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THE HOME AND CHILD-CARE: ARE PRESCHOOLAGED CHILDREN GETTING MIXED FOOD-RELATED MESSAGES?

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THE HOME AND CHILD-CARE: ARE PRESCHOOL-
AGED CHILDREN GETTING MIXED FOOD-RELATED
MESSAGES?

BY

NOEREEM ZENAIDA MENA

A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE OF
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IN
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2019

DOCTOR OF PHILOSOPHY

OF

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2019

ABSTRACT

Statement of the Problem: In the United States, nearly 14% of preschool-aged children (ages 2 to 5) are obese. Additionally, disparities persist, with the highest prevalence of obesity among Hispanic preschool-aged children (17% vs. 11% non-Hispanic Black and 3.5% non-Hispanic White preschool-aged children). Establishing healthy eating habits in early childhood is critical and providing children with similar opportunities to practice healthy eating habits independently at home and in child care is thought to reinforce the development of healthy eating habits early in life. However, there is limited information regarding how parents and childcare providers communicate about child-nutrition, including promoting healthy eating habits. Further, there is a need to examine how and what children are fed both at home and in child care. The purpose of this dissertation was to understand child-nutrition related communication between parents and family child care providers (FCCP) how and what parents and family child care providers (FCCP) feed preschool-aged children at home and in child care. The aims of this paper are to 1) describe parent-FCCP child nutrition-related communication, 2) describe how and what parents and FCCP feed preschool-aged children at home and in childcare, and 3) identify with parents and FCCP strategies to promote healthy eating habits in preschool-aged children. **Methods:** A total of three separate research projects (n=83) were conducted between December 2016 – October 2018. For study 1, five focus groups (n=25) were conducted with parents of preschool-aged children attending family child care homes (FCCH) to explore how and what parents communicate about with family child FCCPs, and influences on how parents feed their children at home. Inductive and deductive content analysis approach was utilized for data analysis of the focus group data. For study 2, 33 parent interviews were conducted to collect parent feeding practices and child dietary intake at home. The data collected was subsequently merged with a matching dataset containing FCCP feeding practices and child dietary intake at the FCCH. Parent/FCCP feeding practices scores were calculated and compared for differences. Healthy Eating Index (HEI-

2015) scores were calculated for dietary intake at home and in the FCCH and compared for differences. For study 3, four nominal group technique focus groups (two with parents, (n=8) and two with FCCPs (n=17)) were conducted to identify facilitators and barriers to parents and FCCPs working together to support healthy eating habits in Hispanic preschool-aged children. Responses were ranked from greatest to least facilitator/barrier. **Summary of results:** Most parents/FCCPs were non-US born Hispanic, female, and primarily Spanish-speaking. Parents reported child food preferences and ensuring that children eat enough food influenced how they fed children at home. Communication with FCCPs occurred primarily in-person; child-nutrition related communication was infrequent. Compared to FCCPs, parents reported greater frequency of controlling feeding practices, and diet quality was higher at the FCCH compared to the home. In general, caregivers recognize the shared feeding responsibility and indicate that intercommunication (or a reciprocal interaction between caregivers) is important to work together to support healthy eating habits in young children, however barriers remain. Increasing communication of child-nutrition related topics between parents and FCCPs may lead to improvements in child dietary intake. Future efforts should include identifying effective communication modalities to facilitate transfer of nutrition information between parents and FCCPs to support healthy eating habits in young children.

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PREFACE

This dissertation was written to comply with University of Rhode Island graduate school manuscript thesis format. This dissertation contains an extended literature review focusing on eating habits of preschool-aged children, the role of the parents and family child care providers in shaping eating habits of preschool-aged children, and three manuscripts. The manuscripts are written in a manuscript format for journal submission as cited below:

Manuscript I Communication with Family Child Care Providers and Feeding Preschool-Aged Children: Parental Perspectives (Formatted for submission to *Journal of Nutrition Education and Behavior*)

Manuscript II: Parent and Family Child Care Home Provider Feeding Practices and Child Diet Quality at Home and in Childcare (Formatted for submission to *Journal of the Academy of Nutrition and Dietetics*)

Manuscript III: Understanding Parent and Family Child Care Provider Communication to Promote Healthy Eating Habits in Hispanic Preschool-Aged Children (Formatted for submission to *Journal of Latina Psychology*)

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MANUSCRIPT I

**Communication with Family Child Care Providers and Feeding Preschool-Aged
Children: Parental Perspectives**

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ABSTRACT

Objective: Identify factors that influence eating habits of Hispanic 2-to-5-year-old children at home and in child care.

Design: Five focus groups conducted December 2016 – July 2017.

Participants: Parents (n=25) of 2-to-5-year-old children attending Family Child Care Homes (FCCH) in Rhode Island.

Phenomenon of interest: How and what parents communicate about with family child care providers (FCCPs), and influencers of how and what parents feed their children outside of the FCCH.

Analysis: Recordings were transcribed verbatim. Content analysis was used to analyze transcripts by two independent coders. Reflections, emerging, and final themes were discussed. Microsoft NVivo 11[®] was used for data management.

Results: Participants were recruited via FCCPs, mostly Hispanic and female. Parents mainly communicated with FCCPs in-person. Communication with FCCPs related to how and what children were fed did not occur frequently, parents usually inquired about how much children ate. Child food preferences and ensuring children eat enough influenced how and what parents fed children at home.

Conclusions and Implications: Parents did not engage in frequent nutrition communication with their FCCPs. At home, parents' practices centered on ensuring that children eat enough. Improved parent-FCCP communication around what children are eating may help improve diet quality in the home. Future efforts should identify strategies that support nutrition communication between parents and FCCPs.

Keywords: parents, child care, communication, focus groups, feeding behavior

INTRODUCTION

In the United States, nearly 14% of preschool-aged children (ages 2 to 5 years) are obese.¹ Disparities continue to persist, with the highest prevalence of obesity among Hispanic preschool-aged children, (17%) compared to 11% among non-Hispanic Black, and 3.5% non-Hispanic White preschool-aged children.^{2,3} Obesity in early childhood is of great concern as it is associated with obesity in adolescence and adulthood,⁴ and greater risk for the development of chronic disease (e.g., diabetes, cardiovascular diseases) and some cancers.⁵ Poor diet quality is associated with the development of obesity preschool-aged children,⁶ with parents and child care providers playing an important role in shaping eating behaviors.⁷⁻⁹ Furthermore, poor diet quality can also result in suboptimal intake of energy and essential nutrients required for proper growth and cognitive development in early childhood.¹⁰

Consistent with the ecological perspective of environmental influences on human development,¹¹ it is hypothesized that the home and child care environment interact with each other to influence children's eating behaviors and weight status.¹² Today, over 60% of US children under age 6 are enrolled in some form of child care, of which almost 25% attend a family child care home (FCCH).¹³ A FCCH is a form of child care in which children are cared for in the provider's home, rather than a child care center or facility, has fewer children, and more flexible hours. FCCHs also tend to be more affordable, characteristics appealing to low-income families.¹⁴ Children spend on average 30 hours per week in child care,¹³ and consume most of their daily nutritional requirements (up to 75%) in this setting.¹⁵ Studies suggest increased risk for overweight and obesity in children attending child care,^{16,17} with greater risk among children attending FCCHs at age 3 compared to children attending center-based care.¹⁷

Within the home environment, parents shape young children's eating behaviors via food parenting practices (FPPs), such as controlling the availability and accessibility of foods, and

modeling eating behaviors.¹⁸⁻²¹ Growing evidence suggests that child care providers can also shape children's eating behaviors by providing healthy foods for meals and snacks, being enthusiastic role models,²²⁻²⁴ and talking with children about healthy eating.^{24,25} Types of foods served²⁶ and the feeding practices used during mealtimes by child care providers can also negatively impact a child's diet.^{27,28} Additionally, evidence indicates that FPPs may vary by socioeconomic status and ethnicity among both parents,^{20,29,30} and child care providers.³¹⁻³³

Promoting the development of healthy eating habits during early years of life is important to support nutrient adequacy, promote a healthy body weight, and prevent chronic disease across the lifespan.³⁴ It is the position of the Academy of Nutrition and Dietetics that child care providers communicate with parents to encourage serving healthy foods, and teaching children about nutrition at home.³⁵ Communication can foster parent-provider partnerships,^{36,37} and serve as a link to promote healthy eating habits in children attending child care by reinforcing consistent and similar opportunities to a healthy diet across settings.^{38,39}

When applied to the context of parent and child care provider relationships, effective partnerships can promote collaboration between parents and child care providers to address child nutrition-related concerns (e.g., promoting healthy eating behaviors). Frequent and open communication, mutual trust or confidence, and respecting each individual's share of competency or knowledge are key relationship characteristics needed for effective partnerships.³⁶ In addition, parent involvement can also promote parent and child care provider partnerships.⁴⁰ Parent involvement is influenced by many factors such as cultural beliefs, past experiences, and social norms, and important for the success of health promotion efforts targeting young children.⁴¹ The increase utilization of child care in the US highlights the need understand parental perspectives as it pertains to engaging with their child care provider to promote child health. The latter is particularly important for populations disproportionately

impacted by obesity (low-income, Hispanic, children attending FCCHs).

Studies have found that when child care providers share nutrition information with parents, parents provide healthier meals for their children.^{42,43} However, there is limited evidence with regards to what and how parents communicate with family child care home providers (FCCP), including discussing healthy eating habits in preschool-aged children.^{37,44,45} Also, understanding parental perspectives of the child care setting as it relates to child eating behaviors and factors that influence how and what children are fed outside of the child care setting is important. Such information can provide insight to parental concerns, motivators, and social and cultural norms related to communication and child feeding. This information is critical to inform child health promotion efforts that involve both parents and child care providers.

Therefore, the purpose of this qualitative study was to explore: 1) *How* parents communicate with FCCPs, 2) *What* parents communicate about with FCCPs, including health-related topics (e.g., foods and beverages, physical activity, and screen time for young children), 3) parental perceptions of the FCCH nutrition environment (e.g., foods and beverages served), and 4) factors that influence how parents feed preschool-aged children (outside of the FCCH setting).

METHODS

Study design

This exploratory study was a supplement study to Healthy Start/Comienzos Sanos, a cluster randomized trial testing the efficacy of an 8-month nutrition intervention designed to improve the nutrition and physical activity environment of FCCHs.⁴⁶ This supplemental study focused on parents who utilize FCCHs to inform future research regarding involving parents in FCCH-based health promotion interventions. Parent participants for the supplemental study were

recruited via FCCPs using a separate protocol. A publicly available contact list of FCCPs on the RI Department of Children, Youth & Families' website was used to identify a sample of FCCPs to contact for parent recruitment.

Given that FCCPs in Providence, RI were being targeted for Healthy Start/Comienzos Sanos, recruitment calls primarily targeted FCCPs in other urban, diverse RI cities, i.e. Central Falls, Pawtucket, Cranston, and Warwick. Recruitment efforts were focused in Central Falls and Pawtucket, where more than a quarter of children live in poverty, 41% and 25.3%, respectively.⁴⁷ Lead researcher NM identified 92 FCCPs in Pawtucket/Central Falls (n=41), Cranston/Warwick (n=50), and Providence (n=1). Of those identified, 59 had a phone number listed, (Pawtucket/Central Falls, n=20, Cranston/Warwick, n=38, Providence n=1) and were contacted. Messages were left for FCCPs that did not answer and were contacted no more than two times. Additionally, FCCPs who did not care for children between the ages of 2-5 were ineligible. For all eligible FCCPs successfully contacted, that is NM spoke with live as opposed to leaving a message (n=31), a brief overview of the study was provided, and FCCPs were also asked if recruitment efforts could take place at the FCCH. Of all contacted, 13 (Central Falls/Pawtucket, n=5, Cranston/Warwick, n=7, Providence, n=1) expressed interest agreed to parent FGD recruitment efforts at the FCCH. All FCCPs were given study materials, including study flyers and a contact form, and were asked to share study information with parents. A \$25 gift card to a local store was provided as an incentive. To ensure data saturation,⁴⁸ a final sample size of 24-32 (6-8 parents across 4 groups) was proposed.

Sample

In Rhode Island (RI), nearly 40% of providers identify as Hispanic. Additionally, 28% of children under age 6 in RI attend a FCCH, with nearly half of FCCPs reporting that enrolled

children speak another language at home, and 54% reporting 100% of children enrolled in child care subsidies.⁴⁹ Given these characteristics and disparities in obesity among RI Hispanic preschool-aged children,⁵⁰ parents of Hispanic preschool-aged children attending FCCHs were targeted.

Interested parents completed the contact form at the FCCH. Contact forms were then collected in-person by NM, who also provided “save-the-date” reminders to the FCCPs to share with parents. A total of 25 parents from seven FCCHs completed the contact form. NM called parents, screened them for eligibility, and provided further project details. All parents were determined to be eligible. Eligible parents were at least 18 years of age, spoke English and/or Spanish, and had a child between the ages of 2-5 years attending a FCCH in RI. Parents who were still interested confirmed their attendance to one of five focus group discussions (FGD). Reminder text messages were sent to participants the day before and the day of the scheduled FGD.

Procedures

A moderator guide to facilitate the FGDs was developed using the Social Ecological Model (SEM)⁵¹, and the home daycare link model.³⁹ The SEM accounts for the complex interaction between environmental influences on children’s behaviors and development.⁵¹

Communication is suggested to foster parent-teacher partnerships and reinforce consistency between home and school.⁵² Thus, aligning to the context of the home-daycare link, the moderator guide questions were developed to identify factors that influence child eating behaviors at home and in child care. The factors of interest were how and what parents communicate about with FCCPs, including topics related to child health behaviors, and factors that influence how and what parents feed young children attending child care.

Once developed, the moderator guide was reviewed with research team members and content area experts. The moderator guide was then pilot tested with a population sample of similar demographics of the target population to ensure that questions were clear, facilitated in-depth discussions, and were culturally relevant and acceptable to participants. Feedback from both the review and pilot were used to finalize the moderator guide. The moderator guide contained a total of 11 questions (39 probes), organized into four domains: **I. Communication with FCCPs, II. Awareness of the FCCH nutrition and food environment, III. Involvement in nutrition-related changes in the FCCH, and IV: Factors that influence food parenting practices outside of the FCCH.** See **Table 1** for all moderator guide questions and probes.

Lead researcher NM facilitated five FGDs with parents (n=25) of preschool-aged children attending a FCCH in RI. Three FGDs were conducted in Spanish, two in English. A bilingual assistant moderator (FT) took notes, operated the digital recorder, and provided logistical support. During the FGD parents were asked to discuss how they communicate with FCCP, and what they communicate with FCCP about regarding the foods and beverages young children consume. Parental awareness of nutrition-related policies, and foods and beverages served in the FCCH, involvement in nutrition-related changes in the FCCH, and factors that influence how parents feed their preschool-aged children at home were also discussed. After each FGD, NM and the assistant moderator met to discuss initial findings and impressions. Although the fourth FGD yielded similar preliminary themes compared to the first three (data saturation), the research team engaged in one final recruitment effort for a fifth FGD to achieve the initial proposed sample size and further validate findings from the previously conducted focus groups.

Four focus groups were conducted at a local public library, and one was conducted within a FCCH. Upon arrival, consent forms were reviewed and signed by each participant, who then

also completed a 22-item demographic survey. The survey included questions on age, race, ethnicity, education level, household income, and federal nutrition program participation (i.e., the Supplemental Nutrition Assistance Program (SNAP) and the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC)). The survey also included the two validated Household Food Insecurity (HFI) screener items: 1) *Within the past 12 months, we worried whether our food would run out before we got to buy more*, and 2) *Within the past 12 months, the food we bought just didn't last, and we didn't have money to get more*.⁵³ Response options to these items were: *often true, sometimes true, and never true*.

A validation study of the HFI screener examined patterns of negative health outcomes compared to the 18-item US Household Food Security Scale, and found that most respondents who were food insecure answered affirmatively “often true” or “sometimes true” to questions 1 and 2 (93% and 82%, respectively).⁵³ Additionally, the HFI screener was determined to have a sensitivity of 97%, and specificity of 83%, indicating that only 3% of families who experienced food insecurity were likely to be misclassified, and 17% of families who were food secure were classified as *at risk* by the HFI screener.⁵³ Three items pertaining to frequency of parent communication with FCCPs about foods and beverages, physical activity, and screen time for young children (*never, rarely, sometimes, often, or always*) were also included. Responses were coded as 0-5 respectively, with higher scores indicating greater frequency of parent-FCCP communication related to child nutrition and health topics.

All FGDs were digitally recorded and averaged 45 minutes in length. At the end of each FGD, participants received a US\$30 gift card to a local supermarket for their participation. Full review of study protocol, and study approval were obtained from the Institutional Review Board at Brown University. An Institutional Review Board Authorization Agreement was obtained from the University of Rhode Island.

Table 1. Focus group moderator guide questions

Domain	Questions
I. Communication with FCCH provider	<ol style="list-style-type: none"> 1. What is the most common way you and your child care provider communicate? Probes: <ol style="list-style-type: none"> a. In-person? b. Over the phone? c. Social Media d. Informal/formal meetings? 2. What are the most common things you talk about with your child care provider? Probes: <ol style="list-style-type: none"> a. Child behavior? b. How the child slept? c. How the child ate? d. What the child ate? e. Specific health concerns? (weight status, eating behaviors) 3. In what ways do you talk to your child care provider about the foods and beverages served to your child with your child care provider? Probes: <ol style="list-style-type: none"> a. In person? b. What do you typically ask? c. Are you aware of a menu/provided with a menu? d. Do you usually ask your child what they ate? e. Not really a concern? – Could you share why this may not be concern to you?^a 4. What might make it difficult to talk to your child care provider about the foods and beverages served to your child in the home daycare with? Probes: <ol style="list-style-type: none"> a. Time b. Language barrier c. Cultural differences 5. If your provider wanted to share information on what foods and beverages are being served to your child when in child care, how would you want to receive that information? Probes: <ol style="list-style-type: none"> a. In-person? b. Handouts or reports? c. Menu?
II. Awareness of FCCH food environment	<ol style="list-style-type: none"> 1. What do you think about the food and beverages that are served at your child's daycare? Probes: <ol style="list-style-type: none"> a. Is enough food provided at each meal? b. Do you consider them healthy? c. Does your child like the food? d. Are there foods your child eats at child care but won't eat at home?

III. Involvement in nutrition-related changes in the child care environment	<p>1. If your child care provider wanted to share information with you about food-related rules and policies of the home daycare, how would you like to receive that information?</p> <p>Probes:</p> <ul style="list-style-type: none"> a. Printed handouts? b. In-person communication? c. Interactive workshop or for parents? <p>Scenario: Your provider tells you that they will have to attend trainings to learn about new mealtime recommendations related to feeding young children in child care. Your child care provider also tells you that she would like to share the information with you so you can have it at home.</p> <p>2. What do you think about your provider giving you that type of information?</p> <p>Probes:</p> <ul style="list-style-type: none"> a. Is this information important to you? b. Would this information influence how you feel about the changes being made? c. Do you think this is information would be useful to when feeding your young child at home?
IV. How parents feed their preschool-aged children outside of the FCCH	<p>1. What helps you decide what foods you feed your children at home?</p> <p>Probes:</p> <ul style="list-style-type: none"> a. Childhood experiences? <p>For example, not being able to leave the table without finishing a meal.</p> <ul style="list-style-type: none"> b. Child food preferences? c. Culture? <p>For example, specific staple foods served at most meals?</p> <p>2. Describe how you interact with your child during mealtimes.</p> <p>Probes:</p> <ul style="list-style-type: none"> a. Do you sit with your child? b. Do you let your child to serve themselves? c. Do you let your child choose from different options what to eat? <p>3. What <i>would</i> you do, or usually do, if your child doesn't want to eat something you cooked or prepared for them to eat?</p> <p>Probes:</p> <ul style="list-style-type: none"> a. Do you make your child something else to eat? b. Do you encourage them to try it? c. Do you use any eating-related rules? For example, child cannot leave the table without finishing a meal, or has to eat a specific meal before getting dessert?

^aProbe added after initial two focus groups; *Quotes have been translated from Spanish into English.

Data Analysis

English audio-recordings were transcribed verbatim into Microsoft Word by research assistant

LS, and Spanish audio-recordings were transcribed verbatim by research assistant FT. NM created structural codes from the moderator guide questions and key phrases (**Table 1**) to facilitate a systematic review of the transcripts and categorize the data.⁵⁴ Microsoft NVivo 11® (QSR International, Melbourne, Australia) was used for data management and organization. Using a deductive and inductive content analysis approach, and the structural codes as a guide,^{55,56} NM read, reviewed, and coded the transcripts and identified initial concepts, themes, and supporting text. Transcripts were then reviewed and coded independently by FT. Concepts, themes, and supporting text segments identified from the Spanish-language transcripts were translated into English. The data analysis process consisted of several team meetings between NM, FT, and a third independent researcher AT to review and discuss reflections, emerging and final themes, and text segments to ensure that all *a priori* and emergent themes were captured. Although the sample included primarily mother/female caregivers, differences between maternal/paternal views and responses from the focus groups were documented and examined. Percent agreement for coded themes were all greater than 90%. Descriptive statistics were computed from the survey data using SAS 9.4.

RESULTS

Demographic Survey Results

Participant Characteristics. Participants (N=25) were primarily Hispanic (n=23), female (n=21), and mothers (n=18). The remaining caregivers were fathers (n=3), or other caregiver/relative (n=4), (e.g., grandmother, aunt). More than half (n=15) reported being born outside of the US, living in the US on average for 6.4 years. Of those born outside of the US, most reported the Dominican Republic as their country of origin (n=7); followed by Puerto Rico (n=4), and Colombia or El Salvador (n=3) as their country of origin. High school or GED was reported as the highest level of education attained by most participants (n=12), followed

by some college (n=6), and college degree or higher (n=5). More than half (n=14) reported being married or living with partner. Nearly half (n=12) of the sample reported participating in SNAP or WIC in the past 12 months. See **Table 2** for full participant demographics.

HFI Screener. Findings from the HFI screener (not reported in table) suggest that more than half of the sample (n=14) represent households with young children at risk for food insecurity. More than a third (n=9) reported “sometimes true” to ‘*Within the past 12 months, we worried whether our food would run out before we got to buy more*’, and five reported “sometimes true” to ‘*Within the past 12 months, the food we bought just didn't last, and we didn't have money to get more.*’

Frequency of parent communication with FCCPs about child nutrition and health topics. In-person during drop-off and pick-up was the primary method of communication reported by the majority of participants (n=20), followed by over the phone (n=18). Parents also reported communicating with their FCCPs during formal meetings (n=10), and via text (n=10). Newsletters and email were rarely used (21 and 23 reporting “no”, respectively). Less than half reported “often or always” seeking advice from their FCCPs about healthy foods and beverages (n=12), physical activity (n=9), and screen time recommendations (n=6) for their child.

Focus Group Results

Emergent themes are presented by moderator guide domains (**Table 3**), with supporting text segments and quotes provided. Quotes that were translated into English are noted with an asterisk (*).

Table 2. Characteristics of the focus groups participants (n=25)

Parent Characteristics		(mean ± SD)
*Age, years (n=23)		33.4 ± 10.6
		n(%)
Sex		
	Female	21(84)
*Race (n=19)		
	White	6(32)
	Other**	13(68)
Born in the United States		
	Yes	10 (40%)
	No	15 (60%)
Years in US (mean ± SD)		6.4 ± 4.9
*Hispanic or Latino		n(%)
	Yes	23(96)
	No	1(4)
*Country of Origin		
	Dominican Republic	7(47)
	Puerto Rico	4(27)
	Other	3(20)
*Education		
	High school diploma/GED	12(50)
	Some college	6(25)
	College degree or higher	5(21)
Marital Status		
	Never married/single	9(36)
	Married/Living with partner	14(56)
	Separated or Divorced	2(8)
*Employment status		
	Employed, full time	11(48)
	Homemaker or student	6(26)
	Employed, part time/seasonal	4(17)
	Unemployed	1(4.3)
Yearly Household Income*		
	Less than \$29,999	13(65)
	Between \$30,000 - \$45,000	2(10)
	Greater than \$45,000	5(25)
Child Characteristics		
		(mean ± SD)
	***Child age	2.89 ± 1.08
*Total hours spent in FCCH per week		33±10

*n<25 d/t missing data / wish not to answer: age, race, country of origin, Hispanic or Latino, employment status, education, and income. **Other reported race categories: Hispanic (n=5); Latina (n=2); Puerto Rico (n=1); Taino (n=1); missing (n=4) ***n=24, reported child age of 7 years, excluded from mean

Domain I: Communication with FCCPs

Parents primarily communicate with FCCPs in-person. Consistent with the survey data, in the focus groups, parents also reported that in-person was the primary method of communication with FCCPs. Parents reported that in-person communication was preferred because it was a more personal form of engagement, and the most convenient way to engage with FCCPs. One parent stated, “**For me, it is easier in person than giving me something in writing.*” Parents were satisfied with primarily communicating with their FCCP face-to-face. Although infrequent, as it was limited to transition times and varied depending on parents’ schedules, parents were confident that the FCCPs would contact them throughout the day when necessary (e.g., child is sick). Engaging in face-to-face communication with FCCPs reinforced the personal relationship parents had and valued with FCCPs (**Table 3**). Handouts and newsletter, although reported as infrequently used, were viewed as an effective strategy to share information about foods/beverages served and consumed in the FCCH, in particular to overcome language barriers (**Table 3**).

Parents trust that the FCCH is a safe environment. Parents emphasized that if they did not trust their FCCPs to adequately care for their child, they would not feel comfortable leaving their child at the FCCH. Parents took comfort in knowing that their children were being well taken care of, given the significant amount of time spent in FCCHs, and their children’s behavior during transition time (happy during drop-off, and not wanting to leave during pick-up).

One mother stated, “** (My daughter) spends more time during the day with her provider than with me. If I did not trust her, know that my daughter is fine, I would be worried at work.*” Parents viewed FCCPs as the primary caregiver while they were at work, and receptive to parent-initiated communication (**Table 3**).

Table 3. Supporting Quotes for Emergent Themes

Domain	Themes	Quotes
Communication with FCCPs	Parents primarily communicate with FCCP in-person	<p>“*I am not buying clothes from her; she is taking care of my daughter. So, it has to be a more personal relationship.”</p> <p>“(Handouts would be helpful) especially for me. I think its cause of the language barrier. You know [my daughter] could say (she had) rice and beans. I know she eats fruits, I could ask [my daughter] but I know she says yes to everything, so I don’t, like, 100% know every day.”</p>
	Parents trust that the FCCH is a safe environment	<p>“*She is your eyes when you are not there. The 40 hours or more one is working, you have to feel comfortable, even though you are not physically there, but you know everything is fine. And it’s like you being there, (just) not physically.”</p> <p>“I feel that I am able to communicate with her and feel open enough...and (my provider) feels comfortable (too). The same way with me, if there was a problem, she’d be able to tell me. We’re just very comfortable with each other. And I think that’s important.”</p>
	Lack of time is a barrier to effective communication	<p>“*Sometimes, its (lack of) time. Sometimes you are rushing out of work because you have something else to do. “</p> <p>“*I (don’t) think it’s the right time because there are other children that she has to be aware of. I go pick up my child, and if I have to talk to her, I try to arrive later, so he’s the last one left, so I do not take away the attention from another child.”</p>
	FCCP are not frequently utilized as source of child nutrition and health information	<p>“*One doesn’t always have access to a nutritionist. But with WIC or the pediatrician. I always use Google.”</p> <p>“I learn on mom blogs, or on Instagram. I follow a lot (of) mothers. I’ve seen different options, where they take the reusable cupcake holders and put food in different ones, and let the child try different things. I’ve been meaning to try that (again). She was more into the playing with them than actually trying the food (the first time).”</p>
	Apprehensiveness to discuss child nutrition-related concerns with FCCPs	<p>“*I don’t ask specifically about what my child ate...I am ashamed for her to think that she is not feeding my child (well).”</p> <p>“I don’t want to offend her, because the cultural aspect too...I don’t want her to think, I’m telling her not to do something.”</p>
Awareness of FCCH nutrition and food environment	Parents trust FCCP to serve healthy, and sufficient food	<p>“*I think the FCCH nutrition environment is good, at least in the home (day care), they always cook.”</p> <p>“One can tell (when your child is eating well. For example, when my son leaves daycare, he does not come home hungry. [In contrast], *my daughter gets out of school, and she wants everything... something to eat, something to drink.”</p>
	FCCH/FCCP influences food parenting practices and child eating habits	<p>“*The provider told me ‘don’t worry, healthy meals are served here’, and so I agreed to (my child) trying new things. And now I can say that (my daughter) eats excellent, she now eats things I’ve never served to her (before).”</p> <p>“*It’s very helpful when she (FCCP) tells me ‘yes, he ate this, he eats that’ and one knows that they are serving (certain foods) ...to then serve it at home. Sometimes at home, they are picky and sometimes don’t want to eat it there, but here (FCCH) they eat it.”</p>

	Differences in maternal and paternal child nutrition-related concerns	<p>“When she comes home with her sippy cup, there is a lot of juice all the time. A lot of times, I think it’s like a guava or (some type of fruit juice). Not like soda, or nothing like that. But I never see water.” (Mother)</p> <p>“(The FCCP) usually tells me what (my child) eats or drinks. She does give her water. But I feel like she gives her juice, more than twice a day, I feel like that’s a little concerning.” (Mother)</p> <p>“*(My son) might not want milk today but want juice. They’re not going to drink the milk but wait for the juice. So, if (the FCCP) can’t give juice that day, they’re going to feel uncomfortable. My child isn’t going to be satisfied.” (Father)</p> <p>“It would make a little uncomfortable because I give the kids juice every day. It makes me a bit uncomfortable because that’s what they usually drink.” (Father)</p>
Involvement in nutrition-related changes in the FCCH	Parental concern for additional burden on FCCPs	<p>“I feel like it would take away from the child, like you know the day care centers, they do that, but a lot of its just paper work.”</p> <p>“There is more staffing (at daycare center), and all its going to do is take time away from the child, or the children they’re watching, that’s not right. You know, I wouldn’t want them to have to do that.”</p>
Factors that influence food parenting practices outside of the FCCH	Parents cater to child food preferences to ensure child eats and food-related conflicts	<p>“*If they like it, I will buy it for them because I see that they do eat it.”</p> <p>“*[Children] will eat more when you give it to them. Sometimes when he finishes [eating], and I feel that he did not eat well, I give it to him. And then after he will say that he doesn’t want any, but he finishes everything on the plate.”</p>
	Television used as a tool to ensure children eat	<p>*[My daughter] will sit on the floor [to eat], watching (TV), even if she makes a mess.</p> <p>*[My child] will pay more attention to the TV than the food, and they will eat quietly.”</p>
	Preventing diet-related diseases	<p>“*I worry for my son because he likes sweets, (and) sweet drinks. I don’t want him to get cavities. I want him to get into a habit of drinking water, instead of [sugary drinks], and to drink [water] when he is thirsty.”</p> <p>“*[I monitor] how much juice intake for health reasons...for their teeth. [Juice causes] a lot of cavities. Even so, in the future, so much sugar, and so much juice can be harmful to their health. Someone told me once to put half water, [half juice] so they only taste a little bit of juice.”</p>
	Cultural and family factors influence child food preferences and eating habits	<p>“Her father is Dominican, I’m French and Irish. Half the time she is eating rice and beans every day, then with me, other stuff.”</p> <p>“[Her grandmother] likes to give [my daughter] what makes her happy. Which is not the healthiest things. She comes home and starts asking for chocolate, and we’re like we don’t have any [in the house]”</p>

Lack of time is a barrier to effective communication. Despite brief, but frequent communication occurring during drop-off and pick-up, parents felt that engaging in more in-depth conversations with FCCPs was limited during this transition period. Many parents

expressed other competing life demands after the workday, causing these transition periods to be rushed. Parents also wanted to be respectful of their FCCPs responsibilities, understanding that they had multiple children to care for, thus limiting their ability to fully engage in a conversation with parents (**Table 3**).

FCCPs are not frequently utilized as a source of child nutrition and health information.

Although the survey data suggests that almost half (48%) of parents seek advice from their FCCPs about foods and beverages for young children, parents reported in the FGDs that they usually sought advice related to child nutrition and health from pediatricians or primary care physicians. This is supportive of the survey data findings in which less than half of parents sought advice from their FCCPs regarding physical activity and screen time recommendations for young children. Encounters with pediatricians or primary care physicians however, appeared limited to annual exams or visits when parents sought treatment (e.g., child is sick). As one mom stated, “**(My daughter) is 4. She is in the category of annual exams or if there is an emergency.*” WIC Nutritionists were also reported by parents as a source for child nutrition information, although at times, the information received from health professionals conflicted with parents’ own beliefs. For example, one mom stated, “**They’re like forcing you (to accept the messages). I would tell them my daughter has a small frame. I am (feeding her) but she also burns calories. You have an appointment, and they expect for my daughter to have gained 5-6 pounds. Her father and I are not heavy. I just gave up fighting with them.*”

Parents were more willing to accept information from health care professionals when messages were reinforced by the FCCPs. One mother explained, “*She (FCCP) told me that you are not supposed to serve juice to children every day, and at first I questioned why. She said it was not good because it contains a lot of sugar. And it’s true, because the WIC Nutritionist told me that...it’s not good to do that (serve juice) every day.*” Parents also

reported using social media apps such as Instagram, and the search engine Google to look for tips related to child feeding and nutrition such as creative ways to introduce new foods, kid friendly recipes, and healthy foods for their child (**Table 3**).

Apprehensiveness to discuss child nutrition-related concerns with FCCPs. Some parents expressed apprehensiveness to discuss concerns related to child eating. Several expressed that they did not inquire about the foods/beverages served to children with FCCPs because they felt it may contradict perceived FCCP's cultural beliefs that influence what is served to children. Parents also stated being worried about their questions or concerns being perceived as undermining the FCCP. (**Table 3**). Despite these challenges, parents overwhelmingly expressed feeling confident in approaching their FCCPs with child-related concerns, and that their concerns would be well received. As one mother shared her experiences communicating her concerns about candy as a choking hazard to her FCCPs, *"(I noticed) they give (my daughter) lollipops and candy. Growing up...we never had that, we never were able to have that stuff, so I think that was a culture thing. I wrote her a note, in Spanish just explaining, I got nervous in the car when I thought (my daughter) was coughing, I was afraid she would choke (on the candy). It never happened again. And she even wrote back on the note saying 'sorry'."*

Domain II: Awareness of the FCCH nutrition and food environment

Parents trust FCCPs to serve healthy, and sufficient food. Foods served by FCCPs were perceived as healthy. Most parents reported that they did not inquire about foods and beverages served. However, because parents were aware that meals served to children were home-cooked meals, they viewed the foods being served to children as healthy. (**Table 3**). Furthermore, types of foods were not of concern as long as it was reported that the child ate well. As one father stated, *"*It's not about knowing (what my son ate) but to be sure that the child ate. When they don't eat a lot, that's when it's worrisome."* All parents unanimously

agreed that FCCPs served adequate amounts of food to satisfy their child's hunger (**Table 3**).

FCCH/FCCP influences food parenting practices and child eating habits. Parents were aware that what occurred in the FCCH could positively impact mealtimes at home. Trust in their FCCPs feeding practices was reinforced by personal history and experiences with FCCPs, observations of foods/beverages served to children during drop-off and pick-up and noticing changes in their children's eating habits at home due to eating and food experiences at the FCCH (**Table 3**).

Some parents expressed being aware that their child's eating habits differed in the FCCH and capitalized on this fact by asking FCCPs about foods/beverages served in the FCCH to help determine what types of meals to prepare at home. This information helped parents serve similar foods, to avoid child food-related conflicts or to complement child care food intake at home (**Table 3**).

Differences in maternal and paternal child nutrition-related concerns. Although parents stated that FCCPs provided healthy and adequate amounts of foods to children, some mothers did express concerns related specifically to juice consumption in the FCCH. As one parent stated: *"What concerns me the most, is what she drinks. I feel like she has more (juice) than I would normally offer to her."* Other mothers expressed similar sentiments. In contrast, fathers in this study were concerned with limiting juice intake (**Table 3**). *Rules are for (FCCHs), not for our home,"* one father stated in response to making changes in the home based on practices in the child care setting. Resistance to limiting juice intake at the FCCH and at home were reported to be fueled by concerns of over child food-related conflicts and making the child unhappy (**Table 3**).

Domain III: Involvement in nutrition-related changes in the child care environment

Parental concern for additional burden on FCCPs. Parents acknowledged the importance and value of engaging in nutrition-related communication with FCCPs. As one mother stated, “**I say it’s a good thing because at home, you can practice the same behavior.*” However, there was great concern over creating additional work for the FCCP. Parents viewed FCCPs as already investing quality time over the course of the day while caring for their child. Parents stated that additional work may not be respectful of the providers’ child care responsibilities by taking time away from caring for children and expecting providers to work beyond traditional work hours. As one parent put it... “*She had such a stressful day. *Why give her more (work)? After 5pm, that’s her free time. And during the day, she does not have time...because she is taking care of children.*” Parents also acknowledged that it is more difficult for FCCPs to facilitate opportunities for nutrition communication with parents due to lack of staff in comparison to center-based facilities (**Table 3**).

Domain IV: Factors that influence food parenting practices outside of the FCCH

Parents cater to child food preferences to ensure child eats and reduce food-related conflicts.

How parents fed their children was greatly influenced by the preoccupation of ensuring their child ate what they perceived to be an adequate amount of food. Although vegetables and fruits were reported when prompted to describe foods their children preferred to eat, child food preferences were mostly characterized by: fried meats such as fried ham, summer sausage, and eggs, fried plantains, and refined grains such as white (mashed) potatoes, white rice and French fries, and flavored yogurts.

Parents stated that catering to child food preferences ensured children would eat but also minimize child food-related conflict, such as refusing to eat a specific food. One mother noted, “*She (my daughter) pretty much chooses what she wants. I’m wasting food if I were to make*

what I want and not let her have her say.” A father expressed: “**One worries when they (children) don’t eat, when they do eat, you can relax.*” While many stated that they did not pressure their child to eat, they did report undesirable FPPs such as encouraging or helping their child eat (i.e., spoon-feeding), and determining how much their child should eat when it was perceived that the child had not eaten a sufficient amount of food, **(Table 3)**. Child pickiness was the most commonly reported food-related challenge at home, and catering primarily to child food preferences by purchasing and serving foods parents knew their child liked increased food acceptance **(Table 3)**, and subsequently reduced risk of food waste. As one mother shared, “**Kids are picky. You have to buy what they like, as long as they eat it.*”

Television used as a tool to ensure children eat. In addition to catering to child food preferences as a strategy to increase food acceptance, some parents utilized the television as a tool to get children to eat. Some parents reported using practices such as using television-watching privileges as a reward for eating a specific food. Others kept the television on during mealtimes to get their children to eat. One father stated, “**(The TV) is always on. If not, they will not eat.*” Parents reported that the distraction from the television encouraged children to eat quietly. **(Table 3)**.

Preventing diet-related diseases. While child food preferences largely determined the foods/beverages parents served to children at home, understanding the relationship of eating habits and chronic disease did influence parents to modify their FPPs **(Table 3)**. This understanding emerged from direct family experiences with diabetes. Parents reported taking charge or being responsible for preventing the development of disease. One mother stated, “**For health reasons, (my husband and I) are now starting to eat a little bit healthier...My husband was recently diagnosed with (high blood sugar).*”

Cultural and family factors influence child food preferences and eating habits. Culture was reported to greatly influence child food preferences, which in turn determined the foods served at home. One father stated, *“My wife is Dominican. I’m half Dominican. Rice and beans, that’s a staple. That was instilled in us. (Our daughter) asks for rice and beans all the time. So, it’s a big part of her diet.”* Others expressed that spouses (i.e., husbands) also influenced their child’s food preferences, which at times contradicted healthful eating habits that primary caregivers were trying to model. One mother stated, *“*I do eat salad, but (my son) is not going to eat salad. I have to make rice separately for my son, and my husband because he also wants his rice too.”* Grandparents were also reported to have food-related practices that contradicted practices in the child’s home. **(Table 3).**

DISCUSSION

This study used FGDs to explore: 1) *How* parents communicate with FCCPs, 2) *What* parents communicate about with FCCPs, including health-related behaviors, 3) parental perceptions of the FCCH nutrition environment, and 4) factors that influence how parents feed preschool-aged children. Consistent with other studies conducted with parents of preschool-aged children attending child care,^{38,41,45} parents in our study communicated with FCCPs in-person, during transition periods (drop-off and pick-up) about overall child wellness, including if the child ate well. Parents also acknowledged the importance of communicating with their FCCPs, the role of FCCPs in caring for their children while at work, and how FCCH factors could influence eating behaviors at home.^{41,45} However, communication between parents and FCCPs related to what children are consuming in the FCCH and best foods and beverages for young children, did not occur frequently. We also found that perceptions and awareness of foods and beverages served influence FPPs at home. Given the close and trusting relationship between FCCPs and parents, our findings highlight the need to strengthen their communication around what and how children are fed to shape child healthy eating behaviors.⁵⁷

Overall, parent-FCCP communication was brief, and friendly conversation centered around the child's well-being. Parents clearly trusted their FCCPs to provide the best possible care for their children. Mutual trust and open communication are two of eight dimensions of the parent-teacher relationship important for the development of parent-teacher partnerships.^{36 36} Our findings suggest that like with teachers, partnerships between FCCPs and parents to support healthy eating habits in young children is possible. Capitalizing on these relationship characteristics could be particularly beneficial to families that utilize FCCHs. Given that parents also expressed that health-related concerns influenced what foods and beverages were served to children at home, framing FPPs in the context of health promotion and disease prevention may reduce parents' resistance to making changes at home, and address concerns related to child eating enough.

Parents in general perceived the foods served to children as healthy, and also trusted their FCCPs to provide adequate food to their children. These findings are consistent with those of *Lindsay et al.*⁴⁵ whereby Latino parents also reported that foods served in FCCHs were more healthful than the foods served at home, and trusted FCCPs serve healthy foods to their children. Parents that did inquire about foods served to children at the FCCH found the information provided beneficial. Knowing what foods/beverages children consumed while at the FCCH helped parents decide which foods to serve to their children at home. This is consistent with the SEM,⁵¹ suggesting that there is a continuity of care (consistency)²² of food-related practices, such as serving healthy foods, in the home as a result of the FCCH environment/FCCP.

In our study, mothers reported actively restricting juice intake at home because of the negative health consequences associated with excessive juice intake, and fathers were resistant to

limiting juice due to concerns related to child happiness and satisfaction. Inconsistencies in parenting and feeding-related practices have been found to be associated with undesirable outcomes, such as higher fast food consumption⁵⁸ and less adherence to food-related rules at home⁵⁹ among adolescents. Although fathers represented only a small proportion of the study sample, evidence supports the role of fathers in feeding young children highlighting the importance of including fathers in health promotion efforts targeting young children.^{60,61}

Despite differences in child nutrition-related concerns, maternal and paternal reported FPPs suggest the use of permissive, indulgent, and controlling practices in the home environment. These practices were driven by parents' concern over ensuring their child eat. Similar to findings reported by *Loth et al.*,⁶² catering to children's food preferences and encouraging or helping children eat eased parental concerns over ensuring that their child ate "enough" food during mealtimes. The sample included parents of children between ages 5-11,⁶³ suggesting that children continue to have an important role in determining foods and beverages served in the home as they older. However, limiting the choice of foods/beverages served to children can limit exposure to healthy foods.^{64,65} Also, concern over ensuring that children eat enough can also impact provider practices in child care settings.^{38,66} Previous studies conducted with child care providers have found that fear of negative parental response to children not eating in child care was a barrier to communicating effectively with parents, and implementing practices that encourage healthy eating behaviors in young children.⁶⁶ Findings from this study support provider perceptions reported in previous studies and also indicate that parents can influence how children are fed in child care settings.

Strategies to increase the frequency of parent-FCCP child nutrition related communication need to take into consideration the context of parents' daily life demands. It was evident that daily routines were primarily influenced by parents' work schedules, which can interfere with

a parents' ability to create and maintain healthy environments.^{45,67} Prospective research efforts should identify strategies that are perceived by parents as less burdensome, and encourage parents to seek child nutrition information from their FCCPs. Federal nutrition programs like the Child and Adult Care Food Program (CACFP) provide free child nutrition education resources for child care providers who participate in the program,⁶⁸ and thus program participation should be encouraged. Furthermore, evidence shows that CACFP participating programs serve healthier foods and beverages compared to non-CACFP participating programs. Future researchers can also utilize CACFP resources already available to enhance FCCPs' child nutrition knowledge and implement programs that provide FCCPs with guidance on creating nutrition education opportunities for parents and children to foster healthy food environments in both settings.

Findings from this study provide a unique opportunity to expand topics that FCCPs could include in nutrition education opportunities for parents. Communication related to child nutrition can include discussing the role of the federal nutrition programs SNAP, WIC, and CACFP in supporting healthy eating environments, in addition to practices that promote healthy eating habits. Previous studies report that FCCPs acknowledge the importance of communicating with parents about healthy eating habits, and want to work with parents to promote healthy eating habits in young children.^{31,44} Moreover, parents in this study reported WIC nutritionists as a source of reliable nutrition information, especially when information was reinforced by their FCCPs. Participation in WIC, SNAP, and CACFP can help increase food security for families with young children and provide opportunities for nutrition education.⁶⁹ Future research should examine FCCPs knowledge of these federal nutrition programs, interest in sharing this information and to what extent FCCPs already provide this type of information to parents.

Nonetheless, this study was not without limitations. While our study was intended to be inclusive of all parents and caregivers among our target population, our participants were primarily women as opposed to fathers. In addition, the cross-sectional design of this study and small sample size limit the generalizability of this study to other Latinx/Hispanic immigrant parents/other caregivers of Hispanic preschool-aged children. There is also the potential for researcher and participant bias⁷⁰ related to recruitment methods and topic of discussion. Parents were informed as part of the consent process that the purpose of the FGDs was to gather feedback to inform intervention efforts to promote healthy eating in young children. It is possible that some parents may have been unwilling to share perspectives that may seem contradictory to what are appropriate eating behaviors for young children. Although, the research team included Latina bilingual researchers so that participants could feel more comfortable, and FGD transcripts were analyzed in their original language using a standardized analytic approach. Additionally, both the survey data and qualitative findings of this study reinforce that parent-FCCP communication related to what children are consuming and appropriate foods and beverages for young children is limited. Also, it is likely that children are exposed to healthier nutrition and food environments when in child care.

IMPLICATIONS FOR RESEARCH AND PRACTICE

Parents are primarily concerned with ensuring their children eat a sufficient amount of food during mealtimes. Parents also do not engage in frequent child nutrition communication with FCCPs because they do not want to burden FCCPs with additional work and perceive the FCCH environment to be healthy. Parents also trust FCCPs to serve children sufficient, and healthy foods, and acknowledge that FPPs can be influenced by FCCH factors. Future FCCH-based interventions should target both parent and child behaviors as the current study showed that parents are serving unhealthy foods based on child food preferences and eating these foods themselves as well. Findings from this study provide potential parent behaviors, and

home environment characteristics to target in future FCCH-based obesity prevention interventions that target Latinx/Hispanic children from primarily low-income primarily immigrant families.

Communication methods that highlight the role of child care providers in promoting healthy eating habits among young children, and ease parental concerns to encourage them to seek child nutrition information from their FCCPs should be identified within the context of other factors such as acculturation level, parental daily life demands and work schedules. Providing parents with nutrition education can be beneficial,^{38,43,71} and leveraging the role of already existing nutrition programs and resources, such as CACFP, may facilitate effective parent-FCCP child nutrition communication to support the development of healthy eating behaviors among preschool-aged children.

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MANUSCRIPT II:

**Parent and Family Child Care Home Provider Feeding Practices and Child Diet Quality
at Home and in Childcare**

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ABSTRACT

Background Parents and childcare providers influence a child's dietary intake via feeding practices to influence what and how much a child eats. Yet, limited data on caregiver feeding practices and eating habits among children attending family childcare homes is available.

Objectives To describe parent/provider (FCCP) feeding practices and child diet quality at home and in the FCCH and examine differences in feeding practices and child diet quality across settings.

Design This was a cross-sectional mixed-methods study.

Participants The sample included 33 majority Hispanic (>60%) FCCP-parent-child triads from two northeast states. The data collected was subsequently merged with a matching dataset containing FCCP feeding practices and child dietary intake at the FCCH (n=30).

Main outcome measures Parent and FCCP feeding practices collected via self-report survey, and child dietary intake outside of the FCCH collected via phone food recalls and direct observation in the FCCH. Scores were calculated for feeding practices. Healthy Eating Index (HEI-2015) scores were calculated for dietary intake at home and the FCCH.

Statistical analyses Descriptive statistics were calculated for all variables. Wilcoxon rank-sum were used to examine differences between parent and FCCP feeding practices. The Signed Rank Test was used to examine differences in HEI-2015 at home and FCCH. All analyses were conducted using SAS 9.4

Results Parents engaged in significantly greater frequency of controlling feeding practices compared to FCCP (2.8 vs. 2.0, $p<0.01$). Total HEI-2015 score was higher for the FCCH (66.0) compared to the home (58.3), however, not significant ($p=0.06$).

Conclusion Overall, the FCCH environment was characterized by a greater frequency of positive feeding practices and higher diet quality. However, improvements in both settings regarding caregiver feeding practices and child diet quality is warranted.

RESEARCH SNAPSHOT

Research Questions: What feeding practices do parents and family childcare providers use with preschool-aged children. What are the eating habits of preschool-aged children at home and in the childcare setting?

Key Findings: Parents engage in greater frequency of controlling feeding practices compared to FCCPs. Child diet quality in the FCCH was higher compared to diet quality at home, indicating that children are exposed to a greater variety of healthful foods in the childcare setting. However, HEI-2015 scores remain well below 100 indicating overall suboptimal diet quality.

INTRODUCTION

A major contributing factor to the development of child obesity is unhealthy eating patterns in early childhood. Nearly all preschool-aged children fail to meet the recommended intakes for vegetables and whole grains, and exceed intakes for added sugars and fat.^{1,2} These trends are alarming as healthy eating patterns in the early years of life are critical to ensure nutrient adequacy for proper growth and development,³ and prevent chronic disease and promote a healthy body weight across the lifespan.⁴ It is estimated that 60% of US children under age 6 are enrolled in some form of childcare,⁵ spending on average 35 hours per week in this setting, where they can consume up to 75% of their recommended daily nutrient intake.⁶ Both parents and childcare providers serve as “nutritional gatekeepers” and impact the health and eating patterns of young children.^{7,8} Given that children spend the majority of their time between the home and childcare setting, understanding how both parents and childcare providers influence children’s eating patterns is important.

How children are fed may be just as important as *what* children are fed. Parents and childcare providers tend to be the primary persons responsible for grocery shopping, and meal preparation, shaping the physical food environment (what is available to children).⁹ Moreover, parents and childcare providers also shape the social food environment by employing feeding practices and modeling food choices and eating habits. Feeding practices (more commonly referred to as ‘food parenting practices (FPP)’) are goal-directed behaviors employed by caregivers to influence how much and what a child eats.¹⁰

Decades of literature continues to support the influence of a variety of FPPs on children’s eating patterns and weight outcomes.⁹ Food parenting practices are specific goal-oriented directives employed by parents to influence what and how much the child eats.¹¹ More broadly, FPPs are organized into two categories, *non-responsive* and *responsive* feeding

practices.¹² *Non-responsive* FPPs include parent-centered behaviors such as controlling FPPs, whereby parents use restriction and pressure to eat to influence a child's dietary intake, and foods as rewards or bribes to control children's behavior.¹² *Non-responsive* FPPs have been found to interfere with a child's ability to self-regulate their dietary intake by hindering their ability to respond to their own cues of hunger and fullness.¹²⁻¹⁴ *Responsive FPPs* on the other hand, are child-centered, as children are given the opportunity to eat in response to their internal cues of hunger and stop eating when they are full.^{15,16} Examples of *responsive* FPPs include: adults sitting with children to provide guided food choices, teaching children to serve themselves, role modeling, and encouraging but not forcing (or pressuring) children to try healthy foods.¹⁰

Within the home environment, parents play a critical role in shaping young children's eating patterns by controlling availability and accessibility of foods, modeling eating behaviors, and through parental feeding practices (behaviors employed by parents to influence how much and what a child eats).^{17,18} Overall, evidence suggests that controlling feeding practices can negatively impact children's eating behaviors and weight status.¹⁹⁻²² These 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.¹⁹ Permissive and indulgent practices have also been associated with higher child body mass index, particularly among Hispanic preschool-aged children.^{23,24} Similar to that the parent feeding literature, evidence suggests that childcare providers can also shape children's eating patterns providing healthy foods for meals and snacks, being enthusiastic role models,²⁵⁻²⁷ and talking with children about healthy eating.^{27,28} Types of foods served²⁹ and the feeding practices used during mealtimes by childcare providers can also negatively impact a child's diet.^{30,31}

Understanding dietary intake across both settings is needed to synergistically implement targeted efforts to support healthy eating habits at home and in the childcare setting. Of the limited studies examining parent and childcare provider feeding practices, and dietary intake of preschool-aged children, evidence suggest that children are exposed to generally more positive (responsive) feeding practices in childcare,^{28,29,31,32} and are consuming a greater variety of foods in childcare. In contrast, evidence suggests that preschool-aged children are exceeding recommended energy intake outside of the childcare setting.³³⁻³⁵ However, these studies have primarily focused on center-based care, resulting in little understanding of caregiver feeding practices and child diet quality of children attending family childcare homes (FCCHs). Nearly 25% of children under age 6 attend a FCCH, making it the second most utilized form of childcare.⁵ A FCCH is a form of childcare in which children are cared for in the provider's home, rather than a childcare center or facility, with fewer children, and more flexible hours. Evidence indicates that children attending FCCHs are at greater risk for obesity than their peers enrolled in center-based care.³⁶

To inform future FCCH-based obesity prevention programs, identifying factors associated with higher diet quality is warranted. Therefore, this study had three objectives: **1) Describe parent and FCCP feeding practices per the content map** outlined by Vaughn et al.,¹⁰ (coercive control, autonomy support, and structure), **2) Describe child diet quality at home and in the FCCH** in a diverse sample of preschool-aged children, and **3) Examine differences between parent/FCCP feeding practices and child diet quality** at home and in the FCCH.

METHODS

Study Design and Setting

This study was of a cross-sectional, exploratory design, and supplemental to Healthy

Start/Comienzos Sanos (Healthy Start). Healthy Start was a five-year randomized control trial assessing the impact of FCCH-based nutrition intervention training program with on child diet and physical activity habits. A detailed description of the protocol is described elsewhere.³⁷ In brief, FCCHs in Rhode Island and Massachusetts were recruited to participate, and FCCP feeding practices and child dietary intake were collected as part of the Healthy Start/Comienzos Sanos protocol. A subsample of parents of children participating in Healthy Start/Comienzos Sanos were recruited to participate in *this supplemental* study. Parent feeding practices and child dietary intake at home was collected via phone interviews. Parents received up to \$55 in gift cards to a local supermarket for their participation. Full review of study protocol, and study approval were obtained from the Institutional Review Board at Brown University (Providence, RI). An Institutional Review Board Authorization Agreement was also obtained from the University of Rhode Island (Kingston, RI).

Participants and Recruitment

Parents of preschool-aged children attending FCCHs for this study were recruited from baseline Healthy Start participating FCCHs (n=82) between August 2016 and October 2017. The eligibility criteria included parent consented for child to participate in Healthy Start (i.e., dietary observations) and parent opted to be contacted for future studies on the consent form and spoke English or Spanish. At the time of recruitment, a total of 333 parents had provided consent for their child to participate in Healthy Start. Of the 333 consents, 130 parents (39%) also opted to be contacted for future research studies. Parents who did not provide contact information were excluded, resulting in 101 parents to be contacted for recruitment. Lead researcher, and registered dietitian nutritionist NM called all parents at least once, during which verbal consent was obtained by parents interested in participating. In total, 42 parents enrolled (41% response rate) and scheduled questionnaire interviews and food recalls.

MEASURES

Demographic survey

The demographic questionnaire contained a total of 22 items. Demographic items included race, ethnicity, parent education, annual household income, and parent and child age. The validated two-item Household Food Insecurity (HFI) Screener,³⁸ and items pertaining to frequency of seeking advice from the FCCP about healthy foods and beverages for young children (response categories were: *never*, *rarely*, *sometimes*, *often*, *always*, scored on a 6-point Likert scale with 1 indicating *never*, and 6 indicating *always*) were also included.

Caregiver feeding practices

The self-report Physical Activity & Diet Behavior with Children in the Home (PADB) questionnaire was used to collect both parent and FCCP feeding practices. The PADB questionnaire was developed utilizing items from the validated Comprehensive Feeding Practices Questionnaire,³⁹ which were modified to capture nutrition and physical activity-related practices of childcare providers. The PADB questionnaire has a total of 44 items (22 feeding practices items, 4 nutrition-related attitudes/beliefs items, and 18 physical activity practices items). Of the 22 feeding practice items, 21 were included in this study. The item “*I play videos during children's meals and snacks*” was omitted as screen-time related variables were not within the scope of this study’s objective. Parents and FCCPs were asked to report the frequency (*never*, *rarely*, *sometimes*, *often*, *very often*, or *always*) to which they engaged in a specific feeding practice. Response options were coded on a 6-point Likert scale with 1 indicating *never*, and 6 indicating *always*.

Using the developed content map by Vaughn and colleagues¹⁰ the PADB feeding practices were organized into one of the three higher order feeding practices construct: *coercive control, structure, or autonomy support* (**Table 1**). Coercive control-related feeding practices included

using food as a reward or to soothe negative emotions (5 items). Structure-related feeding practices included role modeling of eating behaviors and leaving the TV during meals and snacks (7 items). Autonomy support-related feeding practices included talking to children about healthy foods, and teaching children to serve themselves (9 items). All PADB items written in directives to the provider were modified to read as a directive to the parent – for example: “*I drink soda and/or other sugary drinks while I am caring for children*” was written as “*I drink soda and/or other sugary drinks in front of my children*” on the parent version of the questionnaire.

Composite scores for each construct was calculated by adding individual item scores and dividing by the total number of items in the construct. Higher coercive control and structure composite scores would be expected to be associated with lower diet quality in children, thus lower scores of the coercive control and structure are more favorable. Conversely, higher levels of autonomy support would be expected to be associated with better diet quality. Thus, higher scores on autonomy support composite were more favorable. In total, of the 42 parents that enrolled in this supplemental study, 36 completed both the demographic and feeding practices questionnaires. Parents received a \$10 gift card to a local supermarket for completing both questionnaires.

Child Dietary Intake

Children’s food intake at home/away from the FCCH was collected via parent-reported food recalls. Parents were called on two separate weekdays and asked to report foods and beverages consumed by their child on the day prior from the time the child woke up to before leaving the house in the morning, and from the time the child got home up until the child went to bed. A portion size guide was mailed out to all participants to facilitate the food recalls. In total, 33 parents completed at least one food recall on behalf of their preschool-aged child, and 26

completed the two food recalls on behalf of their child. Parents who completed one food recall received a \$20 gift card to a local supermarket. Parents who completed the second food recall received an additional \$25 gift card to a local supermarket.

Children's food intake at the FCCH was collected as part of the Healthy Start project,³⁷ using the Dietary Observation for Childcare (DOCC) system. The DOCC is a validated visual observation technique developed by Dr. Ward and her team.^{40,41} Observation is the gold standard for measuring children's diets,⁴²⁻⁴⁴ and the DOCC protocol minimizes observer intrusion so children don't know that their food intake is being observed. The DOCC is considered a valid and reliable structured system to assess diets of young children and is considered the next best option when plate waste is not possible.⁴⁰

To assess energy intake (kcal), intake of macro- and micronutrients, and diet quality, all foods and beverages, along with meal type and location (i.e., home and FCCH) were entered in the *Nutrition Data System for Research (NDSR)*. Child dietary intake at home was collected directly with NDSR. The DOCC data containing child FCCH dietary intake was entered using the field data collection sheets. The NDSR is a Windows-based dietary analysis program developed by the Nutrition Coordinating Center (NCC) University of Minnesota, Minneapolis, MN.

The NDSR program was designed for the collection and analyses of 24-hr dietary recalls, food records, menus, and recipes. Data per ingredient, food, meal, and day is provided in report and analysis file formats. To reflect the marketplace throughout the study, dietary intake data were collected using NDSR software versions 2015 and 2016. The NDSR time-related database updates analytic data while maintaining nutrient profiles true to the version used for data collection.⁴⁵⁻⁴⁷ Final calculations for the dietary data collected for this study were completed in October 2017 using NDSR version 2016.

Table 1. The Physical Activity & Diet Behavior with Children in the Home (and Childcare) organized per Vaughn et al. constructs. Unfavorable feeding practices are in *italics*

<p>Coercive Control</p> <ul style="list-style-type: none"> • Restriction • Pressure to eat • Threats and bribes (food-based threats and bribes to eat; non-food-based threats and bribes to eat; food-based threats and bribes to behave • Soothing with food 	<ol style="list-style-type: none"> 1. <i>I promise children something other than food if they eat a specific food (for example: "If you eat your beans, we play ball outside")</i> 2. <i>I reward children with something to eat when they are well behaved</i> 3. <i>I give children something to eat to make them feel better when they are upset.</i> 4. <i>I encourage children to eat by using food as a reward. For example, "If you finish your vegetables, you will get some fruit."</i> 5. <i>I encourage children to finish their food even if they say "I'm not hungry."</i>
<p>Structure</p> <ul style="list-style-type: none"> • Rules and limits • Monitoring • Meal and snack routines (atmosphere of meals; distractions; family presence; meal and snack schedule) • Modeling • Food availability • Food accessibility • Food preparation • Permissiveness 	<ol style="list-style-type: none"> 1. <i>I leave the TV on during children's meals and snacks.</i> 2. <i>I show children that I enjoy fruits and vegetables so the children are more likely to eat them.</i> 3. <i>I use my own behavior to encourage children to eat healthy.</i> 4. <i>I eat chips, sweets, or fast food while I am caring for children.</i> 5. <i>I monitor and guide children's eating so that they do not eat more than they should.</i> 6. <i>I monitor and guide children's eating so that they don't eat much less than they should.</i> 7. <i>I drink soda and/or other sugary drinks while I am caring for children.</i>
<p>Autonomy support or promotion</p> <ul style="list-style-type: none"> • Limited/guided choices • Child involvement • Encouragement and support • Praise • Reasoning (Nutrition education) • Negotiation 	<ol style="list-style-type: none"> 1. I teach children about the foods they are eating. 2. I encourage children to wait a few minutes before getting seconds so children can decide if they are still hungry. 3. I let children decide how much they should eat. 4. I ask if they are hungry before I serve them seconds. 5. I encourage children to eat a wide variety of foods. 6. I praise children when they try a new food. 7. I wait to give seconds until a child has finished another food on his/her plate. 8. I ask children if they are full before I remove an unfinished plate. 9. I encourage children to eat fruits and vegetables by telling them that they taste good.

Child Diet Quality

To examine child diet quality at home and in the FCCH, NDSR outputs containing total nutrient data and food group servings were exported for the calculation of Healthy Eating Index (HEI-2015) scores for each setting. The HEI is density-based (e.g., amounts per 1,000 kcal) rather than absolute amounts and relies on a common set of standards that make it applicable across individuals and settings.⁴⁸ As a measure of dietary quality, HEI-2015 scores reflect adherence to food group components of healthy food patterns described in the 2015-2020 Dietary Guidelines for Americans.⁴ The DGA food patterns are based on foods typically consumed by Americans, however, in nutrient-dense and appropriate portion sizes. The HEI is comprised of 13 food group components divided into adequacy components: *total fruit, whole fruit, total vegetables, greens and beans, whole grains, dairy, total protein foods, sea food and plant proteins, fatty acids*, and moderation components: *refined grains, sodium, and empty calories*.⁴⁹

Food group components were derived using established methods publicly available USDA SAS codes.⁵⁰ The SAS codes sum food group equivalents and divide over 1000 calories to calculate a normalized variable for each adequacy or moderation component. Adequacy components are positively scored (i.e., higher intake of food group component results in an increased score) and moderation components are reversed scored (i.e., lower intake results in an increased score). Total HEI-2015 scores are an indication of overall diet quality and are generated by combining adequacy and moderation scores (food patterns), for a possible total maximum score of 100.

Statistical Analyses

Descriptive statistics, including frequencies and proportions were calculated for all variables using SAS 9.4. Cronbach's alpha was calculated for each construct. Non-parametric

Independent t-tests (Wilcoxon rank-sum) were used to examine parent/FCCP differences in feeding practices construct scores with a Cronbach alpha >0.5. The non-parametric paired t-test (Signed Rank Test) was used to examine differences in HEI at home and FCCH.

RESULTS

Participant Characteristics

The final dataset for this study included parents with at least one completed food recall on behalf of their preschool-aged child (n=33) from 30 FCCHs in RI and MA. The majority of parents were female (97%) identified as Hispanic/Latino (67%) and were on average 33.6 years old. Almost two-thirds (64%) reported being born outside of the US, living in the US on average for 15 years. More than half (52%) reported their marital status as ‘single’, and the remaining reported being married or living with a partner (30%) or divorced (17%). A quarter of the sample reported high school diploma or GED as the highest level of education attained, and almost 60% reported some college or a college degree and higher.

Most parents (75%) reported being employed, with nearly a third (31%) indicating part-time employment or indicating seasonal employment, and more than half (53%) reported an annual income of less than \$29,000. Participation in SNAP and WIC in the past year was reported by nearly half (45%) of participants. Children averaged 3.8 years old (range?), were male (55%), and spent on average 33 hours per week in FCCHs. Additional demographic data on the parent-child dyad sample is reported in **Table 2**.

A majority of the parents responded affirmatively to both food insecurity questions indicating that a great proportion of the sample are food-insecure households with children. Most parents (61%) reported ‘often true’ or ‘sometimes true’ to the HFI screener item “*Within the past 12 months, we worried whether our food would run out before we got to buy more*”, and 42%

Table 2. Descriptive data of parents-child dyads and FCCPs

	Parents (n=33)	FCCPs (n=30)
Age, years (mean±SD)	33.6±6.4	51.3±7.5
Sex, %(n)		
Female	97(32)	100(30)
Relationship to child		
Mother	97(31)	-
Father	3(1)	-
Ethnicity, %(n)		
Hispanic/Latina	67(22)	87(26)
Not Hispanic/Latina	33(11)	13(4)
Race, %(n)		
Other	39(13)	37(11)
White	36(12)	30(9)
Black or African American	12(4)	13(4)
Mixed Race	6(2)	-
I don't know/Did not answer	6(2)	20(6)
Born outside of US, %(n)	64(21)	80(24)
Region of Birthplace %(n)		
Caribbean	57(12)	71(17)
Central and South America	24(5)	25(6)
Europe	9.5(2)	-
West Africa	-	4(1)
Did not answer	9.5(2)	-
Years in US, (mean±SD)	15.2±8.8	
Marital Status, %(n)		
Single	58(19)	7(2)
Married/living with partner	8(24)	73(22)
Divorced/Separated	18(6)	13(4)
Widowed	-	7(2)
Education level, %(n)		
<High school diploma	9(3)	13(4)
High school diploma or GED	27(9)	30(9)
Some college (<4 years)	33(11)	43(13)
College (4 years or more)	24(8)	13(4)
Other (technical training program)	6(2)	-
Federal nutrition assistance program in past 12 months, %(n)		
SNAP ^a	45(15)	-
WIC ^a	45(15)	-
CACFP ^a	-	93(28)
Children		
Age, years (mean±SD)	3.8±1.1	
Gender, (%)n		
Male	55(18)	
Hours spent in FCCH/week (mean±SD)	33±10	

^a Abbreviations: (SNAP)=Supplemental Nutrition Assistance Program; (WIC)=The Special Supplemental Nutrition Program for Women, Infants and Children; (CACFP)=Child and Adult Care Food Program

reported ‘often true’ or ‘sometimes true’ to the HFI screener item 2 “*Within the past 12 months, the food we bought just didn’t last, and we didn’t have money to get more*”.

The FCCP subsample for this study (n=30) were all female, mostly Hispanic/Latina (87%) and averaged 51 years old. Similar to the parents in this study, the majority were born outside of the US (80%) and had lived in the US an average of 24 years. Most reported being married (73%), 13% reported being divorced. Nearly 75% reported high diploma or some college as the highest level of education attained, and 13% college degree as the highest level of education attained. The majority of FCCPs reported an annual household income of less than \$50,000 (77%), and almost all (93%) reported their day care home participated in the Child and Adult Care Food Program. See **Table 2** for additional FCCP demographics.

Reliability of Feeding Constructs

Measures of internal consistency (Cronbach’s alphas) were calculated for each feeding practice construct (separately for parents and FCCPs) and yielded adequate estimates for coercive control (alpha=0.65, .60 for parents and FCCPs respectively) and autonomy support (alpha=0.77, 0.68 for parents and FCCPs respectively). The internal consistency for the structure construct did not meet acceptable criteria (alpha=0.38, 0.13 for parents and FCCPs respectively). Composite scores for coercive control and autonomy support were used to examine differences between parents and FCCPs.

Caregiver Feeding Practices

The coercive control construct score was significantly higher among parents than FCCPs (2.8 vs. 2.0, $p<0.01$). For all five items, parents reported greater frequency of employing coercive control practices compared to FCCPs. The parent structure score was also higher for parents than for FCCPs (3.6 vs. 2.7). Parents reported greater frequency of non-responsive feeding

practices such as, leaving the TV on during meals and snacks, unhealthy role modeling (i.e., eating chips, sweets or fast food, and drinking soda or other sugary drinks while caring for children). Parents also reported greater frequency of monitoring children's eating so that they do not eat more than they should compared to FCCPs. Compared to parents, FCCPs reported a greater frequency monitoring children's eating so that they did not eat less than they should. The autonomy support score was the similar for parents and FCCPs (4.3). In general, both parents and FCCPs reported similar frequency of autonomy support feeding practices such as: you encourage your child to wait a few minutes before getting seconds so that he/she can decide if he/she is still hungry; you encourage your child to eat fruits and vegetables by telling your child that they taste good; and you praise your child when he/she tries a new food. For full mean and standard deviations of individual items and constructs, see **Table 3**.

Child Diet Quality

In general, children exceeded recommended daily total energy intake, and consumed on average 400 more calories per day at home compared to the FCCH (959 vs. 558, respectively). All HEI-2015 subcomponent scores, except for sodium and refined grains, were higher at the FCCH compared to HEI-2015 subcomponent scores at home (**Table 4**). Children consumed a greater variety of vegetables and more fruit at the FCCH compared to home dietary intake. The mean total HEI-2015 score for foods and beverages consumed at the FCCH was higher than the mean total HEI for dietary intake at home (66.0 vs. 58.3, respectively, $p=0.06$). Given that the maximum HEI-2015 score is 100, HEI-2015 scores in both settings suggests less than optimal diet quality.

DISCUSSION

The current study described parent and FCCP feeding practices and child diet quality at home and the FCCH in a diverse sample of preschool-aged children ($n=33$) and examine differences

Table 3. Parent and FCCP PADB item and construct level mean scores, standard deviations, and Cronbach alphas

Response scale of the PADB questionnaire: (1) never (2) rarely (3) sometimes (4) often (5) Very often (6) always

Italics represent items where lower scores more favorable

Food parenting practices (n=33)		FCCP feeding practices (n=30)	
Coercive Control (Cronbach Alpha=0.65)	Mean±SD	Coercive Control (Cronbach Alpha=0.60)	Mean±SD
<i>You promise your child a reward if they eat a specific food. For example, "if you eat your beans, we can play ball outside."</i>	3.1±1.6	<i>You promise children a reward if they eat a specific food. For example, "if you eat your beans, we can play ball outside."</i>	1.8±0.9
<i>You reward your child with food or sweets when he/she is well behaved.</i>	2.4±1.4	<i>You reward children with food or sweets when they are well behaved.</i>	1.7±1.2
<i>You give your child something to eat to make him/her feel better when he/she is upset</i>	1.8±1.0	<i>You give children something to eat to make them feel better when they are upset.</i>	1.7±0.8
<i>You encourage children to eat by using food as a reward. (For example, "if you finish your vegetables, you will get some cookies.")</i>	2.9±1.7	<i>You encourage children to eat by using food as a reward. (For example, "if you finish your vegetables, you will get some cookies.")</i>	1.9±0.8
<i>You encourage your child to finish his/her food even if he/she says, "I'm not hungry".</i>	4.3±1.8	<i>You encourage children to finish their food even if they say they are not hungry.</i>	3.0±1.9
PCC Construct score	2.9±1.0	FCC Construct score	2.0±0.6*
Structure (Cronbach Alpha=0.38)	Mean±SD	Structure (Cronbach Alpha=0.13)	Mean±SD
<i>You leave the TV on during your child's meal and snacks.</i>	2.5±1.5	<i>You leave the TV on during children's meals and snacks.</i>	1.2±0.5
<i>You show your child that you enjoy fruits and vegetables so that he/she is more likely to eat them.</i>	5.1±1.4	<i>You show children that you enjoy fruits and vegetables so the children are more likely to eat them.</i>	4.7±1.2
<i>You eat chips, sweets, or fast food while you are caring for your child.</i>	2.6±1.1	<i>You eat chips, sweets, or fast food while you are caring for children.</i>	1.2±0.5
<i>You watch and guide your child's eating so that he/she does not eat more than he/she should.</i>	4.0±2.0	<i>You watch and guide children's eating so that they don't eat more than they should.</i>	3.9±1.9
<i>You watch and guide your child's eating so that they don't eat less than they should^a</i>	2.5±1.4	<i>You watch and guide children's eating so that they don't eat less than they should</i>	4.3±1.9
<i>You drink soda or other sugary drinks while you are caring for your child.</i>	5.2±1.4	<i>You drink soda or other sugary drinks while you are caring for children.</i>	1.2±0.4
PST Construct score	3.6±0.7	FST Construct score	2.6±0.6

Autonomy Promotion (Cronbach Alpha=0.77)	Mean±SD	Autonomy Promotion (Cronbach Alpha=0.68)	Mean±SD
You teach your child about the food he/she is eating	4.5±1.6	You teach the children about the foods they are eating.	4.0 ±1.1
You encourage your child to wait a few minutes before getting seconds so that he/she can decide if he/she is still hungry	3.4±2.1	You encourage children to wait a few minutes before getting seconds so they can decide if they are still hungry.	3.3±1.9
You let your child decide for themselves how much he/she should eat	2.2±1.3	You let children decide for themselves how much they should eat.	3.8±2.1
You encourage your child to eat fruits and vegetables by telling your child that they taste good	4.7±1.6	You encourage children to eat fruits and vegetables by telling them that they taste good.	4.9±1.5
You ask your child if he/she is hungry before serving him/her seconds	4.3±2.0	You ask children if they are hungry before serving them seconds.	3.6±2.0
You encourage your child to eat a variety of foods	5.5±0.9	You encourage children to eat a wide variety of foods.	4.8±1.3
You praise your child when he/she tries a new food	5.0±1.5	You praise children when they try a new food.	5.3±0.99
You wait until your child has finished another food on his/her plate before you give seconds	4.8±1.7	You wait to give children seconds until they have finished another food on their plate.	4.3±1.7
You ask your child if he/she is full before you remove an unfinished plate of food	4.6±1.8	You ask the children if they are full before you remove an unfinished plate of food.	4.3±1.9
PAS Total (construct) score	4.3±1.0	FAP Total (construct) score	4.3±0.9

*FCCP score for coercive control construct was significantly lower than those for parents, $p=0.0024$

between caregiver feeding practices and child diet quality across the home and FCCH environment. Similar to a study conducted by Gubbels *et al.*,³² in which childcare staff scored more favorable on feeding practices compared to parents, FCCPs in this study scored more favorably on non-responsive and responsive feeding practices compared to parents.

Additionally, consistent with studies conducted with preschool-aged children enrolled in center-based care examining child dietary intake at home and childcare,^{33-35,51,52} findings from this study also indicated that child diet quality was higher in the FCCH environment compared

to the home environment, and that children are consuming greater amounts of calories outside of the childcare setting. Yet, as previous studies highlight, our findings suggest that both parent and FCCP feeding practices and child diet quality in both settings can be improved.

The greater use of childcare utilization and the fact that most US preschool-aged are enrolled in some form of childcare,⁵ has led to a shared feeding responsibility, as young children depend on their parents to meet their nutritional needs at home¹⁸ and depend on childcare providers to meet their nutrition needs in childcare.⁵³ Thus, understanding how both parents and childcare providers influence children's eating patterns is important. While there are a limited number of studies that have examined feeding practices of both parents and childcare providers, our study helps fill this gap by providing insight to *how* preschool-aged children are being fed in the environments they spend the majority of their time in.

Consistent with the food parenting literature, parents in this study reported using a variety of feeding practices.⁹ A recent qualitative study conducted with Hispanic caregivers (n=25) of preschool-aged children attending FCCHs provides insight as to why parents may engage in a variety of non-responsive and responsive feeding practices. Mena *et al.*⁵⁴ conducted five focus groups and found that although parents reported that they did not engage in non-responsive feeding practices, such as pressure/force child to eat a specific food, they did commonly employ such feeding practices when it was perceived that the child did not eat enough. In such scenarios, practices reported did not allow children to decide for themselves how much they should eat (e.g., spoon-feeding or helping the child eat).⁵⁴ It may also be that parents are not familiar with appropriate portion sizes for preschool-aged children, as one qualitatively study found. Mena *et al.*,⁵⁵ conducted 4 focus groups with Hispanic mothers (n=36) of preschool-aged children attending center-based care to identify factors that influence parental feeding practices and parent involvement in childcare settings. Parents in this study reported concerns

over their child *not* eating enough in childcare, and even viewed portion sizes served in the childcare center as too small, or smaller than what a child would usually be served at home.

Compared to parents, FCCPs in this study rarely engaged in coercive control feeding practices to influence a child's eating behavior. Low reported frequency of coercive control feeding practices are not surprising given that many childcare provider trainings and best practices recommend *against* controlling practices in the childcare setting, and *emphasize* the use of feeding practices associated with optimal eating habits^{6,56} However, encouraging children to finish their plate even if the child said they were not hungry was the most frequently reported coercive control practice employed by FCCPs. This may be attributed to concerns that parents may perceive their child is not eating well in the childcare setting. As Mena *et al.* concluded some parents are concerned if sufficient food is being provided to children while in childcare.⁵⁴ Parental concern over child food intake in childcare can influence FCCP practices, as suggested by findings that fear of negative parental response to children not eating well in childcare caused providers to engage in controlling practices such as encouraging children to finish their plate.^{49,50} These findings suggest that parents and FCCPs may not be communicating effectively about child dietary intake in the childcare setting. Thus, future efforts should also focus on examining how and what parents and FCCPs communicate about as it relates to child nutrition and feeding young children.

Interestingly, parents reported similar frequencies of role modeling both unhealthy and healthy eating behaviors (structure-related feeding practices). Modeling of eating habits plays a major role in shaping food preferences and dietary intake in young children. Children learn by modeling caregivers' and peers' preferences, intake and acceptability of trying new foods.⁹ Although this study examined FCCP feeding practices, and not actual dietary intake or FCCP modeling behaviors, future research in this area is warranted.

Table 4. Healthy Eating Index (HEI) – 2015^a components and scores for foods consumed at home vs. FCCH(n=33)

Component	Min	Max	Mean±SD	
			Home	FCCH
Adequacy:				
Total vegetgables ^b	0	5	2.1±1.7	2.4±1.5
Greens and beans ^b	0	5	1.5±2.0	2.7±2.4
Total fruits ^c	0	5	3.3±2.1	4.0±1.5
Whole fruits ^d	0	5	2.7±2.3	4.1±1.5
Whole grains	0	10	4.5±3.7	4.5±4.1
Dairy ^e	0	10	8.6±2.7	8.6±2.8
Total protein foods ^d	0	5	3.7±1.5	3.9±1.5
Seafood and plant proteins ^{bf}	0	5	1.6±2.1	3.2±2.1
Fatty acids ^g	0	10	2.6±3.2	4.1±3.3
Moderation:				
Sodium	0	10	7.2±3.6	5.6±3.4
Refined grains	0	10	6.9±3.2	5.9±4.1
Added Sugars	0	10	7.5±3.0	9.0±1.6
Saturated fats	0	10	6.1±3.4	7.8±3.2
Total HEI score^{h,i}	0	100	58.3±12.3	66.0±13.8

^aIntakes between the minimum and maximum standards are scored proportionately.

^bIncludes legumes (beans and peas).

^cIncludes 100% fruit juice.

^dIncludes all forms except juice.

^eIncludes all milk products, such as fluid milk, yogurt, and cheese, and fortified soy beverages.

^fIncludes seafood, nuts, seeds, soy products (other than beverages), and legumes (beans and peas).

^gRatio of poly- and monounsaturated fatty acids (PUFAs and MUFAs) to saturated fatty acids (SFAs)

^hout of a total of 100 possible points

ⁱabsolute difference between home and FCCH HEI score |7.1|, p=0.06

A study examining health behaviors among FCCPs (n=166) found that more than 50% had a “high” stress score, with nearly 90% of FCCPs classified as overweight or obese.⁵⁷ Children attending FCCHs are at greater risk for obesity,³⁶ thus it would be important for future efforts to specifically examine how FCCP individual level behaviors and overall FCCH feeding environment may contribute to obesity risk and development in preschool-aged children.⁵⁸

Identifying obesity promoting attributes in the FCCH can aid in the development of targeted intervention efforts.⁵⁹

Currently there are few studies examining caregiver feeding practices and dietary intake of preschool-aged children at home and in childcare.³² However, the findings from this indicating higher child diet quality in the FCCH compared to the home, and excess energy intake at home, is consistent with the breadth of studies examining dietary intakes of preschool-aged children at home and in center-based care.^{34,35,60,61} Children in general are consuming greater intakes of vegetables, fruits, dairy and whole grains in the childcare setting. A recent study examining childcare provider feeding practices and child diet quality both at home and in childcare also found that child diet quality was higher in childcare compared to the home.³² Similar to this study, findings suggest that children are exposed to more supportive feeding practices in childcare, although exploratory associations yielded mixed findings (e.g., coercive control practices being positively associated with dietary behaviors). The latter may be attributed to the complexities of the child-care giver feeding relationship and underscores the need for additional studies with more robust study designs to disentangle and better understand this bi-directional feeding relationship. Moreover, the opportunity to improve both caregiver feeding practices and child diet quality across settings remains.

Although conducted in a rather homogenous sample (95% of participants reported The Netherlands as country of origin), findings by Gubbels et al.³² suggests that the home and childcare setting interact, and *together* influence child outcomes. Significant differences between settings were found across most feeding practices and were mostly associated with unhealthy dietary intake. Due to limited sample size, the current study did not examine if differences in feeding practices were associated with child diet quality. However, differences in feeding practices between parents and FCCPs were evident. Future studies should consider

Table 5. Spearman Correlations between item level and construct level feeding practices and home/FCCH HEI-2015 scores

Spearman Correlation Coefficients, N=33 Prob r	Home HEI-2015 score	FCCH HEI-2015 score
You promise your child a reward if they eat a specific food. (parent coercive control feeding practice)	0.39 0.02	-
You show your child that you enjoy fruits and vegetables so that he/she is more likely to eat them. (parent structure feeding practice)	0.45 0.01	-
You watch and guide your child's eating so that they don't eat more than they should. (parent structure feeding practice)	0.39 0.03	
You watch and guide your child's eating so that they don't eat less than they should. (parent structure feeding practice)	0.51 <0.01	-
You let your child decide for themselves how much he/she should eat. (parent autonomy promotion feeding practice)	-0.37 0.03	
You encourage your child to wait a few minutes before getting seconds so that he/she can decide if he/she is still hungry. (parent autonomy promotion feeding practice)		-0.44 0.03
You eat chips, sweets, or fast food while you are caring for children. (FCCP structure feeding practice)		-0.43 0.02
You watch and guide children's eating so that they do not eat more than they should. (FCCP structure feeding practice)	-0.41 0.02	0.57 <0.01
You watch and guide children's eating so that they don't eat less than they should. (FCCP structure feeding practice)	-0.53 <0.01	0.49 <0.01

Note. All coefficients are significant at $p < 0.05$; PCC / FCC =parent/FCCP coercive control composite score; PAP/FAP=parent/FCCP autonomy promotion

this socioecological approach to examine the relationship between differences in parent and childcare provider feeding practices and child diet quality in large, diverse samples.

This study has several strengths. To the author's knowledge this is the first study to examine feeding practices of caregivers and child diet quality in a population of preschool-aged children attending FCCHs. Additionally, the lead researcher NM was a bilingual, registered dietitian nutritionist, and thus also collected data from parents who primarily spoke Spanish. These findings can serve as stepping stone to inform future obesity prevention efforts targeting at-risk populations. Also, while 24-hr recalls may be subjected to some amount of under/over reporting and reporting bias, they remain the gold standard in measuring dietary intake. Moreover, dietary findings in this study are consistent with previous studies that have analyzed dietary intakes in large populations of preschool-aged children.^{62,63}

Limitations

Findings from this study should be interpreted with caution. The study sample was relatively small (n=33), and only 16 (48%) had no missing observations, limiting the generalizability of these findings. Furthermore, the Cronbach's alphas for the coercive control and structure feeding construct indicated low/poor internal consistency between the items, limiting interpretation of correlations with child diet quality. The Cronbach alpha for the FCCP structure construct indicated the poorest internal consistency of all constructs. This may be a result of inherent structures already set in childcare settings that may not be as relevant as in the home setting and the lack of tools available to specifically examine feeding practices of FCCPs.

Conclusion

Overall, the FCCH environment was characterized by a greater frequency of responsive feeding practices and higher diet quality. However, there is a need for improvement in both settings to decrease the frequency of non-responsive feeding practices and increase child diet quality as findings suggest that in general, diet quality of preschool-aged children at home and in childcare settings are suboptimal. The preschool years is a critical period for the development of healthy eating habits. Thus, future research efforts warrant the use of the ecological framework to focus simultaneously on caregiver feeding practices and child eating habits across both the home and childcare setting.

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MANUSCRIPT III

**Understanding Parent and Family Child Care Provider Communication to
Promote Healthy Eating Habits in Hispanic Preschool-Aged Children**

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ABSTRACT

Nearly 14% of US preschool-aged children are obese, with disproportionately higher rates among Hispanic children. Child care settings have become an important venue for obesity prevention efforts given that most US preschool-aged children attend some form of child care. Much of the child care literature has focused on center-based care, with more recent efforts expanding to include Family Child Care Homes (FCCHs). The Academy of Nutrition and Dietetics recommends child nutrition-related communication between parents and child care providers to promote the development of healthy eating habits in young children. However, little is known about effective communication strategies specific to families that utilize FCCHs. The current study identified facilitators and barriers to family child care providers' (FCCPs) and parents working together to support healthy eating habits in young children. Four structured focus groups, two with FCCPs (n=17) and two with parents of Hispanic preschool-aged children (n=8) were conducted using the Nominal Group Technique (NGT). Discussing information related to healthy foods and beverages for young children, and planning meals together emerged ways for FCCPs and parents to work together to support child healthy eating habits. Barriers such as, child food acceptance in the FCCH but not at home, and indulgent parent feeding practices at home were reported by FCCPs. Parents reported lack of time, primarily attributed to work schedules as barriers. In general, caregivers recognize the shared feeding responsibility and indicate that intercommunication (or a reciprocal interaction between caregivers) is important to work together to support healthy eating habits in young children.

Keywords: Hispanic/Latinx, childcare, child nutrition, parent communication, parent engagement

INTRODUCTION

Hispanic/Latinx (hereafter referred to as *Hispanic*) are the largest, and fastest growing ethnic minority group in the United States (US), comprising nearly 18% of the US population (Ennis S., 2010). This has significant public health implications given that 17% of Hispanic 2-to-5-year-old children (hereafter referred to as *preschool-aged children*) are obese, compared to 3.5% and 11% of their non-Hispanic White and Black peers, respectively (Ogden et al., 2016). Obesity prevention early in life is critical, as accelerated weight gain during the preschool years is a significant predictor for obesity in adolescence and adulthood (Geserick et al., 2018).

It is estimated that nearly 60% of US children under the age of 6 are enrolled in some form of out of home care (Laughlin & Bureau, 2013). This has led to a shared responsibility of feeding, as young children depend on their parents to meet their nutritional needs at home (Lindsay, Sussner, Kim, & Gortmaker, 2006) and depend on child care providers to meet their nutrition needs in child care (McBean & Miller, 1999). Parents can influence young children's eating habits by controlling availability and accessibility of foods, modeling healthy/unhealthy eating behaviors within the home environment, (Couch, Glanz, Zhou, Sallis, & Saelens, 2014), feeding practices. (Yee, Lwin, & Ho, 2017). Feeding practices are goal-directed behaviors employed by caregivers to influence what and how much the child eats, (Ventura & Birch, 2008) and range from supportive and involved to controlling practices. Similarly, evidence also suggests that child care providers can influence children's eating habits by the types of foods served (healthy/unhealthy) for meals and snacks, and feeding practices used during mealtimes such as, being enthusiastic role models, encouraging child to eat, and talking to children about healthy eating (Ward, Belanger, Donovan, & Carrier, 2015). This is particularly important given that children can consume up to three-quarters of their total energy needs in child care (Benjamin Neelon & Briley, 2011).

Policies and regulations can help ensure a healthy child care environment (Sigman-Grant et al., 2011) by directly modifying the environment and through requiring professional training and education to providers on best feeding practices (Larson, Ward, Neelon, & Story, 2011). A majority of the recent training programs and interventions targeting child care provider feeding practices have focused on child care centers (Larson et al., 2011), despite that nearly 25% of children under age 6 attend a family child care home (FCCH) (Laughlin & Bureau, 2013). A FCCH is a form of child care in which children are cared for in the provider's home, rather than a child care center or facility, with fewer children, and more flexible hours. Previous evidence has suggested an increased risk for obesity among children attending FCCHs compared to their peers enrolled in center-based care (Benjamin et al., 2009).

Nutrition benchmarks in child care from the Academy of Nutrition and Dietetics state that child care providers should communicate with parents to encourage serving healthy foods, and teach children about nutrition at home (Benjamin Neelon & Briley, 2011). According to the ecological perspective of environmental influences on human development (Wachs, 1992) it is hypothesized that the home and child care environment interact with each other and influence children's behavior and weight status (Kremers, 2010). In the general child development literature, inconsistencies in child-rearing practices between parents' and child care providers' negatively impact child outcomes (Van IJzendoorn MH, 1998). As such, it can be hypothesized that consistency between environments would positively impact outcomes (Feagans LV, 1994). However, a link is needed between the home and child care environment since the child participates fully in these two meso-systems (Feagans LV, 1994). Evidences suggests that communication between parents and child care providers can serve as this link (Mena et al., 2019; Tovar, Mena, Risica, Gorham, & Gans, 2015; Tovar, Risica, et al., 2015).

Past studies indicate that the relationship between Hispanic family child care providers (FCCPs) and parents are more intimate than with those at child care centers (Mena et al., 2019; Tovar, Mena, et al., 2015). Additionally, Hispanic FCCPs may be more likely to engage with parents on topics related to child nutrition and healthy eating compared to non-Hispanic white FCCPs (Tovar, Risica, et al., 2015), yet there is limited knowledge on effective communication strategies specific to families that utilize FCCHs. Understanding factors that support and hinder communication between parents and providers is needed to inform obesity prevention efforts targeting Hispanic preschool-aged children attending FCCHs. Therefore, this qualitative study sought to identify with FCCPs and parents' best ways to work together to promote healthy dietary behaviors in Hispanic preschool-aged children. Factors that would make it difficult for FCCPs and parents to work together to promote healthy dietary behaviors in preschool-aged children were also identified.

METHODS

Four structured focus groups (two with FCCPs and two with parents) using the Nominal Group Technique (NGT) were conducted from June through October 2018. The NGT is a structured multi-step procedure (Delbecq, Van de Ven, & Gustafson, 1975; Van de Ven & Delbecq, 1972), which allows participants to elicit and prioritize responses to a specific question. Participants were asked to first list, then rank, and finally vote on factors that support, and make it difficult, for FCCPs and parents to work together to support healthy eating habits among Hispanic preschool-aged children. The NGT focus group lasted approximately two hours, and all participants received a \$35 gift card to a local supermarket as an incentive. Brown University (Providence, RI) Institutional Review Board approved all study materials and protocols. An Institutional Review Board Authorization Agreement was obtained from the University of Rhode Island.

Recruitment

Family child care providers were recruited in-person at Ready to Learn Providence (R2LP), an organization that provides nutrition-related professional development trainings to English and Spanish speaking FCCPs in RI. Given our research question, our target population was primarily Hispanic caregivers of preschool-aged children, thus Hispanic FCCPs and parents (English and/or Spanish-speaking) were specifically targeted. Two 10-minute recruitment sessions were conducted during R2LP training sessions for Spanish-speaking providers. FCCPs in attendance were provided with a brief overview of the study. Recruitment flyers were distributed which included study staff contact information were also distributed, and FCCPs were informed to contact NM with study-related questions and/or to register for the study. FCCPs were also provided with the opportunity to register for one of two scheduled focus groups at that time. Eligible FCCPs were 18 years or older, cared for a child between the ages 2-5 in RI, and spoke English or Spanish. Approximately 40 FCCPs attended the professional development trainings between both recruitment sessions, and a total of 17 FCCPs registered.

Parent recruitment was conducted via the FCCPs. Recruitment flyers, available in both the English and Spanish language were provided to eligible FCCPs, and they were encouraged to share the flyers with parents. As a result of the parent recruitment efforts via FCCPs, 8 parents (all only Spanish-speaking) registered for a focus group. In addition to the parent recruitment flyers provided to FCCPs, parents from a contact list of participants from past studies who agreed to be contacted for future studies were contacted (n=14). Parents were contacted via email (n=8), text messages (n=12), and phone calls (n=14). All recruitment messages were sent in English and Spanish given that these parents identified as Hispanic and indicated both languages as appropriate for future contact. Eligible participants were at least 18 years old, a parent or primary guardian of a child between the ages 2-5 attending a FCCH in RI and spoke

English or Spanish. This effort yielded one additional participant to register for a focus group. In total, 9 Spanish-speaking parents/primary caregivers of Hispanic preschool-aged children registered for a focus group. Research team members were Hispanic and bilingual, and all participants were offered to participate in an NGT in either English or Spanish. Two groups of FCCPs (n=17) and two groups of parents (n=8) participated in an NGT focus group.

The Nominal Group Technique

The NGT procedure has been used in a variety of contexts to elicit ideas or enable a group to come to an agreement (O'Connor et al., 2013; Papaioannou et al., 2013). There are several advantages of the NGT over typical focus groups, and other qualitative data collection methods. In order to help identify and implement strategies that facilitate FCCPs and parents to work together to promote child healthy eating habits, input from both FCCPs and parents are needed. The NGT allows for both qualitative (eliciting ideas or idea generating) and quantitative (ranking) to be collected and offers an equitable way for these processes to occur. Compared to traditional focus groups, the structured nature of the NGT prevents any one participant from dominating the discussion, thereby reducing the risk of a group leader having greater influence.

Development of NGT Facilitator Guide

To address the objective of this study, lead researcher NM developed two prompts to facilitate the NGTs. Several revisions took place as the prompts were reviewed with the research team to ensure clarity and appropriate translations. The final prompts developed in English, and then translated into Spanish were: 1) *what are the best ways FCCPs and parents can work together to support healthy eating habits in young children?* And 2) *what makes it difficult for FCCPs and parents to work together to support healthy eating habits in young children?*

Parents and FCCPs were informed that the phrase “young children” was in reference to

specifically preschool-aged children, (aged 2-5). Once the prompts were finalized, a five-step NGT protocol for each prompt was developed, for a total of 10 procedural steps in the NGT facilitator guide. An introduction and conclusion statement were also included to complete the NGT facilitator guide. Thus, the final facilitator guide consisted of three main sections: 1) Introduction & Preamble; 2) Two prompts specific for facilitators and barriers to parents/FCCPs working together to support healthy eating habits in preschool-aged children, each with a 5-step NGT procedure, and 3) A conclusion statement. The final guide was then reviewed with research team members, which included content experts. Lead researcher NM also translated the guide into Spanish to accommodate primarily Spanish speakers. The Spanish-language version of the NGT facilitator guide was then reviewed with the bilingual research team members and content experts.

To ensure content and cultural relevance to the target population, and that the session could be completed within the proposed time frame of 2 hours, NM conducted a pilot focus group. The pilot NGT was conducted in Spanish with community health workers at a community health clinic who also reflected target population demographics (n=5). Additionally, because the NGT was conducted in Spanish, participants provided feedback specific to readability and interpretability of the prompts to ensure cultural adequacy. Feedback from both the review and pilot were used to finalize the NGT facilitator guide.

Procedures

The FCCP NGT focus groups were conducted at R2LP, and the parent NGT focus groups were conducted at a local public library. Once participants arrived, they were asked to sign-in, provide informed consent and complete a 22-item survey. The survey included demographic questions such as: age, ethnicity, education, income, and federal nutrition program participation (e.g., WIC, SNAP, and CACFP). The validated two-item Household Food

Insecurity (HFI) Screener was also included (Hager et al., 2010) to identify homes with young children at risk of experiencing food insecurity. The items are: 1) *Within the past 12 months, we worried whether our food would run out before we got money to buy more*, and 2) *Within the past 12 months the food we bought just didn't last, and we didn't have money to get more*", with response options "often true" (3), "sometimes true" (2), "never true" (1).

Responses were coded on a 3-point Likert scale, with higher scores indicating a lower risk of experiencing food insecurity.

FCCPs were asked to report the methods they used to communicate with parents of the preschool-aged children they care for (response options included: text messages, over the phone, during transition times (drop-off/pick-up), email, newsletters, formal/informal meetings, and other), and how often they provided information to parents of preschool-aged children regarding foods and beverages (Never, Rarely, Sometimes, Often, Always). Parents were asked to report the methods of communication with their FCCP (response items were identical to those on the FCCP survey), and how often they sought advice from their FCCP regarding foods and beverages for young children (response items were identical to those on the FCCP survey).

The surveys administered were tailored for FCCPs and parents. FCCPs were asked if they participated (Yes/No) in the Child and Adult Care Food Program (CACFP), and parents were asked if they were aware (Yes/No) of the CACFP. FCCPs were also asked to report number of times they attended a professional development training in the last 3 years on healthy eating for preschool-aged children (response items were: I have never received/attended training, 0-3 times, 4-7 times). Parents were asked to report child age and number of hours per week child spent at the FCCH. Once all participants completed the survey, the NGT was conducted.

The NGT focus group began with NM reading the introduction and preamble out loud to participants to help provide context to the purpose of the NGT and the nature of the prompts. The preamble acknowledged the responsibility of both FCCPs and parents in feeding preschool-aged children, and briefly summarized findings from past studies conducted in the community that highlighted both FCCPs' and parents' interest in supporting healthy eating habits in young children. The following steps were then completed for the first prompt, and then repeated again for the second prompt:

1. *Silent Generation of Ideas.* Participants were provided with a pre-lined response form. The prompt (*What are the best ways FCCPs and parents can work together to support healthy eating habits in young children?*) was read, and participants were instructed to write down as many responses to the prompt on the lined form in silence. A total of three minutes was provided for the silent generation of ideas.
2. *Round-Robin Documentation of Generated Responses.* Participants shared their responses, one at a time, until all of the responses had been exhausted. If a participant's response had already been given by their turn, they provided the next response on their list. A bilingual facilitator assistant documented all responses verbatim on a paper notepad hung up on the wall.
3. *Discussion and Clarification.* Once all participants shared their ideas, NM read all responses one by one out loud to participants to ensure clarity and comprehension of the statements. During this step, similar responses were combined and/or clarified per request of the participants.

4. *Ranking Stage.* Participants were provided with three index cards and instructed to select their top three options and to write one response on each of the index cards. Respondents were instructed to write a “three” on the index card with the response that represented the greatest facilitator, a ‘two’ on their second preferred option, and a 1 on the remaining index card.

Intermediate step: After this step, participants were given a 5-minute break during which NM and the assistant facilitator summed all ranks provided to the responses generated. Once all rank assignments were scored, the top 3 (or 4 in the case of a tie) responses were selected. A final list was written with the responses listed in order of highest to lowest ranking and presented to the group.

5. *Response Scoring Form.* Participants were provided with a lined scoring form and asked to write down the three (or 4) highest ranked options (from step 4), each on one line. They were then asked to rate *how useful* each response would be in facilitating FCCPs and parents to work together to support healthy eating habits in young children. Scores were rated on a scale from 0 to 5, with 5 representing the most useful facilitator, 0 representing the least useful facilitator.

Once completed, the entire 5-step process was repeated, for the second prompt “*What makes it difficult for FCCPs and parents to work together to support healthy eating habits in young children?*” For step 5, participants were asked to rate each response on *how difficult* it would make it for FCCPs and parents to work together to support healthy eating habits in young children. Each participant completed this step individually Scores were rated on a scale from 0 to 5, with 5 representing what would make it most difficult to work together, 0 representing the least difficult. Maximum score for NGT focus group 1 was 55 points given that there were

11 participants, 30 for NGT focus group 2 given that there were 6 participants, and 20 points for NGT focus groups 3 and 4, given that there were 4 participants. Once participants completed their score form, the facilitator or assistant facilitator collected each form and reviewed it to ensure proper documentation.

After each NGT, all responses generated by each group, and corresponding rank and scores were entered into Excel. All responses were then translated from Spanish to English, and total scores for ranked responses were calculated by summing all participant scores given to each response. Means and standard deviations of all scores in the top ranked responses for each NGT were calculated. All responses for each prompt were then aggregated and reviewed to create structural codes to facilitate a systematic review all responses. The structural codes were used to categorize the data categorize the data, identify emergent themes, and also examine differences and similarities of themes across the NGTs. Using an inductive and deductive content analysis approach (Hsieh H-F, 2005) NM read, reviewed, and coded all responses and identified initial concepts and themes. Responses were then reviewed and coded independently by a trained bilingual researcher RO. The data analysis process consisted of several team meetings in which NM and RO discussed codes, emerging and final themes. A total of 12 structural codes (5 for prompt 1, 7 for prompt 2) were identified and used to review and categorize all responses. Findings were reviewed and confirmed with a third independent researcher (AT).

RESULTS

Participant characteristics. The characteristics of the 25 participants (FCCPs, n=17; parents, n=8) are reported in **Table 1**. All FCCPs were female, Hispanic, born outside of the US, and on average 51 years old. The majority (70%) were born in the Dominican Republic, followed by Guatemala (17%), living in the US for approximately 21 years. Over half (59%) reported

an annual household income of less than \$46,000. Approximately 38% were divorced, and 31% reported being married. More than half (53%) reported high school as the highest level of education attained, followed by 1-3 years of college (23%) and college degree (17%). Over half (53%) of FCCPs reported “sometimes” or “often” true to both HFI screener items, indicating these households are experiencing food insecurity.

The majority of parents were female (87%), all identified as Hispanic, were born outside of the US, and on average 44 years old. All parents were born in the Dominican Republic and reported living in the US for approximately 12 years. The majority (80%) reported an annual household income of less than \$15,000. Half (50%) reported being married or living with a partner, and 38% reported being single. A quarter of the sample (25%) reported less than high school as the highest level of education attained, 38% reported high school, and 25% reported college degree; one participant chose not to answer this question. At least 75% reported “sometimes” or “often” true to both HFI screener items, indicating that a greater proportion of this sample experience food insecurity.

FCCP-parent communication. FCCPs and parents reported via survey that they mostly communicate with each other over the phone (76% and 88%, respectively) and text messages (65% and 50%, respectively). Communication during transition periods (drop off/pick-up) was reported by more FCCPs (82%) than parents (13%). Other forms of communication that FCCPs reported included e-mail (35%), in-person formal/informal meetings with parents (35%), and newsletters (29%).

Table 1. Participant characteristics (n=25)

	FCCP (n=17)	Parents (n=8)
Age (yrs), mean±SD	51±8	44±13.7
Hispanic/Latino, %(n)	100(17)	100 (8)
Born Outside US, %(n)	100(17)	100 (8)
Years in US, mean±SD	20.5±8.5	10.4±10.8
Country of Origin, %(n)	FCCP (n=17)	Parents (n=8)
Dominican Republic	71(12)	100(8)
Guatemala	17(3)	0(0)
Colombia	6(1)	0(0)
Puerto Rico	6(1)	0(0)
Race, %(n)	FCCP (n=17)	Parents (n=8)
White	35(6)	37.5(3)
Other	47(8)	37.5(3)
Wish not to answer	6(1)	25(2)
Left question blank	12(2)	0(0)
Annual Household Income, %(n)	FCCP (n=17)	Parents (n=8)
<\$15,000	12(2)	75(6)
\$15,000 - \$29,999	6(1)	0(0)
\$30,000 - \$45,999	41(7)	0(0)
\$46,000 - \$60,000	29(5)	0(0)
>\$60,000	0(0)	12.5 (1)
Wish not to answer/Left question blank	12(2)	12.5(1)
Marital Status, %(n)	FCCP (n=17)	Parents (n=8)
Unmarried/single	24(4)	37.5(3)
Divorced / Separated	29(5)	0(0)
Married / lives with partner	35(6)	50(4)
Widowed	6(1)	12.5(1)

Wish not to answer/Left question blank	6(1)	0(0)
No. of Adults Living in Household, mean±SD	2.1±.96	2.8±-0.84
No. of Children Living in Household, mean±SD	1.3±-1.1	2.0±-0.76
Nutrition Federal Food Program Participation, %(n)	FCCP (n=17)	Parents (n=8)
SNAP	18(3)	25(2)
WIC	6(1)	0(0)
CACFP*	23(4)	25(2)
"In the last 12 months, I worry / we worry that the food could end before having money to buy more", %(n)	FCCP (n=17)	Parents (n=8)
Often True	18(3)	62.5(5)
Sometimes True	35(6)	12.5(1)
Never True	23(4)	12.5(1)
Wish not to answer/Left question blank	24(4)	12.5(1)
"In the last 12 months, the food that I bought / bought did not last enough and we did not have money to buy more", %(n)	FCCP (n=17)	Parents (n=8)
Often True	6(1)	12.5(1)
Sometimes True)	47(8)	75(6)
Never True	29 (5)	12.5(1)
Wish not to answer/Left question blank	18(3)	0(0)
Parent-reported child characteristics		
Child Age (yrs), mean±SD	4±1.0	
Total number of hours/week in FCCH, mean±SD	27.5±6.4	

Abbreviations: SNAP=Supplemental Nutrition Assistance Program, participants were asked if they participated in the SNAP program in the past year; WIC = Special Supplemental Women, Infants and Children program, participants were asked if they participated in the WIC program in the past year; CACFP=Child and Adult Care Food Program, *parents were asked if they were aware of the CACFP, FCCPs were asked if they participant in the CACFP

A smaller proportion of parents reported communicating with FCCPs via email (13%), and meetings (25%). Over half FCCPs (53%) reported “often” or “always” giving information or advice to parents about best foods and beverages for young children, and 63% of parents

reported “often” or “always” seeking advice from their FCCPs about best foods and beverages for young children. **See Table 2 for full FCCP-parent communication characteristics.**

Nearly all FCCPs (94%) reported attending/receiving trainings related to healthy eating for preschoolers in the past 3 years, and none reported never attending/receiving trainings related to healthy eating for preschool-aged children in the last 3 years.

NGT results

The 4 NGT focus groups generated 6-8 responses/group for best ways to work together to support healthy eating habits in preschool-aged children, and 6-14 responses/group to what makes it difficult to work together to support healthy eating habits in preschool-aged children. Together, participants elected 3-4 responses per group as top facilitators and barriers.

Facilitators to FCCPs and parents working together to support child healthy eating habits

In response to the first prompt, “*What are the best ways FCCPs and parents can work together to support healthy eating habits in young children?*”, the FCCP NGT focus groups voted ‘having communication with parents about what the child eats at home, ‘communicating with parents how poor dietary habits can impact health’, ‘speaking with parents about foods children should eat’, ‘sharing FCCH food-related rules/policies’, ‘providing parents with handouts,’ ‘supporting parents to make changes (at home)’, and ‘knowing child food preferences’ as top ways FCCPs and parents can work together to support healthy eating habits in young children.

‘Having communication with parents about what the child eats at home’ was ranked as the top response and received the highest score (52/55) in most useful to facilitate FCCPs and parents to work together to support healthy eating habits in preschool-aged children by FCCPs in NGT focus group 1. ‘Communicating with parents how a poor diet affects health’ and ‘sharing

the FCCH rules with parents' were tied for second ranked facilitator. Although 'speak with parents that (children) should eat fruits, vegetables and whole grains' received the greatest number of votes, it received the lowest score (44/52) in most useful to facilitate FCCPs and parents to work together to support healthy eating in preschool-aged children. FCCPs in NGT focus group 2 ranked 'support parents to make changes at home, talk more and have trust' as the second top response, however it received the highest score (30/30) in most useful to facilitate FCCPs and parents to work together to support healthy eating habits in preschool-aged children.

Among the parent NGT focus groups, 'communicate and work together regarding child nutrition and feeding', 'meeting with parents to discuss the FCCH nutrition environment', 'planning with FCCPs foods to buy/avoid and coordinate introducing new foods, primarily vegetables, to do the same at home', 'consistent communication regarding child nutrition to serve/offer similar healthy foods at home and in child care to teach child to eat different foods', 'involving child in nutrition education opportunities for parents', 'being on the same page about what foods to serve and when, to maintain a consistent routine', and 'having patience with the child' received the most votes as the top ways parents and FCCPs can work together to support healthy eating habits in young children.

'Plan together the food that is going to be bought / not buy junk food, and discuss how they will introduce new foods mainly the vegetables to do the same in the home,' and 'have constant communication between parents and FCCPs about child nutrition to provide healthy food at home and in the FCCH and teach the child to a variety of foods' received the highest scores in most useful to facilitate FCCPs and parents to work together to support healthy eating habits in preschool-aged children (30/30 and 20/20, respectively). 'Meeting with parents to discuss the FCCH nutrition environment', and 'involve the child in nutrition

communication between FCCPs and parents and love the child to increase the child's confidence to eat healthy' were ranked second across the parent NGT focus groups. **See Table 3 for full list of facilitators, and corresponding number of votes, rank, and final total score.**

Barriers to FCCPs and parents working together to support child healthy eating habits

In response to the second prompt, "*What makes it difficult for FCCPs and parents to work together to support healthy eating habits in young children*", 'Lack of time, parents in a hurry', 'parents giving other meals that are not healthy at home', 'parents are not aware of habits', and 'they (referring to parents) do not accept changes' received the greatest number of votes across the FCCP NGT groups. The FCCP NGT focus groups ranked 'lack of time, parents in a hurry,' and parents are not aware of healthy habits as the top barriers that would make it difficult for FCCPs and parents to work together. 'Lack of time, parents in a hurry' received the highest score in how difficult it can make FCCPs and parents working together to support healthy eating habits for the parent NGT focus group 1. 'Parents do what the children want', and they (parents) do not accept changes' were ranked second for each group respectively.

Among the parent NGT focus groups, 'work schedule' was the top barrier ranked that would make it difficult for FCCPs and parents to work together to support healthy eating habits in preschool-aged children. Although work schedule, lack of interest and dedication of both caregivers to support the child's well-being, and little communication were the top ranked responses for parent NGT focus group 3, final scores were low (range, 2-9 out of maximum 20), suggesting that parents viewed these factors as barriers to a FCCPs and parents working together to support healthy child eating habits. However, they were not viewed as significant barriers by the participants themselves (**Table 4**).

Table 2. FCCP and parent communication characteristics, %(n)

How do you communicate with the parents of the children you care for in your home? / How does your provider communicate with you? Check all the answers that apply to you?	FCCPs (n=17)	Parents (n=8)
Text messages	65(11)	50(4)
Over the phone	76(13)	88(7)
During the time of drop off / pick up of your child	82(14)	13(1)
E-mail	35(6)	13(1)
Meetings	35(6)	25(2)
Newsletters	29(5)	0(0)
Other	6(1)	13(1)
Wish not to answer	6(1)	0(0)
How often do you give information or advice to parents about the best foods and drinks for young children? / How often do you ask your provider for advice about the best foods and drinks for your child?	FCCP (n=17)	Parents (n=8)
Never	0(0)	0(0)
Rarely	0(0)	25(2)
Sometimes	35(6)	13(1)
Often	18(3)	13(1)
Always	35(6)	50(4)
Wish not to answer	12(2)	0(0)

The qualitative analyses of all NGT focus groups responses for prompt 1 yielded two major themes, and a total of six major themes for prompt 2 (**TABLE 5**). The two major themes for prompt 1 were: 1) *Communication to facilitate social support and consistency between the home and FCCH environment*, and 2) *Engagement to facilitate nutrition education opportunities for parents and children*. Coded responses for *Communication to facilitate*

social support and consistency between the home and FCCH environment included: develop/coordinate a monthly plan with FCCPs on feeding children and constant communication between parents and FCCPs about child nutrition to provide healthy food at home and in the FCCH and teach the child to a variety of foods. Top ranked (scored) responses for FCCPs were *having communication with parents about what the child eats at home* and *supporting parents to make changes at home (and) to build trust*. Top ranked responses for parents were *plan together food to buy and discuss introducing new foods to do the same at home* and *constant communication to provide healthy food at home and FCCH*.

Coded responses for *Engagement to facilitate nutrition education opportunities for parents and children* included: invite parents to have lunch so that they can see examples of what is healthy and (FCCPs) provide advice to parents on how to introduce new healthy foods. Top ranked (scored) responses for FCCPs were *communicate with parents how a poor diet affects health* and *sharing the FCCH rules with parents*. Top ranked responses for parents were *meeting with FCCPs to discuss the FCCH nutrition environment* and *involving the child in nutrition communication between FCCPs and parents, loving and supporting the child's confidence to eat healthy*.

Of the 6 major themes identified for prompt 2, one theme was common to all NGT focus groups: *Lack of time, fast-paced life, and work/busy schedules make it difficult for FCCPs and parents to work together to support healthy child eating habits*. Coded responses included: Lack of time, parents in a hurry, parents do not have time or do not make time, and difficulty of conflicting work schedules and routines. Top ranked responses included (perceived) parents' lack of time by FCCPs and conflicting work schedules and job location for parents. Three themes emerged specific to the FCCP NGT focus groups: 1) Inconsistency between FCCH and child's home environment; 2) Lack of parental support; and 3) Parental attitudes,

perceptions, and lack of knowledge/awareness. Coded responses for inconsistency between FCCH and child's home environment included: at home child does not want to eat the same foods offered at child care, and lack of the same routine in the house. Coded responses for lack of parental support included: not having parental support and parents not accepting/difficult with following rules. Coded response for parental attitudes, perceptions, lack of knowledge/awareness included: the temperament of parents and parents not aware of health-related habits. Top ranked responses by FCCPs were parents serving unhealthy food at home, parents do what children want, and parents are not aware / lack health education.

Lastly, two themes emerged specific to the parent NGT groups for prompt 2: *1) Poor communication with lack of interest in well-being of child.* Coded responses included lack of/little communication and lack of interest and dedication of both caregivers to support the welfare of the child. Coded responses for *Cultural and Contextual factors* included difference in languages spoken, and other parent daily life demand/responsibilities. However, coded responses for the two themes that emerged specific to the parent NGT groups in responses to prompt 2 were not top ranked by parents during the NGT process.

DISCUSSION

The aim of our study was to identify with FCCPs and parents, best ways to work together to promote healthy dietary behaviors among Hispanic preschool-aged and factors that would make it difficult for FCCPs and parents to work together. This study found that caregivers recognized their shared feeding responsibility to the child and viewed intercommunication (or a reciprocal interaction between caregivers) as a major facilitator of working together to support healthy eating habits in young children. Child nutrition-related communication between child care providers and parents is recommended to promote healthy eating habits among young children (Benjamin Neelon & Briley, 2011).

Table 3. Facilitators to FCCP-parent working together to support child healthy eating habits				
NGT 1 (FCCPs, n=11)	Item No.	No. votes	Rank score	^aTotal Score, (mean±SD)
Having communication with parents about what the child eats at home.	1	4	9	52(4.7±0.6)
Communicate with parents how a poor diet affects health.	4	4	9	49(4.5±0.9)
Sharing the FCCH rules with the parents.	14	4	9	49(4.5±1.0)
Speak with parents that (children) should eat fruits, vegetables and whole grains.	9	5	7	44(4.0±1.0)
NGT 2 (FCCPs, n=6)	Item No.	No. votes	Rank score	Total Score, (mean±SD)
Support parents to make changes, talk more and have that trust.	9	4	7	30(5±0)
Know child food preferences	4	3	6	29(4.8±0.4)
Have communication with parents by providing parents with handouts	6	3	9	29(4.8±0.4)
NGT 3 (Parents, n=4)	Item No.	No. votes	Rank score	Total Score, (mean±SD)
Plan together the food that is going to be bought / not buy junk food and discuss how they will introduce new foods mainly the vegetables to do the same in the home.	3	4	8	20(5±0)
FCCPs meeting with parents to discuss the FCCH nutrition environment	2	2	6	19(4.7±0.5)
Communicate and work together on nutrition and food.	1	3	6	18(4.5±1)
NGT 4 (Parents, n=4)	Item No.	No. votes	Rank score	Total Score, (mean±SD)
Have constant communication between parents and providers about child nutrition to provide healthy food at home and in the FCCH and teach the child to eat a variety of foods.	1	4	10	17(4.3±1.5)
Involve the child in communication about nutrition (between parents and providers) and love the child to increase the child's confidence to eat healthy.	2	1	3	17(4.3±0.9)
Have patience with the child.	4	2	3	17(4.3±0.9)
Providers and parents both agree on mealtime schedules at home and FCCH (to maintain routine).	3	3	5	13(3.3±1.7)

^aMost likely to facilitate FCCP/parents to work together to support healthy eating habits in young children (scale 0-5); nx5=maximum score per NGT

Table 4. Barriers to FCCP-parent working together to support child healthy eating habits				
NGT 1 (FCCPs, n=11)	Item No.	No. votes	Rank score	^aFinal Score, (mean±SD)
Lack of time, parents in a hurry. (The hectic life, fast food).	1	11	27	49(4.5±0.9)
Parents giving other meals that are not healthy at home.	3	9	22	48(4.4±0.9)
Parents do what the children want.	2	5	9	48(4.4±0.7)
NGT 2 (FCCPs, n=6)	Item No.	No. votes	Rank score	Final Score, (mean±SD)
Parents are not aware of habits (lack of health education)	8	3	5	30(5±0)
They (Parents) do not accept changes.	2	6	13	29(4.8±0.4)
Not having the support of parents.	3	4	9	29(4.8±0.4)
The routine at home is not consistent with routines in the child care setting (TV on during mealtimes)	7	3	5	29(4.8±0.4)
NGT 3 (Parents, n=4)	Item No.	No. votes	Rank score	Final Score, (mean±SD)
Work schedule / lack of time / quick routine	4	3	6	9(2.3±2.6)
Lack of interest and dedication of both to support the child's well-being	1	3	5	3(0.7±0.9)
Little communication	3	3	9	2(0.5±1)
NGT 4 (Parents, n=4)	Item No.	No. votes	Rank score	Final Score, (mean±SD)
Parent work schedule and job location (working in a different state, Massachusetts)	1	2	5	20(5.0±0)
Lack of coordination and difficulty of conflicting work schedules and routines	2	4	8	19(4.7±0.5)
Difficulty of meeting / communicating between provider and parents due to the schedule of the FCCH	4	2	6	18(4.5±1.0)
Lack of communication	6	2	5	18(4.5±1.0)

^aMost likely to hinder FCCP/parents from working to support healthy eating habits in young children (scale 0-5); nx5=maximum score per NGT

However, there is limited understanding of strategies that foster effective communication between Hispanic FCCPs and parents to support the development of healthy eating habits among Hispanic preschool-aged children. Findings from this study help fill this gap in the literature as the NGT methodology used allowed FCCPs and parents to identify specific strategies in which they could work together to promote healthy eating habits in young children.

Our findings also suggest that both FCCPs and parents view consistent and frequent communication critical to supporting children's well-being but perceived barriers to working together mostly differed between FCCPs and parents. Furthermore, both FCCPs and parents acknowledged the shared responsibility of feeding young children, and how they together can influence children's eating behaviors. This is consistent with previous studies that have examined factors related to child nutrition communication between parents and child care providers. Specifically, in one qualitative study conducted with Hispanic FCCPs, communication and working together with parents to introduce (new) vegetables and fruits was viewed important in promoting child healthy eating habits (Tovar, Mena, et al., 2015). Providers in the referenced study also emphasized the importance of communication with parents to maintain consistency of health-related messages between the home and FCCH. Additionally, in a study conducted by Johnson and colleagues, FCCPs also reported that communication between providers and parents was critical to gain parental support for making changes that promote children's healthy eating (Johnson, Ramsay, Shultz, Branen, & Fletcher, 2013). Together, these findings support the hypothesis that communication between **FCCPs and parents can serve as a link between the home and child care, creating synergism and consistency across these settings that positively support children's development** (Shpancer, 2002).

In our study, parents identified receiving information from their FCCP as a facilitator to helping promote healthy eating habits across both settings, and lack of dedication and interest of caregivers as barriers to working together. Leveraging FCCP and parent interest in working together to promote child healthy eating habits may improve parent nutrition-related and child dietary behaviors at home. Consistent communication and dedication were determined to be important factors in the success of a child care center-based obesity prevention program (Healthy Inside-Healthy Outside (HI-HO)) to improve child weight status and dietary intake

Table 5. Major themes and all generated responses within and between NGT focus groups

PROMPT 1^a
Communication to facilitate social support and consistency between the home and FCCH environment
Having communication with parents about what the child eats at home.
Have a daily routine.
Support parents to eat healthy together.
Use parents' good habits with the other children.
Talk every day of the child's feeding/nutrition.
Knowing what the child prefers to eat and telling the parents.
Ask parents to support the child to eat more healthy meals at home
Development of menus with parents.
Know what the child likes.
Have a menu.
Model healthy habits.
Support parents to make changes at home to build trust.
The time that is dedicated for meals, have a schedule.
Communicate and work together on nutrition and food.
Plan together the food that is going to be bought / not buy junk food and discuss how they will introduce new foods mainly the vegetables to do the same in the home.
Between FCCPs and parents, motivate children to eat healthy food.
Involve the child in nutrition communication between FCCPs and parents and love the child to support the child's confidence to eat healthy.
Have constant communication between parents and FCCPs about child nutrition to provide healthy food at home and in the FCCH and teach the child to a variety of foods.
FCCPs and parents both agree on mealtime schedules at home and FCCH to maintain routine.
Develop/coordinate a monthly plan with FCCPs on feeding children.
An agreement between FCCPs and parents on child screen time exposure.
Engagement to facilitate nutrition education opportunities for parents and children
Talk to the child, explain what is good, and how to eat healthy.
Communicate with parents how a poor diet affects health.
Invite parents to have lunch so that they can see examples of what is healthy.
Look for recipes to share with parents.
Speak with parents that (children) should eat fruits, vegetables and whole grains.
Advice to parents how to introduce new healthy foods.
Communicate to parents changes they can make related to feeding.
Sharing the FCCH rules with the parents.
Provide advice and tips to parents.
Communicate with parents by via handouts.
Invite parents to the FCCH to spend time together.
FCCPs meeting with parents to discuss the FCCH nutrition environment
FCCPs motivation to explain the importance of nutrition and healthy eating.
Involve children in nutrition education at home and at the FCCH.
Have patience with the child.
PROMPT 2^b
Lack of time and work/busy schedules make it difficult for parent-FCCP partnerships to support healthy child eating habits
Lack of time, parents in a hurry. (The hectic life, fast food).
Parents don't make time to communicate.
Parents do not have time or do not make time.
Work schedule / lack of time / the fast-paced routine

The time and the hours of work (of parents) and location (MA)
Lack of coordination and difficulty of conflicting work schedules and routines
Difficulty of meeting / communicating between provider and parents due to the schedule of the FCCH
Inconsistency between FCCH and child's home environment
Parents do what the children want.
Parents serving unhealthy meals at home.
At home, the child does not want to eat the same foods offered at child care.
Lack of the same routine in the house.
Inconsistent mealtime routines, like having the TV on during mealtimes
Lack of parental support (FCCP NGTs)
Parents who do not want to accept changes.
Not having the support of parents.
Parental behavior - they do not accept or are difficult with the rules.
Parental attitudes, perceptions and lack of knowledge/awareness (FCCP NFTs)
The temperament of the parents / the way of thinking of the parents.
Parents unaware of healthy habits (lack of health education)
Poor communication and lack of interest in well-being of child (Parent NGTs)
The lack of communication.
Lack of interest and dedication of both to support the welfare of the child.
Little love for the children.
Little communication
Cultural and Contextual Factors (Parent NGTs)
Difference in culture.
Difference in language.
Child's homework can interfere with mealtimes.
The stress of child responsibility, and work.
Other parental responsibilities may hinder interactions with the child.
Need for parent and FCCP to rest

^a**Prompt 1:** *What are the best ways FCCPs and parents can work together to support healthy eating habits in young children?*

^b**Prompt 2:** *What makes it difficult for FCCPs and parents to work together to support healthy eating habits in young children*

of Hispanic preschool-aged children at home (R. A. Natale, Lopez-Mitnik, Uhlhorn, Asfour, & Messiah, 2014). Future studies should examine the role FCCPs in community-based obesity prevention efforts as a link to disseminate and increase access to evidence-based child nutrition information to promote healthy eating habits at home for low-income Hispanic families with young children.

Although HI-HO was a child care center-based obesity prevention program, future efforts could model successful components of HI-HO, such as the monthly educational dinners with

parents, given that it was a developmentally, culturally, and linguistically appropriate curriculum to specifically target Hispanic families with preschool-aged children (R. A. Natale et al., 2014). The findings from our study indicate that transition times may not be an ideal opportunity for FCCPs to engage with parents on child nutrition-related topics, thus dissemination of child nutrition information during a scheduled, convenient time, may be more appropriate. Such efforts would also be congruent with the responses generated by the FCCPs to prompt 1. Although not highly ranked or scored, FCCPs in both NGT identified inviting parents to share a meal with the child as a way for FCCPs and parents to work together to support healthy child eating habits. Future research should further explore FCCPs' and parents' perceptions of this potential modality of nutrition education dissemination.

When asked about the best ways to work together with parents to promote healthy dietary behaviors in Hispanic preschool age children, FCCPs ranked having communication with parents about what the child eats at home, how poor diet affects health, sharing FCCH food and nutrition rules with parents, and talking with parents about the best foods for young children as the best ways to work with parents to support child healthy eating habits. These findings are consistent with previous studies conducted with child care providers (Dev et al., 2017; Johnson et al., 2013), and FCCPs (Lindsay, Salkeld, Greaney, & Sands, 2015; Tovar, Mena, et al., 2015), whereby parent communication and support about child nutrition was reported to be important, and that communication related to nutrition and health may help improve the home food environment.

FCCPs in this study reported wanting to work with parents to promote healthy eating habits in young children which is consistent with previous studies, whereby FCCPs viewed their role as more than just caring for children, but supporting parents to promote healthy behaviors in early childhood as well (Kim, Shim, Wiley, Kim, & McBride, 2012; Lindsay et al., 2015;

Rosenthal, Crowley, & Curry, 2013). Providing parents with support may increase parents' self-efficacy to make positive changes at home, an important factor in promoting children's healthy eating habits (Bluford, Sherry, & Scanlon, 2007; Skouteris, McCabe, Swinburn, & Hill, 2010).

Parents in the current study ranked planning together with FCCPs what foods to buy/avoid and introducing new foods, and FCCPs meeting with parents to discuss the FCCH nutrition environment as best ways to support child healthy eating habits. Our findings suggest that because parents ranked actively working with FCCPs and wanting to learn about the FCCH nutrition environment as top responses, they may perceive the FCCH environment to be healthier than that of the home. Parents' perception of the child care environment being healthier than the home environment is not new. Studies conducted with parents of Hispanic preschool-aged children attending center-based care (Mena, Gorman, Dickin, Greene, & Tovar, 2015) and FCCHs (Lindsay et al., 2017) have reported such perceptions. Exposure to healthier child care settings are thought to especially benefit children who live in households at risk for food insecurity and exposed to unhealthier food environments (Gubbels et al., 2018). Future studies should examine the FCCH and home environment objectively to confirm parental perceptions, and how the FCCH can positively impact parent and child behaviors at home.

Given that strategies suggested by parents also included learning about the FCCH nutrition environment, it seems that parents may benefit from observing FCCPs engage in practices that promote healthy eating habits in young children. This finding is important as parents have reported that observing or being made aware of healthy practices in the child care environment would encourage them to make changes in their home (Mena et al., 2015). It is important to note that because majority of the current evidence on FCCHs are from qualitative studies,

future research should objectively examine the impact of utilizing a peer-model approach (FCCP as primary agent of change) on factors such as: parenting nutrition-related practices and child eating habits in home environment. Perceptions and motivators of FCCPs as role models should also be further examined. While previous studies have reported that FCCPs view themselves as also supporting parents to promote healthy behaviors in the home environment (Kim et al., 2012; Lindsay et al., 2015; Rosenthal et al., 2013) role modeling healthy behaviors was identified by FCCPs but received no endorsement votes, and thus was not a top ranked response in regards to best ways to work with parents to support child healthy eating habits.

Similar to one study conducted with Latina FCCPs, providers in our study also perceived that unhealthy practices in the home environment made it difficult to support healthy eating behaviors in young children (Lindsay et al., 2015). Additionally, similar to a qualitative study conducted by Dev and colleagues (Dev et al., 2017, providers perceived parents to be too busy to talk and they reported that parents were serving unhealthy foods to children at home. Parents play an important part in structuring the home environment (Lindsay et al., 2006), and given the perception that the home nutrition environment may be less healthful than that of the FCCH, providers may be able to play an important role in educating and supporting parents in providing healthier food options in the home environment. Given that FCCPs engage with parents on a daily basis, they may be able to disseminate consistent information and help reduce some of the barriers to healthy eating (Lindsay et al., 2015). FCCPs may also be more motivated to engage with parents who they perceive to be too busy to prepare healthy meals at home (Garcia, Dev, & Stage, 2018). Future studies should consider including an intervention component that also provides parents with simple, relatively quick, healthy recipes to prepare.

Communication with parents to maintain consistency of food-related messages (e.g., routines)

across settings has been identified by Hispanic FCCPs as a key element to promoting healthful behaviors in young children (Tovar, Mena, et al., 2015). However, as expected, participants in our study reported barriers to engaging in frequent communication related to child nutrition. This study found that lack of time and busy schedules were the top ranked responses by FCCPs and parents as barriers to working together to support healthy eating habits among Hispanic preschool-aged children. Although, it is important to note that it was primarily parents in this study that identified social factors as barriers to working together with their FCCP to support child healthy eating habits. Similarly, another qualitative study with Hispanic parents of children attending FCCHs reported competing daily demands as barriers to establishing routines that promoted healthy eating habits (Lindsay et al., 2017). These findings highlight the complexity of factors that can influence child's feeding environment.

Lastly, although our results suggest that FCCPs may engage with parents to improve communication around healthy eating, they would need support to be able to do this. The average annual income of child care providers is \$21,710, earnings well below poverty, making this profession one of the lowest paying occupations (Child Care in America, 2015; Department of Health and Human Services, 2016). A study conducted by Tovar and colleagues assessing socio-demographic and health risk behavior profiles in a sample of FCCPs (n=166) determined that more than half of the sample had a "high" stress score (Tovar et al., 2017). FCCPs reported working on average 62 hours per week, and nearly 80% reported an annual household income of less than \$50,000, of which 24% reported less than \$25,000, and almost half of the sample did not meet recommendations for vegetable and fruit consumption, and nearly all (90%) were overweight or obese (Tovar et al., 2017).

Earning low wages and less than optimal health behaviors, puts FCCPs at great risk for chronic disease (Tovar et al., 2017). While our current study did not examine FCCP health-

related behaviors, 18% of FCCP sample reported an annual household income of less than \$30,000. FCCPs are also more likely to have less formal education and opportunities for professional development and mentorship and FCCHs tend to have less strict implementation of nutrition-related regulations (Benjamin et al., 2009; Trost, Messner, Fitzgerald, & Roths, 2009). Such barriers can impact FCCPs' ability to create high quality, healthy environments for the children in their care. Therefore, it is important that future research efforts take into context that FCCPs have demanding jobs, and unfortunately limited resources and support to promote their own health.

Our study findings highlight the need for continued investment by the federal government in early childhood education. In our study, only 25% of FCCPs and parents reported CACFP participation and awareness of CACFP, respectively. Thus, efforts targeting FCCPs and families that utilized FCCHs should involve capitalizing on already existing child nutrition programs like CACFP to support healthy FCCH food environments and facilitate the dissemination of evidence-based food-related messages to parents for implementation in the home environment. Recent evidence suggests that children attending CACFP participating programs are served healthier meals compared to non-participating programs (FRAC, 2018). Moreover, FCCPs have reported that CACFP policies were beneficial in promoting healthy behaviors among children (Lindsay et al., 2015).

This study is not without limitations. Cross-sectional design, selection bias inherent to the nature of qualitative studies, unequal/small sample sizes between FCCP and parent NGT groups, and incomplete survey data by almost half the sample suggest that findings may not be generalizable to other Latinx/Hispanic caregivers of preschool-aged children. However, to the author's knowledge, this is the first study to utilize the NGT with Immigrant Latinx/Hispanic FCCPs and families of preschool-aged children that utilize FCCHs to identify ways FCCPs

and parents can work together to support healthy eating habits among Hispanic preschool-aged children. Findings can inform future FCCH-based interventions targeting Hispanic families who experience disproportionate rates of obesity and other chronic disease. Furthermore, the NGT is an effective way to prioritize goals, and thus this study identified specific strategies that could facilitate FCCPs and parents to work together to support child healthy eating habits. Additionally, specific barriers were identified allowing future research efforts to take into consideration these factors when designing and implementing FCCH-based obesity prevention programs that include both FCCPs and parents. Lastly, the NGT allowed for both quantitative and qualitative assessment of the data, providing context to all responses generated.

CONCLUSION

Obesity prevention efforts are needed to address disparities in obesity among Hispanic preschool-aged children, and communication between FCCPs and parents can create synergy and support the development of healthy eating habits across both settings. In RI, the majority of FCCPs and families that utilize FCCHs are Hispanic. This study identified factors most likely to facilitate or undermine a FCCPs and parents working together to promote child healthy eating habits in Hispanic preschool-aged children. Furthermore, caregivers recognize the shared feeding responsibility and indicate that intercommunication (or a reciprocal interaction between caregivers) is important to work together to support healthy eating habits in young children. There is a need to identify effective communication strategies and modalities to facilitate transfer of nutrition information between parents and FCCPs. Since child care settings are subjected to federal and state regulations and policies, focusing on FCCH environmental characteristics and policies that promote child healthy eating habits can serve as a starting point of child nutrition-related communication between parents and FCCPs.

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APPENDICES

APPENDIX A – EXTENDED REVIEW OF THE LITERATURE

I. Childhood Obesity Crisis

Introduction

Nearly 4 decades later, childhood obesity remains “one of the most serious public health challenges of the 21st century.”¹ Despite public health initiatives, and previous reports of a decline or plateau in prevalence rates,² childhood obesity in the United States (US) is still on the rise.³ Almost 20% of US children (2-19 years old) are overweight or obese.³ Furthermore, the most recent data highlights a significant increase in obesity rates among preschool-aged children (ages 2 to 5 years).³ This is discouraging, as previous studies have suggested a significant decrease in obesity prevalence among this age group.² Presently, a quarter of US preschool-aged children are considered overweight or obese, approximately 14% are classified as obese.³

Disparities

Disparities in obesity prevalence continue to persist, with the highest prevalence among Hispanic preschool-aged children (17%) compared to 11% among non-Hispanic Black, and almost five times greater than non-Hispanic White preschool-aged children (3.5%).^{2,4} This is troubling given that Hispanics are now the fastest growing and largest minority population in the US.^{5,6} By 2050, Hispanics/Latinos are projected to represent 29% of the US population.⁶ 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.⁷⁻⁹ Hispanic/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,¹⁰ higher rates of screen time compared to non-Hispanic whites,^{11,12} and suboptimal quality.¹³⁻¹⁶

Greater prevalence of obesity has also been observed in population groups of low-socioeconomic status (SES) given that low-SES is associated with the consumption of lower quality diets.^{17,18} However, after controlling for SES factors, obesity prevalence remains higher among Hispanic and non-Hispanic black children and adolescents compared to non-Hispanic white peers.³ Hispanic children between the ages of 2-5 years, experience a higher prevalence for both overweight and obesity (30%), compared to the 23% prevalence among children from all racial/ethnic groups.² Along with being burdened with low-SES and environmental factors, 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.

Defining obesity

Obesity is defined as excess body fat, and this excess body fat usually has negative effects on a person's health.¹⁹ Although a variety of precise measures are available to measure body fat, obesity is most commonly measured using body mass index (BMI).¹⁹ 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.¹⁹ As a result, BMI does not differentiate between adipose tissue and fat-free mass, which can also influence the accuracy when used to measure obesity in children and adults.²⁰ Nonetheless, research supports that BMI is correlated with direct measures of body fat (e.g., skinfold thickness measurements, bioelectrical impedance, dual energy x-ray absorption (DXA), and other object methods of measuring adiposity.²¹⁻²³

To account for the growth and development during childhood, age- and sex-specific

percentiles for BMI (referred to as BMI-for-age) are used rather than BMI categories used for adults. The Centers for Disease Control and Prevention (CDC) defines childhood overweight as BMI-for-age at or above the 85th but below the 95th percentile, and obesity as $\geq 95^{\text{th}}$ percentile.^{19,21} A most recent update on the prevalence of obesity among US children categorized more severe forms of obesity. Skinner *et al.* defined class I obesity as a BMI-for-age at or above the 95th percentile, class II obesity as BMI-for-age $>120\%$ of the 95th percentile or BMI ≥ 35 , (whichever is lower), and class III obesity as a BMI-for-age $\geq 140\%$ of the 95th percentile, or BMI ≥ 40 , (whichever is lower).³

Consequences of obesity

Obesity has reached epidemic levels. Parallel to the epidemic, has been the continuous rise in the prevalence of other nutrition related chronic diseases like diabetes, cardiovascular disease, and some cancers in children and adults.²⁴ For the first time in the history of the US, the current generation will suffer from greater morbidity and die before their parents partly due to nutrition-related chronic diseases.²⁵ Obesity in early childhood is associated with cardiovascular and metabolic disorders, even in childhood,^{26,27} and increased morbidity and mortality in adulthood.²⁸ Children who are obese after the age of six experience a 50% greater chance of becoming obese adults.²⁹ When compared to a child of healthy BMI, obese children are two times more likely to die before the age of 55.³⁰ Other co-morbidities 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.³¹

Along with the associated co-morbidities, the cost of obesity on the health care system in the US is staggering. In 2008 obesity-related costs were estimated at \$147 billion,³² underscoring the importance of obesity prevention early in life.³³ The ongoing increases in obesity prevalence can be linked to SES and environmental conditions that encourage excessive

consumption of energy-dense, low-nutrient foods and discourage physical activity.⁷⁻⁹ A term first coined by Swinburn et al. in the 90's, "obesogenic environment" refers to environmental conditions that promote the development of obesity.³⁴ Obesity-promoting behaviors like consumption of high-energy dense foods, poor diet quality, an increase in sedentary behavior, and a decrease in physical activity behaviors contribute to the development of obesity in early childhood.³⁵

Environmental conditions of the built environment encompasses all of the physical surroundings where humans live and work, including the food environment which influences food purchasing and consumption behaviors.³⁶ The US is known for promoting "obesogenic environment" conditions.³⁷ The current food environment is characterized by easy access to a variety of cheap, energy-dense, palatable foods and sugar-sweetened beverages and can negatively impact children's diet quality.³⁸ Furthermore, these food products are typically available/sold/served in large portions, and are frequently heavily marketed to children and their families. Obesogenic environments are of great concern as extensive research in this area has shown that persistent exposure to obesogenic environments increase children's risk for consuming excess calories and subsequently excess weight gain.³⁸

Risk factors for obesity development

There are both modifiable and non-modifiable risk factors that increase the risk to develop obesity in children.^{39,40} Modifiable risk factors for obesity include dietary and physical activity habits, screen time,⁴¹⁻⁴³ and sleep.^{39,40} Non-modifiable risk factors for obesity include age, gender, race/ethnicity, and genetics/family history.^{39,40} In simple terms, basic drivers of obesity include dietary factors primarily described as an excess caloric intake, or an imbalance between energy intake and energy expenditure, which can cause a positive energy balance and

subsequently lead to weight gain. However, the etiologies of child obesity are much more complex.

Childhood obesity is a complex public health problem

Childhood obesity is multifactorial and complex,³⁹ a result of multiple factors, such as biological, social, and environmental factors. Inadequate consumption of healthy foods, excess consumption of sugar-sweetened beverages and energy-dense foods, low levels of physical activity, and high levels of screen time are all associated with obesity.²⁴ Additionally, disparities in obesity prevalence are suggested to be exacerbated by the greater prevalence of unhealthy eating habits in low-income and ethnic minority children due to various social factors (e.g., food preferences, community/environmental status, family factors, and socioeconomic status).^{44 45} For this paper, the focus will be diet and environmental factors in the home and child care setting that influence eating habits of preschool-aged children.

II. Modifiable Risk Factor: Diet

The importance of healthy eating patterns early in life

During the first 2 years of life, food preferences are forming and child eating behaviors are dramatically evolving, setting the stage for eating habits during the preschool years.⁴⁶ From “tube feeding” in utero, infants then transition to milk consumption in the early months of life, followed by consumption of complementary foods (around 6 months of age). By the end of the first year of life, infants have transitioned to consumption of family foods.³⁸

The preschool years is a critical period in which food preferences and dietary behaviors continue to form. Food preferences directly influence eating behaviors (e.g., food choice, food intake) subsequently impacting overall health, wellness, and obesity development. Given that

excessive weight gain during this period is a significant predictor for obesity in childhood and adolescence,⁴⁷ establishing healthy eating habits in the early years of life is important to support nutrient adequacy, promote a healthy body weight, and prevent chronic disease across the lifespan.⁴⁸ Unfortunately, inadequate intakes of nutrient-dense foods like vegetables and fruits have been observed as early as infancy and toddlerhood.⁴⁹ Concomitantly, the modern obesogenic environment sets the stage for unhealthy eating patterns, and evidence suggests that eating habits formed during the early years of life tend to track over time.^{50,51}

Compared to infants, preschool-aged children have more complex experiences with foods and flavors, and greater autonomy in deciding food choices. Fortunately, the preschool years can reinforce the formation of healthy eating habits, as a large body of evidence indicates that repeated taste exposures can be an effective strategy to increase food acceptance among preschool-aged children.³⁸

The 2015 – 2020 Dietary Guidelines for Americans (DGAs)

The (current) *2015 – 2020 Dietary Guidelines for Americans* provide five specific Guidelines to promote healthy eating patterns, acknowledging that individuals will need to make changes in their selection of foods and beverages to achieve a healthy eating pattern and the role of society in supporting healthy choices.⁴⁸ The five Guidelines are:

- 1. Follow a healthy eating pattern across the lifespan.** All food and beverage choices matter. Choose a healthy eating pattern at an appropriate calorie level to help achieve and maintain a healthy body weight, support nutrient adequacy, and reduce the risk of chronic disease.

2. **Focus on variety, nutrient density, and amount.** To meet nutrient needs within calorie limits, choose a variety of nutrient-dense foods across and within all food groups in recommended amounts.
3. **Limit calories from added sugars and saturated fats and reduce sodium intake.** Consume an eating pattern low in added sugars, saturated fats, and sodium. Cut back on foods and beverages higher in these components to amounts that fit within healthy eating patterns.
4. **Shift to healthier food and beverage choices.** Choose nutrient-dense foods and beverages across and within all food groups in place of less healthy choices. Consider cultural and personal preferences to make these shifts easier to accomplish and maintain.
5. **Support healthy eating patterns for all.** Everyone has a role in helping to create and support healthy eating patterns in multiple settings nationwide, from home to school (e.g., early care and education settings) to work to communities.

Key recommendations highlight consuming a healthy eating pattern that accounts for all foods and beverages within an appropriate calorie level. A healthy pattern consists of a variety of vegetables from all subgroups (dark green, red and orange, legumes (beans and peas), starchy, and other); fruits, particularly whole fruits; grains, of which at least half are whole grain; fat-free or low-fat dairy, including milk, yogurt, cheese, and/or fortified soy beverages; a variety of protein foods, including seafood, lean meats and poultry, eggs, legumes (beans and peas), and nuts, seeds, and soy products; and (healthy) oils. A healthy eating pattern limits: saturated fats and *trans* fats, added sugars, and sodium (no more than 10% of total calories consumed per day for saturated fats and added sugars; no more than 2,300 milligrams of sodium per day).

Dietary recommendations for preschool-aged children

Daily recommendations for food groups intakes are divided into three age groups for preschool-aged children: 2-year-olds, 3-year-olds, and 4 and 5-year-olds (see figure below).

Table 1. Healthy Eating food groups recommendations for preschoolers

Food Group	2-year-olds	3-year-olds	4- and 5-year-olds
Fruits	1 cup	1 – 1½ cups	1 – 1½ cups
Vegetables	1 cup	1 – 1½ cups	1 – 2 cups
Grains	3 ounces	3 – 5 ounces	4 – 5 ounces
Protein Foods	2 ounces	2 – 4 ounces	3 – 5 ounces
Dairy	2 cups	2 – 2½ cups	2½ cups

Current Eating Patterns of US Preschool-Aged Children

US preschool-aged children are not consuming a healthy diet consistent with the DGAs.

Eating patterns are characterized by: inadequate intakes of nutrient-dense foods like vegetables and whole grains and excessive intake of energy-dense foods that are sources of solid fats, added sugars, and sodium.^{48,52} Underscoring this alarming trend are recent findings from The Feeding Infants and Toddlers Study (FITS) 2016 that indicate eating habits of young children remain in need of improvement.⁵³

For the FITS 2016,⁵³ dietary intakes of US children aged 0 to 4 were collected from a national representative sample of 3232 children, of whom, 600 (18%) were aged 2-3.9 years old.

Investigators conducted 24-h dietary recall phone surveys with the primary caregiver of the child and calculated the proportions of food groups consumed and total calories from each food group. Results indicated that the most commonly consumed vegetable was fried potatoes. More than one quarter (27%) of 2-and 3-year-olds did not consume a vegetable on the day of

the recall, but most (75%) consumed a distinct portion of fruit. A high proportion of the sample exhibited unhealthy eating patterns. Nearly all (90%) of children consumed a dessert, sugar-sweetened beverage or sweet (e.g., candy) on the day of the recall, and almost half (45%) consumed a sugar-sweetened beverage. More than a third (36%) consumed a savory snack (e.g., chips, crackers) on the day of recall.

Although 24-hr recalls may be subjected to some amount of under/over reporting and reporting bias, FITS remains one of the largest studies on eating habits of young children.⁵³ Moreover, 24-hr recalls remain the gold standard in measuring dietary intake, and findings from FITS 2016 are consistent with previous studies that have analyzed dietary intakes in large populations of young children.⁵⁴

Unfortunately, eating habits of US preschool-aged children are not improving, and unhealthy habits persist as children get older. An analysis of dietary changes among 10,647 children ages 2-6 from 1989 to 2008 found changes in diet associated with significant increases in obesity during that period. Ford and colleagues⁵⁴ analyzed changes in dietary intakes of children from five nationally representative surveys of dietary intake in the US: Continuing Survey of Food Intake in Individuals (CSFII), 1989-1991; CSFII 1994-1998; and the What We Eat In America, National Health and Nutrition Examination Surveys (WWEIA, NHANES) 2003-2004, 2005-2006 and 2007-2008. Investigators in this study also used 24-hr dietary recalls to collect dietary intake and categorized the diet data into food groupings. Top changes in per capita consumption significantly increased ($p<0.01$) for savory snacks (+51 kcal), pizza/calzones (+32 kcal), sweet snacks and candy (+25 kcal), and mixed Mexican dishes (+22 kcal), and fruit juice (+18 kcal). Total daily energy intake significantly increased from 1475 to 1584 (+109 kcal, $p<0.05$).

Food preferences and eating habits formed during the early years are a blueprint for lifelong eating behaviors and subsequently weight status, recent findings are consistent with the literature, and indicate that eating patterns of US preschool-aged children are concerning. Given the complexity of obesity development, improving eating habits of US preschool-aged children will require individual, community, and policy-level strategies.

III. Factors that influence eating behaviors of young children

Theoretical Framework

In 1979 *Bronfenbrenner* proposed the ecological systems perspective,⁵⁵ in which it was hypothesized that developmental settings influence children's health-related behaviors (e.g., eating habits). As a result, there have been applications of the socio-ecological model (SEM) to the etiology of childhood obesity to understand how the multiple determinants (individual, social, and environmental factors) influence a child's weight status.⁵⁶⁻⁵⁸ This model incorporates determinants from broader, national levels to local mesosystems (e.g. neighborhood, schools, and workplaces), incorporating policy, behavioral, and genetic factors related obesity.^{57,58} As described by Davison et al.,⁵⁸ child risk factors for obesity include dietary intake, physical activity, and sedentary behaviors, and are moderated by factors including age and gender. Family characteristics such as parenting/feeding style and practices also play a role in obesity risk. Other factors such as, demographics, parents' work-related demands, and school/child care policies also influence eating habits.

Presently, most preschool-aged children spend the majority of their waking hours at home or in child care. Nearly 60% of US children under age 6 are enrolled in some form of child care, spending on average 35 hours per week in child care, where they can consume up to 75% of their total daily recommended nutrient intake.⁵⁹ With children spending a significant amount

of time in non-parental care,⁶⁰ studies have examined the impact of child care on obesity outcomes.^{45,58,61-64} Given that food preferences and eating habits develop in early childhood and can track across the lifespan, ensuring healthy environments where children are spending their time is important to promote the development of healthy eating habits and promote a healthy body weight across the lifespan.³⁸

To date, there are mixed findings regarding obesity risk among children attending child care, but some data do suggest an increased risk of obesity among children attending child care.^{63,65} Also, child obesity risk factors for children attending child care may also vary by type of child care (home-based child care vs. center-based, Head Start). Nearly 25% of US children under age 6 attend a family child care home (FCCH).⁶⁶ A FCCH is a form of child care in which children are cared for by a non-relative, in the provider's home, rather than a child care center or facility. Compared to center-based care facilities, FCCHs also tend to have fewer children, and more flexible hours. This type of child care setting tends to also be more affordable, characteristics that may be appealing to low-income families.⁶⁷

Nationally, almost 900,000 children attending FCCHs live below the federal poverty level in 2012 attend a FCCH, putting them at a greater risk for obesity development.⁶⁰ Over a quarter (28%) of children under 6 in Rhode Island (RI) were enrolled in a FCCH.⁶⁸ One longitudinal study of early exposure to child-care in 1138 children from a prospective 34 cohort of pregnant women and infant dyads at 0-6 months of age, found FCCH attendance to be associated with increased weight for length at 1 year age, and BMI-z at 3 years of age compared to children attending center-based care.⁶³

However, a recent study by Lsong and colleagues⁶⁴, found no difference in obesity risk (after adjusting for fixed effects of additional confounding factors) in a sample of 10,700 children

from the ECLS cohort entering kindergarten, who were enrolled in nonparental care or parental care. Another study including a nationally representative sample of 15,691 children entering kindergarten from the Early Childhood Longitudinal-Study (ECLS) Kindergarten-Cohort, found that certain types of non-parental care were protective against obesity risk.⁶²

Nonetheless, whether there is a differential risk between types of childcare exists, evidence suggests that childcare environments may have a lasting or long-term effect on child weight status.^{62,63} Increased obesity risk may be a result of excess energy intake in the child care environment, at home/outside of the child care environment, or both.⁶⁹ The Academy of Nutrition and Dietetics (AND) recommends that children enrolled in child care consume one-half to two-thirds of their total daily recommended nutrient intakes from meals and snacks consistent with DGA served in child care. However, few studies have assessed dietary intake of preschool-aged children away from child-care centers.⁶⁹

Moreover, while qualitative evidence suggests an interaction between the home and child care environment and influence on child eating habits, there is a lack of quantitative studies examining the home-child-care meso-system. Gubbels et al.⁶⁸ highlights that most studies investigating child determinants of child obesity have focused on either the home *or* child care setting. This is not congruent with ecological systems perspective of environmental influences on human behavior that suggest that the home and child care environment interact with each other and influence children's eating behaviors and weight status.^{70,71}

Focusing on improving the modifiable risk factors of childhood obesity with the context of the SEM is needed. The home and child care environment both play a role in shaping the eating habits of young children. Healthy food environments in which preschool-aged children spend the majority of their waking hours can positively support healthy eating habits early in life.³⁸

Thus, targeting diet-related determinants of obesity in the home and child care environment is warranted.

The home and child care environment

Young children depend on adults for their nutritional needs in both the home⁷² and child care environment.⁷³ Parents and child care providers serve as “nutritional gatekeepers,”^{58,74} forming the physical and social food environment in which children are exposed to.³⁸ Evidence suggests that during the preschool years both parents and child care providers can influence and shape children’s dietary behaviors.⁵⁸ Repeated exposure to a variety of healthy foods both at home and in child care promotes healthy eating habits as young children are given similar opportunities to practice healthy eating habits independently at home and in child care.^{75,76} However, most of the research has primarily focused on parents, the home environment and child diet quality at home.⁴⁵ Also, few have utilized an ecological systems perspective approach to examine child eating habits in *both* the home and child care setting. Understanding dietary intake across both settings is needed to synergistically implement targeted efforts to support healthy eating habits at home and in the child care setting.

The home environment

The home food environment has an important role in shaping children’s food preferences and eating habits early in life.³⁸ Research suggests that children’s dietary intake is associated with more obesogenic home food environments. A study based on the Gemini twin birth cohort, in which Schrepft and colleagues⁷⁷ created composite scores to measure “obesogenic” home food environments, found that “higher risk” (more obesogenic home food environments) were associated with dietary behaviors among children ages 3-5 years. Specifically, children in “higher risk” obesogenic home food environments consumed (odds ratio (OR); 95% Confidence Interval (CI)), significantly less fruit (0.39; 0.27 – 0.57) and vegetables (0.47; 0.34

– 0.64), and more energy-dense snacks (3.48; 2.16 – 5.62) and sugary drinks (3.49; 2.10 – 5.81), compared to children in less obesogenic home food environments. Furthermore, lower socioeconomic status was found to a predictor of living in a “higher risk” obesogenic home food environment at 4 years of age.

It would be beneficial to examine parent sociodemographic factors associated with creating healthier food environments in future research efforts. Several parent demographic characteristics have also been found to be associated with aspects of the home food environment. For example, parents of low education status are more likely to have energy-dense foods at home.⁷⁸ Less educated parents are also more likely to use feeding practices associated with lower diet quality in young children,⁷⁹ (e.g., permissiveness associated with habitual consumption of sugary drinks and sweets, using food as a reward associated with habitual consumptions of sweets),

Parent nutrition literacy has recently emerged as a potential factor that may influence health decisions made by parents, subsequently impacting how parents shape the home food environment. While the relationship between parent nutrition literacy and child obesity risk factors (e.g., eating habits and obesogenic home food environment) remains unclear, it may be another important area to consider in future obesity prevention efforts targeting young children. Nutrition literacy is a component of Health Literacy, which is “the degree to which individuals have the capacity to obtain, process, and understand basic health information to make appropriate health decisions.”⁸⁰

In the context of nutrition literacy, the question remains if parents can make changes in the home environment based on information that is available to them. For example, learning how to read food labels leading parent to purchase healthier foods for the home. This is of

importance as emerging evidence suggests that parent nutrition literacy may be associated with diet quality in young children. Gibbs et al.⁸¹ examined associations between parent nutrition literacy (measured via Nutrition Literacy Assessment Instrument for Parents (NLit-P)), parental and child BMI, and child diet quality (measured via the Healthy Eating Index (HEI-2010)). It was determined that for every 1% increase in NLit-P, there as a 0.51 increase in child HEI-2010. Healthy Eating Index scores reflect adherence to the DGAs, and thus reflect overall dietary patterns/diet quality. Nonetheless, discrepancies in tools available to examine parent nutrition literacy indicates that more research is necessary to further validate robust measures of parent nutrition literacy and its association with the home food environment in larger, and diverse samples.

The child care environment

In recent decades, there has been an increase in the number of parents who utilize organized child care to help care for their children.⁴⁵ More than 63% of mothers with preschoolers are working,⁸² and 70-80% of their children are enrolled in some form of child care.^{45,83} Given the shift in child care utilization and the role that child care providers have in shaping young children's dietary behaviors, efforts have moved towards the improvement of the child care environment to promote healthful behaviors.⁴⁵

Child care settings can serve as homes away from home, where young children continue to form food preferences and eating habits. The Academy of Nutrition and Dietetics has identified 12 core nutrition child care benchmarks for children aged 2 to 5 in child care programs (formally referred to as early care and education (ECE) programs) to promote healthy feeding in the child care settings.⁸⁴ Benchmarks include child care provider level goals, such as “provide children with a variety of healthy foods and beverages in appropriate portions,” and “create healthy physical and social eating environments,” and the need to

provide training and technical assistance to child care providers to implement benchmarks.

Training and technical assistance to child care providers should focus on the Academy benchmarks and the basic principles of child nutrition and healthy eating and strategies to foster positive mealtime environments.

Healthy child care environments can be ensured through policies and regulations,⁸⁵ as they result in professional training and/continue education requirements for child care providers to be able to translate the policies into healthy practices.⁴⁵ Furthermore, child care settings can be supported by federal nutrition programs, such as the Child and Adult Care Food Program. The program plays a key role in improving the quality of day care, and making it more affordable for many low-income families.⁸⁶ Child care centers and FCCH that meet eligibility requirements are able to participate in a tiered reimbursement program.

The CACFP serves as a food safety net for low-income families and vulnerable populations at greater nutritional risk. Every day in the US more than 4 million children in child care settings, a majority from low-income households, receive nutritious meals and snacks through CACFP.⁸⁷ As a result of the Healthy, Hunger-Free Kids Act of 2010, the USDA was directed by Congress to review and update CACFP nutrition standards to align more consistently with the 2010 Dietary Guidelines for Americans. Based on a health impact assessment conducted as a collaborative effort by the Pew Charitable Trusts and the Robert Wood Johnson Foundation the updated guidelines are expected to improve the nutrition quality of CACFP-reimbursed meals and snacks, subsequently increasing children's intake of vegetables and whole grains, and decreasing children's consumption of grain-based desserts. The deadline for full implementation of the updated guidelines occurred in October 2017.

Observed greater risk for obesity among children attending FCCHs could be related to the fact

that for FCCH environments tend to be different, and in most cases being less strict than those for child care centers.⁸⁸ Family Child Care Homes also tend to not meet established child care standards for nutrition and physical activity.^{89,90} The updated CACFP guidelines provide child care providers, including FCCPs with guidance on fostering positive and healthy mealtime environments. In Rhode Island, state licensing laws are linked to CACFP standards, and require licensed child care program to have healthy eating policies, however no current RI state regulations exist requiring child care programs to provide (serve) meals and snacks that meet the DGAs.⁹¹

State regulations and policies that require meals and snacks served to align with the DGAs has the potential to impact the quality of both the child care and home food environment. In a qualitative study by Dev et al., a total of 18 childcare providers were interviewed to assess providers' perspectives regarding communicating with parents about child nutrition to promote child healthy eating habits.⁹² Providers reported that federal policies (i.e., Head Start Performance Standards) made it easier to implement center-level policies that facilitated working with parents to ensure healthy foods are brought from home.⁹² While this finding was specific to Head Start providers, providers of non-Head Start facilities allowed foods to be brought from home, and reported that parents usually brought unhealthy foods. However, in comparison to non-CACFP participating sites, providers reported that CACFP policies helped with implementing policies and practices to communicate with parents nutrition guidelines for foods that are brought from home.

Implications to improve child care food environments through the broader context of policy is evident, and can be a potential strategy to support obesity prevention efforts in the child care setting. Specifically, aligning FCCH-level policies with federal performance standards and nutrition benchmarks to reduce obesity risk in young children may be beneficial. Although

more studies are needed to examine how policy and environmental changes across different types of child care settings impact parent behaviors and a child's home environment.

Food Parenting Practices: Shaping healthy eating habits in young children

How children are fed may be just as important as *what* children are fed. Parents and caregivers tend to be the primary persons responsible for grocery shopping, and meal preparation, determining the physical food environment (what is available to children). However, parents and caregivers also shape the social food environment by employing feeding practices and modeling food choices and eating habits. Feeding practices (more commonly referred to as 'food parenting practices (FPP)) are goal-directed behaviors employed by caregivers to influence how much and what a child eats.

Food Parenting Practices

Decades of literature continues to support the influence of a variety of FPPs on children's eating patterns and weight outcomes.³⁸ Food parenting practices are specific goal-oriented directives employed by parents to influence what and how much the child eats.⁹³ More broadly, FPPs are organized into two categories, *non-responsive* and *responsive* feeding practices.⁹⁴ *Non-responsive* FPPs include parent-centered behaviors such as controlling FPPs, whereby parents use restriction and pressure to eat to influence a child's dietary intake, and foods as rewards or bribes to control children's behavior.⁹⁴ *Non-responsive* FPPs have been found to interfere with a child's ability to self-regulate their dietary intake by hindering their ability to respond to their own cues of hunger and fullness.⁹⁴⁻⁹⁶ *Responsive FPPs* on the other hand, are child-centered, whereby children are given the opportunity to eat in response to their internal cues of hunger and stop eating when they are full.^{97,98} Examples of *responsive* FPPs include: adults sitting with children to provide guided food choices, teaching children to serve themselves, role modeling, and encouraging but not forcing (or pressuring) children to try

healthy foods.⁹⁴

Although it remains consistent that parents have an important role in shaping children's eating patterns, inconsistencies across findings in the literature exist. Inconsistencies have been suggested to be a result of different conceptualizations of food parenting. This is evident as a recent review⁹⁹ determined that there were 79 published instruments (1392 items total) for the purpose of measuring FPPs. The most frequently used FPPs measures to date are¹⁰⁰ the Child Feeding Questionnaire (CFQ),¹⁰¹ the Parental Feeding Style Questionnaire (PFSQ),¹⁰² the Caregiver's Feeding Styles Questionnaire,¹⁰³ the Overt and Covert Control scales,¹⁰⁴ and the Comprehensive Feeding Practices Questionnaire.¹⁰⁵ However, as determined by O'Connor and colleagues, labels for similar or overlapping and/or the same construct differ across instruments.⁹⁹ Similarly, another review also determined that the quality of FPPs measures varied widely.¹⁰⁶ This in turn has left a need for an agreement upon a single conceptualization of food parenting and use of standard measures with robust psychometric properties was needed.¹⁰⁷

Efforts to addressing this need in the field are underway. An item bank of FPPs, including both published items and qualitative surveys, has been developed by O'Connor and colleagues.⁹⁹ There are an estimated 400 items categorized into representative concepts (i.e., control, autonomy support, structure of food environment, responsiveness, consistency of feeding environment, behavioral and educational, and emotion regulation). The goal of this item bank is to facilitate the ability to utilize a Computerized Adaptive Testing environment, in which presented items are tailored based on responses given, enabling participants to complete relevant items and results to be compared across studies.

In addition to the development of a FPPs item bank, a team of field experts have collaborated

to design a content map to guide the conceptualization and naming of a variety of feeding practices.¹⁰⁸ The final content map constructed included three broad food parenting constructs: Coercive Control, Structure, and Autonomy Promotion. Each food parenting construct is also comprised of multiple specific practices.

Figure 1 Content map of food parenting practices

Vaughn AE, Ward, D.S., Fisher, J.O., Faith, M.S., Hughes, S.O., Kremers, S., Musher-Eizenman, D.R., Patrick, H., Power, T.G. Fundamental constructs in food parenting practices: A conceptual model to guide future research. *Nutrition Reviews In Press*. 2016

Ethnicity, income status and food parenting practices

Other researchers in the field highlight that a majority of the food parenting constructs focus primarily on coercive control, inadvertently omitting other important factors of food parenting such as parents' responsiveness to child's satiety cues, strategies to encourage children to try new foods, and practices related to children's portion sizes.¹⁰⁰ As a result, Power and colleagues¹⁰⁰ created a Food Parenting Inventory (FPI) to include FPPs related to encouragement of new foods, mealtime structure, and external control. Informed by previous FPPs measures, the FPI includes most of the FPPs outlined in the concept map developed by

Vaughn and colleagues, with the exception of food availability/accessibility, food preparation, and praise.

The latter is of significance importance given that there is evidence of good reliability and validity of the FPI among Latina families with preschoolers. Much of the food parenting literature has focused on white, middle-class families, despite evidence that suggests FPPs may vary by socioeconomic status and ethnicity.^{109,110} For example, food insecurity, an indicator of socio-economic status¹¹¹ 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.¹¹² Worobey et al., used the CFQ to examine differences in use of “restriction” and “pressure to eat” among white middle-income mothers and Hispanic low-income mothers (determined via enrollment in the New Jersey WIC program).¹¹³ White middle-income mothers in this study reported significantly less restriction and pressure to eat in comparison to low-income mothers. Similarly, Gross *et al.* found greater reported restrictive practices (per the CFQ) among mother-infant pairs enrolled in WIC compared to mothers who reported higher food insecurity.¹¹⁴ Some evidence also suggests that Hispanic parents are more likely to engage in permissive and indulgent feeding practices during meal times compared to other racial and ethnic groups.^{109,115-118}

Previous findings from a qualitative study also suggest that Mexican American mothers are more likely to engage in permissive and indulgent behavior when determining what, when, and how much to feed their toddlers. Even though viewed as “bad foods”, most of the mothers reported giving their child sips of soda, and some even offered a sweetened beverage daily, typical more than once a day.¹¹⁶ Indulgent and permissive FPPs are of concern associated with greater body mass index in Hispanic preschool children.^{109,110} A cross-sectional study conducted by Hughes et al.,¹¹⁰ to examine the association between indulgent feeding style and

weight status in preschool-aged children found that indulgent feeding styles was significantly, positively associated with child BMI. The participants were 718 parents (29% Hispanic, 93% mothers) of children enrolled in Head Start programs in Texas and Alabama, and the CFQ and the Caregiver's Feeding Style Questionnaire was used to assess feeding styles and practices.¹¹⁰

In conclusion, there is a need to further understand the precursors to FPPs as it may help inform future efforts to improve healthy eating among Hispanic children. And although efforts are underway to move the field towards a standardization of conceptualizing FPPs, few studies have examined parents,^{108,119} and other caregiver (i.e., child care providers)¹²⁰ responses in the context of the constructs proposed by Vaughn and colleagues.

Parental and child care provider feeding practices

Within the home environment, parents play a critical role in shaping young children's eating patterns by controlling availability and accessibility of foods, modeling eating behaviors, and through parental feeding practices (behaviors employed by parents to influence how much and what a child eats).^{72,121} Overall, evidence suggests that controlling feeding practices can negatively impact children's eating behaviors and weight status.^{112,122-124} These 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.¹²² Permissive and indulgent practices have also been associated with higher child body mass index, particularly among Hispanic preschool-aged children.^{125,126} Similar to that of with parents, evidence suggests that child care providers can also shape children's eating patterns **providing healthy foods for meals and snacks**, being **enthusiastic role models**,¹²⁷⁻¹²⁹ and talking with children about healthy eating.^{129,130} Types of foods served¹³¹ and the feeding practices used during mealtimes by child care providers can also negatively impact a child's diet.^{132,133}

Communication

In the general child development literature, inconsistencies in child-rearing practices between parents and child care providers are associated negatively impact child outcomes.¹³⁴ As such, it can be hypothesized that consistency between environments would positively impact outcomes.¹³⁵ In 2011, the Academy of Medicine (formerly the IOM), published recommended early childhood obesity prevention policies. These recommendations include *best practices* to improve the nutrition environment in child care settings.⁹⁴ Recommendations also include that providers to share information and resources with parents, (i.e. best practices in the child care setting) so that parents can utilize similar best that reinforce healthy behaviors at home.⁹⁴

Recommendation 4-4 states “State child care regulatory agencies should require that child care providers and early childhood educators practice responsive feeding” to create a healthy eating environment that is responsive to children’s hunger and fullness cues.⁹⁴ As previously stated, responsive feeding practices allow children to eat in response to their internal cues of hunger and stop eating when full as opposed to non-responsive feeding practices that hinder a child’s ability to respond to their own cues of hunger and fullness to regulate food intake.⁹⁴⁻⁹⁶

Recommendation 4-6 states “Health and education professionals providing guidance to parents of young children and those working with young children should be trained and educated and have the right tools to increase children’s healthy eating and counsel parents about their children’s diet” to help parents increase children’s healthy eating.⁹⁴ The evidence suggests that feeding practices of both parents’ and child care providers’ are critical in preventing early childhood obesity⁹⁴, however effectively engaging parents in the child-care setting, especially ethnic minority groups, remains a challenge.^{45,136,137}

However, a link is needed between the home and child care environment since the child participates fully in these two meso-systems.¹³⁵ Evidence indicates that communication

between child care providers can create this link.^{82,138,139} Qualitative studies conducted with child care providers emphasize the importance of support and communication caregivers to support healthy behaviors in young children.¹⁴⁰⁻¹⁴² Similarly, studies conducted with primarily Hispanic family child care providers (FCCPs), found that both parents and FCCPs viewed communication related to supporting healthy eating in young children were important.^{82,138,143} Contrary to the latter, Mena et al., found that parents were not primarily concerned with discussing what types of foods or beverages were served to children, only to ensure that the child was adequately fed in child care. Nonetheless, the majority of the literature has focus on center-based care,⁸³ inadvertently leading to limited studies examining FCCP and parent communication related to best practices that promote healthy dietary behaviors in young children.^{82,143,144} More research is needed to understand factors associated with parental concern and/or motivation to communicate with FCCPs related to foods and beverages consumed in child care.

The AND also acknowledges the importance of child nutrition-related communication between parents and child care providers to promote healthy eating habits among preschool-aged children. Nutrition benchmarks in child care from the AND state that child care providers should communicate with parents to encourage serving healthy foods, and teach children about nutrition at home.⁵⁹ This is important given that studies have found that when child care providers share nutrition information with parents, parents provide healthier meals for their children.^{145,146} Despite IOM and AND benchmarks, there is limited evidence available to determine if parents and child care providers are communicating effectively to support the development of healthy eating habits in preschool-aged children,¹⁴⁷ particularly among parents of Hispanic preschool-aged children and FCCPs.^{143,144}

I. Conclusion

Given that most US preschool-aged children primarily split their waking hours between the home and child care setting, both settings play an important role in promoting the development of healthy life style habits, such as healthy eating patterns.^{58,148,45,149} Within the home environment, parents shape young children's eating patterns via FPPs such as controlling availability and accessibility of foods, and modeling eating behaviors.^{122,125,126,150} Similar to that of with parents, evidence suggests that child care providers can also positively influence shape children's eating patterns providing healthy foods for meals and snacks,¹³¹ being enthusiastic role models,¹²⁷⁻¹²⁹ and talking with children about healthy eating.^{129,130} Conversely, types of foods served and the feeding practices used during mealtimes by child care providers can also negatively impact a child's diet.^{132,133}

Of the limited studies examining parent and child care provider feeding practices, and dietary intake of preschool-aged children, evidence suggest that children are exposed to generally more positive (responsive) feeding practices^{130,131,133,151}, and are consuming a greater variety of foods in child care, and exceeding recommended energy intake outside of the childcare setting.^{69,152,153} However, these studies have primarily focused on center-based care, resulting in little understanding of caregiver feeding practices and child diet quality of children attending FCCHs.

Moreover, it should be noted that much of the existing literature regarding childhood obesity and health outcomes has been primarily conducted in Mexican-American children.¹⁵⁴ In addition to effectively engaging and involving Hispanic parents in FCCH-based obesity prevention efforts, the diverse subgroups that exists within the Hispanic and Latino communities warrant individual attention. Hispanics and Latinos in the US are made up of a complex, diverse group, differing in country of origin, nativity, and population distribution in

the US¹⁵⁵. It is unclear if the findings from studies conducted in primarily Mexican-American populations are generalizable to other Hispanic subgroups and populations.¹⁵⁴ 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.¹⁵⁶ According to 2012 US Census data, a little over 13% of Rhode Islanders are Hispanic.¹⁵⁷ Puerto Ricans are the largest Hispanic/Latino population, followed by Dominicans and Colombians, living in RI.¹⁵⁸ 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.^{158,159}

Gap in the Literature

Per the ecological perspective of environmental influences on human development,¹⁶⁰ it is hypothesized that the home and child care environment interact with each other and influence children’s behavior and weight status.⁷⁰ In the general child development literature, inconsistencies in child-rearing practices between parents’ and child care providers’ are associated negatively impact child outcomes.¹³⁴ As such, it can be hypothesized that consistency between environments would positively impact outcomes.¹³⁵ However, a link is needed between the home and child care environment since the child participates fully in these two meso-systems.¹³⁵ Evidences indicates that communication between child care providers can create this link.^{82,138,139}

Past studies indicate that the relationship between Hispanic family child care providers (FCCPs) and parents are more intimate than with those at child care centers ^{82,138}. Additionally, Hispanic FCCPs may be more likely to engage with parents on topics related to child nutrition and healthy eating compared to non-Hispanic white FCCPs ¹³⁹, yet there is limited knowledge on effective communication strategies specific to families that utilize FCCHs.

Identifying effective communication strategies specific to families that utilize FCCHs is of great importance. Young children enrolled in FCCHs are at greater risk for obesity, yet there is limited knowledge on the association of the FCCH environment and child obesity risk. ^{62,63} A recent review conducted by Francis and colleagues ¹⁶¹ found that obesogenic attributes of the FCCH environment included: lack of comprehensive written nutrition and physical activity policies within FCCHs, poor nutrition-related communication with families, and poor feeding practices.

Moreover, despite the role of parent and child care providers in shaping eating patterns of young children, there is a paucity of studies examining caregiver feeding practices and child dietary intake in *both* settings. Current eating patterns of young US children are concerning as they reflect eating habits associated with a greater risk for obesity and indicate the less than optimal diet quality across the life span. Additionally, because excessive weight gain during the preschool years is a significant predictor for obesity in adolescence, ⁴⁷ 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. ¹⁶² Promoting the development of healthy eating patterns during the preschool years is important for obesity prevention, and the complexity of this public health crisis warrants multi-level obesity prevention and intervention efforts in the environments they spend the majority of their time in.

To inform future FCCH-based obesity prevention efforts targeting Hispanic preschool-aged children, identifying factors (i.e., feeding practices and nutrition-related communication) associated with higher child diet quality (i.e., child healthy eating patterns) is warranted. As such, the goals of my dissertation were to: 1) Explore how a diverse sample of parents of preschool-aged children communicate with their FCCPs about child nutrition-related topics, and which child nutrition-related topics were discussed; 2) Identify factors that support and hinder parents and FCCPs working together to support healthy eating habits in Hispanic preschool-aged children; and 3) Describe parent and FCCP feeding practices (coercive control, autonomy promotion, and structure), child diet quality at home and in the FCCH in a diverse sample of preschool-aged children, and examine associations between parent/FCCP feeding practices and child diet quality. Findings from my dissertation study will be used to inform the development of culturally relevant FCCH-based interventions, including a parental/family component, to improve eating habits of preschool-aged children attending FCCHs.

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APPENDIX B

STUDY 1 DEMOGRAPHIC SURVEY

Please answer the following questions about you, your family child care home provider, and your child.

If there is any question you prefer not to answer you can simply choose, “WISH NOT TO ANSWER”

1. How old are you? _____(years)

☐ Wish not answer

2. What is your gender?

☐ Female

☐ Male

☐ Wish not to answer

3. Were you born in the United States?

☐ Yes

☐ No

☐ Wish not to answer

3a. If NO, how many years have you lived in the United States? _____Years in US

4. Do you consider yourself Hispanic or Latino?

☐ Yes

☐ No

☐ Wish not to answer

4a. If No (to number 3), what country (or countries) are you and/or your family from?

5. Which of the following best describes you? **You may select more than one**

☐ White

☐ African-American

☐ American Indian/Alaskan

☐ Asian

☐ Native Hawaiian/Pacific
Islander

☐ Other: _____

☐ Wish not to answer

6. How would you describe your current employment status?

☐ Student

☐ Retired

☐ Employed Seasonally

☐ Homemaker

☐ Employed full time
(more than 35 hrs/wk)

☐ Wish not to answer

☐ Unemployed/looking
for work

☐ Employed part-time
(less than 35 hrs/wk)

7. What is your current marital status?

☐ Never married	☐ Married/live with partner
☐ Single	☐ Widowed
☐ Divorced/Separated	☐ Wish not to answer

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

☐ No formal schooling	☐ High school graduate or GED	☐ Wish not to answer
☐ Less than 8 th grade	☐ 1-3 years of college	
☐ Higher than 8 th grade, less than high school	☐ College graduate or higher	

9. How many children (those under the age of 18) are in your household?

☐ Wish not to answer

10. How many adults (those ages 18 and older) are in your household?

☐ Wish not to answer

11. What is your **annual** household income?

☐ Less than \$15,000	☐ \$46,000 - \$60,000
☐ \$15,000 - \$29,999	☐ More than \$60,000
☐ \$30,000 - \$45,999	☐ Wish not to answer

12. In the last year, have you participated in the SNAP (food stamps) program?

- ☐ Yes ☐ No ☐ Wish not to answer

13. In the last year, have you participated in the WIC program?

- ☐ Yes ☐ No ☐ Wish not to answer

For questions 14 and 15, please tell me how often the statement was true for you:

14. "Within the past 12 months, we worried whether our food would run out before we got money to buy more".

☐ Often true	☐ Sometimes true	☐ Never true	☐ Wish not to answer

15. “Within the past 12 months, the food we bought just didn’t last, and we didn’t have money to get more”.

- ☐ Often true ☐ Sometimes true ☐ Never true ☐ Wish not to answer

16. How does your provider communicate with you? Check all that apply to you.

- ☐ Texting ☐ Newsletters
☐ On the phone ☐ In person meetings
☐ During drop-off/pick-up ☐ Other form (please specify): _____
☐ Email ☐ I do not speak with my provider on a regular basis
 ☐ Wish not to answer

17. How often do you ask your family child care home provider for advice about the foods and drinks that is best for your child? Would you say...

- ☐ Never ☐ Often
☐ Rarely ☐ Always
☐ Sometimes ☐ Wish not to answer

18. How often do you ask your family child care home provider for advice about physical activity for your child?

- ☐ Never ☐ Often
☐ Rarely ☐ Always
☐ Sometimes ☐ Wish not to answer

19. How often do you ask your family child care home provider for advice about how much screen time is OK for your child? (**Note:** Screen time includes – iPads, smart phones, playing video games, watching TV, and computer/laptop activities) Would you say...?

- ☐ Never ☐ Often
☐ Rarely ☐ Always
☐ Sometimes ☐ Wish not to answer

20. What is your relationship to the child that attends a Family Child Care Home in RI?

- ☐ Mother ☐ Grandfather
☐ Father ☐ Other: _____
☐ Grandmother ☐ Wish not to answer

21. How old is your child that attends a Family Child Care Home in RI? _____ years

22. How many hours a week does your child spend at the Family Child Care Home?
_____ hours/week

STUDY 2 DEMOGRAPHIC AND FEEDING PRACTICES SURVEY

Interviewer, mark participants answer (total estimated time: 10-15 minutes)

1. What is your relationship to the child that attends a Family Child Care Home in Rhode Island?

- ☐ Mother
- ☐ Father
- ☐ Grandmother
- ☐ Grandfather
- ☐ Other: _____
- ☐ WISH NOT TO ANSWER

2. How old are you?

- _____
- ☐ WISH NOT ANSWER

3. I know this might sound silly, but are you...

- ☐ Female
- ☐ Male
- ☐ WISH NOT TO ANSWER

Interviewer Note: Responses in CAPS are not read to participants

4. Were you born in the United States?

- ☐ Yes
- ☐ No
- ☐ WISH NOT TO ANSWER

- 4a. IF NO, how many years (or months? have you lived in the United States?

_____ Years in the United States

5. Do you consider yourself Hispanic or Latino?

- ☐ YES
- ☐ NO
- ☐ WISH NOT TO ANSWER

- 5a. **IF YES**, what country (or countries) are you and your family from?

(WRITE IN ANSWER):

6. Which of the following best describes you?

- ☐ White/Caucasian
- ☐ Black or African-American
- ☐ American Indian/Alaskan native
- ☐ Asian American
- ☐ Native Hawaiian/Pacific Islander
- ☐ Other (specify): _____
- ☐ WISH NOT TO ANSWER

Interviewer Note: Responses in CAPS are not read to participants

7. How would you describe your current employment status?
- ☐ STUDENT
 - ☐ HOMEMAKER
 - ☐ UNEMPLOYED/LOOKING FOR WORK
 - ☐ RETIRED
 - ☐ EMPLOYED FULL TIME (>THAN 35 HRS/WEEK)
 - ☐ 6 EMPLOYED PART TIME (<THAN 35 HOURS/WEEK)
 - ☐ 7 EMPLOYED SEASONALLY /ON AND OFF
 - ☐ 0 WISH NOT TO ANSWER
8. What is your current marital status?
- ☐ NEVER MARRIED
 - ☐ SINGLE
 - ☐ DIVORCED/SEPARATED
 - ☐ MARRIED/LIVING WITH PARTNER
 - ☐ WIDOWED
 - ☐ WISH NOT TO ANSWER
9. What is the *highest level* of education / schooling you have completed?
- ☐ NO FORMAL SCHOOLING
 - ☐ LESS THAN 8TH GRADE
 - ☐ >8TH, LESS THAN HIGH SCHOOL
 - ☐ HIGH SCHOOL GRADUATE OR GED
 - ☐ 1-3 YEARS OF COLLEGE
 - ☐ COLLEGE GRADUATE/HIGHER
 - ☐ WISH NOT TO ANSWER
10. How many children under the age of 18 live in your household?
- ☐ WISH NOT TO ANSWER _____
11. How many adults 18 years old and older live in your household?
- ☐ WISH NOT TO ANSWER _____
12. What is your **annual** household income? Would you say....
(Interview note: this is an open-ended question. Please code according to participant response)
- ☐ \$15,000 OR LESS
 - ☐ \$15,000-\$29,000
 - ☐ \$30,000-\$45,999
 - ☐ \$46,000-\$60,000
 - ☐ >\$60,000

☐ WISH NOT TO ANSWER

The following questions you can respond with Yes or No, or choose not to answer

13. In the last year, have you participated in the SNAP program, also called food stamps?

(Interview note: Supplemental Nutrition Assistance Program)

- ☐ YES
- ☐ NO
- ☐ WISH NOT TO ANSWER

14. In the last year, have you participated in the WIC program?

- ☐ YES
- ☐ NO
- ☐ WISH NOT TO ANSWER

I am going to read you two statements that people have made about their food situation. For each statement, please tell me how often this is true for you; you can respond: often, sometimes, or never.

15. “Within the past 12 months, we worried whether our food would run out before we got money to buy more”

- ☐ Often (true)
- ☐ Sometimes (true)
- ☐ Never (true)
- ☐ WISH NOT TO ANSWER

16. “Within the past 12 months, the food we bought just didn’t last, and we didn’t have money to get more”

- ☐ Often (true)
- ☐ Sometimes (true)
- ☐ Never (true)
- ☐ WISH NOT TO ANSWER

17. Does your provider communicate with you in any of the following ways?

(Interviewer note: read each response, mark items participant responds yes to.)

- ☐ [via] Text
- ☐ [via] Phone
- ☐ During drop-off/pick-up
- ☐ [via] Email
- ☐ [via] Newsletters
- ☐ In person meetings
- ☐ Other form: _____
- ☐ I do not speak with my child’s provider on a regular basis
- ☐ WISH NOT TO ANSWER

(INTERVIEWER NOTE): Prompt for other: “Are there other ways that you and provider communicate that I have not mentioned so far?”

18. How often do you ask your [FAMILY CHILD CARE HOME] provider for advice about the foods and drinks that your child eats and drinks? Would you say....

- ☐ Never
- ☐ Rarely
- ☐ Sometimes
- ☐ Often
- ☐ Always
- ☐ WISH NOT TO ANSWER

19. How often do you ask your [FAMILY CHILD CARE HOME] provider for advice about physical activity for your child? Would you say...

- ☐ Never
- ☐ Rarely
- ☐ Sometimes
- ☐ Often
- ☐ Always
- ☐ WISH NOT TO ANSWER

20. How often do you seek advice from your childcare provider about screen time for your child?

(Interviewer note: Screen time includes – iPads, smart phones, playing video games, watching TV, and computer/laptop activities

- ☐ Never
- ☐ Rarely
- ☐ Sometimes
- ☐ Often
- ☐ Always
- ☐ WISH NOT TO ANSWER

21. How old is your child that attends a family child care home in RI? _____

☐ WISH NOT TO ANSWER

22. How many hours a week does your child spend the family child care home? _____

☐ WISH NOT TO ANSWER

This completes the first survey. Next I will ask you questions about feeding your child. **This survey should take about 5-10 minutes.**

For the following questions, **please tell me how often you do the following things with your child. Please respond with either:**

Never, Rarely, Sometimes, Often, Very Often, or Always

Please remember that the following questions refer to how you interact with your child that is between the ages of 2 and 5 during meal times.

23. You promise your child a reward if they eat a specific food.

(For example: "If you eat your beans, we can play ball outside.")

- ☐ Never
- ☐ Rarely
- ☐ Sometimes
- ☐ Often
- ☐ Very Often
- ☐ Always
- ☐ WISH NOT TO ANSWER

24. You reward your child with food or sweets when he/she is well behaved.

- ☐ Never
- ☐ Rarely
- ☐ Sometimes
- ☐ Often
- ☐ Very Often
- ☐ Always
- ☐ WISH NOT TO ANSWER

25. You teach your child about the foods he/she is eating.

- ☐ Never
- ☐ Rarely
- ☐ Sometimes
- ☐ Often
- ☐ Very Often
- ☐ Always
- ☐ WISH NOT TO ANSWER

26. You give your child something to eat to make him/her feel better when he/she is upset.

- ☐ Never
- ☐ Rarely
- ☐ Sometimes
- ☐ Often
- ☐ Very Often
- ☐ Always
- ☐ WISH NOT TO ANSWER

27. You leave the TV on during your child's meals and snacks.

- ☐ Never
- ☐ Rarely
- ☐ Sometimes
- ☐ Often
- ☐ Very Often
- ☐ Always
- ☐ WISH NOT TO ANSWER

28. You encourage your child to wait a few minutes before getting seconds so that he/she can decide if he/she still hungry.

- ☐ Never
- ☐ Rarely
- ☐ Sometimes
- ☐ Often
- ☐ Very Often
- ☐ Always
- ☐ WISH NOT TO ANSWER

29. You let your child decide for themselves how much he/she should eat.

- ☐ Never
- ☐ Rarely
- ☐ Sometimes
- ☐ Often
- ☐ Very Often
- ☐ Always
- ☐ WISH NOT TO ANSWER

30. You encourage your child to eat fruits and vegetables by telling your child that they taste good.

- ☐ Never
- ☐ Rarely
- ☐ Sometimes
- ☐ Often
- ☐ Very Often
- ☐ Always
- ☐ WISH NOT TO ANSWER

31. You ask your child if he/she is hungry before serving him/her seconds.

- ☐ Never
- ☐ Rarely
- ☐ Sometimes
- ☐ Often
- ☐ Very Often
- ☐ Always
- ☐ WISH NOT TO ANSWER

32. You encourage your child to eat a wide variety of foods.

- ☐ Never
- ☐ Rarely
- ☐ Sometimes
- ☐ Often
- ☐ Very Often
- ☐ Always
- ☐ WISH NOT TO ANSWER

33. You praise your child when he/she tries a new food.

- ☐ Never
- ☐ Rarely

- ☐ Sometimes
- ☐ Often
- ☐ Very Often
- ☐ Always
- ☐ WISH NOT TO ANSWER

34. You wait until your child has finished another food on his/her plate before you give seconds.

- ☐ Never
- ☐ Rarely
- ☐ Sometimes
- ☐ Often
- ☐ Very Often
- ☐ Always
- ☐ WISH NOT TO ANSWER

35. You show your child that you enjoy fruits and vegetables so that he/she is more likely to eat them.

- ☐ Never
- ☐ Rarely
- ☐ Sometimes
- ☐ Often
- ☐ Very Often
- ☐ Always
- ☐ WISH NOT TO ANSWER

36. You encourage your child to eat by using food as a reward. (For example, "If you finish your vegetables, you will get some cookies")

- ☐ Never
- ☐ Rarely
- ☐ Sometimes
- ☐ Often
- ☐ Very Often
- ☐ Always
- ☐ WISH NOT TO ANSWER

37. You eat chips, sweets, or fast food while you are caring for your child.

- ☐ Never
- ☐ Rarely
- ☐ Sometimes
- ☐ Often
- ☐ Very Often
- ☐ Always
- ☐ WISH NOT TO ANSWER

38. You watch and guide your child's eating so that he/she does not eat more than he/she should.

- ☐ Never
- ☐ Rarely

- ☐ Sometimes
- ☐ Often
- ☐ Very Often
- ☐ Always
- ☐ WISH NOT TO ANSWER

39. You ask your child if he/she is full before you remove an unfinished plate of food.

- ☐ Never
- ☐ Rarely
- ☐ Sometimes
- ☐ Often
- ☐ Very Often
- ☐ Always
- ☐ WISH NOT TO ANSWER

40. You watch and guide your child's eating so that they don't eat less than they should.

- ☐ Never
- ☐ Rarely
- ☐ Sometimes
- ☐ Often
- ☐ Very Often
- ☐ Always
- ☐ WISH NOT TO ANSWER

41. You drink soda or other sugary drinks while you are caring for my child.

- ☐ Never
- ☐ Rarely
- ☐ Sometimes
- ☐ Often
- ☐ Very Often
- ☐ Always
- ☐ WISH NOT TO ANSWER

42. You encourage your child to finish his/her food even if he/she says "I'm not hungry".

- ☐ Never
- ☐ Rarely
- ☐ Sometimes
- ☐ Often
- ☐ Very Often
- ☐ Always
- ☐ WISH NOT TO ANSWER

STUDY 3 FAMILY CHILD CARE PROVIDER DEMOGRAPHIC SURVEY

Please answer the following questions about you, your family child care home, and your family

If there is any question you prefer not to answer you can simply choose, “WISH NOT TO ANSWER”

1. How old are you? _____ (age in years)
☐ WISH NOT ANSWER
2. What is your gender?
☐ Female ☐ Male ☐ Wish not to answer
3. Were you born in the United States?
☐ Yes ☐ No ☐ Wish not to answer
- 3a. If NO, how many years have you lived in the United States? _____ Years in US
4. Do you consider yourself Hispanic or Latino?
☐ Yes ☐ No ☐ Wish not to answer
- 4a. If YES, what country (or countries) are you and/or your family from?

5. Which of the following best describes you?
☐ White ☐ African-American ☐ American Indian/Alaskan Native
☐ Asian ☐ Native Hawaiian/Pacific Islander ☐ Other: _____
☐ Wish not to answer
6. What is your current marital status?
☐ Never married ☐ Married/live with partner
☐ Single ☐ Widowed
☐ Divorced/Separated ☐ Wish not to answer
7. What is the *highest level* of education / schooling you have completed?
☐ No formal schooling ☐ Higher than 8th grade, less than high school
☐ Less than 8th grade ☐ High school graduate or GED
☐ Higher than 8th grade, less than high school ☐ 1-3 years of college
☐ College graduate or higher
☐ Wish not to answer
8. How many children (those under the age of 18) are in your household? _____
☐ Wish not to answer

9. How many adults (those ages 18 and older) are in your household? _____
☐ Wish not to answer

10. What is your **annual** household income?

☐ Less than \$15,000	☐ \$46,000 - \$60,000
☐ \$15,000 - \$29,999	☐ More than \$60,000
☐ \$30,000 - \$45,999	☐ Wish not to answer

11. In the last year, have you participated in the SNAP (food stamps) program?

- ☐ Yes ☐ No ☐ Wish not to answer

12. In the last year, have you participated in the WIC program?

- ☐ Yes ☐ No ☐ Wish not to answer

13. In the last year, have you participated in the CACFP program? (Child and Adult Care Food Program or Child Care Food Program)

- ☐ Yes ☐ No ☐ Wish not to answer

For questions 14 and 15, please tell me how often the statement was true for you:

14. "Within the past 12 months, we worried whether our food would run out before we got money to buy more".

- ☐ Often true ☐ Sometimes true ☐ Never true ☐ Wish not to answer

15. "Within the past 12 months, the food you bought didn't last and you didn't have money to get more".

- ☐ Often true ☐ Sometimes true ☐ Never true ☐ Wish not to answer

16. How do you communicate with the parents of the children you care for? Check all that apply to you.

☐ Texting	☐ Newsletters
☐ On the phone	☐ In person meetings
☐ During drop-off/pick-up	☐ Other form (please specify):
☐ Email	☐ I do not speak with my provider on a regular basis
	☐ Wish not to answer

17. How often do you give parents advice about the foods and drinks that is best for young children? Would you say...?

☐ Never	☐ Often
☐ Rarely	☐ Always
☐ Sometimes	☐ Wish not to answer

18. How often do you give parents advice about physical activity for young children? Would you say...?

☐ Never	☐ Often
☐ Rarely	☐ Always
☐ Sometimes	☐ Wish not to answer

19. How often do you give parents advice about how much screen time is OK for their child? (**Note:** Screen time includes – iPads, smart phones, playing video games, watching TV, and computer/laptop activities) Would you say...?

☐ Never	☐ Often
☐ Rarely	☐ Always
☐ Sometimes	☐ Wish not to answer

20. How often have you received training specifically on nutrition for preschool-aged children (2-5 years old) in the past 3 years?

☐ 0-3 times	☐ I have not received or attended training on nutrition for preschool-aged children
☐ 4-7 times	☐ Wish not to answer

21. How often have you received training specifically on physical activity for preschool-aged children (2-5 years old) in the past 3 years?

☐ 0-3 times	☐ I have not received or attended training on physical activity for preschool-aged children
☐ 4-7 times	☐ Wish not to answer

22. How often have you received training specifically on screen time for preschool-aged children (2-5 years old) in the past 3 years? (**Note:** Screen time includes – iPads, smart phones, playing video games, watching TV, and computer/laptop activities).

☐ 0-3 times	☐ I have not received or attended training on screen time for preschool-aged children
☐ 4-7 times	☐ Wish not to answer

STUDY 3 PARENT DEMOGRAPHIC SURVEY

Please answer the following questions about you, your family child care home provider, and your child.

If there is any question you prefer not to answer you can simply choose, “WISH NOT TO ANSWER”

Please answer the following questions about you, your family child care home, and your family

If there is any question you prefer not to answer you can simply choose, “WISH NOT TO ANSWER”

1. How old are you? _____ (age in years)
☐ WISH NOT ANSWER
2. What is your gender?
☐ Female ☐ Male ☐ Wish not to answer
3. Were you born in the United States?
☐ Yes ☐ No ☐ Wish not to answer
- 3a. If NO, how many years have you lived in the United States? _____ Years in US
4. Do you consider yourself Hispanic or Latino?
☐ Yes ☐ No ☐ Wish not to answer
- 4a. If YES, what country (or countries) are you and/or your family from?

5. Which of the following best describes you?
☐ White ☐ African-American ☐ American Indian/Alaskan Native
☐ Asian ☐ Native Hawaiian/Pacific Islander ☐ Other: _____
☐ Wish not to answer
6. What is your current marital status?
☐ Never married ☐ Married/live with partner
☐ Single ☐ Widowed
☐ Divorced/Separated ☐ Wish not to answer
7. What is the *highest level* of education / schooling you have completed?
☐ No formal schooling ☐ Higher than 8th grade, less than high school
☐ Less than 8th grade ☐ High school graduate or GED

☐ Higher than 8 th grade, less than high school	☐ 1-3 years of college
	☐ College graduate or higher
	☐ Wish not to answer

8. How many children (those under the age of 18) are in your household? _____
☐ Wish not to answer

9. How many adults (those ages 18 and older) are in your household? _____
☐ Wish not to answer

10. What is your **annual** household income?

☐ Less than \$15,000	☐ \$46,000 - \$60,000
☐ \$15,000 - \$29,999	☐ More than \$60,000
☐ \$30,000 - \$45,999	☐ Wish not to answer

11. In the last year, have you participated in the SNAP (food stamps) program?
☐ Yes ☐ No ☐ Wish not to answer

12. In the last year, have you participated in the WIC program?
☐ Yes ☐ No ☐ Wish not to answer

13. In the last year, have you participated in the CACFP program? (Child and Adult Care Food Program or Child Care Food Program)
☐ Yes ☐ No ☐ Wish not to answer

For questions 14 and 15, please tell me how often the statement was true for you:

14. "Within the past 12 months, we worried whether our food would run out before we got money to buy more".
☐ Often true ☐ Sometimes true ☐ Never true ☐ Wish not to answer

15. "Within the past 12 months, the food you bought didn't last and you didn't have money to get more".
☐ Often true ☐ Sometimes true ☐ Never true ☐ Wish not to answer

16. How do you communicate with the parents of the children you care for? Check all that apply to you.

☐ Texting	☐ Newsletters
☐ On the phone	☐ In person meetings
☐ During drop-off/pick-up	☐ Other form (please specify):
☐ Email	☐ I do not speak with my provider on a regular basis
	☐ Wish not to answer

17. How often do you give parents advice about the foods and drinks that is best for young children? Would you say...?

☐ Never	☐ Often
☐ Rarely	☐ Always
☐ Sometimes	☐ Wish not to answer

18. How often do you give parents advice about physical activity for young children? Would you say...?

☐ Never	☐ Often
☐ Rarely	☐ Always
☐ Sometimes	☐ Wish not to answer

19. How often do you give parents advice about how much screen time is OK for their child? (Note: Screen time includes – iPads, smart phones, playing video games, watching TV, and computer/laptop activities) Would you say...?

☐ Never	☐ Often
☐ Rarely	☐ Always
☐ Sometimes	☐ Wish not to answer

20. How often have you received training specifically on nutrition for preschool-aged children (2-5 years old) in the past 3 years?

☐ 0-3 times	☐ I have not received or attended training on nutrition for preschool-aged children
☐ 4-7 times	☐ Wish not to answer

21. How often have you received training specifically on physical activity for preschool-aged children (2-5 years old) in the past 3 years?

☐ 0-3 times	☐ I have not received or attended training on physical activity for preschool-aged children
☐ 4-7 times	☐ Wish not to answer

22. How often have you received training specifically on screen time for preschool-aged children (2-5 years old) in the past 3 years? (Note: Screen time includes – iPads, smart phones, playing video games, watching TV, and computer/laptop activities).

☐ 0-3 times	☐ I have not received or attended training on screen time for preschool-aged children
☐ 4-7 times	☐ Wish not to answer

23. Have you heard about the Child and Adult Care Food Program, also known as CACFP?

☐ Yes	☐ No	☐ Wish not to answer