niño pequeño que está entre las edades de 2-7 años** de edad en ***El Bebe Daycare***, nos gustaría invitarlo a participar en un grupo de discusión.

La Universidad de Rhode Island le gustaría aprender más acerca de la alimentación saludable en las familias.

Este pequeño grupo de discusión tendrá una duración de **aproximadamente 1 a 1.5 horas.**

El Bebe Daycare Center, 197 Beverage Hill Ave, Pawtucket, RI

Cuando: Martes, 15 de Octubre 2013 a 530 pm,

School Age Side

Usted recibirá una tarjeta de regalo de $35 por su participación.

Se servirán refrescos y se proveerá cuidado de niños.

Para registrarse, póngase en contacto con:

Noereem Mena 401-874-7602 para ver si usted es elegible

THE UNIVERSITY OF RHODE ISLAND

$35 GIFT CARD TO WALMART

If you are a **parent of a young child who is between the ages of 2-7 years old** and is **enrolled** at ***El Bebe Daycare***, we would like to invite you to **participate in a focus group**.

The **University of Rhode Island** would like to learn more about **healthy eating in families** with children enrolled in daycares.

This small group discussion will **last for about 1-1.5 hours** and will be held at:

Where: El Bebe Daycare Center, 197 Beverage Hill Ave, Pawtucket, RI

When: Tuesday, October 15th, 2013 – 530 pm, School Age Side

You will receive a **$35 gift card** for your participation. **REFRESHMENTS WILL BE SERVED.** Childcare will be provided.

To register for the focus group, please contact:

Noereem Mena at 401-874-7602 to see if you are eligible.

THE UNIVERSITY OF RHODE ISLAND

If you are a **parent of a young child who is between the ages of 2-7 years old** and is **enrolled** at ***Love 4 All Child Care Center,*** we would like to invite you to **participate in a focus group**.

RECEIVE **$35** GIFT CARD FOR YOUR PARTICIPATION!!

The **University of Rhode Island** would like to learn more about healthy eating in Hispanic families.

This small group discussion will **last for about 1-1.5 hours** and will be held at:

Where: Love 4 All Child Care Center, 310 Elmwood Ave, Providence, RI

When: Wednesday, September 18th, 2013 – 4 pm

You will receive a **$35 gift card** for your participation. **REFRESHMENTS WILL BE SERVED.** Childcare will be provided.

To register for the focus group, please contact:

Noereem Mena at 401-484-8542 to see if you are eligible.

THE UNIVERSITY OF RHODE ISLAND

Si usted es un **padre** de un **niño pequeño que está entre las edades de 2-7 años** de edad en ***Love 4 All Child Care Center,*** nos gustaría invitarlo a participar en un grupo de discusión.

TARJETA REGALO de $35 POR SU PARTICIPACIÓN!

La Universidad de Rhode Island le gustaría aprender más acerca de la alimentación saludable en las familias Hispanas.

Este pequeño grupo de discusión tendrá una duración de **aproximadamente 1 a 1.5 horas.**

Love 4 All Child Care Center, 310 Elmwood Ave, Providence, RI

Cuando: Miércoles 18 de Septiembre 2013 al las 4:00 pm

Usted recibirá una tarjeta de regalo de $35 por su participación. Se servirán refrescos y se proveerá cuidado de niños.

Para registrarse, póngase en contacto con:

Noereem Mena 401-484-8542 para ver si usted es elegible.

THE UNIVERSITY OF RHODE ISLAND

APPENDIX F:
Demographics Survey

Demographics Survey

Please answer the following questions about YOU.

1. How old are you?
   - ☐ 18 – 21 years
   - ☐ 22 – 25 years
   - ☐ 26 – 29 years
   - ☐ >29 years

2. What is your sex?
   - ☐ Female
   - ☐ Male

3. Are you Hispanic or Latino?
   - ☐ No
   - ☐ Yes

   → If yes, country of origin:

   _____

4. What is your race? Please check all that apply.
   - ☐ White
   - ☐ African-American
   - ☐ American Indian/Alaskan Native
   - ☐ Asian
   - ☐ Native Hawaiian/Pacific Islander
   - ☐ More than once race
   - ☐ Wish not to answer/don't know

5. What is the *highest level* of education / schooling you have completed?

   - ☐ No formal schooling
   - ☐ Less than 8th grade
   - ☐ 8th grade or more, but less than high school
   - ☐ High school graduate (finished 12th grade) or GED
   - ☐ Post high school trade or technical school
   - ☐ 1-3 years of college
   - ☐ College graduate/higher

6. How many children between the ages of 2-7 years old are living in your household?
   - ☐ 1

☐ 2
☐ 3
☐ 4
☐ 5 or more

7. How many of your children between the specified ages above are enrolled currently at this daycare?
   ☐ 1
   ☐ 2
   ☐ 3
   ☐ 4
   ☐ 5 or more

8. Are you currently living with a spouse or partner?

   ☐ Yes
   ☐ No

9. What is your current marital status?
   ☐ Never Married
   ☐ Married
   ☐ Separated
   ☐ Divorced
   ☐ Widowed

10. Where you born in the United States?

    _____years_____months

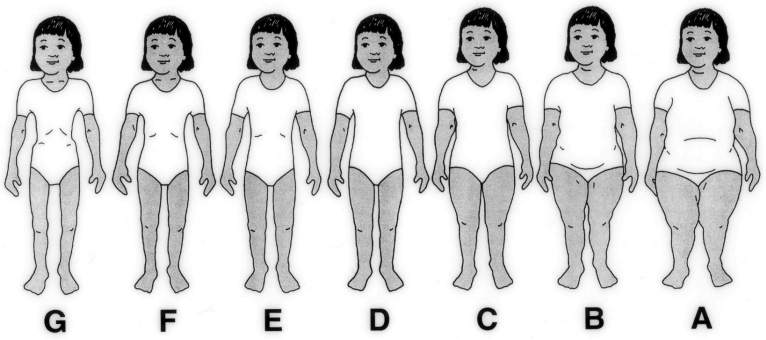
    ☐ Yes
    ☐ No
    → If NO, how many years have you lived in the United States?

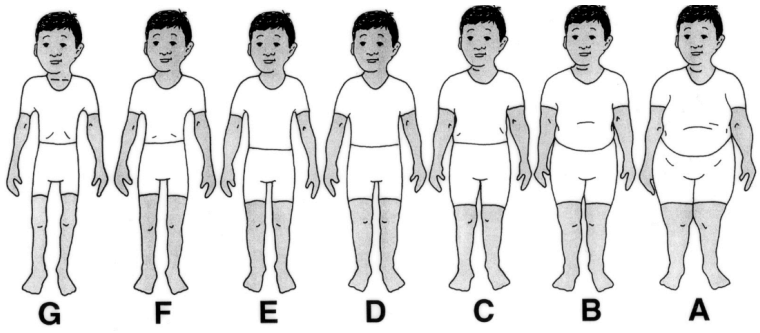
11. How would you describe your current employment status? Please check all that apply.
    ☐ Employed full time (more than 35 hours/week)
    ☐ Employed part time (less than 35 hours/week)
    ☐ Employed seasonally /on and off
    ☐ Unemployed /looking for work
    ☐ Student
    ☐ Homemaker

    →If employed, how many jobs do you currently have?
    ☐ 1
    ☐ 2
    ☐ 3

□ 4+

12. Which child do you think looks the healthiest? Please **circle one**, based on whether your child is a boy or girl.





Favor conteste las siguientes preguntas sobre USTED.

1. ¿Cuántos años tiene?

   ☐ 18 – 21 años
   ☐ 22 – 25 años
   ☐ 26 – 29 años
   ☐ >29 años

2. ¿Cuál es su género?

   ☐ Mujer
   ☐ Hombre

3. ¿ Es Hispano/Latino?
   ☐ No
   ☐ Si
   → Si es, país de origen: _____

4. ¿Cuál es su raza? Marque todas las que apliquen.

   ☐ Blanca

   ☐ Negra / Afro Americana

   ☐ Indígena Americana o Nativa de Alaska

   ☐ Asiática

   ☐ De origen Hawaiano/ de las Islas del Pacífico

   ☐ Más de una raza

   ☐ Desconocida/ No sé

5. ¿Cuál es el *nivel más alto* de educación/de escuela que usted completó?

   ☐ Ninguna educación formal
   ☐ Menos del 8vo grado
   ☐ 8vo grado o más, pero menos de escuela secundaria
   ☐ Graduada de escuela secundaria (terminó el grado 12) o la equivalencia (GED)
   ☐ Escuela vocacional post secundaria o escuela técnica
   ☐ 1- 3 años de universidad
   ☐ Graduada de universidad/Estudios de postgrado universitario/grado superior

6. ¿Cuántos hijos entre las edades de 2-7 años tiene?

   ☐ 1
   ☐ 2
   ☐ 3
   ☐ 4
   ☐ 5 or más

7. ¿Cuántos de sus hijos entre las edades especificadas arriba están matriculados actualmente en este guardería?

   ☐ 1
   ☐ 2
   ☐ 3
   ☐ 4
   ☐ 5 or más

8. ¿Está viviendo actualmente con su esposo o pareja?
   ☐ Sí
   ☐ No

9. ¿Cuál es su estado civil actual?

   ☐ Nunca casada/o
   ☐ Casada/o
   ☐ Separada
   ☐ Divorciada
   ☐ Viuda

10. ¿ Nació usted en los Estados Unidos?

    ☐ Sí
    ☐ No

    → Si NO, ¿ Cuántos años ha vivido en los Estados Unidos?

    _____ años _____meses

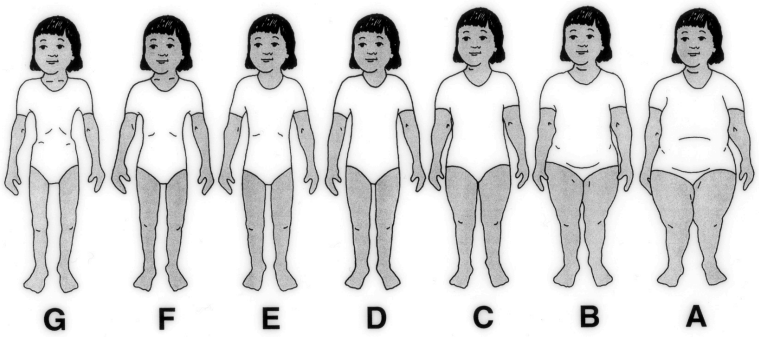
11. ¿Cómo describiría usted su situación actual de empleo? Favor marque todas las que apliquen.

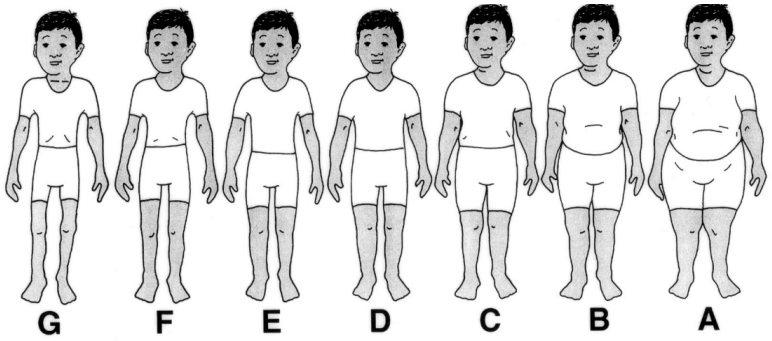
☐ Empleado a tiempo completo (más de 35 horas a la semana)
☐ Empleado a tiempo parcial (menos de 35 horas a la semana)
☐ Empleado por temporadas /a veces sí y otras no
☐ Desempleado / Buscando trabajo
☐ Estudiante
☐ Ama de casa

→ Si empleado, ¿Cuántos trabajos tiene usted actualmente?

☐ 1
☐ 2
☐ 3
☐ 4+

12. ¿Mirando los dibujos, en su opinión, qué niño cree que es el más sano/saludable? Dependiendo si tiene una hija/o, por favor marque con un círculo uno de los dibujos correspondientes.





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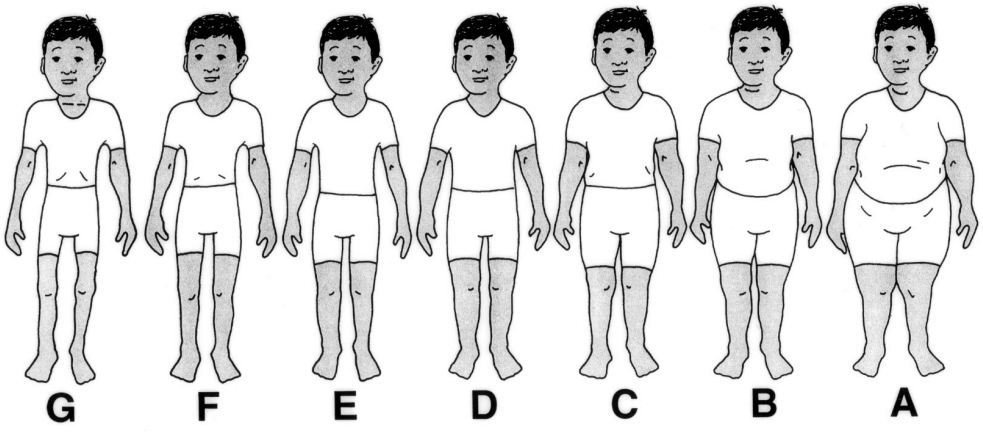

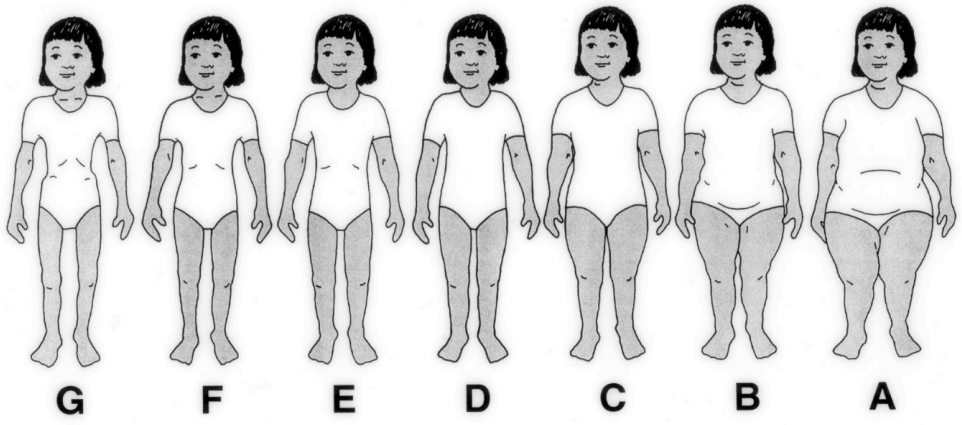

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