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The Impact of the Healthy Children, Healthy Families Curriculum on Maternal Food Parenting Practices

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THE IMPACT OF THE HEALTHY CHILDREN, HEALTHY FAMILIES
CURRICULUM ON MATERNAL FOOD PARENTING PRACTICES

BY

LAURA E. OTTERBACH

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE OF
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MASTER OF SCIENCE THESIS

OF

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2016

ABSTRACT

Objective: To assess the impact of the evidence-based Healthy Children, Healthy Families (HCHF) curriculum on changes in positive food parenting practices (FPPs).

Design/Setting: Non-experimental pre/post within-subjects design. The study primarily took place at a free healthcare clinic (Clinica Esperanza/Hope Clinic) located in Providence, RI.

Participants: Mother-child dyads were recruited from the community (n=40) and completed baseline data measures for an 8-week group-based intervention, with 24 mother-child dyads completing the intervention. Dyads were primarily Hispanic, and of low socio-economic status.

Intervention: The 8-week, evidence-based HCHF curriculum/intervention was delivered primarily in Spanish to 4 separate groups of mothers by trained paraprofessional educators, or *navegantes*.

Main Outcome Measures: Mothers completed self-administered surveys pre/post which included demographic questions, seven subscales from the Comprehensive Feeding Practices Questionnaire, and the 16-item HCHF Behavior Checklist.

Analysis: Descriptive statistics and paired samples t-tests were used to analyze mother-child dyad data (n=40).

Results: There were significant improvements in positive FPPs, including modeling and involvement, ($p < 0.05$). There were also significant improvements in several mother and child diet and activity outcomes.

Conclusions and Implications: Positive FPPs, and mother and child health behaviors improved after participating in an 8-week group based intervention. Community-based

delivery of the HCHF curriculum is feasible and may be effective in improving food parenting practices as well as behaviors that contribute to childhood obesity.

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PREFACE

This thesis was written to comply within the University of Rhode Island graduate school Manuscript Thesis Format. This thesis contains one manuscript: *The Impact of the Healthy Children, Healthy Families Curriculum on Maternal Food Parenting Practices*. This manuscript has been written in a form suitable for publication in the Journal of Nutrition Education and Behavior.

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CHAPTER 1

The Impact of the Healthy Children, Healthy Families Curriculum on Maternal Food Parenting Practices

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Introduction

Prevention of childhood obesity continues to be a public health priority.¹ In 2011-2012, 16.9% of children and adolescents in the United States (US) were obese.¹ This is concerning, given that childhood obesity is associated with increased risk for many diseases such as heart disease, hypertension, and type 2 diabetes.^{1,2} In addition, obese and overweight children are more likely to be obese adults which puts them at increased risk for adverse health outcomes across the lifespan.^{3,4}

Despite recent reductions in childhood obesity rates, disparities among race/ethnicity persist nationwide.^{1,5-7} For example, using data from 2011-2012, over 22% of Hispanic youth aged 2-19 were obese in the US, as compared to 14.1% of non-Hispanic white youth and 8.6% of non-Hispanic Asian youth.¹ In the state of Rhode Island (RI) these disparities are even greater. In 2011, 25% of Hispanic kindergarteners (5 yrs) in RI were obese, as compared to 14% of non-Hispanic White and 11% of non-Hispanic Black kindergarteners.⁶ These rates increase as children reach 7th grade (12 yrs), as 30% of Hispanic 7th graders, 23% non-Hispanic black and 17% of non-Hispanic white 7th graders were obese in 2011.⁶ These rates are consistently highest in Hispanic populations, which is concerning given that this population is one of the largest ethnic minority groups not only in Rhode Island but in the US as well, and this population is expected to grow^{1,6}. Obesity prevention programs that focus on Hispanic populations are needed to reduce these racial/ethnic disparities and to help continue to reduce national obesity rates^{1,6}. Given these disparities and the increased risk for developing obesity later in life,^{1,3-5,8} involving parents to aid in childhood obesity prevention is critical.^{9-11,13-15}

Parents play an important role in shaping a child's diet and eating behaviors early in life.^{9-11,13-15,18,19,22,28,30,31} Parents serve as an authority figure and role model for their children^{9-11,13-15}, and can improve the environments by reducing obesogenic factors and increasing healthy parenting practices.^{9-11,13-15,18-20,28} Given that parents play a key role in shaping a child's diet and feeding habits,¹⁸⁻²¹ interventions that include parents as agents of change are often successful in facilitating behavior changes at the family level.^{9-11,13-15} Parents are important gate keepers for the home food environment, and play a role in obesity risk through several parenting behaviors. For example, parents use strategies to maintain or alter a child's food intake, known as food parenting practices¹⁸. Food parenting practices are goal directed behaviors that influence the amount or type of food a child eats, and include modeling, involvement, and encouragement of balance and variety.^{13,16,18,19} These food parenting practices have been identified as important factors in the development of weight gain and obesogenic eating behaviors in young children.^{12,13,16-22,24,25,28}

Food parenting practices influence the diet quality and weight status of young children.^{12,13,16,-22,24,25,28} One longitudinal study among Mexican American families found that parental use of food restriction predicted higher weight status at year 1, while pressure to eat was related to a lower weight status.²⁵ Similarly, another longitudinal study with 323 mother-child dyads (child ages 1.5-2 yrs), found that instrumental feeding, or food as reward, was positively correlated with child BMI-z score at multiple time points.¹² Given these results, childhood obesity interventions should include parent education on the impact of food parenting practices and tools to promote practices that are associated with favorable health outcomes.^{9-11,13-16,19,27,28}

Most of the literature on food parenting practices has focused primarily on negative food parenting practices such as pressure to eat and restriction.^{12,13,18,21,24-28} A recent systematic review by Shloim et al. reviewed studies investigating food parenting practices, and practices in relation to weight status in children ages 4-12 years. The review identified 22 previous studies that examined the relationship between food parenting practices and child weight status.²⁸ Of those studies, a majority focused on negative food parenting practices, and the associations of these types of practices with child weight status.²⁸ Most studies were focused on practices like pressure to eat, restriction, and instrumental and emotional feeding, and very few studies included positive/supportive food parenting practices in their main findings.²⁸ The review highlights the need for future interventions to focus on parenting and positive food parenting practices²⁸, such as modeling, child involvement, and encouragement.¹⁶

In studies focusing on these positive food parenting practices, modeling, involvement, and encouragement have also shown to be associated with diet quality and BMI.^{9-12,18,20,25} For example, among 699 child-parent dyads, parental encouragement/modeling and overall positive food parenting practices were associated with favorable diet quality and weight status in children aged 6-11 years.²⁰ Children's BMI z-scores were negatively associated with parent encouragement/modeling, and positively associated with permissive food parenting practices.²⁰ These associations suggest that along with information about modifying negative food parenting practices, it is important to target positive food parenting practices when designing interventions as a way to improve child diet habits and therefore weight status.

Although there have been multiple interventions to prevent childhood obesity,²⁸⁻³¹ few have targeted the modification of positive food parenting practices set within a community setting among low-income Hispanic populations. The *Healthy Children, Healthy Families* (HCHF) is an evidence-based curriculum for parents of 3-11-year-old children that focuses on the importance of developing healthy lifestyle behaviors through parenting style, food parenting practices, and the home environment.³²⁻³⁵ HCHF is a family-centered obesity prevention curriculum/intervention that focuses on parenting skills, with the goal of facilitating healthy lifestyle changes within a family system.³¹⁻³⁴ The HCHF curriculum was designed for community nutrition educators to deliver to low-income parents throughout an 8-week series of weekly workshops.³²⁻³⁶

Although previous studies utilizing the HCHF curriculum have found improvements in parent and child health behaviors following the intervention,^{34,35} these studies have not comprehensively measured changes in food parenting practices.³⁴⁻³⁶ For example, Lent et al. found that after participating in this curriculum, 500 parents³⁵ reported significant improvements in both their and their child's diet and physical activity behaviors, including reduced soda and fast food intake, higher low-fat dairy, vegetable, and fruit intakes, and less TV watching and more active play for children.³⁵ In addition, the study found improvements in self-reported parenting behaviors (eating with their child, autonomy) following the intervention.³⁵ Given the focus of the HCHF curriculum on food parenting practices, it is important to understand the impact of the intervention on these practices. This may shed light on these practices as possible mediators of these outcomes as well as future targets for intervention improvement.

The purpose of the present study was to assess if mothers participating in a childhood obesity intervention utilizing the HCHF curriculum would improve their self-reported positive food parenting practices pre/post intervention. In addition, the study aimed to assess changes in parent and child behaviors related to dietary intake and activity.

Methods

Study Design

The study utilized a non-experimental, within-subjects pre/post design. Parents of 3-11-year-old children participated in the evidence-based 8-week *Healthy Children, Healthy Families* (HCHF) curriculum/workshop series, which was taught by community paraprofessionals (navegantes) primarily in Spanish. The 8-week intervention was delivered to a total of four groups of mothers (approximately 5-15 mothers/group) between April and December 2015. The curriculum is focused on parenting techniques to improve family health behaviors including healthy eating, physical activity, and positive parenting practices.

The primary hypothesis was that parents would improve their scores on the supportive food parenting practice of modeling. The secondary hypothesis was that parents would improve their scores on supportive food parenting practices of encouragement of balance and variety and involvement. Additional exploratory hypotheses were that there would be improvements in parent and child diet and activity outcomes such as increases in intake of fruits, vegetables, and low-fat dairy, increased physical activity, and decreased consumption of energy dense snacks, fast food, and soda.

Study Setting

The study involved a community partnership with Clínica Esperanza/Hope Clinic (CEHC), a free healthcare clinic located in the Olneyville area of Providence, RI. The clinic provides free healthcare services to the uninsured, and also provides community health programs delivered by trained paraprofessional educators. As an existing community platform for health interventions, CEHC was chosen as the community partner for this study, and was the primary setting for the delivery of the intervention. All protocols of the proposed study were approved by the University of Rhode Island Institutional Review Board.

Participants and Recruitment

Eligible participants were parents or primary caregivers of children between the ages of 3-11 years, and willing to attend the weekly workshop sessions for 8 weeks. Although recruitment included both male and female participants, only one male participated. This male participant was removed from the analytic study sample in order to assess changes in mothers only. The target population was parents living in the Providence, Rhode Island area. In addition, we intended to reach a large percentage of at risk parents, specifically low-income Hispanic parents, given the demographics of this area. The median household income in Olneyville is \$17,538, and 61% of the population is Hispanic.³⁷

Recruitment fliers (Appendix C) including study information were placed throughout the Olneyville area and distributed to organizations including community centers, local businesses, parks, libraries, and churches. In addition, the navegantes and community partners including healthcare clinics and current health-related programs

helped do in person recruitment in the community. Interested parents were screened in-person or via telephone to determine eligibility. Recruitment efforts continued on a rolling basis by continuously recruiting eligible parents to participate in the next available group.

Intervention

The HCHF curriculum was taught by *navegantes* (paraprofessional educators) employed through CEHC. Navegantes participated in a formal 2-day training on the HCHF curriculum, conducted by representatives from Cornell University. The training reviewed the foundations of the curriculum, answered frequently asked questions, addressed common barriers, and allowed for the practice of activities and lessons in the curriculum. The training also provided the navegantes with valuable background knowledge of the overall goals of the curriculum as well as tools and techniques surrounding curriculum flow, delivery, and evaluation.

The HCHF curriculum highlights '*paths to success*' and '*keys to success*' to facilitate healthy changes in families (Appendix D).^{32,33} These paths and keys to success, which serve as the backbone of the HCHF curriculum, highlight several positive food parenting practices, and encourage parents to use these practices with their families at home. Examples include setting a good example for their child (modeling), and offering healthy choices within limits (guiding).^{32,33} By integrating health education with parental support and tools to promote firm and responsive parenting, HCHF is a curriculum tailored to the specific needs of parents of 3 to 11-year old children.

The HCHF curriculum addresses health education topics surrounding diet, activity, and the home environment. Topics include consuming water or milk instead of

sugar sweetened beverages, reducing high-fat and high-sugar foods, eating more fruits and vegetables, playing actively, reducing screen time, and having family meals.^{32,33} The curriculum includes problem-solving strategies for health-related behavior change, and utilizes parenting scenarios and role-play to address barriers to behavior change.^{32,33} Specifically, the curriculum focuses on strategies that parents can use to improve their food parenting practices, including emphasizing their child's role in food preparation, encouraging their children to eat a balanced and varied diet, and modeling healthy eating behaviors to their children (Appendix E). In addition, each session also included an active play break, featuring a family-friendly activity that parents can do with their families at home (Appendix F).^{32,33} Every session includes a healthy recipe for parents to taste (Appendix G), and a weekly prize/incentive, such as pedometers or cooking utensils (Appendix H). For weekly goal-setting, at the end of each session parents identified a 'healthy step' or goal for the week ahead (Appendix I).^{32,33}

To assess parent participation, attendance was recorded at each session. Study completers were considered for data analysis if they attended at least five out of the eight class sessions. To assess fidelity of the intervention, a portion of the HCHF sessions were observed. Out of the 32 sessions (8 sessions/group, 4 groups total), 19 sessions, or 59% were observed. At least 2 sessions/group were observed. Fidelity assessment was conducted by a trained research assistant using previously developed observation checklists corresponding with each lesson/session of the HCHF intervention³² (Appendix J). Using the completed observation checklist, intervention fidelity was high (97%), indicating that the navegantes delivered the intervention as it was intended based on the protocol of the HCHF curriculum.

Procedures

Prior to the first session, baseline measures for each group of participants were collected. On the day of the first session, each mother-child dyad arrived at CEHC before the proposed session start time to complete baseline measures. All study materials were available in both English and Spanish. Mothers completed a consent form for themselves (Appendix K) and a written permission form their child if their child was under 7 years of age. Children who were over 7 years of age completed an assent form. Mothers then completed a baseline survey, which consisted of demographic questions, questions from the Comprehensive Feeding Practices Questionnaire (CFPQ), and the 16-item HCHF behavior checklist (Appendix L). Once mothers completed the survey, both mother and child were led to a separate area where a research assistant measured and recorded their baseline height and weight measurements (Appendix M). Once height and weight measurements of each mother-child dyad were completed, session one began. Although the focus of this intervention was for the mothers, mothers were encouraged to bring their children to the sessions where complimentary child care and/or a separate nutrition curriculum was delivered to the children. Mothers were compensated for their time with a \$10 gift card at the end of the first session. Mother-child dyads then returned to CEHC weekly for a total of eight sessions to complete the intervention. On the last week (session 8), the survey and measurement process described above was repeated to collect post-intervention data. Mothers were compensated for their time with a \$40 gift card at the end of the last session. In addition to completing a post-intervention survey, mothers also completed an evaluation survey from the HCHF curriculum which evaluated their opinions of the program (Appendix N).

Measures

Anthropometrics

Standing height and weight measurements of each parent-child dyad were taken using standardized procedures.³⁸ Measurements were taken in a private area to assure confidentiality of measurements and to increase the comfort of participants. Each parent-child dyad was instructed to wear light clothing and remove footwear, and if applicable, asked to take down their hair to ensure measurement accuracy. Each parent and child had measurements (height and weight) taken twice to confirm measurement precision. Height was measured using a portable stadiometer (Seca 213). Weight was measured using a calibrated digital scale (Seca 813). To assess parent BMI, the mean calculation for weight and height for each data collection point was used to calculate a BMI score (pre and post). Pre and post-intervention BMI z-scores and percentiles were calculated for children, using the means for height and weight, in addition to date of birth and sex.^{39,40}

Survey Protocol

The survey was designed to be self-administered and consisted of 84 questions. Although it was designed to be self-administered, each participant was asked if they needed assistance completing the survey. If the participant needed assistance, a bilingual research assistant or navegante read questions aloud to ensure the participant understood each question and answer option. Parents answered each question as it pertains to their child involved in the study. If a parent has more than one child between ages 3-11, they were instructed to answer questions about the youngest child within the 3-11 age range. The survey took participants approximately 20-30 minutes to complete.

Demographic Questionnaire

The first section of the baseline survey consisted of 19 demographic questions. The following data was collected from mothers: age, sex, ethnicity, race, education level, number of children, ages of children, living with spouse, marital status, if they were born in the U.S., number of years in the U.S., employment status, number of jobs, health insurance status, annual household income, child date of birth, and child gender. In addition to the demographic questions, there was one question about the perceived weight status of their child, where parents are asked to circle one of seven figures/silhouettes (seven for each gender) that best represents their child, as previously described.⁴¹

Comprehensive Feeding Practices Questionnaire (CFPQ)

Self-reported food parenting practices were assessed using 29 questions from the Comprehensive Feeding Practices Questionnaire (CFPQ).⁴² Prior testing of the CFPQ with parents of 2-to-8-year-old children showed reasonable validity and reliability. For the purpose of this study only seven of the 12 subscales were used, including modeling (4 items), involvement (3 items), encouraging balance and variety (4 items), and teaching about nutrition.⁴² Examples for the 'encouraging balance and variety' subscale are "I encourage my child to eat a variety of foods," for the 'environment' subscale, "I keep a lot of snack food (potato chips, Doritos, cheese puffs) in my house" and for the 'involvement' subscale "I involve my child in planning family meals."⁴² Each question from the CFPQ has 5 answer options, ranging on a scale from disagree (1), disagree slightly (2), neutral (3), slightly agree (4), to agree (5).⁴² Thus, a higher score on each subscale indicates a higher frequency of the corresponding practice. One item indicates lower frequency of the feeding practice, and this item was reverse coded prior to scoring. Subscale means

were calculated for seven subscales, and changes in subscale means pre/post will be assessed. The CFPQ subscales and corresponding items for the primary and secondary outcomes of this study are listed in Appendix O.

Each item on the CFPQ is loaded onto a specific subscale, and Cronbach's alphas were calculated from the baseline CFPQ outcomes for our primary and secondary outcomes (modeling, involvement, encouragement of balance and variety). The results for Cronbach's alphas were as follows: modeling (alpha = 0.878), involvement (alpha = 0.927), and encouragement of balance and variety (alpha = 0.629).

Healthy Children, Healthy Families Behavior Checklist (HCHF-BC)

Measures of self-reported parent and child diet, physical activity, and screen time behaviors were assessed using the previously used HCHF behavior checklist.^{35,36} The 16-item behavior checklist assessed frequency of parent and child health behaviors, including diet habits (11 items) and physical activity/screen time behaviors (3 items).^{35,36} For example, "How often do your children play actively for at least 60 minutes a day?" and "How many days a week do you usually eat vegetables?"^{35,36} Each item was assessed using a 5-point scale with answers ranging on frequency specific to each question, starting with the least frequent answer option to the most frequent. For example, for the question "How often do your children play actively for at least 60 minutes a day?" the answer options range from (1) once in a while, (2) 1-2 days each week, (3) 3-4 days each week, (4) 5-6 days each week, to (5) every day. Items were scored 1-5 with a higher total score indicating higher frequency of the corresponding behavior. The HCHF-BC items organized by construct are listed in Appendix P.

Statistical Analysis

Statistical analysis was performed using SPSS version 23. Descriptive statistics for study variables were calculated including means and standard deviations for continuous variables and frequencies and percentages for categorical variables. Shapiro-Wilk test was used to analyze normality of the data. Forty percent (n=16) of participating mothers were lost to follow-up and did not complete the full intervention or post-intervention measures. To address the missing data due to participants lost to follow up, a multiple imputation analysis for missing data was run to impute missing data values for study outcomes. A missing value analysis with all outcome variables, in addition to all demographic variables that may provide information on the trends of missing values was created. This included all post-intervention outcomes from the HCHF-BC and the CFPQ, in addition to demographic variables (age, number of children). Multiple imputation analysis was used to impute missing data values from participants lost to follow up for post-intervention outcomes from the HCHF-BC and CFPQ, using demographic variables (listed above), and pre-survey items from the HCHF-BC and CFPQ included as predictors in the model. Based on previous literature, 140 imputations were used⁴³⁻⁴⁵. Pooled values from the data set with imputed values were used for analysis of primary and secondary outcomes, with values of study completers and pooled values displayed in Tables 2-4. Corrections for multiple comparisons was not executed given that the variables of interest were correlated. Paired samples t-tests were performed to assess for statistically significant changes pre/post intervention. Cronbach's alphas were calculated for the CFPQ subscales, modeling, encouragement of balance and variety and involvement. Significance level was set at $p < 0.05$.

Results

Study Sample

A total of 41 participants were recruited and completed baseline measurements. Of those, twenty-five participants completed the intervention and post-intervention measures. One male participant who completed the intervention was removed for data analysis to assess changes in mothers only. After multiple imputation (described above) for missing follow up data for 16 participants, the final sample for data analysis was 40 mothers.

Baseline descriptive statistics on the characteristics of the study sample are reported in Table 1 for the study sample (n=40), study completers (n=24), and study non-completers (n=16). Overall, mothers were approximately 38.3 ± 11.3 years of age, and 98% were Hispanic/Latino. Almost half of the mothers had less than a high school degree, and a majority of the mothers were not born in the United States. The sample was primarily low-income, with a majority of the mothers reporting an annual household income of \$15,000 or less. Over three quarters of the mothers were either overweight or obese (81%). For the children, over half were either overweight or obese (57%), and the mean BMI z-scores was 1.2 ± 1.5 .

There were several differences in demographic variables between study completers and non-completers. For example, greater than 50% of non-completers had less than a high school education, as compared to only one-third of completers. There were also differences in employment status between study completers and non-completers, with 46.7% of non-completers employed full time, as compared to 16.7% of completers.

Primary & Secondary Outcomes

Pre/post intervention outcomes from the Comprehensive Feeding Practices Questionnaire (CFPQ) are summarized in Table 2. From individual subscales on the CFPQ, there was a significant increase in mother's use of modeling ($p < 0.01$). There was an increase in the use of encouragement of balance and variety, however this was not a significant change ($p > 0.05$). There was a significant increase in maternal use of involvement ($p < 0.05$).

Exploratory Outcomes

For outcomes related to other food parenting practices, there were several non-significant changes ($p > 0.05$). These non-significant changes include an increase in teaching about nutrition, a decrease in the use of food as a reward, and increases in both restriction for health and restriction for weight control.

Results on pre/post outcomes from the self-reported 16-item HCHF-BC are displayed in Table 3 (Parent and Child Diet & Activity) and Table 4 (Parenting & Home Environment). For diet and activity behaviors of mothers, mothers significantly increased their frequency of both fruit and vegetable intake. Mothers also increased their reported intake of low-fat dairy products, however this was not a significant increase ($p > 0.05$). There was a significant decrease in soda consumption for mothers ($p < 0.05$). Mothers increased their frequency of physical activity, however this was not a significant increase ($p > 0.05$).

For children, there were no significant changes in fruit or vegetable intake ($p > 0.05$). There was a significant increase in child consumption of low-fat dairy products ($p < 0.01$). There were non-significant changes in child soda consumption or child screen

time ($p>0.05$). There was a significant increase in frequency of physical activity for children ($p<0.05$).

The remaining five items of the HCHF-BC related to parenting practices and the home food environment. There was a significant increase in parental use of autonomy ($p<0.05$), defined as parents letting their child decide how much food to eat during mealtime. For food availability, there were non-significant decreases in energy dense snack availability, and fast/convenience food availability ($p>0.05$). There was also an increase in fruit availability, but this was not significant ($p>0.05$). Unexpectedly, there was a significant decrease in the frequency of family meals ($p<0.001$).

The mean attendance rate for all mothers who completed baseline data measures ($n=40$) was 4.6 ± 2.6 sessions. Of all mothers that completed the 8-week intervention and completed post-intervention measures ($n=24$), 100% attended at least 5 out of the 8 sessions and were considered ‘study completers’. Of the study completers, the mean attendance rate was 6.5 ± 1.2 sessions. Overall, the participant dropout rate was 40%, with 60% of the original sample consisting of study completers.

Out of the 24 mothers who completed the intervention, 96% completed a post-intervention evaluation survey, designed to assess participant opinions on the program. Results from the evaluation survey indicate overall positive attitudes of the program. Of those who completed the survey, 100% agreed that they “enjoyed coming to the HCHF sessions,” “learned a lot of new things during the program,” “what they learned was useful for them and their families,” and that they “learned new parenting skills that helped them get along better with their children.” Ninety-five percent of mothers agreed

that the time of the sessions was convenient for them, and 88% agreed the location was convenient.

Discussion

This study assessed changes in mothers' use of positive food parenting practices and diet and activity habits of parents and children pre/post participation in the evidenced-based HCHF intervention. Post intervention there were increases in the frequency of supportive food parenting practices, including modeling healthy eating behaviors, encouraging a balanced and varied diet in their child, and involving their child in food decisions. In addition, mothers also reported significant improvements in their fruit and vegetable and soda intake and their child's low-fat dairy intake and physical activity. Mothers also reported significant improvements in the use of autonomy, or allowing their child to decide how much to eat during meals. Based on these results, this intervention may aid in the prevention of obesity through improvements in food parenting practices and certain health behaviors among a low-income Hispanic population.

Similar to other studies, this study found that food parenting practices are modifiable, and are effective targets for behavior change to improve family health^{25,26} One longitudinal study examined several food parenting practices 6, 12, and 24 months post participation in a parent-centered childhood obesity treatment program.²⁶ The study found that parental restriction, pressure to eat, and monitoring significantly decreased at 24 months post intervention, indicating that improvements in these food parenting practices can be sustained in the long term.²⁶ This study however was a longer treatment intervention compared to the study reported in this paper and also focused on more of the

“negative” food parenting practices; it is possible that parents may be more amenable to changing more positive feeding practices within a shorter period of time.⁴³ These improvements in food parenting practices support development of healthy eating, favorable diet quality and weight outcomes over time.^{16-21,24-26} Similar to the findings in this paper, another study found that the children of parents participating in an intervention which focused on improving role modeling of healthy behaviors, significantly increased their fruit and vegetable consumption, and parents also significantly influenced a decrease in children’s fast/convenience food consumption, which was not observed in the control group.⁴³ However, the intervention was delivered over the course of one school year, whereas the intervention in the current study was eight weeks. While our study did not find significant changes in child intake of fruit and vegetables, we found nonsignificant increases in these areas. The results of this intervention suggest that parent modeling of healthy eating behaviors, or acting as a role model, is a feasible target for behavior change in childhood obesity prevention efforts, and long term interventions to promote these behaviors may be more effective.

The improvements seen in mother and child diet and activity behaviors are similar to previous studies utilizing the HCHF intervention,^{34,35} whereby significant improvements in parent and child diet behaviors, including significant increases for fruit, vegetable, and low-fat dairy intake, and significant reductions in parent soda intake were found.³⁵ These findings make sense in light of the topics covered during the curriculum where the importance of fruit and vegetable intake, drinking water or milk instead of sweetened beverages are thoroughly covered.^{32,33,35} Although the population type and size slightly varied, we found very similar results which adds to the possible efficacy of

this intervention in improving health behavior outcomes for parents and children. Despite in the current study having a smaller sample size, there were significant outcomes similar to these findings.

The current study has some limitations. Sample size was relatively small in this study, as participant recruitment, enrollment, and retention was a challenge. However, researchers attempted to reduce barriers to study participation by providing child care, healthy meals, and in some cases transportation to the intervention. In addition, the use of multiple imputation allowed for missing data for participants who dropped out of the intervention to be imputed using a state of the art approach, which was utilized to support the analysis of study completers.⁴³⁻⁴⁵ Although the study did not utilize an experimental design, it utilized an evidence-based curriculum in a community-based setting, and was able to reach an at-risk population.¹⁻⁸ By targeting a population that was primarily Hispanic and low-income, the intervention was able to reach parents of children who are disproportionately at risk for obesity.^{1,5-7}

However, successful implementation of this intervention was resource intensive, requiring joint efforts from researchers, educators, and community partners. Participant recruitment and retention remains a challenge, specifically in research studies and community programs that aim to reach parents.⁴⁶⁻⁴⁸ Common barriers to parent participation include transport, parents' work schedules and competing demands on family time.⁴⁷⁻⁴⁹ Limiting barriers to participation in research studies and community programs may help to enroll and retain more participants.^{48,49} Ultimately, the success of the program as evidenced by the health outcomes suggest parent participation in the HCHF intervention is a feasible approach to improve behaviors linked to obesity risk.

Conclusions & Implications

The current study found that after participation in the HCHF intervention, mothers significantly increased their use of positive food parenting practices, which are associated with favorable weight status and diet habits in children.^{9-12,18,20,25} Future research should test the efficacy of this intervention utilizing an experimental design and explore food parenting practices as a mediator to weight gain. Although there are several obesity prevention studies, few have specifically targeted or measured food parenting practices and few have taken a family-based approach.^{14,15,30,31,34,35} Interventions to prevent childhood obesity may include some information on modifying food parenting practices, but few have had a comprehensive focus and/or have not measured changes in these practices pre/post intervention.^{26,27,34-36}

Future interventions should include information on how to improve food parenting practices,^{11-13,16,18} and should adequately measure these changes pre/post intervention,^{16,23} given the influence of food parenting practices on a child's diet and weight status.^{9,12,13,16-21,24-28} Based on the results of the current study, future interventions, including those using the HCHF curriculum, should take into account the important influence of food parenting practices in an effort to facilitate healthy family changes and improve the diet quality and weight status of parents and children, and subsequently reduce the risk of childhood obesity.

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TABLE 1: Baseline Characteristics of Mothers (N=40)

<u>Participant Characteristics</u>	<u>All</u> <u>Participants</u> <u>(n=40)</u>	<u>Study</u> <u>Completers</u> <u>(n=24)</u>	<u>Non-</u> <u>Completers</u> <u>(n=16)</u>
	<u>n(%)</u>	<u>n(%)</u>	<u>n(%)</u>
Sex			
Female	40 (100)	24 (100)	16 (100)
Age (mean±SD)	38.3±11.3	44.1±10.8	30.3±5.7
Hispanic/Latino			
Yes	39 (97.5)	24 (100)	15 (93.8)
No	1 (2.5)	0 (0)	1 (6.3)
Race			
White	17 (42.5)	11 (45.8)	6 (37.5)
More than one race	7 (17.5)	3 (12.5)	4 (25)
Wish not to answer/don't know	6 (15)	3 (12.5)	3 (18.8)
African-American	1 (2.5)	0 (0)	1 (6.3)
American Indian/Alaskan Native	1 (2.5)	0 (0)	1 (6.3)
<i>Did not answer/Missing</i>	8 (20)	7 (29.2)	1 (6.3)
Education			
Less than high school	16 (40)	7 (29.2)	9 (56.3)
High school graduate/GED	9 (22.5)	6 (25)	3 (18.8)
Post HS Trade/Technical school	3 (7.5)	3 (12.5)	0 (0)
Some college or higher	12 (30)	8 (33.4)	4 (25)
Living with Spouse			
Yes	22 (55)	15 (62.5)	7 (43.8)
No	18 (45)	9 (37.5)	9 (56.3)
Marital Status			
Never Married	12 (30.8)	4 (17.4)	8 (50)
Married	17 (43.6)	12 (52.2)	5 (31.3)
Divorced or Separated	9 (23.1)	6 (26.1)	3 (18.8)
Widowed	1 (2.6)	1 (4.3)	0 (0)
Born in the U.S.			
No	33 (84.6)	22 (91.7)	11 (73.3)
Yes	6 (15.4)	2 (8.3)	4 (26.7)
Country of Origin			
Guatemala	11 (33.3)	7 (33.3)	4 (25)
Dominican Republic	9 (27.3)	5 (23.8)	4 (25)
Other	13 (39.4)	9 (42.9)	8 (50)
Years in the U.S. (mean±SD)	11.7±7.6	12.2±7.5	10.4±8.0
Employment Status			
Employed Full time (>35 hrs/wk)	11 (28.2)	4 (16.7)	7 (46.7)
Employed Part time (<35 hrs/wk)	6 (15.4)	5 (20.9)	1 (6.7)
Unemployed/Looking for work	12 (30.8)	8 (33.3)	4 (26.7)
Homemaker	9 (23.1)	7 (29.2)	2 (13.3)
Student	1 (2.6)	0 (0)	1 (6.7)

Health Insurance			
Yes	25 (75.8)	13 (68.4)	12 (85.7)
No	8 (24.2)	6 (31.6)	2 (14.3)
Medicaid			
Yes	17 (70.8)	9 (69.2)	8 (72.7)
Annual Household Income			
\$15,000 or less	25 (75.8)	15 (78.9)	10 (71.4)
\$15,000 - \$30,000	5 (15.2)	3 (15.8)	2 (14.3)
\$30,000 - \$45,000	3 (9.1)	1 (5.3)	2 (14.3)
Mothers Baseline BMI score (kg/m²)			
Underweight (<18.5)	0 (0)	0 (0)	0 (0)
Healthy Weight (18.5 – 24.9)	7 (18.2)	4 (16.8)	3 (21.3)
Overweight (25.0 – 29.9)	11 (28.6)	7 (29.4)	4 (28.4)
Obese (30.0 or higher)	20 (52)	13 (54.6)	7 (49.7)
Child Baseline BMI Percentile			
Underweight (<5 th)	1 (2.6)	0 (0)	1 (7.1)
Healthy Weight (5 th – <85 th)	15 (39)	9 (37.8)	6 (42.6)
Overweight (85 th - <95 th)	7 (18.2)	4 (16.8)	3 (21.3)
Obese ($\geq$ 95 th)	15 (39)	11 (46.4)	4 (28.4)
Child BMI Z-score (mean$\pm$SD)	1.2 $\pm$ 1.5	1.5 $\pm$ 1.3	0.59 $\pm$ 1.6
Child Age (mean$\pm$SD)	6.8 $\pm$ 2.4	7.2 $\pm$ 2.3	6.1 $\pm$ 2.4
Child Gender			
Female	21 (52.5)	13 (54.2)	8 (50)
Male	19 (47.5)	11 (45.8)	8 (50)

Table 2: Paired Samples t-test Values for Mother's Pre/Post Intervention Feeding Practices from Subscales from the CFPQ

		Study Completers (n=24)		Pooled Data (n=40)	
<u>Subscale on CFPQ</u>	<u>Pre/Post</u>	<u>Mean</u>	<u>p-value</u>	<u>Mean</u>	<u>p-value</u>
Modeling	Pre	4.65	0.049*	4.48	0.003**
	Post	4.90		4.83	
Encouragement of Balance and Variety	Pre	4.55	0.005*	4.60	0.165
	Post	4.88		4.77	
Involvement	Pre	4.03	0.035*	3.97	0.018*
	Post	4.60		4.53	
Teaching About Nutrition	Pre	4.23	0.157	4.25	0.157
	Post	4.50		4.50	
Food As Reward	Pre	3.33	0.297	3.21	0.326
	Post	3.03		2.98	
Restriction for Health	Pre	3.88	0.129	3.94	0.271
	Post	4.19		4.14	
Restriction for Weight Control	Pre	3.18	0.072	3.13	0.107
	Post	3.54		3.41	

Significant changes labeled *p<0.05, **p<0.01, ***p<0.001.

Items were assessed using the Comprehensive Feeding Practices Questionnaire (CFPQ) using a 1-5 Likert scale ranging from 'Disagree' to 'Agree.'

Table 3: Paired Samples t-test Values for Mother's Pre/Post Intervention Diet and Physical Activity Outcomes from the HCHF-BC

		Study Completers (n=24)		Pooled Data (n=40)	
<u>Item on HCHF-BC</u>	<u>Pre/Post</u>	<u>Mean</u>	<u>p-value</u>	<u>Mean</u>	<u>p-value</u>
Parent Fruit Intake	Pre	3.04	0.003**	3.08	0.003**
	Post	3.83		3.80	
Parent Vegetable Intake	Pre	2.88	0.003**	2.77	0.000***
	Post	3.58		3.57	
Parent LF Dairy Intake	Pre	2.92	0.067	2.88	0.054
	Post	3.33		3.34	
Parent Soda Intake	Pre	1.54	0.233	1.87	0.037*
	Post	1.33		1.42	
Parent Physical Activity	Pre	2.21	0.025*	2.35	0.064
	Post	2.83		2.84	
Child Fruit Intake	Pre	4.08	0.063	4.18	0.834
	Post	4.17		4.13	
Child Vegetable Intake	Pre	2.75	0.188	2.77	0.185
	Post	3.08		3.08	
Child LF Dairy Intake	Pre	3.16	0.004**	3.16	0.003**
	Post	3.96		3.94	
Child Soda Intake	Pre	1.54	0.814	1.55	0.558
	Post	1.58		1.66	
Child Physical Activity	Pre	3.00	0.029*	3.11	0.035*
	Post	3.67		3.66	
Child Screen Time	Pre	2.13	0.295	2.18	0.199
	Post	1.96		1.97	

Significant changes labeled *p<0.05, **p<0.01, ***p<0.001.

Table 4: Paired Samples t-test Values for Mother's Pre/Post Intervention Parenting and Home Food Environment Outcomes from the HCHF-BC

		Study Completers (n=24)		Pooled Data (n=40)	
<u>Item on HCHF-BC</u>	<u>Pre/Post</u>	<u>Mean</u>	<u>p-value</u>	<u>Mean</u>	<u>p-value</u>
Parent Autonomy	Pre	2.88	0.062	2.92	0.036*
	Post	3.63		3.59	
Family Meals	Pre	4.04	0.011*	4.18	0.000***
	Post	3.29		3.29	
Energy Dense Snacks Availability	Pre	2.08	0.307	2.15	0.183
	Post	1.79		1.85	
Fast Food Availability	Pre	1.46	0.213	1.53	0.075
	Post	1.29		1.32	
Fruit Availability	Pre	4.38	0.170	4.18	0.937
	Post	4.58		4.51	

Significant changes labeled *p<0.05, **p<0.01, ***p<0.001.

Table 5: Missing Pattern Analysis Comparing Selected Continuous Variables between Study Completers (n=24) and Non-Completers (n=16)

Variable	Mean Completer	Mean Non-Completer
Age in years (Mother)*	44.1	30.3
Number of Children	1.4	1.8
Years in the U.S.	12.2	10.4
Maternal BMI (m/kg²)	30.9	29.9

* Significant difference between completer and non-completer (p<0.05)

Table 6: Missing Pattern Analysis Comparing Selected Categorical Variables between Study Completers (n=24) and Non-Completers (n=16)

<u>Variable</u>		<u>% of Completers</u>	<u>% of Non-Completers</u>
Education	Less than High School	45%	55%
	High School or More	84%	16%
Marital Status	Never Married	33%	67%
	Married	71%	29%
Employment Status	Full Time	36%	64%
	Part Time	80%	20%
Annual Household Income	\$30,000 or less	60%	40%
	\$30,000 - \$45,000	33%	67%

Figure 1: Study Design

Figure 2: Study Timeline

APPENDIX A

EXTENDED LITERATURE REVIEW

Prevalence of Childhood Obesity and Its Consequences

Childhood obesity is a significant public health issue in the United States (US), as childhood obesity rates have tripled over the past three decades.^{1,2} In the US, nearly one in every three children in the U.S. overweight or obese.^{1,2} These rates are concerning, as obese children are more likely to be obese adults, and often develop chronic health problems associated with obesity, including type 2 diabetes, heart disease, asthma, and hypertension.^{1,2} As a result, reducing the prevalence of childhood obesity is considered an important public health initiative.^{2,3} Recent data collected from the 2011-2012 National Health and Nutrition Examination Survey (NHANES) demonstrated that overall, childhood obesity prevalence has decreased since 2003.¹ For example, the obesity prevalence for children ages 2-5 decreased from 13.9% in 2003, to 8.4% in 2012.¹ Increased recognition of childhood obesity as an important public health issue, and efforts of prevention programs nationwide likely contribute to these declining rates. However, rates of childhood obesity remain high, and further research and interventions are important to combat this public health issue. Therefore, the development of evidence-based childhood obesity interventions, and the continued evaluation of these interventions are critical to continue these efforts.

Childhood Obesity Disparities Among At-Risk Populations

Hispanic Populations

Despite recent reductions in childhood obesity rates, disparities among race/ethnicity persist nationwide.¹ For example, using data from 2011-2012, over 22% of Hispanic youth aged 2-19 were obese in the U.S., as compared to 14.1% of non-Hispanic white youth and 8.6% of non-Hispanic Asian youth.¹ In the state of Rhode Island these disparities are even greater. In 2011, 25% of Hispanic kindergarteners (5 yrs) in RI were obese, as compared to 14% of non-Hispanic White and 11% of non-Hispanic Black kindergarteners.⁴ These rates increase as children reach 7th grade (12 yrs), as 30% of Hispanic 7th graders, 23% non-Hispanic black and 17% of non-Hispanic white 7th graders were obese in 2011⁴. These rates are consistently highest in Hispanic populations, which is concerning given that this population is one of the largest ethnic minority groups not only in Rhode Island but in the U.S. as well, and this population is expected to grow.^{1,4} Obesity prevention programs that focus on Hispanic populations are needed to reduce these racial/ethnic disparities and to help continue to reduce national obesity rates.

Low-Income Populations

Childhood obesity prevalence is also disproportionately higher in low-income populations.^{1,5-8} For example, obesity prevalence in children ages 2-4 are highest in families living at or below the federal poverty level.⁵ Built environments surrounding low-income areas likely contribute to “obesogenic” characteristics that may increase risk factors of obesity.⁶ The built environment surrounding low-income neighborhoods often lack access to safe areas and facilities for physical activity and play, and often have a greater amount of fast-food/convenience food outlets and less access to supermarkets.⁶

Targeting behavioral and environmental factors that contribute to increased obesity prevalence in low-income populations is an important target for future prevention strategies.^{6,9}

Influences of the Development of Obesogenic Behaviors

The specific causes of the development of obesity are complex, with many environmental and psychosocial factors influencing the onset of obesity. A review of evidence for the treatment of overweight and obesity in children highlights the important factors to consider in effective interventions. The review suggests that research supports the use of multicomponent lifestyle interventions as an effective approach for obesity treatment (i.e. interventions that include a dietary and physical activity modification component, behavioral strategies, and parental/familial involvement, to take into account the environmental factors contributing to obesity risk.¹⁰ Interventions must take into account the “obesogenicity” of an environment, as previously defined by Swinburn et al. as the sum of influences the surroundings, opportunities, or conditions of life have on promoting obesity in individuals or populations.”¹¹ Environmental factors that may contribute to obesogenicity include parents, homes, neighborhoods, schools, communities, and government systems.^{11,12} Although there are multiple interacting factors that contribute to obesogenicity, this review will focus on parental factors and factors within the home environment, including diet quality, food availability, home food environment, physical activity and screen time behaviors, and maternal food parenting practices.

Diet Quality

Diet quality is an important factor contributing to childhood obesity risk.

Evidence shows that positive eating patterns, and high diet quality is associated with favorable health outcomes.¹³ These healthy dietary patterns include those highlighted in the 2015-2020 Dietary Guidelines for Americans, which promote the consumption of fruits, vegetables, whole grain, legumes, nuts/seeds, lean proteins, seafood, and low-fat dairy products.¹³ These dietary components contribute to decreased risk for multiple diseases including diabetes, heart disease, cancer, and hypertension.¹³ However, the diet quality of Americans of all ages is not reflective of these dietary guidelines. Moreover, in children between the ages of 4 and 13, average daily consumption of vegetables was between 0.8 and 1.1 cups, while the recommended amount is between 1.5-3.0 cups/day.¹³ Additionally, children are consuming added calories from added sugars and energy-dense snacks.¹³ For example, for children ages 4 to 13, daily percentage of kcals contributed by added sugars range from 15-17%, while the recommended limit is 10% or less.¹³ For children, this is particularly concerning as proper nutrition during childhood is imperative for development of healthy weight status and diet habits into adulthood.¹³ The home environment is a target for improving diet quality,¹⁴ as two thirds of the foods children consume is from home.¹⁵

Home Food Environment

Parents and family members play an important role in a variety of factors contributing to childhood obesity by acting as the gate-keepers of the home food environment.¹⁶⁻¹⁸ The home food environment model described by Rosenkranz & Dziewaltowski is defined as overlapping interactive domains composed of built and

natural, sociocultural, political and economic, micro-level and macro-level environments, and depicts the contextual environment where a child develops eating behaviors.¹⁴ In addition to providing food in the home, or the physical environment, parents are also responsible for providing a positive sociocultural environment.¹⁹

A cross-sectional study conducted by Couch et al. explored the home food environments relation to child diet quality and weight status, using DASH score and BMI z score, respectively.²⁰ The study defined the home food environment as including the physical environment (e.g. food availability), and the sociocultural environment (e.g. parenting behaviors and feeding practices).²⁰ The study found that the home food environment explained 28% of the variance in child BMI and 9-21% of the variance in various measures of child dietary quality.²⁰ Several aspects of the sociocultural environment are based around food parenting practices, such as parental modeling/encouragement, indicating that these parenting behaviors are possible areas to target in childhood obesity prevention.

Physical Activity & Screen Time

Another component of the home environment that contributes to childhood obesity risk is the physical activity (PA) and screen time behaviors of families. One study consisting of 421 parent-child dyads (child ages 5-10 yrs) and examined the relationships between parenting styles and practices and child physical activity and screen time.²¹ Child PA was assessed using accelerometers and parent questionnaires, and child screen time was assessed using surveys and screen time logs.²¹ Parenting styles and practices were assessed via questionnaires (Langer), and child BMI percentile was calculated.²¹ There was an inverse association between BMI and physical activity, with each unit

increase in BMI, activity decreased by 8 minutes per day.²¹ Parental support for PA, which was observed across parenting styles, was positively associated with child PA.²¹ Regression models found associations of child BMI and parenting styles in relation to screen time.²¹ Child BMI was positively related to screen time, with each unit increase in BMI was associated with a 20-23% increase in the likelihood that the child had more than 2 hours of screen time per day.²¹ Parenting styles and practices were also associated with screen time. Both authoritarian and permissive parenting styles were associated with a 133% and 113% respective increase in the likelihood of a child having more than 2 hours of daily screen time.²¹ Parenting styles and practices are predictors of screen time and PA behaviors, in addition to food parenting practices, suggesting the importance of parenting style as a target of behavior change in childhood obesity prevention efforts.

Parenting Styles

Parenting style is defined by a set of attributes, attitudes, and ways of interacting with children that can influence child outcomes.²² Four general types of parenting have been identified.²²⁻²⁴ These parenting styles are categorized based on parental levels of demandingness/firmness and responsiveness. Authoritative parenting is characterized by high levels of both firmness and responsiveness, while the authoritarian style is categorized by high levels of firmness, and low levels of responsiveness.^{22,24} In indulgent parenting style, parents are high in responsiveness but low in firmness, while neglectful parenting style is categorized by low levels of firmness and responsiveness.^{18,22,24} Longitudinal studies have found associations between parenting style and child BMI. Specifically, the authoritative parenting style has been found to be protective against

child overweight over time.^{19,24-26} These general parenting styles can be applied to the style in which parents approach child feeding, known as parent feeding styles.^{18,24,27}

Similar to general parenting style, parent feeding styles have been linked to both positive and negative outcomes related to obesity. For example, in a cross-sectional study of 231 primary caregivers, authoritative feeding was positively associated with the availability of fruits and vegetables.²⁸ Authoritative feeding was also positively associated with child consumption of dairy and vegetables, while authoritarian feeding was negatively associated with availability of fruit and vegetables, and child consumption of vegetables.²⁸ Given the connection between parenting style, feeding style, and obesity risk, interventions should address parenting behaviors and feeding styles as a target of behavior change to improve outcomes related to obesity.

Research studies involving parenting behaviors and styles may help to clarify the relationships between parenting and behaviors linked to childhood obesity. One study by Hubbs-Tait et al. aimed to identify the relationship between parental feeding styles and practices and general parenting styles, in order to understand how to target parenting practices to increase intervention efficacy.²⁷ For instance, parental use of responsibility, restricting, monitoring, and modeling all significantly predicted authoritative parenting style in a sample of 239 parents.²⁷ Additionally, restricting, pressuring, and monitoring all significantly predicted authoritarian parenting style.²⁷ The researchers concluded that general parenting styles are associated with parental feeding practices, and that interventions/programs should include approaches to behavior change that take into account parenting styles and family dynamics.²⁷

Food Parenting Practices

Parental feeding practices, more recently defined as food parenting practices, have been identified as important factors in the development of weight gain and obesogenic eating behaviors in young children.²⁹⁻³² Food parenting practices are defined as goal directed behaviors that influence the amount or type of food a child eats²⁹⁻³². Examples of food parenting practices include modeling, restriction, involvement, and encouragement.²⁹⁻³² These food parenting practices, have been identified as important factors in the development of weight gain and obesogenic eating behaviors in young children.^{29,32-38}

Food parenting practices influence the diet quality and weight status of young children.^{29,32-38} One longitudinal study among Mexican American families found that parental use of food restriction predicted higher weight status at year 1, while pressure to eat was related to a lower weight status.³⁶ Similarly, another longitudinal study with 323 mother-child dyads (child ages 1.5-2 yrs), found that instrumental feeding, or food as reward, was positively correlated with child BMI z score at multiple time points.²⁹ Given these results, it makes sense for childhood obesity interventions to include parent education on the impact of food parenting practices and tools to promote positive practices.^{15,16,18,32,33,38-42}

Most of the literature on food parenting practices has focused primarily on negative food parenting practices such as pressure to eat and restriction.^{29-31,33,35,36,38,42,43} A recent systematic review by Shloim et al. reviewed studies investigating parenting styles and practices, and feeding practices in relation to weight status in children ages 4-12 years. The review identified 22 previous studies that examined the relationship

between food parenting practices and child weight status.³⁸ Of those studies, a majority focused on negative food parenting practices, and the associations of these types of practices with child weight status.³⁸ Most studies were focused on practices like pressure to eat, restriction, and instrumental and emotional feeding, and very few studies included positive/supportive food parenting practices in their main findings.³⁸ Therefore, the review discusses the need for future interventions to focus on authoritative parenting and positive food parenting practices³⁸, such as autonomy support or promotion and structure, which include modeling, child involvement, and encouragement.³²

In studies focusing on these positive/supportive food parenting practices, encouragement, modeling, and involvement have also shown to be associated with diet quality and BMI.^{20,29,31,36,39-41} For example, among 699 child-parent dyads, parental encouragement/modeling and overall authoritative food parenting practices were associated with favorable diet quality and weight status in children aged 6-11 years.²⁰ Children's BMI z-scores were negatively associated with parent encouragement/modeling, and positively associated with permissive food parenting practices.²⁰ These associations suggest that along with information about modifying negative food parenting practices, it is also of importance for interventions to target positive or supportive food parenting practices as a way to improve child diet quality and therefore weight status.

In a sample of 394 parent-child dyads (children ages 18 mo. – 5 yrs), parental food involvement - an authoritative feeding practice- was strongly correlated with consumption of fruits and vegetables.⁴⁴ In another study of 316 mother-child dyads (child ages 2-5 yrs), maternal feeding practices were assessed using the Comprehensive Feeding

Practices Questionnaire (CFPQ), and child dietary intake was assessed by parent completion of an eating habits questionnaire.⁴⁵ In this study, supportive feeding practices, including modeling, building a healthy home food environment, involvement, encouraging balance and variety, and teaching about nutrition, were all significantly correlated with fruit and vegetable intake.⁴⁵ These positive feeding practices are potential targets for interventions as behaviors parents can use to decrease development of obesogenic behaviors.

Family-Centered Interventions

Given the important influence of parent feeding practices on childhood obesity risk, it is important for interventions to be family-centered. Interventions that are tailored to the needs of the family and include as many members of the family are more successful than individual-focused interventions.^{16,17,40,41} Parents serve as an authority figure and role model for their children, and can improve the environments by reducing obesogenic factors and increasing healthy family practices.³⁹ An article by Golan & Crow published in *Nutrition Reviews* discussed the role of parents in childhood obesity preventions, and emphasized that since parents provide the food environment for their children, parents should be considered key players and agents of change in the prevention and treatment of childhood obesity.³⁹

Culturally Tailored Interventions

Another characteristic of successful family-based interventions are that they are culturally tailored. A randomized controlled trial by Barkin et al. explored the effectiveness of a family-centered, culturally tailored intervention on BMI in Latino-American families.⁴⁶ Seventy-five parent-child dyads participated in the study (children

ages 2-6).⁴⁶ The intervention group participated in *Salud con Familia (Health with the Family)* program, which consisted of 12 weekly skill-building sessions at a community recreation center.⁴⁶ The program was designed to improve family nutrition, while increasing physical activity and reducing sedentary behaviors of the family, and took into account several cultural factors of the study sample.⁴⁶ BMI of the parents and children were assessed and the children who participated in the intervention experienced an average reduction in BMI of 0.51 over a period of 3 months.⁴⁶ The results of this study indicate that community-engaged, culturally-tailored interventions can successfully change children's early growth patterns such as BMI, and may be an effective approach for childhood obesity interventions. Information that is useful for parents involves skill-building techniques surrounding parenting practices, which equip parents with the tools they need to facilitate behavior changes in their family. By providing more useful and applicable information, parents will be more likely to benefit from interventions tailored to their learning needs.

HCHF Curriculum

One intervention that emphasizes the importance of positive feeding practices, and allows for community-based tailoring is the evidence-based *Healthy Children, Healthy Families* (HCHF) intervention. The HCHF intervention is an evidence-based curriculum for parents of 3-11-year-old children that focuses on the importance of developing healthy lifestyle behaviors through parenting style, food parenting practices, and the home environment.⁴⁷⁻⁵⁰ HCHF is a family-centered obesity prevention curriculum/intervention that focuses on parenting skills, with the goal of facilitating healthy lifestyle changes within a family system.⁴⁷⁻⁵⁰ The HCHF curriculum was

designed for community nutrition educators to deliver to low-income parents throughout an 8-week series of weekly workshops.⁴⁷⁻⁴⁹ By focusing on family lifestyles and parenting, HCHF is a curriculum tailored to participants by meeting the needs of low-income parents with young children.⁴⁷⁻⁴⁹

The HCHF curriculum was designed for use in the Expanded Food Nutrition Education Program (EFNEP) by Cornell University through the Collaboration for Health, Activity, and Nutrition in Children's Environments (CHANCE).⁴⁷⁻⁵⁰ Upon development of the HCHF curriculum, interventions began throughout New York to evaluate the success of the program.⁴⁷⁻⁵⁰ By 2012, over 500 low-income parents and caregivers of children 3-11 years of age completed the HCHF curriculum. Participating parents reported significant improvements in their child's diet and physical activity behaviors in addition to improvements in self-reported parenting behaviors.⁴⁷⁻⁵⁰ Although the program has collected self-reported measures on diet and physical activity, researchers have not collected comprehensive data on outcomes related to specific feeding practices.^{50,51} The validated behavior checklist tool used to measure pre/post intervention behavior changes includes only two items assessing parenting practices; one question assessing family meals, and another assessing how often parents allow their child to decide how much to eat, two different parameters related to feeding.^{50,51} In addition to the validated behavior checklist, using validated tools such as the Comprehensive Feeding Practices Questionnaire (CFPQ) to assess changes in parent feeding practices pre/post intervention will allow researchers to determine how the HCHF curriculum influences changes in specific feeding practices.

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APPENDIX B

EXTENDED METHODOLOGY

Methods

Study Design

The study utilized a non-experimental, within-subjects pre/post design. Parents of 3-11-year-old children participated in the evidence-based 8-week *Healthy Children, Healthy Families* (HCHF) curriculum/workshop series, which was taught by community paraprofessionals (navegantes) primarily in Spanish. The 8-week intervention was delivered to a total of four groups of mothers (approximately 5-15 mothers/group) between April and December 2015. The curriculum is focused on parenting techniques to improve family health behaviors including healthy eating, physical activity, and positive parenting practices.

The current study involved a community partnership with Clínica Esperanza/Hope Clinic (CEHC), a free healthcare clinic located in the Olneyville area of Providence, RI. The clinic provides free healthcare services to the uninsured, and also provides community health programs delivered by trained paraprofessional educators, or *navegantes*. As an existing community platform for health interventions, CEHC was chosen as the community partner for this study, and was the primary setting for the delivery of the intervention. All protocols of the proposed study were approved by the University of Rhode Island Institutional Review Board.

Participants and Recruitment

Eligible participants were parents or primary caregivers of children between the ages of 3-11 years, and willing to attend the weekly workshop sessions for 8 weeks. The

target population was parents living in the Providence, Rhode Island area. In addition, we intended to reach a large percentage of at risk Hispanic parents given the demographics of this area.

Recruitment fliers (Appendix C) including study information were placed throughout the Olneyville area and distributed to organizations including community centers, local businesses, parks, libraries, and churches. In addition, the navegantes and community partners including healthcare clinics and current health-related programs helped do in person recruitment in the community. Interested parents were screened in-person or via telephone to determine eligibility. Navegantes would explain the program to parents, and answer questions about the study, in order to enroll participants. Recruitment efforts continued on a rolling basis by continuously recruiting eligible parents to participate in the next available group.

Intervention

The HCHF curriculum was taught by the navegantes (paraprofessional educators) employed through CEHC. Navegantes participated in a formal 2-day training on the HCHF curriculum, conducted by representatives from Cornell University. The training reviewed the foundations of the curriculum, answered frequently asked questions, addressed common barriers, and allowed for the practice of activities and lessons in the curriculum. The training also provided the navegantes with valuable background knowledge of the overall goals of the curriculum as well as tools and techniques surrounding curriculum flow, delivery, and evaluation.

The HCHF curriculum highlights '*paths to success*' and '*keys to success*' to facilitate healthy changes in families (Appendix D).^{1,2} These paths and keys to success,

which serve as the backbone of the HCHF curriculum, highlight several positive diet behaviors and food parenting practices, and encourage parents to use these practices with their families at home. The six paths to success are: (1) Drinking water or milk instead of sweetened beverages, (2) Eating more vegetables and fruits (3) Playing actively, (4) Eating fewer high-fat, high-sugar foods, (5) Limiting TV and computer time, and (6) Having sensible servings.^{1,2} The keys to success include setting a good example for their child (showing/modeling), offering healthy choices within limits (guiding), helping children feel good about themselves (supporting), and making healthy choices easier (shaping).^{1,2} By integrating health education with parental support and tools to promote firm and responsive parenting, HCHF is a curriculum tailored to the specific needs of parents of 3 to 11-year old children.

The HCHF curriculum addresses health education topics surrounding diet, activity, and the home environment. The curriculum includes problem-solving strategies for health-related behavior change, and utilizes parenting scenarios and role-play to address barriers to behavior change.^{1,2} Specifically, the curriculum focuses on strategies that parents can use to improve their food parenting practices, including emphasizing their child's role in food preparation, encouraging their children to eat a balanced and varied diet, and modeling healthy eating behaviors to their children (Appendix E). In addition, each session also included an active play break, featuring a family-friendly activity that parents can do with their families at home (Appendix F).^{1,2} Every session includes a healthy recipe for parents to taste (Appendix G), and a weekly prize/incentive, such as pedometers or cooking utensils (Appendix H). For weekly goal-setting, at the end

of each session parents identified a 'healthy step' or goal for the week ahead (Appendix I).^{1,2}

To assess parent participation, attendance was recorded at each session. Study completers were considered for data analysis if they attended at least five out of the eight class sessions. To assess fidelity of the intervention, a portion of the HCHF sessions were observed. Out of the 32 sessions (8 sessions/group, 4 groups total), 19 sessions, or 59% were observed. At least 2 sessions/group were observed. Fidelity assessment was conducted by a trained research assistant using previously developed observation checklists corresponding with each lesson/session of the HCHF intervention¹ (Appendix J). Each lesson plan of the HCHF intervention divides into 4 categories, (1) Anchor, (2) Add, (3) Apply, and (4) Away. The observational checklist assessed completion of each of these domains for each lesson, and provides space where researchers can comment on what was changed, and areas for improvement. The observation tool also includes rubrics assessing the educators' delivery of the program and ability to facilitate the group, in addition to how group member's responded to the intervention. Using the completed observation checklist, intervention fidelity was high, indicating that the navegantes delivered the intervention as it was intended based on the protocol of the HCHF curriculum.

Procedures

Prior to the first session, baseline measures for each group of participants were collected. On the day of the first session, each mother-child dyad arrived at CEHC before the proposed session start time to complete baseline measures. All study materials were available in both English and Spanish. Mothers completed a consent form for themselves

(Appendix K) and a written permission form their child if their child was under 7 years of age. Children who were over 7 years of age completed an assent form. Mothers then completed a baseline survey, which consisted of demographic questions, questions from the Comprehensive Feeding Practices Questionnaire (CFPQ), and the 16-item HCHF behavior checklist (Appendix L). Once mothers completed the survey, both mother and child were led to a separate area where a research assistant measured and recorded their baseline height and weight measurements (Appendix M). Once height and weight measurements of each mother-child dyad were completed, session one began. Although the focus of this intervention was for the mothers, mothers were encouraged to bring their children to the sessions where complimentary child care and/or a separate nutrition curriculum was delivered to the children. Mothers were compensated for their time with a \$10 gift card at the end of the first session. Mother-child dyads then returned to CEHC weekly for a total of eight sessions to complete the intervention. On the last week (session 8), the survey and measurement process described above was repeated to collect post-intervention data. Mothers were compensated for their time with a \$40 gift card at the end of the last session. In addition to completing a post-intervention survey, mothers also completed an evaluation survey from the HCHF curriculum which evaluated their opinions of the program (Appendix N).

Measures

Anthropometrics

Standing height and weight measurements of each parent-child dyad were taken using standardized procedures.³ Measurements were taken in a private area to assure confidentiality of measurements and to increase the comfort of participants. Each parent-

child dyad was instructed to wear light clothing and remove footwear, and if applicable, asked to take down their hair to ensure measurement accuracy. Each parent and child had measurements (height and weight) taken twice to confirm measurement precision. Height measurements were rounded to the nearest 0.5 cm, with a requirement of two measurements within 0.5 cm of one another. If the difference between the first two measurements was greater than 0.5 cm, additional measurements were taken until an accurate measurement is reached, that is, two values within 0.5 cm of each other. For weight, the two measurements were required to be within 0.5 lb. of one another. If the difference between the first two measurements was greater than 0.5 lb., additional measurements were taken until there were two values within 0.5 lb. of one another. Height was measured using a portable stadiometer (Seca 213). Weight was measured using a calibrated digital scale (Seca 813). To assess parent BMI, the mean calculation for weight and height for each data collection point was used to calculate a BMI score (pre and post). For children, using the means for height and weight for both pre and post assessment, in addition to their date of birth and sex, a BMI z-score and BMI-percentile was calculated to assess changes in BMI.^{4,5}

Survey Protocol

The survey was designed to be self-administered and consisted of 84 questions. Although it was designed to be self-administered, each participant was asked if they needed assistance completing the survey. If the participant needed assistance, a bilingual research assistant or navegante read questions aloud to ensure the participant understood each question and answer option. Parents answered each question as it pertains to their child involved in the study. If a parent has more than one child between ages 3-11, they

were instructed to answer questions about the youngest child within the 3-11 age range. The survey took participants approximately 20-30 minutes to complete.

Demographic Questionnaire

The first section of the baseline survey consisted of 19 demographic questions. The following data was collected from mothers: age, sex, ethnicity, race, education level, number of children, ages of children, living with spouse, marital status, if they were born in the U.S., number of years in the U.S., employment status, number of jobs, health insurance status, annual household income, child date of birth, and child gender. In addition to the demographic questions, there was one question about the perceived weight status of their child, where parents are asked to circle one of seven figures/silhouettes (seven for each gender) that best represents their child, as previously described.⁶

Comprehensive Feeding Practices Questionnaire (CFPQ)

Self-reported food parenting practices were assessed using 29 questions from the previously validated Comprehensive Feeding Practices Questionnaire (CFPQ) that showed high internal consistency of the subscales⁷. For the purpose of this study only seven of the 12 subscales were used, including modeling (4 items), involvement (3 items), encouraging balance and variety (4 items), and teaching about nutrition.⁴¹ Examples for the 'encouraging balance and variety' subscale are "I encourage my child to eat a variety of foods," for the 'environment' subscale, "I keep a lot of snack food (potato chips, Doritos, cheese puffs) in my house" and for the 'involvement' subscale "I involve my child in planning family meals."⁷ Each question from the CFPQ has 5 answer options, ranging on a scale from disagree (1), disagree slightly (2), neutral (3), slightly agree (4), to agree (5).⁷ Thus, a higher score on each subscale indicates a higher frequency of the

corresponding practice. One item indicates lower frequency of the feeding practice, and this item was reverse coded prior to scoring. Subscale means were calculated for seven subscales, and changes in subscale means pre/post will be assessed. The CFPQ subscales and corresponding items for the primary and secondary outcomes of this study are listed in Appendix O.

Healthy Children, Healthy Families Behavior Checklist (HCHF-BC)

Measures of self-reported parent and child diet, physical activity, and screen time behaviors were assessed using the previously used HCHF behavior checklist.⁸ The 16-item behavior checklist assessed frequency of parent and child health behaviors, including diet habits (11 items) and physical activity/screen time behaviors (3 items).⁸ For example, "How often do your children play actively for at least 60 minutes a day?" and "How many days a week do you usually eat vegetables?"⁸ Each item was assessed using a 5-point scale with answers ranging on frequency specific to each question, starting with the least frequent answer option to the most frequent. For example, for the question "How often do your children play actively for at least 60 minutes a day?" the answer options range from (1) once in a while, (2) 1-2 days each week, (3) 3-4 days each week, (4) 5-6 days each week, to (5) every day. Items were scored 1-5 with a higher total score indicating higher frequency of the corresponding behavior. The HCHF-BC items organized by construct are listed in Appendix P.

Statistical Analysis

Statistical analysis was performed using SPSS version 23. Descriptive statistics for study variables were calculated including means and standard deviations for continuous variables and frequencies and percentages for categorical variables. Shapiro-

Wilk test was used to analyze normality of the data. Thirty-seven percent (n=15) of participating mothers were lost to follow-up and did not complete the full intervention or post-intervention measures. To address the missing data due to participants lost to follow up, a multiple imputation analysis for missing data was run to impute missing data values for study outcomes. A missing value analysis with all outcome variables, in addition to all demographic variables that may provide information on the trends of these values was created. This included all post-intervention outcomes from the HCHF-BC and the CFPQ, in addition to demographic variables (age, number of children). Multiple imputation analysis was used to impute missing data values from participants lost to follow up for post-intervention outcomes from the HCHF-BC and CFPQ, using demographic variables (listed above) as predictors in the model. Based on previous literature,⁹⁻¹¹, 140 imputations were used. Pooled values from the data set with imputed values were used for data analysis. Paired samples t-tests were performed to assess for statistically significant changes pre/post intervention. Significance level was set at $p < 0.05$. Results from the analysis of both the original and imputed dataset were compared for trends in the data following the analysis.

References- Extended Methodology

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APPENDIX C

RECRUITMENT FLIER

\$50
Gift
Card

Niños Activos y Sanos (NASA) Healthy Active Children in Rhode Island

FREE

Nutrition & Cooking classes for your child during every lesson!

WHAT?

A **FREE** program for parents of 3-11 year old children, designed to improve family health!

90 minute lessons
1 lesson/week for 7 weeks

WHY?

To create programs that facilitate healthy lifestyles for families.

FREE prizes, food tastings, kids cooking classes, and fun activities each lesson!

WHEN & WHERE?

Weeknights @ Clínica Esperanza
60 Valley Street

HOW?

Call Damaris Rosales if you are interested in participating!

401-516-4685

Or Email:
damarisr@aplacetohealthy.org

damarisr@aplacetohealthy.org
401-516-4685

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APPENDIX D

PATHS AND KEYS TO SUCCESS USED IN THE HCHF CURRICULUM²⁹

PATHS TO SUCCESS

healthy children, healthy families

I just don't bring soda into our home anymore.

I keep cut-up veggies and fruit in the fridge — easy to grab when the kids need a snack.

I used to give my kids servings that were way too big. Now I let them serve themselves... They are happier at the table and seem to know when they are full.

I turned off the TV and my children didn't care. They went off and played. I didn't think it would be that easy!

Instead of just going for a walk, we walk to the playground, to school, or to the store. Now my kids are asking me to walk places.

The kids have fun helping, so it doesn't take that long to make healthy family meals that taste better than fast food!

➡ **Drinking Water or Milk Instead of Sweetened Drinks**

➡ **Eating More Vegetables and Fruits**

➡ **Playing Actively**

➡ **Eating Fewer High-Fat and High-Sugar Foods**

➡ **Limiting TV and Computer Time**

➡ **Having Sensible Servings**

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KEYS TO SUCCESS

help make healthy habits happen

SHOWING

Teach by Example

- show your children the behaviors you want
- eat smart and play actively with your children

SUPPORTING

Help Children Feel Good About Themselves

- encourage your children when they do something you like
- respect your children's feelings

GUIDING

Offer Choices within Limits

- let children decide how much to eat and how active to be
- tell children what they can do, not what they can't do
- involve children in making decisions

SHAPING

Make Healthy Choices Easier

- change the environments where children live, learn, and play
- find solutions with others in your family and your community
- create family routines that build healthy habits

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APPENDIX E

EXAMPLE OF PARENTING PRACTICES ENCOURAGED IN HCHF CURRICULUM

Healthy Children, Healthy Families Session 3

Eating More Vegetables & Fruits

Quick Ways to Make Vegetables and Fruits Fun for Children

Cut fruit and veggies in different shapes

- Cut apples in half side-ways to see the “star” in the middle.
- Slice carrots into “coins” and let them count their money before they eat it.

Do-it-yourself fruit or vegetable kabobs

- Let children make their own fruit kabobs, putting small pieces of various fresh or canned fruit onto toothpicks.
- Try using vegetables instead!

Get children involved

- Let children sprinkle cinnamon on applesauce.
- Let children dip vegetables and fruits into simple low-fat dips or dressings.
- Spread peanut butter on celery or apple slices and let children add raisins.
- Let your child plan the dinner vegetables or what goes into the salad.
- Have your child help prepare dinner
- Let your child pick out a “new veggie or fruit of the week” while shopping.
- Decorate plates with vegetable or fruit slices.

Add more veggies and fruits to meals

- Buy dried and canned fruits and frozen and canned vegetables when they’re on sale, so you always have some on hand.
- Serve fruit on breakfast cereal, or add to pancakes or waffles.
- Put whole, cut up, or canned fruit (drain juice off) on the table for dessert.
- Put vegetables on pizza.
- Add vegetables to spaghetti sauce.
- Add extra vegetables such as frozen peas or sliced carrots to Ramen type soups.
- Add color to salads by adding a variety of vegetables or fruits.

Add more veggies and fruits to snacks

- Add fruit to low-fat plain or vanilla yogurt.
- Keep clear bags of cut-up fruits and veggies in the front of the fridge where your child can easily grab them.
- Try applesauce to replace some oil when baking muffins or cakes.
- Offer raisins or other dried fruits instead of candy!

APPENDIX F

EXAMPLE OF WEEKLY ACTIVE PLAY BREAK

Healthy Children, Healthy Families Session 6

Sit Less: Reducing Screen Time

Active Play Break: Balloon Toss (5-10 min)

Instruct participants in wearing and using a pedometer, and tell them they can borrow it for the week. See facilitator guide for instructions.

Materials: *A balloon blown up for each participant. Provide another one or two, not blown up, for each to take home and use with their children. Remind participants that balloons should not be used with children under the age of three.*

Do the balloon toss activity, then ask:

Allow a minute or two for discussion.

Variations:

- *Have partners switch halfway through or join with 2 other partners so that they have 4 people trying to keep two balloons aloft.*
- *Have participants keep the balloons aloft without using their hands.*
- *Have participants join hands and keep all their balloons aloft without letting go of their hands.*

Let's try something simple, fun and active that children will enjoy doing instead of screen time.

First, let's all put on a pedometer, or step counter, so that we can measure how many steps we take during this game.

Find a partner.

When I say, "go," do everything you can to keep your balloon in the air for 3 minutes, until I say "stop".

Do not let the balloon touch the floor.

? What did you think of this activity? What would your children think of it?

? How many steps did you take?

Keeping a balloon up is a fun way to play actively. When your children do watch TV they might even enjoy doing this during commercials!

Think about how many minutes you and your children would be active if you did this during every commercial!

? How long is a typical commercial? (2-3 minutes)

? How many commercial breaks? (4-5, so 8-15 minutes total)

APPENDIX G

EXAMPLE OF WEEKLY RECIPE PROVIDED AT INTERVENTION

Taco Salad with Cilantro Lime Dressing

Ingredients

- 5 cups chopped lettuce (spinach, romaine)
- $\frac{3}{4}$ cup tomatoes, chopped
- $\frac{3}{4}$ cup corn (canned, frozen, or fresh)
- $\frac{3}{4}$ cup canned black beans, drained and rinsed
- 2 tablespoons cilantro, chopped
- $\frac{1}{4}$ cup tortilla chips, crushed
- *Optional: Low-Fat Cheese, Avocado, Onion, Radish*

Dressing

- 1 cup cilantro
- $\frac{1}{2}$ cup plain low-fat yogurt
- 2 cloves garlic
- Juice of 1 lime
- Pinch of salt
- $\frac{1}{4}$ cup olive oil
- 2 tablespoons apple cider vinegar

Directions

1. To make dressing, combine ingredients in a bowl and whisk, or combine in a food processor.
2. Combine salad ingredients in a bowl and toss together. Add dressing and toss to combine.

Recipe from:

<http://damndelicious.net/2014/01/10/southwestern-chopped-salad-cilantro-lime-dressing/>

APPENDIX H

LIST OF WEEKLY PRIZES FOR PARTICIPANTS

Session	Incentive	Connection to HCHF
1	\$10 gift card	Financial Incentive
2	Water Bottle	Drinking Water Instead of Sugar Sweetened Beverages
3	MyPlate Shopping List	Encourage Balance & Variety
4	Pedometer	Playing Actively
5	Spatula	Cooking Healthy Meals
6	Kickball	Playing Actively
7	Serving Bowls	Autonomy & Family Meals
8	\$40 gift card	Financial Incentive

APPENDIX I

EXAMPLE OF WEEKLY GOAL SETTING WORKSHEET

Healthy Children, Healthy Families Session 3

Eating More Vegetables & Fruits

Session 3 – Take a Healthy Step!

Today's path: Eating more vegetables and fruits

Steps you could take this week:

- ☐ **Teaching by example** and eating more vegetables and fruits myself
- ☐ Putting cut-up vegetables that my children like on the table as a side dish
- ☐ Introducing a new vegetable or fruit and **respecting the feelings** of my family about trying the new food
- ☐ Letting my child pick a new vegetable or fruit at the store for the family to try
- ☐ Asking my child to help plan or prepare a vegetable or fruit snack

Or pick your own step:

☐ _____

Key to success that can help:

- Showing** Teach by example
- Supporting** Help children feel good about themselves
- Guiding** Offer choices within limits
- Shaping** Make healthy choices easier

Help make healthy habits happen!

(Attachment 3.4)

APPENDIX J

EXAMPLE OF FIDELITY OBSERVATION CHECKLIST

Session 3: Eating More Vegetables and Fruits

2015-2016 HCHF Observations Form

Site: RI ___ ___ ___ Series# ___ Agency Partner/Location of class: _____

Date: ___ / ___ / ___ No. attending today: ___ Time started: ___:___ Time ended: ___:___

Facilitators: _____

Observers/visitors: _____

1. Please note how each task went.

Session Task	Did	Changed	Successes or Challenges? Comments?
Review of Previous Session			
Task 1: Veggies & Fruits – How much to eat?			
Anchor: Active Play Break Veggie Toss			
Add			
Apply			
Away			
Task 2: Strategies to Eat More Veggies & Fruits			
Anchor: Food Activity Vegetable & Fruit Dips			
Add (1)			
Apply (1)			
Add (2)			
Apply (2)			
Away			
Take a Healthy Step!			

A Look Ahead to Next Week			
----------------------------------	--	--	--

over

2. Changes to Session: *If you checked yes above, please give details here. Why were changes made? Please be specific.

3. Observations: Record observations or responses that indicate successes experienced by participants so far (include changes in attitudes, knowledge, and skills and/or behaviors)

4. For Next Meeting

a. **Take a Healthy Step:** What steps would participants like to try?

b. **Looking Ahead:** What types of snacks do participants and their families like?

5. Participant questions/requests for follow-up:

2. Please circle the number corresponding to your response. Please comment on each aspect below.

Facilitators covered the lesson content within the appropriate time frame.				
<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
Ran out of time			Covered all content at a comfortable pace	
Comments:				
Facilitators engaged participants and invited them to share, but moved on in a timely manner.				
<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
Not enough sharing		Just right	Too much sharing, lesson got off track	
Comments:				
Facilitators were comfortable handling questions related to nutrition.				
<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
Uncomfortable			Very comfortable	
Comments:				
Facilitators were comfortable handling questions related to parenting.				
<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
Uncomfortable			Very comfortable	
Comments:				
Supplies and materials needed were available.				
<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
Were not available			Were all available	
Comments:				
Facilitators connected the workshop content to participant's lives using examples from participants.				
<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
Did not connect			Good connections	
Comments:				
Facilitators worked as a team				
<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
Lacking teamwork			Good teamwork	
Comments:				

3. Strengths of educator:

4. Suggestions for change. How about...

5. Please circle the number corresponding to your response. Please comment on each aspect below.

PARTICIPANT BEHAVIOR:

At least one participant expressed a belief during the lesson.

1	2	3	4	5
---	---	---	---	---

Not enough sharing some sharing most participants shared

Comments:

Participants demonstrated a sense of understanding of the lesson.

1	2	3	4	5
---	---	---	---	---

Did not understand Understood everything

Comments:

The participants as a whole **do not** appear bored vs. not bored.

1	2	3	4	5
---	---	---	---	---

Very Bored Very Enthusiastic

Comments:

Participants are attentive to the paraprofessionals.

1	2	3	4	5
---	---	---	---	---

Not attentive, no connection Very attentive

Comments:

Participants are open and comfortable during discussion.

1	2	3	4	5
---	---	---	---	---

Uncomfortable Very comfortable

Comments:

Participants are respectful of one another.

1	2	3	4	5
---	---	---	---	---

Disrespectful Very respectful

Comments:

6. Highlights of participant behavior:

7. Suggestions for change:

APPENDIX K

PARENTAL CONSENT FORM

Consent for Participation THE UNIVERSITY OF RHODE ISLAND

Niño's Activos y Sanos (NASA): Healthy Active Children in Rhode Island

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

Description of this project:

Niño's Activos y Sanos (NASA) is a project organized by the University of Rhode Island, Blue Cross Blue Shield of Rhode Island, and the Clinica Esperanza/Hope Clinic (CEHC). This project is designed to target and improve the health of children and their families in the Providence area.

This project uses the Healthy Children Healthy Families (HCHF) curriculum. This curriculum has been designed to inform parents/caretakers of young children by providing parenting practices that support children's healthy food and active play choices. We are asking you to participate in lessons, fill out a pre and post survey, receive text messages with follow-up information from the lessons, and participate in height and weight measurements. Your input will help develop future HCHF programs, and will provide useful information for you and your family.

What will happen if I decide to participate in the study?

If you agree to participate in this study, the following will happen:

1. You will participate eight HCHF lessons that equal one HCHF curriculum. Lessons will be once per week, for a total of 8 weeks. Each lesson is about 90 minutes. Six to eight parents/caretakers will be asked to participate in each group. During the group sessions, your child/children can attend childcare and/or participate in cooking lessons. In between the group lessons, the navegantes who will be teaching the lessons will text you useful information to remind you what you learned and to remind you about next group dates.
2. During the project, there will be two evaluation days (week 1 and week 8). On these days, in addition to the scheduled lesson, we will take the following measurements.
 - a. Questions on nutrition, parenting practices, and demographics.
 - b. Height and weight (of both you and your child).

THE
UNIVERSITY
OF RHODE ISLAND
DIVISION OF RESEARCH
AND ECONOMIC
DEVELOPMENT

IRB #HU1415-104
IRB Approval Date 06/04/2015
IRB Approval Expiration 03/04/2016

3. Your group discussions and activities will be observed and notes will be taken. Any information gathered will be stored securely at the University of Rhode Island in Ranger Hall room 403.

Benefits or risks:

If you do decide to participate in this study, you will be helping research project staff to help develop programs to allow you to be a part of future nutrition education programs. The 8 lessons you attend will provide you with useful knowledge and skills to benefit your family's health. Parents who attend the sessions will be directly served as they will be the ones applying the information learned during the sessions and having discussions with other parents. Those who are indirectly served are the children and other family members of these parents. It is expected that the parents participating in this study will use the knowledge and strategies from class to apply them to their own home environments.

It is possible that some participants may suffer nervousness when weight measurements are recorded. To protect participant privacy and self-esteem, all measurements will be taken in private areas, not said aloud, and will not label anyone as overweight, obese, underweight, too thin, or anorexic. Measurements will be taken along with surveys (when they are being collected), so that the importance will not be on weight. We will not be saying any of the measurements aloud, but if you are at an unhealthy weight, we will be informing you by mailed letter. This letter will be sent after measurements are taken. In this letter we will provide places that may be helpful for you and ask you to talk about this information with your doctor.

Confidentiality:

All information about you will be kept confidential. Once we receive their information, the people working with Healthy Children Healthy Families will give you an ID number that will be used as their identification throughout the study. All names and personal information will be kept in locked files at the University of Rhode Island Ranger Hall 403, available only to the principal investigator and appropriate project staff. No one else will have access to their personal information. Evaluation Day measurements will be held in private areas. Height and weight measurements will not be said aloud, and measurements will be made along with the other measures so that the importance will not be on weight. You can stop participating at any time and you will no longer be contacted.

Notes will be retained for three years following the completion of the project and then destroyed.

Right to quit at any time:

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

In case of injury:

If this study causes you any injury, you should tell student investigator Laura Otterbach (401) 575-1885. You should also write or call the office of the URI Vice-President for Graduate Studies, Research, and Outreach, Suite 2, 70 Lower College Road, The University of Rhode Island, Kingston, RI 02881; Telephone (401) 874-4328.

Rights and Complaints:

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

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

Signature of Participant

Signature of Researcher

Typed/printed Name

Typed/printed name

Date

Date

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

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DEVELOPMENT

IRB #HU1415-104
IRB Approval Date 06/04/2015
IRB Approval Expiration 03/04/2016

APPENDIX L

BASELINE SURVEY

Niño's Activos y Sanos (NASA): Healthy Active Children in Rhode Island

Your name: _____

***If you have more than one child between the ages of 3-11, please answer questions based on the younger child in this age range:**

Please answer the following questions about YOU.

1. How old are you? _____ years
2. What is your sex?
☐ Female
☐ Male
3. Are you Hispanic or Latino?
☐ No
☐ Yes
→ If yes, country of origin: _____
4. What is your race? Please check all that apply.
☐ White
☐ African-American
☐ American Indian/Alaskan Native
☐ Asian
☐ Native Hawaiian/Pacific Islander
☐ More than once race
☐ Wish not to answer/don't know
5. What is the *highest level* of education / schooling you have completed?
☐ No formal schooling
☐ Less than 8th grade
☐ 8th grade or more, but less than high school
☐ High school graduate (finished 12th grade) or GED
☐ Post high school trade or technical school
☐ 1-3 years of college
☐ College graduate/higher

6. How many children between the ages of 2-13 years old live in your household?

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 or more

a. What ages? _____yrs.

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

- ☐ Yes
- ☐ No

8. What is your current marital status?

- ☐ Never Married
- ☐ Married
- ☐ Separated
- ☐ Divorced
- ☐ Widowed

9. Were you born in the United States?

- ☐ Yes
- ☐ No

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

_____ years _____ months

10. How would you describe your current employment status? Please check all that apply.

- ☐ Employed full time (more than 35 hours/week)
- ☐ Employed part time (less than 35 hours/week)
- ☐ Employed seasonally /on and off
- ☐ Unemployed /looking for work
- ☐ Student
- ☐ Homemaker

→ If employed, how many jobs do you currently have?

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4+

16-item HCHF-BC

1)	How many days each week do you usually eat fruit (including fresh, dried, frozen, and canned)?	Once in a while	1-2 days each week	3-4 days each week	5-6 days each week	Every day
2)	How many days each week do you usually eat vegetables (including fresh, frozen, and canned)?	Once in a while	1-2 days each week	3-4 days each week	5-6 days each week	Every day
3)	How often do you drink regular (NOT diet) soda?	Almost never	1-3 days each week	4-6 days each week	Once each day	2 or more times each day
4)	How often do you use 1% milk, skim milk, or low-fat yogurt?	Never	Once in a while	Once each day	Twice each day	3 or more times each day
5)	How often are you physically active for at least 30 minutes a day – active enough that you breathe a little harder or your heart beats faster? This includes brisk walking, dancing, and playing <u>actively</u> with kids.	Once in a while	1-2 days each week	3-4 days each week	5-6 days each week	Every day
6)	How many days each week do your <u>children</u> usually eat vegetables (including fresh, frozen, and canned)?	Once in a while	1-2 days each week	3-4 days each week	5-6 days each week	Every day
7)	How often do your <u>children</u> drink regular (NOT diet) soda?	Almost never	1-3 days each week	4-6 days each week	Once each day	2 or more times each day

8)	How often do your <u>children</u> have 1% milk, skim milk, or low-fat yogurt?	Never	Once in a while	Once each day	Twice each day	3 or more times each day
9)	In a typical week, how often do you let your <u>children</u> decide how much food to eat?	Almost never	Less than half the time	Half the time	More than half the time	Almost always
10)	How much time do your <u>children</u> spend watching TV, using the computer, or playing video games?	Less than 1 hour each day	1-2 hours each day	3-4 hours each day	5-6 hours each day	7 or more hours each day
11)	How often do your <u>children</u> play actively for at least 60 minutes a day – actively enough that they breathe a little harder or their hearts beat faster?	Once in a while	1-2 days each week	3-4 days each week	5-6 days each week	Every day
12)	How often do your <u>children</u> usually eat take out, delivery, or fast foods (such as burgers, fried chicken, pizza, Chinese food)?	Once in a while	1-2 days each week	3-4 days each week	5-6 days each week	Every day
13)	How often do you eat together with your <u>children</u> at least one meal a day?	Almost never	1-2 days each week	3-4 days each week	5-6 days each week	Every day
14)	In a typical month, how often are high-fat or high-sugar snacks available at home for your <u>children</u> to eat? This includes chips, candy, cookies, and sweets.	Almost never	Less than half the time	Half the time	More than half the time	Almost always

15)	In a typical month, how often are fruits available at home for your <u>children</u> to eat?	Almost never	Less than half the time	Half the time	More than half the time	Almost always
16)	How many days each week do your <u>children</u> usually eat fruit (including fresh, dried, frozen, and canned)?	Once in a while	1-2 days each week	3-4 days each week	5-6 days each week	Every day

CFPQ

	Disagree	Slightly disagree	Neutral	Slightly agree	Agree
1. Most of the food I keep in the house is healthy.	1	2	3	4	5
2. I encourage my child to eat when hungry and stop when full.	1	2	3	4	5
3. My child should always eat all of the food on his/her plate.	1	2	3	4	5
4. I have to be sure that my child does not eat too many high-fat foods.	1	2	3	4	5
5. I offer my child his/her favorite foods in exchange for good behavior.	1	2	3	4	5
6. Even if my child doesn't like a certain food, I think s/he should eat it.	1	2	3	4	5
7. If I did not guide or regulate my child's eating, s/he would eat too much of his/her favorite foods.	1	2	3	4	5
8. Offering this child something to eat is one of the best ways to stop his/her temper tantrums.	1	2	3	4	5
9. I offer sweets (candy, ice cream, cake, pastries) to my child as a reward for good behavior.	1	2	3	4	5
10. If my child eats an unhealthy food, I limit his/her eating of unhealthy foods for a while to make up for it.	1	2	3	4	5
11. I encourage my child to try new foods.	1	2	3	4	5
12. I discuss with my child why it's important to eat healthy foods.	1	2	3	4	5
13. My child must eat all of his/her dinner in order to have dessert.	1	2	3	4	5
14. I encourage my child to eat less so he/she won't get fat.	1	2	3	4	5
15. If I did not guide or regulate my child's eating, s/he would eat too many junk foods.	1	2	3	4	5
16. I give my child small helpings at meals to control his/her weight.	1	2	3	4	5
17. If my child eats more than usual at one meal, I try to restrict his/her eating at the next meal.	1	2	3	4	5
18. I restrict the food my child eats that might make him/her fat.	1	2	3	4	5
19. There are certain foods my child shouldn't eat because they will make him/her fat.	1	2	3	4	5

20. I withhold sweets/dessert from my child in response to bad behavior.	1	2	3	4	5
21. If I make a variety of healthy foods available to my child, I trust that s/he will choose a healthy diet.	1	2	3	4	5
22. I encourage my child to eat a variety of foods.	1	2	3	4	5
23. I discuss with my child the nutritional value of foods.	1	2	3	4	5
24. I have to be sure that my child does not eat too much of his/her favorite foods.	1	2	3	4	5
25. I don't allow my child to eat between meals because I don't want him/her to get fat.	1	2	3	4	5
26. I tell my child what to eat and what not to eat without explanation.	1	2	3	4	5
27. I have to be sure that my child does not eat too many sweets (candy, ice cream, cake, or pastries).	1	2	3	4	5
28. I model healthy eating for my child by eating healthy foods myself.	1	2	3	4	5
29. I often put my child on a diet to control his/her weight.	1	2	3	4	5
30. It is impossible to keep track of what my child eats because he/she eats in so many places.	1	2	3	4	5
31. If I try to guide or regulate my child's eating, it will make him/her unhappy.	1	2	3	4	5
32. I try to eat healthy foods in front of my child, even if they are not my favorite.	1	2	3	4	5
33. I try to show enthusiasm about eating healthy foods.	1	2	3	4	5
34. I show my child how much I enjoy eating healthy foods.	1	2	3	4	5
35. I feel that I have an important role in establishing lifelong eating habits in my child.	1	2	3	4	5
36. I feel responsible for determining portion sizes for my child.	1	2	3	4	5
37. I feel responsible for providing a healthy diet for my child.	1	2	3	4	5
38. I encourage my child to eat healthy foods before unhealthy foods.	1	2	3	4	5
39. I tell my child that healthy food tastes good.	1	2	3	4	5
40. I involve my child in planning family meals.	1	2	3	4	5
41. I allow my child to help prepare family meals.	1	2	3	4	5
42. I encourage my child to participate in grocery shopping.	1	2	3	4	5

	Never	Rarely	Sometimes	Often	Always
My child refuses new foods at first	☐	☐	☐	☐	☐
My child enjoys tasting new foods	☐	☐	☐	☐	☐
My child enjoys a wide variety of foods	☐	☐	☐	☐	☐
My child is difficult to please with meals	☐	☐	☐	☐	☐
My child is interested in tasting food s/he hasn't tasted before	☐	☐	☐	☐	☐
My child decides that s/he doesn't like a food, even without tasting it	☐	☐	☐	☐	☐

1. What is your child's date of birth?

Day____/Month____/Year_____

2. What is your child's gender?

- ☐ Female
☐ Male

3. Choose the figure that best represents **your child**. Please **circle one figure**, based on whether your child is a boy or girl.

1. Do you have health insurance?

- ☐ No
- ☐ Yes

1a) If yes, do you have Medicaid?

- ☐ No
- ☐ Yes

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

- ☐ \$15,000 or less
- ☐ \$15,000-\$30,000
- ☐ \$30,000-\$45,000
- ☐ More than \$45,000

APPENDIX M

ANTHROPOMETRIC MEASUREMENT RECORDING FORM

Niño's Activos y Sanos: Height and Weight Collection Sheet

Today's Date: ____ / ____ / 20__

ID Code: _____

NOTES

If the hairstyle affects the height measurement ... use a plastic ruler to estimate how much is contributed by the hairstyle to the nearest half an inch:

PARENT

I. HEIGHT MEASUREMENT

- Must have at least TWO measurements
- The three readings should be all within 1/2 inch of each other (round up)

1st measurement: ____ / ____

2nd measurement: ____ / ____

Additional:

3rd measurement: ____ / ____

4th measurement: ____ / ____

5th measurement: ____ / ____

6th measurement: ____ / ____

Recorder's Name: _____

II. WEIGHT MEASUREMENT

- Must have at least TWO measurements
- The three readings should be all within 0.5 lb of each other

1st measurement: ____.

2nd measurement: ____.

Additional:

3rd measurement: ____.

4th measurement: ____.

5th measurement: ____.

6th measurement: ____.

Recorder's Name: _____

CHILD

I. HEIGHT MEASUREMENT

- Must have at least TWO measurements
- The three readings should be all within 1/2 inch of each other (round up)

1st measurement: ____ / ____

2nd measurement: ____ / ____

Additional:

3rd measurement: ____ / ____

4th measurement: ____ / ____

5th measurement: ____ / ____

6th measurement: ____ / ____

Recorder's Name: _____

II. WEIGHT MEASUREMENT

- Must have at least TWO measurements
- The three readings should be all within 0.5 lb of each other

1st measurement: ____.

2nd measurement: ____.

Additional:

3rd measurement: ____.

4th measurement: ____.

5th measurement: ____.

6th measurement: ____.

Recorder's Name: _____

APPENDIX N

HCHF PARTICIPANT PROGRAM EVALUATION FORM

Healthy Children, Healthy Families, Session 8

Celebrate!

Healthy Children, Healthy Families Participant Evaluation Form

Circle the number that best describes how much you agree with each sentence.	Strongly Disagree	Disagree	Not Sure	Agree	Agree Strongly
I enjoyed coming to <i>Healthy Children, Healthy Families</i> sessions.	1	2	3	4	5
I learned a lot of new things in <i>Healthy Children, Healthy Families</i> .	1	2	3	4	5
The educator(s) did a good job of teaching and working with the group.	1	2	3	4	5
I would recommend <i>Healthy Children, Healthy Families</i> to my friends and/or family.	1	2	3	4	5
What I learned in <i>Healthy Children, Healthy Families</i> is useful for me and my family.	1	2	3	4	5
I felt very comfortable while participating in <i>Healthy Children, Healthy Families</i> .	1	2	3	4	5
The number of sessions in the series (8) was just right for me to learn the information.	1	2	3	4	5
The <i>Healthy Children, Healthy Families</i> topics and activities were interesting and fun.	1	2	3	4	5
I learned new parenting skills that help me get along better with my children.	1	2	3	4	5
The length of time the <i>Healthy Children, Healthy Families</i> sessions lasted was fine for me.	1	2	3	4	5
The time that the sessions were held was convenient for me.	1	2	3	4	5
The location was convenient for me.	1	2	3	4	5

Comments (use back of form if needed):

13. What I liked best about *Healthy Children, Healthy Families* was:

14. Because of what I have learned, we are making these changes at home:

15. I would like to learn more about:

Attachment 8.4

APPENDIX O

SUBSCALES AND CORRESPONDING ITEMS FROM THE CFPQ

FULL SUBSCALES ASSESSED:

Modeling

- I model healthy eating for my child by eating healthy foods myself.
- I try to eat healthy foods in front of my child, even if they are not my favorite.
- I try to show enthusiasm about eating healthy foods.
- I show my child how much I enjoy eating healthy foods.

Encouragement of Balance & Variety

- I encourage my child to try new foods.
- I encourage my child to eat a variety of foods.
- I encourage my child to eat healthy foods before unhealthy foods.
- I tell my child that healthy food tastes good.

Involvement

- I involve my child in planning family meals.
- I allow my child to help prepare family meals.
- I encourage my child to participate in grocery shopping.

Teaching About Nutrition

- I discuss with my child why it's important to eat healthy foods.
- I discuss with my child the nutritional value of foods.
- I tell my child what to eat and what not to eat without explanation. **(R)**

Restriction for Health

- If I did not guide or regulate my child's eating, s/he would eat too much of his/her favorite foods.
- If I did not guide or regulate my child's eating, s/he would eat too many junk foods.
- I have to be sure that my child does not eat too much of his/her favorite foods.
- I have to be sure that my child does not eat too many sweets (candy, ice cream, cake, or pastries).

Restriction for Weight Control

- I have to be sure that my child does not eat too many high-fat foods.
- I encourage my child to eat less so he/she won't get fat.
- I give my child small helpings at meals to control his/her weight.
- If my child eats more than usual at one meal, I try to restrict his/her eating at the next meal.
- I restrict the food my child eats that might make him/her fat.

- There are certain foods my child shouldn't eat because they will make him/her fat.
- I don't allow my child to eat between meals because I don't want him/her to get fat.
- I tell my child what to eat and what not to eat without explanation.

Food as Reward

- I offer my child his/her favorite foods in exchange for good behavior.
- I offer sweets (candy, ice cream, cake, pastries) to my child as a reward for good behavior.
- I withhold sweets/dessert from my child in response to bad behavior.

INDIVIDUAL ITEMS FROM CFPQ SUBSCALE:

Environment

- Most of the food I keep in the house is healthy.

Pressure to Eat

- My child should always eat all of the food on his/her plate

APPENDIX P

ITEMS FROM THE HCHF-BC BY CONSTRUCT

Parent Diet & Activity

- How many days each week do you usually eat fruit (including fresh, dried, frozen, and canned)?
- How many days each week do you usually eat vegetables (including fresh, frozen, and canned)?
- How often do you drink regular (NOT diet) soda?
- How often do you use 1% milk, skim milk, or low-fat yogurt?
- How often are you physically active for at least 30 minutes a day – active enough that you breathe a little harder or your heart beats faster? This includes brisk walking, dancing, and playing actively with kids.

Child Diet & Activity

- How many days each week do your children usually eat vegetables (including fresh, frozen, and canned)?
- How many days each week do your children usually eat fruit (including fresh, dried, frozen, and canned)?
- How often do your children drink regular (NOT diet) soda?
- How often do your children have 1% milk, skim milk, or low-fat yogurt?
- How often do your children play actively for at least 60 minutes a day -- actively enough that they breathe a little harder or their hearts beat faster?
- How much time do your children spend watching TV, using the computer, or playing video games?

Parenting & Home Environment

- In a typical week, how often do you let your children decide how much food to eat?
- How often do you eat together with your children at least one meal a day?
- In a typical month, how often are high-fat or high-sugar snacks available at home for your children to eat? This includes chips, candy, cookies, and sweets.
- In a typical month, how often are fruits available at home for your children to eat?
- How often do your children usually eat take out, delivery, or fast foods (such as burgers, fried chicken, pizza, Chinese food)?