University of Rhode Island

DigitalCommons@URI

2018

Are Feeding Practices of Family Child Care Home Providers Related to Child Fruit & Vegetable Intake?

Tayla M. Carter
University of Rhode Island, taylacarter@my.uri.edu

Follow this and additional works at: https://digitalcommons.uri.edu/theses

ARE FEEDING PRACTICES OF FAMILY CHILD CARE HOME PROVIDERS

RELATED TO CHILD FRUIT & VEGETABLE INTAKE?

BY

TAYLA M. CARTER

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE

REQUIREMENTS FOR THE DEGREE OF

MASTER OF SCIENCE

IN

NUTRITION AND FOOD SCIENCES

UNIVERSITY OF RHODE ISLAND

2018

MASTER OF SCIENCE THESIS

OF

TAYLA M. CARTER

Thesis Committee:

Major Professor Alison Tovar

Maya Vadiveloo

Karen McCurdy

Nasser H. Zawia

DEAN OF THE GRADUATE SCHOOL

UNIVERSITY OF RHODE ISLAND

2018

ABSTRACT

Objectives: To explore the relationship between three feeding practice constructs (role modeling, encouragement, and pressure to eat) of family child care home (FCCH) providers, and fruit and vegetable intake of the preschool-aged children in their care.

Participants: Subjects were family child care home providers and the children in their care. Participants were recruited from Providence, Rhode Island and surrounding areas of Rhode Island and Massachusetts.

Methods: Baseline data, collected during a two-day home visit from an ongoing cluster-randomized trial, Healthy Start/Comienzos Sanos, were used (n=61 FCCH). Feeding practice data was collected using the Environment and Policy Assessment and Observation (EPAO) tool. Child dietary intake was collected using the Dietary Observation in Child Care (DOCC) protocol. A score for each construct was created by summing the relevant feeding practice items (averaged across two days) for each and averaging across the number of items. Child whole fruit, total fruit (whole fruit plus fruit juice), and vegetable intake were averaged across both observation days and across all children observed within a home. Multiple linear regressions were used to examine the relationship between FCCH provider feeding practice constructs and diet variables.

Results: The majority of providers identified as Hispanic/Latina (83%), all were female, and the mean age of providers was 50.8±8.3 years. The majority of children were Hispanic/Latino (69%), and about half were female (48%). The mean age of children was 3.4±1.0 years. Mean whole fruit intake was 1.02±1.03 cups/day, mean total fruit intake

was 1.35±1.07 cups/day, and mean vegetable intake was 0.54±0.41 cups/day. In adjusted multivariate models, encouragement was significantly positively associated with child vegetable intake (β =0.51, p=0.007), total fruit intake (β =0.45, p=0.02), and whole fruit intake (β =0.55, p=0.002), and fruit and vegetable intake combined (β =0.64, p=0.0004). In the adjusted model, pressure to eat was also significantly negatively associated with whole fruit intake (β =-0.27, p=0.05). No other provider practices were significantly associated with child whole fruit, total fruit, or vegetable intake.

Conclusions: FCCH provider encouragement was associated with a significant increase in child fruit and vegetable intake, and although the frequency of pressure to eat was low, it was associated with a significant decrease in child whole fruit intake. Future studies should further explore the relationship between provider feeding practices and child diet. With this information, interventions and training for FCCH providers can be better tailored to improve the diets of young children.

AKNOWLEDGMENTS

I would like to thank the people that made my master's thesis work possible during my time at URI. First, I would like to thank my major advisor, Dr. Alison Tovar, for her guidance throughout my entire graduate school experience. Her leadership and expertise has shaped my research abilities and given me valuable knowledge and experience that I will carry with me as I continue in the field of nutrition and dietetics. I would also like to thank the members of my thesis committee, Dr. Maya Vadiveloo, Dr. Karen McCurdy, and my defense chair Dr. Mary Greaney for their guidance and involvement throughout the process of my master's thesis work from beginning to end.

I also appreciate the support and friendship of all the graduate students in the NFS department. I especially would like to thank the graduate students I worked with in the CNCOP research group, Noereem, Amy, Maggie, Jessie, the undergraduate research assistants who worked in the CNCOP research group, Carolina, Carly, and Fatima, and Dara for her work on the project as well. I would also like to give a special thank you to all NFS department faculty and professors I have worked with during my time as a graduate student. I have learned valuable knowledge from each of you and appreciate your time and continued patience. Thank you to the Healthy Start research the team at Brown University for their support and guidance, and for allowing me to be a part of this project.

Finally, I would like to thank my family and friends for their continued encouragement. To Justin, Mom, Dad, Nick, and Mandy, thank you all for believing in me and during one of the most challenging experiences of my life. I could not have done it without your love and support, and I hope I have made you proud.

PREFACE

This thesis was written to comply within the University of Rhode Island graduate school Standard Thesis Format. This thesis contains one manuscript: *Are Feeding Practices of Family Child Care Home Providers Related to Child Fruit & Vegetable Intake?*

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

FIGURE   PAGE

Are Feeding Practices of Family Child Care Home Providers Associated with Child Fruit
and Vegetable Intake?

Tayla Carter[1], Patricia Risica[2], Kim Gans[2], Maya Vadiveloo[1], Karen McCurdy[3], Alison
Tovar[1]

[1]Department of Nutrition and Food Science, University of Rhode Island, Fogarty Hall,
Kingston, RI 02881, USA

[2]Department of Behavioral and Social Sciences, Brown University,
Providence, RI 02912, USA,

[3]Department of Human Development and Family Studies, University of Rhode
Island, Transition Center, Kingston, RI 02881, USA

CHAPTER 1

INTRODUCTION

Low fruit and vegetable consumption (FVC) among preschool aged children (2-5 years old) is a public health problem. Preschool aged children in the United States are not meeting the recommendation of 1-1½ cup equivalent of each per day.[1,2] Low FVC is associated with increased risk of developing chronic diseases.[3,4] Additionally, early childhood is a critical time for the development of food preferences and eating behaviors.[5] Therefore, understanding factors that influence child's FVC early in life is important.

Although there are a variety of factors that influence a child's FVC, how adult caregivers interact with children, including the feeding practices they use during meals, is important. For example, among parents, more responsive feeding practices such as role modeling, reasoning, and encouraging have been associated with higher FVC.[6–12] Fewer studies have explored the impact of childcare provider feeding practices and FVC. Although a large percent of children attend childcare centers, many disadvantaged children attend family child care homes (FCCH)[13] highlighting the importance of understanding provider feeding practices and their impact on FVC in this setting. It is especially important to understand the impact that provider feeding practices may have on child FVC given that 24% of children in child care in the US attend a FCCH.[14] In addition, FCCHs may also have regulations that are less stringent, including those that are related to promotion of food and nutrition.[13] However, no studies that I have found have explored the influence of provider feeding practices on FVC in FCCHs. Therefore,

the purpose of this secondary data analysis is to explore the association between observed

feeding practices of FCCH providers and fruit and vegetable intake in children.

CHAPTER 2

REVIEW OF LITERATURE

Trends in fruit and vegetable consumption in children

Young children in the United States are not meeting recommendations for fruit and vegetable consumption.[15] *The Dietary Guidelines for Americans, 2015-2020 (8ᵗʰ edition)* recommends 1 and 1.25 cup equivalent of fruits and vegetables, respectively, per 1000 daily calories consumed[3] and ChooseMyPlate.gov recommends that 2-3 year old children consume 1 cup equivalent each of fruits and vegetables per day, and that 4-8 year old children consume 1-1½ cups of fruit and 1½ cups of vegetables per day.[1,2] In 2008, 25% of preschoolers did not consume at least 1 cup of fruit and 30% did not consume at least 1 cup of vegetables per day.[16] FVC is linked to a reduced risk of chronic diseases, such as cardiovascular disease (CVD), and may help to prevent some cancers.[4,3] Fruits and vegetables are also important sources of several vitamins, minerals, antioxidants, and fiber, and contribute to the maintenance of a healthy body weight.[3] There is also evidence to suggest that dietary preferences and patterns that develop during infancy and early childhood track into later life.[4,17,18] Given that young children are not consuming the recommended amounts of fruits and vegetables it is important to explore possible contributors to these eating patterns and behaviors.

Feeding practices

Eating habits and attitudes about food that develop in early childhood often last a lifetime.[19] While there are other factors such as genetics and breastfeeding,[5] adult caregivers are also important in shaping children's food behaviors early in life; one way

in which they do this is through their feeding practices.[10,20–22] Feeding practices are the goal-oriented behaviors used by caregivers to influence their children's eating.[7] Although there are many inconsistencies in terminology and definitions when it comes to feeding practices, this study will include feeding practices that are considered responsive, and those that are considered non-responsive. It is important to include responsive practices since they are associated with the best outcomes in child dietary intake and weight status, such as higher fruit and vegetable intake, and less sweet and sugary snack intake.[7,10,27–31] Responsive feeding practices are child-centered, and involve guiding and teaching children to listen to internal hunger and satiety cues. Responsive feeding practices include, nutrition education, child involvement, encouragement, praise, reasoning and negotiation, limited/guided choices, modeling, and monitoring. On the other hand, non-responsive overly controlling practices, which have been studied more extensively, are associated with lower fruit and vegetable consumption and increased pickiness and resistance to eating.[7,31,32,34–41] Controlling practices include restriction, pressure to eat, threats and bribes, and using food to control negative emotions. Parental feeding practices are clearly important within the home environment, but the home is not the only environment in which young children spend time.[34]

Importance of understanding feeding practices of child care providers

According to parental self-reports in 2012, 60% of children under the age of 5 who were not enrolled in kindergarten had some sort of non-parental child care arrangement.[14] Of children cared for by someone else other than a parent, 56% attended center-based child care, such as a day care center, preschool, or prekindergarten, 42% were cared for by a family member, and 24% received child care in a non-relative's

4

home, also called a family child care home (FCCH).[14] A family child care home is a form of licensed child care in which children are cared for in the provider's home, rather than a child care center or facility. [13] This setting is different from child care centers in that it offers a more home-like setting with fewer children. [13] Additionally, FCCH providers tend to have less formal education in early childhood education and fewer professional development opportunities, especially those pertaining to child food and nutrition. [13] FCCHs are also different from child care centers in that they tend to be more affordable and offer more flexible hours, characteristics that make them appealing to low-income families.[13]

Young children spend 26 hours per week in child care on average and it is recommended that children enrolled in a full-time program consume up to two thirds of their daily energy intake while in this setting, and one third at home.[35] Given that children spend significant amounts of time and consume much of their daily energy in child care, child care providers are increasingly important in shaping children's eating behaviors.[20] Therefore, it is important to understand how child care providers are interacting with children during mealtimes; unfortunately, data exploring this are limited.

Organizations such as Caring for Our Children,[36] the Institute of Medicine's Early Childhood Obesity Preventions Policies,[37,38] and the Academy of Nutrition and Dietetics Benchmarks for Nutrition in Child-care,[32] have made recommendations for nutrition practices in child care, and all are in line with responsive feeding practices. Both Caring for Our Children and the Academy of Nutrition and Dietetics (AND) recommends division of responsibility between caregiver and child, where the caregiver provides a variety of healthy foods and allows children to decide what and how much to eat.[32,39] The

organizations recognize the importance of creating an eating environment that is responsive to the child's self-regulation, and therefore recommends family-style meals where children serve themselves.[6,29,37] Other recommended feeding practices include instruction on how to eat, conversation and education about food and nutrition, encouraging, and modeling healthy eating behaviors.[32,41]

With regards to less responsive feeding practices, both organizations discourage overly controlling feeding practices, such as forcing children to eat or using food as a reward or punishment, as this can lead to higher levels of picky eating and increased resistance to eating.[32,42] Although these recommendations are evidence based, the literature which they are based are from studies done with parents and not child care providers; it is unclear if child care provider's feeding practices have a similar impact on child diet. There is a need to explore feeding practices of child care providers, however, of the few studies that have explored feeding practices in a child care setting, most of them have been completed in child care centers as opposed to FCCHs.[6,40–44]

Feeding Practices of Child Care Providers

Of the studies that have looked at the feeding practices of providers in child care centers, most are consistent with the parenting literature. For example, feeding practices consistent with autonomy support have been associated with higher fruit and vegetable intake, as well as lower intake of sweet and salty snacks.[6,7,8,23,28,31,32,41,58] However, these studies have always looked at individual items rather than constructs, and there are inconsistencies regarding which individual practices are associated with these outcomes. For example, three different studies that aimed to explore the association between observed feeding practices and child diet in child care centers had different outcomes.

One study found that responsive feeding practices such as role modeling and encouraging were associated with more FVC and less sweet and salty snack intake,[6] while another study found that only the practices of sitting with children during mealtimes and eating the same foods as children were associated with more vegetable intake.[49] A third study found that responsive feeding practices were only significantly associated with more dairy intake.[46] While parenting literature is more conclusive about the relationship between responsive feeding practices and higher FVC and lower sugary snack intake, findings from the child care setting are mixed. In addition to this research gap, there have also been no studies that explore the association between feeding practices and child diet in FCCHs; all studies done in a child care setting have been in a child care center. This is important because there are 482 FCCHs compared to 318 center-based facilities in Rhode Island, meaning that about 66% of child care facilities in Rhode Island are a FCCH.

Conclusion

Given that children spend significant amounts of time and consume much of their daily energy intake in child care, it is important to understand what practices child care providers are utilizing and how these are associated with fruit and vegetable intake of children. This information may help inform future programs and interventions to modify the feeding practices of child care providers in ways that increase fruit and vegetable consumption of children in FCCHs. Thus, the purpose of this study was to describe child fruit and vegetable consumption in Rhode Island FCCHs and determine if feeding practices of FCCH providers are related to fruit and vegetable consumption of the children in their care.

CHAPTER 3

METHODOLOGY

Study Design

This study was a secondary data analysis using baseline data from Brown

University's study, *Healthy Start/Comienzos Sanos*. Healthy Start is an ongoing cluster

randomized controlled trial evaluating the efficacy of an 8-month intervention that aims

to improve food and physical activity practices in FCCHs. The Institutional Review

Boards of Brown University, University of Rhode Island, and University of Connecticut

approved all study procedures and materials for Healthy Start.

Participants

Subjects were 61 providers and 277 children. To be eligible for the study,

participants must be a FCCH provider in RI or a surrounding area of Massachusetts

(MA). In order to be a participant in the study, providers need to have been in operation

for at least 6 months and plan to remain in operation for at least 1 year. FCCH providers

must speak and read English or Spanish and have at least 1 child between the ages of 2-5

years old in their care, not including their own child, for a minimum of 10 hours per

week, who consumes at least 1 meal and 1 snack prepared by the provider during their

time at the FCCH each day. FCCH providers who closed their FCCH for more than 3

weeks during the study were excluded.

Recruitment

Providers were recruited through local community organizations that provide

training and support for FCCH providers. These organizations provided informational

recruitment sessions, flyers, and brochures to FCCH providers to help with recruitment. Additional FCCH providers could be referred to participate from already participating providers. At recruitment sessions, the study and its eligibility requirements were explained to providers and those who were interested had the option to sign registration forms. Research staff then contacted the provider by phone to complete an eligibility survey.

Data Collection

Eligible providers then completed the first part of the baseline survey over the phone, which gathered demographic information. Further demographic information was collected during an in-person survey. There was only one provider per home. Eligible children were required to have consent forms signed by their parents to participate in the study. If participating, parents filled out a demographics survey about their child or children. Anthropometric data were then collected for children by research staff. As part of baseline data collection, trained observers went into the FCCH for two full days and collected relevant data. Of interest to this project, they observed feeding practices of providers for each meal and snack and collected data on child dietary consumption for each of these meals and snacks.

Measures

The measures used in this study were provider and child demographic information, provider feeding practices, and child fruit and vegetable intake. Demographic information was collected using the provider phone survey, the provider in-person survey, and the child survey, filled out by parents. Provider feeding practices were collected using a modified version of the Environment and Policy Assessment and

9

Observation (EPAO).[50] Child fruit and vegetable intake was collected using the Dietary

Observation in Child Care (DOCC) protocol.[51]

This study used a modified version of the EPAO, developed by Ward et al.[50] It

has been validated in child care settings. The EPAO used in this study was modified to

reflect cultural differences for the study sample based on formative research (focus

groups), and was used to collect objective observation data about feeding practices during

meal times in addition to the dietary data.[50] The EPAO contains 53 items that relate to the

mealtime environment and feeding practices, as well as additional items relating to

physical activity and screen time. Feeding practices captured are reflective of parenting

literature, and include both responsive, and non-responsive practices.[52] Of the practices

relating to meals and feeding, 26 were used in this study. Specifically, three constructs

reported in the parenting literature, role modeling, encouragement, and pressure to eat,

were used.[27]

Based on the literature, the 26 feeding practices were grouped into three

constructs: encouragement, role modeling, and pressure to eat.[27] The role modeling

construct included 10 items, the encouragement construct included 5 items, and the

pressure to eat construct included 11 items (Figure 1). Provider feeding practice construct

scores had the potential to range from 0 to 3, where 0 means the practice did not occur, 1

means the practice occurred a little bit, 2 means the practice occurred sometimes, and 3

means the practice occurred a lot. Some individual practices in the role modeling

construct only had the potential score of 0 to 1, where 0 means the practice did not occur

and 1 means the practice did occur. However, negative role modeling practices such as

consuming fast food, sweet salty snacks, sweet snacks, sugar sweetened beverages,

coffee drinks, or nothing in front of the children were reverse scored so that 0 means the practice did occur, and 1 means the practice did not occur.

Children's food intake was recorded using the Dietary Observation in Child Care (DOCC), a valid and reliable instrument developed by Ball et al.[51] The gold standard for measuring child dietary intake is observation, because recall completed by the provider is less accurate.[53,54] The DOCC is minimally intrusive and the trained data collectors aim to not make children hyper-aware that they are being observed. Raw DOCC forms were entered to DOCC Microsoft Excel spreadsheets by Healthy Start research staff. DOCC Microsoft Excel spreadsheets were entered into the Nutrition Data System for Research (NDSR) 2016, then 2017 as food records.

Procedures

The data used in this study were collected by Healthy Start (Comienzos Sanos) staff. Only children who were eligible and had signed consent forms to participate in the study were observed and included in this study. The beginning of each observation period was determined by the arrival of the first eligible child and continued until the last eligible child has left. Data were not collected for the provider's own child or children. According to the DOCC protocol, an observer can only accurately and reliably assess three children at one time; if more than three children were present, two observers collected data.[51] Another observer recorded information about the mealtime environment and feeding practices using the EPAO.

Statistical Analyses

11

Independent Variables: Each of the 3 feeding practice constructs, role modeling, encouragement, and pressure to eat, were summarized into weighted average scores at the provider level. A weighted score was used to account for the different number of meals and snacks offered during the day and for longer meals. This was done dividing the duration (minutes) of each meal and snack by the total duration for all meals and snacks that day. This weighting factor was then multiplied by the number of occurrences of each individual feeding practice item at each meal and snack. This was then summed over the entire day to create a weighted daily score for that item, which was then averaged across both days of observation. The average weighted score for each individual feeding practice within each construct can be seen in Table 2. An average of all the feeding practice item weighted scores within each construct was calculated to create an average weighted score for each construct (Table 2).

Dependent Variables: Fruit and vegetable intake were examined using cups as a continuous measure of the mean fruit and vegetable consumption in each home. NDSR generates outputs that group foods into food groups (Figure 2). Fruits and vegetables were analyzed at the home level, not the child level, therefore it was necessary to create variables of average vegetables, whole fruit, and total fruit (fruit plus 100% fruit juice), and total whole fruits and vegetables per home. This was done by taking the average vegetable, whole fruit, and total fruit consumption across all children in a home. Since children each have two days of observation, and up to 4 meals per observation (breakfast, lunch, and 2 snacks), fruits and vegetables were averaged per day of meals, then across the two days, to create the average per home.

Prior to the main analysis, preliminary analyses and basic data visualization were conducted to generate summary statistics, basic tests of comparison, distribution evaluation for continuous variables, and examination of correlation structure. After preliminary analyses, Pearson's correlations tested for associations between each of the feeding practice constructs and fruit and vegetable consumption as continuous variables. Cronbach's alpha was determined to assess the internal consistency of the constructs. To examine the association between each feeding practice construct and fruit and vegetable consumption, multiple linear regression models were developed. To adjust for covariates, potential covariates were chosen based on the literature, such as provider ethnicity,[55,56] provider income level,[13,56] provider education level,[13] and CACFP participation.[57] Potential covariates were added to the model one at a time to determine if the addition of the variable made at least a 10% difference in the β coefficient.[58] If a variable made at least a 10% difference in the β coefficient, it would be added to the model. A sample size of 76 providers is appropriate to fit a multiple regression model with up to 3 predictor variables (alpha at the 0.05 level and 80% power and an anticipated effect size of 0.15). All statistical analysis was done using SAS 9.4.

CHAPTER 4

FINDINGS

Study Sample

The study had a final sample of 61 providers and 277 children. Descriptive

statistics of the study sample are reported in Table 1. Overall, providers were 50.8±8.3

years of age, 83% were Hispanic or Latina, and all were female. Most of the providers

were born outside the US (93%) and the Dominican Republic was the country of origin

for 70% of providers. The sample was mostly of low-income, with 59% of providers

reporting $25,000-$50,000, and 25% reporting less than $25,000 for annual household

income. Of the providers, 18% had less than a high school diploma or GED, 30% had a

diploma or GED, 41% had an associate degree or some college, and 11% has a bachelor's

degree or higher. On average, providers had been working in child care for 12.4±6.7, and

87% participated in CACFP. Children were 3.4±1.0 years of age, 69% were Hispanic or

Latino, and about half were female. The mean number of children per home was 6.4±2.9

and the mean number of hours children spent in child care per day was 7.6±0.9 (Table 1).

Given there are 482 FCCHs in Rhode Island and this sample only contains 61 FCCHs

(12.7%), it is important to note that these demographics may not be representative of all

FCCHs in Rhode Island.

Feeding Practice Constructs

The alpha level for the role modeling construct was 0.55, signifying that the role

modeling construct had a low internal consistency. The alpha level for the encouragement

and pressure to eat constructs were 0.73 and 0.74, respectively. The mean score for role

modeling was 0.78, encouragement was 0.50, and pressure to eat was 0.30. Mean scores for all 3 constructs were between 0 (did not occur) and 1 (occurred a little bit). In the role modeling construct, all item means ranged between 0.02 – 1.50; providers almost never consumed fast food, salty snacks, sweet snacks, sugar sweetened beverages, or coffee drinks in front of the children. They also rarely ate anything in front of the children, or ate the same foods as children, and almost never consumed fruits and vegetables in front of the children. The mean score for enthusiastic role modeling eating healthy foods was also infrequent with a mean score of 0.64. The most frequent practice in this construct was sitting with the children during meals, however this was still infrequent with a mean score of 1.50 (between "a little bit" and "sometimes") (Table 2).

Of the individual practices in the encouragement construct, the most common was encouraging children to try new or less preferred foods, with a mean score of 1.00 however this score is still infrequent. All other practices in this construct had a mean score of below 1.00. All individual practices in the pressure to eat construct had mean score of below 1.00 as well. Praising children for eating unhealthy foods, requiring children to clean their plates, using food as a reward or withholding food as punishment, and using food as a reward or bribe for eating a less-preferred food almost never occurred, all having scores of below 0.10 (Table 2).

Mean whole fruit intake per child was 1.02±1.03 cups/day, mean total fruit intake was 1.35±1.07 cups/day, and mean vegetable intake was 0.54±0.41 cups/day. The mean combined whole fruit and vegetable intake was 1.56±1.23 cups/day (Table 3).

Provider encouragement was significantly positively correlated with child vegetable intake (r=0.28, p=0.03), total fruit (r=0.30, p=0.02), whole fruit (r=0.41,

p=0.001), and combined fruit and vegetable intake (r=0.44, p<0.001). No other provider practices were significantly correlated with child whole fruit, total fruit, or vegetable intake (Table 4).

The results of the unadjusted regression models indicated that provider encouragement explained 16.5% of the variance in child vegetable intake (R^2=0.16, $F(3,57)$=3.75, p=0.02), 22.9% of the variance in child whole fruit intake (R^2=0.23, $F(3,57)$=5.64, p=0.002), 25.3% of the variance in child fruit and vegetable intake combined (R^2=0.25, $F(3,57)$=6.43, p=0.001). Encouragement was significantly positively associated with child vegetable intake (β =0.47, p=0.004), total fruit intake (β =0.39, p=0.02), and whole fruit intake (β =0.57, p=0.004), and fruit and vegetable intake combined (β =0.64, p<0.0001). In the unadjusted model, role modeling was significantly negatively associated with a decrease in child vegetable intake (β = -0.34, p=0.03).

Although no single covariate made greater than a 10% difference in the β coefficient when added to the model, the combination of covariates made a meaningful difference in the results. Based on the previous literature, covariates to be included in the adjusted models were provider age, ethnicity, CACFP participation, income, education, and the number of children in the home.[7,55,57,59] In the adjusted regression model, encouragement was significantly positively associated with child vegetable intake (β =0.51, p=0.007), total fruit intake (β =0.45, p=0.02), and whole fruit intake (β =0.55, p=0.002), and fruit and vegetable intake combined (β =0.64, p=0.0004). In the adjusted model, pressure to eat was also significantly negatively associated with whole fruit intake (β =-0.27, p=0.05), and role modeling was no longer significantly negatively associated with vegetable intake (Table 5).

Discussion

This study assessed the association between feeding practices of family child care home providers and average child fruit and vegetable intake. This study found that children are consuming adequate amounts of fruit in this setting, but vegetable intake is still low. This study also found that although many of the feeding practices observed were not frequent, encouragement was positively associated with child vegetable intake, total fruit intake, whole fruit intake, and fruit and vegetable intake combined. Furthermore, in the unadjusted model, role modeling was significantly associated with vegetable intake, but in an unexpected direction. In the adjusted model, pressure to eat was significantly associated with a decrease in whole fruit intake. This is consistent with parenting and some child care center literature regarding the positive association between responsive feeding practices (such as encouragement) and child fruit and vegetable intake, and the negative association between non-responsive feeding practices (such as pressure to eat) and child fruit and vegetable intake. Future studies should further explore the association between feeding practices and child diet in the child care setting, and ways to improve the feeding practices of FCCH providers.

This study found that on average, children are meeting recommendations for fruit intake in child care (two-thirds of a cup to one cup, depending on age),[1,2] with the mean whole fruit intake being about 1 cup. The mean total fruit intake was about one-third of a cup higher than mean whole fruit intake, suggesting that providers are serving 100% fruit juice, which is a source of sugar and calories.[60] Mean vegetable intake is only about one-half of a cup, which is slightly below the recommended intake for child care (two-thirds of a cup to one cup, depending on age). However, from this study it is unknown if

17

children are still meeting the daily recommendation for vegetables by consuming additional vegetables at home. This is consistent with the latest CDC report that fruit intake is increasing, and vegetable intake remains low.[15] However, two studies done in child care centers found that, on average, children consumed less fruits and vegetables than what was observed in this study. One study found that children consumed 0.25 cups of vegetables per day, and 0.32 cups of fruit (excluding juice) per day, on average.[61] Another study found similar results, with children consuming 0.2 cups of vegetables per day, and 0.4 cups of fruit (including juice), on average.[62] Children in these studies consumed about half the amount of vegetables, and less than half the amount of fruit compared to what was observed in this study.

Overall, frequency of provider role modeling, encouragement, and pressure to eat was low. In the role modeling construct, providers demonstrated infrequent use of negative role modeling (consuming unhealthy foods and beverages in front of children), but also demonstrated infrequent use of positive role modeling. FCCH providers rarely consumed the same foods as children, and almost never consumed fruits and vegetables in front of children. This is consistent with previous research which has found that center providers rarely consume unhealthy foods in front of children.[63]

While another study done with 105 FCCH providers found that most providers (67.3%) reported sitting with children during mealtimes,[64] which is consistent with this study as we found that most (90.0%) providers were observed to sit with children at least a little bit throughout the day, however, the mean score for sitting with children during meals was below 2.00, meaning that most providers did not sit with children at all meals, or for the whole duration of the meal. Similar to role modeling, the mean score for all

pressuring feeding practices was also low. A study done with FCCH providers found that

most providers (74.4%) reported pressuring a child to clean their plate,[64] which is

different from the current study, which found infrequent use of this practice. However,

several other studies done with center providers reported low pressuring behaviors,

similar to what was observed in this study.[11,65,66] Although pressuring feeding practices

were infrequent, they were associated with a significant decrease in whole fruit

consumption in the adjusted model. Training for providers should continue to educate

providers on the potential long-term negative effects of pressuring children to eat, as

these behaviors may lead to increased resistance to eat, such as what was seen with whole

fruit intake, and interfere with children's internal hunger and satiety cues.[64]

While overall provider encouragement was low, it still was significantly

associated with an increase in child fruit and vegetable intake, with a one-unit increase in

encouragement accounting for about one-half of a cup increase in child vegetable intake,

and over one-half of a cup increase in child whole fruit intake. An example of a one-unit

increase in encouragement could be moving from no encouragement to a little

encouragement, or from a little encouragement to some encouragement. Even with low

frequency of encouragement, the association with child fruit and vegetable intake can still

be observed, emphasizing the importance of this construct. These findings are consistent

with some of the literature exploring center provider feeding practices and child diet. One

study found that children will increase food intake if encouraged by caregivers to eat

more (based on a single item), regardless of what is being served,[46] while two other

studies found that encouragement specifically increases child fruit and vegetable

consumption.[6,67] However, these previous studies have looked at individual feeding

practice items. Our results add to the literature by assessing a construct including multiple encouragement items, which is a more comprehensive view of the feeding practices occurring in the home. These findings highlight the importance of using responsive feeding practices to get children to consume more fruits and vegetables in a family child care home setting.

Unexpectedly, role modeling was significantly associated with a decrease in child vegetable intake in the unadjusted model. This may be due to overall low use of role modeling, as providers rarely consumed foods or beverages in front of the children. This also may be due to the low internal consistency of the construct. Other studies have also found that enthusiastic role modeling is effective in improving child diet, whereas silent role modeling is not.[67,68] Most of the items in this construct were passive role modeling (i.e. eating fruits and vegetables in front of children), which may explain why this construct was not positively associated with child diet.

This finding suggests exposure to fruits and vegetables and passive role modeling may not be enough to increase child intake of fruits and vegetables. Several studies have shown that CACFP participation is associated with providers serving more fruits and vegetables.[61–64] However, most of the providers in this study participated in CACFP, yet child vegetable intake was still low. This suggests that simply providing fruits and vegetables may not be enough, and children must be encouraged to eat them. Other studies show that early, repeated exposure to fruits and vegetables is the best way to increase child intake.[21,71,72] However, as infants become toddlers and neophobia sets in, encouraging a child to try a food is the first step towards repeated exposure,[72] further

emphasizing the importance of encouraging children to eat the fruits and vegetables provided.

Limitations and Strengths

This study is not without limitations. First, sample size was relatively small, and the study was slightly underpowered with a final sample of 61 homes, whereas the study was powered at 76 homes. Additionally, the study was cross-sectional, so we were unable to assess the longitudinal impact of provider feeding practices on child diet. Although the study used observation and aimed to be minimally invasive, children and providers were still aware of the observers in the home. Therefore, social desirability bias may have influenced provider and child behavior. While observation was a limitation, it was also one of the strengths of this study, as observation is more accurate than self-report. Another strength of this study is the sample of family child care homes, which have not been studied as much as center-based child care. The relatively homogenous sample of female, Latina, providers is both a strength and a limitation of this study; while the results of this study may not be generalizable to the general population of FCCH providers, it provides valuable information on the feeding practices of Latina providers.

CHAPTER 5

CONCLUSION

This study found that FCCH provider encouragement may improve fruit and vegetable intake in children ages 2-5, which is important because low FVC is associated with increased risk of developing chronic diseases[3,4] and early childhood is a critical time for the development of food preferences and eating behaviors.[5] The findings of this study are consistent with parenting literature regarding the associations between responsive and non-responsive feeding practices of adult caregivers and child fruit and vegetable intake. Future research should further explore the association between provider feeding practices and other aspects of child diet besides fruits and vegetables, such as sweet and salty snack foods, whole grains, and dairy. It should also explore ways to increase the use of encouraging feeding practices by FCCH providers. The literature suggests that that there is a need for more frequent nutrition-related training for FCCH providers.[66-68] While many trainings for providers have focused on which foods to serve children and which feeding practices to avoid, future trainings for FCCH providers should highlight the importance of practices that may improve child diet, such as encouragement.

Table 1. **Descriptive Statistics of Providers and Children**

Providers (n=61)

Characteristic	Data
Age, (mean±SD)	50.8±8.3
Female, n (%)	61 (100.00)
Ethnicity, n (%)	
Hispanic/Latina	54 (88.5)
Not Hispanic/Latina	7 (11.5)
Culture, n (%)	
Dominican	38 (70.3)
Colombian	4 (7.4)
Guatemalan	1 (1.9)
Puerto Rican	3 (5.6)
Mexican	1 (1.9)
Other	7 (13.0)
Race, n (%)	
White	13 (21.3)
Black	11 (18.0)
Other	25 (41.0)
Unsure	12 (19.7)
Born outside of US, n (%)	57 (93.4)
Years in US, (mean±SD)	24.5±9.2
Language spoken in child care, n (%)	
English	7 (11.5)
Spanish	18 (29.5)
Both	36 (59.0)
CACFP participation, n (%)	53 (87)
Number of children in care, (mean±SD)	6.4±2.9
Years working in child care, (mean±SD)	12.4±6.7
Education level, n (%)	
<High school diploma or GED	11 (18.0)
High school diploma or GED	18 (29.5)
Associates degree	25 (41.0)
Bachelor's degree	6 (9.8)
Master's degree or higher	1 (1.6)
CDA (Child Development) Credential, n (%)	
Yes	13 (21.3)

No	47 (77.1)
Income, n (%)	
Less than $25,000	15 (24.6)
$25,001-$50,000	36 (59.0)
$50,001-$75,000	6 (9.8)
$75,001-$100,000	2 (3.3)
$100,001 or more	1 (1.6)
Marital Status, n (%)	
Single, never married	5 (8.2)
Married or living with partner	43 (70.5)
Divorced	5 (8.2)
Separated	5 (8.2)
Widowed	3 (4.9)
Children (n=277)	
Age (years)	3.4±1.0
Male, n (%)	142 (52.4)
Hispanic/Latino, n (%)	184 (69.2)
Race, n (%)	
White	93 (35.0)
Black	39 (14.7)
Other	133 (49.9)
Unsure	1 (0.4)
Number of children in home	6.4±2.9
Hours spent in child care/day	7.6±0.9

Table 2. Mean Score for Provider Feeding Practices and Constructs

Feeding Practice (n=61 Providers)	Mean	SD	Min.	Max.
Role Modeling (α=0.55)	**0.78**	**0.19**	**0.50**	**1.24**
Provider ate fast food in front of children[a][b]	1.00	0.02	0.88	1.00
Provider ate salty snack in front of children[a][b]	1.00	0.01	0.91	1.00
Provider ate sweet snack in front of children[a][b]	1.00	0.03	0.80	1.00
Provider drank sugar sweetened beverage in front of children[a][b]	1.00	0.00	0.97	1.00
Provider drank coffee drink in front of children[a][b]	0.98	0.08	0.56	1.00
Provider ate something in front of children[a]	0.36	0.29	0.00	1.00
Provider ate the same foods as children[a]	0.29	0.27	0.00	1.00
Provider at fruits and vegetables in front of children[a]	0.04	0.09	0.00	0.42
Provider sat with children	1.50	0.96	0.00	3.00
Provider enthusiastically role modeled eating healthy foods	0.64	0.69	0.00	2.69
Encouragement (α=0.73)	**0.50**	**0.31**	**0.00**	**1.40**
Provider talked about food with children	0.67	0.47	0.00	1.69
Provider talked about nutrition with children	0.28	0.36	0.00	1.30
Provider encouraged children to try new or less preferred foods	0.99	0.53	0.00	2.04
Provider praised children for trying new or less preferred foods*	0.27	0.33	0.00	1.32
Provider praised children for eating healthy foods*	0.42	0.50	0.00	1.97
Pressure to Eat (α=0.74)	**0.30**	**0.23**	**0.00**	**1.30**
Provider rushed child to eat	0.35	0.53	0.00	2.66
Provider praised child for eating unhealthy foods*	0.05	0.11	0.00	0.57
Provider praised child for cleaning their plate	0.60	0.57	0.00	2.42
Provider pressured child to eat more than they seemed to want	0.26	0.42	0.00	1.84
Provider required child to clean their plate*	0.08	0.21	0.00	0.91
Provider spoon-fed child	0.78	0.71	0.00	2.35
Provider insisted a child eat a certain food	0.53	0.59	0.00	2.36
Provider prompted a child to finish one food in order to receive another*	0.33	0.58	0.00	2.76
Provider promised something other than food for eating a specific food	0.26	0.49	0.00	2.37
Provider used food a reward or withheld food as a punishment	0.02	0.08	0.00	0.41
Provider used food as a reward or bribe for eating a less preferred food	0.09	0.21	0.00	0.89

Scores range from 0-3, where 0 = did not occur, 1 = occurred a little, 2 = occurred sometimes, and 3 = occurred a lot

[a]Scores range from 0-1, where 0 = did not occur and 1 = did occur

[b]Negative practices were reverse scored so that the absence of the practice = 1 and the presence of the practice = 0

*N was less than 61 due to missing observations because the practice was "Not Applicable"

Table 3. Mean Child Fruit and Vegetable Intake

Group (cups)	Mean	SD	Minimum	Maximum
Vegetables	0.54	0.41	0.00	1.76
Total Fruit	1.35	1.07	0.06	5.75
Whole Fruit	1.02	1.03	0.00	5.75
Fruit and Vegetables	1.56	1.23	0.26	6.90

Table 4. Pearson's Correlations between Provider Feeding Practice Constructs and Child

Fruit and Vegetable Intake

	Role Modeling	Encour-agement	Pressure to Eat	Vegetables	Whole Fruit	Total Fruit	FV
Role Modeling	1.00						
Encour-agement	0.60 <0.0001*	1.00					
Pressure to Eat	0.02 0.88	0.24 0.06	1.00				
Vegetables	-0.05 0.69	0.28 0.03*	0.18 0.16	1.00			
Whole Fruit	0.14 0.29	0.41 0.001*	-0.09 0.44	0.31 0.01*	1.00		
Total Fruit	0.17 0.20	0.30 0.02*	-0.07 0.57	0.26 0.04*	0.87 0.01*	1.00	
FV	0.12 0.34	0.44 <0.001*	-0.02 0.86	0.81 <0.0001*	0.94 <0.0001*	0.81 <0.0001*	1.00

*Significant at the p<0.05 level

Table 5. Multiple Regression Examining Associations between Provider Role Modeling, Encouragement, and Pressure to Eat – for Child Vegetable, Total Fruit, Whole Fruit, and Combined Fruit and Vegetable Intake

	Vegetables			Total Fruit		
Variable	β	*p*	95% CI	β	*p*	95% CI
Role Modeling	-0.34	0.03*	-1.42 – -0.06	-0.10	0.54	-2.4 – 1.26
Encouragement	0.47	0.004*	0.20 – 1.04	0.39	0.02*	0.23 – 2.48
Pressure to Eat	0.07	0.57	-0.32 – 0.57	-0.17	0.20	-1.97– 0.43
R^2 (R^2 adj.)	0.17 (0.12)			0.12 (0.07)		
F (p-value)	3.75 (0.02)			2.48 (0.07)		
Variable	**Whole Fruit**			**Whole Fruits & Vegetables**		
	β	*p*	95% CI	β	*p*	95% CI
Role Modeling	-0.17	0.25	-2.59 – 0.69	-0.26	0.08	-3.61 – 0.23
Encouragement	0.57	0.004*	0.88 – 2.91	0.64	<0.0001*	1.33 – 3.70
Pressure to Eat	-0.23	0.06	-2.12 – 0.04	-0.17	0.15	-2.17 – 0.35
R^2 (R^2 adj.)	0.23 (0.19)			0.25 (0.21)		
F (p-value)	5.64 (0.002)			6.43 (0.001)		

*Significant at the p<0.05 level

Table 6. Adjusted Multiple Regression Examining Associations between Provider Role Modeling, Encouragement, and Pressure to Eat – for Child Vegetable, Total Fruit, Whole Fruit, and Combined Fruit and Vegetable Intake

Variable	Vegetables			Total Fruit		
Role Modeling	β	*p*	95% CI	β	*p*	95% CI
Model 1[a]	-0.34	0.03*	-1.42 – -0.06	-0.10	0.54	-2.4 – 1.26
Model 2[b]	-0.34	0.04*	-1.42 – -0.05	-0.10	0.54	-2.40 – 1.28
Model 3[c]	-0.32	0.07	-1.47 – -0.05	-0.08	0.66	-2.43 – 1.55
Encouragement	β	*p*	95% CI	β	*p*	95% CI
Model 1[a]	0.47	0.004*	0.20 – 1.04	0.39	0.02*	0.23 – 2.48
Model 2[b]	0.49	0.005*	0.20 – 1.08	0.39	0.02*	0.18 – 2.52
Model 3[c]	0.51	0.007*	0.19 – 1.16	0.45	0.02*	0.27 – 2.81
Pressure to Eat	β	*p*	95% CI	β	*p*	95% CI
Model 1[a]	0.07	0.57	-0.32 – 0.57	-0.17	0.20	-1.97– 0.43
Model 2[b]	0.07	0.59	-0.33 – 0.57	-0.17	0.21	-1.98 – 0.44
Model 3[c]	0.05	0.73	-0.41 – 0.58	-0.22	0.13	-2.32 – 0.31
Variable	Whole Fruit			Whole Fruits & Vegetables		
Role Modeling	β	*p*	95% CI	β	*p*	95% CI
Model 1[a]	-0.17	0.25	-2.59 – 0.69	-0.26	0.08	-3.61 – 0.23
Model 2[b]	-0.17	0.26	-2.59 – 0.71	-0.26	0.09	-3.61 – 0.25
Model 3[c]	-0.11	0.52	-2.38 – 1.21	-0.20	0.22	-3.39 – 0.80
Encouragement	β	*p*	95% CI	β	*p*	95% CI
Model 1[a]	0.57	0.004*	0.88 – 2.91	0.64	<0.0001*	1.33 – 3.70
Model 2[b]	0.58	0.0005*	0.89 – 2.99	0.65	<0.0001*	1.35 – 3.82
Model 3[c]	0.55	0.002*	0.69 – 2.98	0.64	0.0004*	1.17 – 3.85
Pressure to Eat	β	*p*	95% CI	β	*p*	95% CI
Model 1[a]	-0.23	0.06	-2.12 – 0.04	-0.17	0.15	-2.17 – 0.35
Model 2[b]	-0.24	0.06	-2.14 – 0.04	-0.18	0.15	-2.20 – 0.35
Model 3[c]	-0.27	0.05*	-2.40 – -0.03	-0.21	0.11	-2.51 – 0.26

*Significant at the p<0.05 level
[a]Model 1: Unadjusted model [b]Model 2: Adjusted for provider age [c]Model 3: Adjusted for provider age, ethnicity, CACFP participation, income, education, and number of children in the home

Figure 1. Feeding Practice Constructs

Feeding Practice Construct	EPAO Items
Role modeling	1. Provider ate fast food in front of child/children 2. Provider ate salty snacks in front of child/children 3. Provider ate sweet snacks in front of child/children 4. Provider drank sugar-sweetened beverage in front of child/children 5. Provider drank coffee drink in front of child/children 6. Provider ate something in front of child/children 7. Provider ate the same foods as child/children 8. Provider ate fruit and vegetables in front of child/children 9. Provider sat with child/children 10. Provider enthusiastically role modeled eating healthy foods
Encouragement	1. Provider talked about food with child/children 2. Provider talked about nutrition with child/children 3. Provider encouraged child/children to try new or less preferred foods 4. Provider praised child/children for trying new or less preferred foods 5. Provider praised child/children for eating healthy foods
Pressure to Eat	1. Provider rushed child to eat 2. Provider praised child for eating unhealthy foods 3. Provider praised child for cleaning their plate 4. Provider pressured child to eat more than they seemed to want 5. Provider required child to clean their plate 6. Provider spoon-fed child 7. Provider insisted a child eat a certain food 8. Provider prompted a child to finish one food in order to receive another 9. Provider promised something other than food for eating a specific food 10. Provider used food a reward or withheld food as a punishment 11. Provider used food as a reward or bribe for eating a less preferred food

Figure 2. Fruit and Vegetable Grouping

Variable	ID Code	Description
Vegetables	VEG0100	Dark-green vegetables
	VEG0200	Deep-yellow vegetables
	VEG0300	Tomato
	VEG0400	White potatoes
	VEG0450	Other starchy vegetables
	VEG0500	Vegetable juice
	VEG0600	Other vegetables
	VEG0700	Legumes
Total Fruit	FRU0100	Citrus juice
	FRU0200	Fruit juice excluding citrus juice
	FRU0300	Citrus fruits
	FRU0400	Fruit excluding citrus fruit
	FRU0500	Avocado and similar
	FRU0600	Fried fruits
	FRU0700	Fruit-based savory snack
Whole Fruit	FRU0300	Citrus fruits
	FRU0400	Fruit excluding citrus fruit
	FRU0500	Avocado and similar
	FRU0600	Fried fruits
	FRU0700	Fruit-based savory snack
Fruits & Vegetables	FRU0300	Citrus fruits
	FRU0400	Fruit excluding citrus fruit
	FRU0500	Avocado and similar
	FRU0600	Fried fruits
	FRU0700	Fruit-based savory snack
	VEG0100	Dark-green vegetables
	VEG0200	Deep-yellow vegetables
	VEG0300	Tomato
	VEG0400	White potatoes
	VEG0450	Other starchy vegetables
	VEG0500	Vegetable juice
	VEG0600	Other vegetables
	VEG0700	Legumes

APPENDICES

APPENDIX A: EXTENDED REVIEW OF LITERATURE

Trends in fruit and vegetable consumption in children

Children in the United States are not meeting recommendations for fruit and vegetable consumption.[15] *The Dietary Guidelines for Americans, 2015-2020 (8th edition)* recommends 1 and 1.25 cup equivalent of fruits and vegetables, respectively, per 1000 daily calories consumed[3] and ChooseMyPlate.gov recommends that young children consume 1-1½ cup equivalent each of fruits and vegetables per day.[1,2] In 2008, 25% of preschoolers did not consume at least 1 cup of fruit and 30% did not consume at least 1 cup of vegetables per day.[16]

The consequences of low fruit and vegetable consumption

FVC is linked to a reduced risk of chronic diseases, such as cardiovascular disease (CVD), and may help to prevent some cancers.[4,3] Fruits and vegetables are also important sources of several vitamins, minerals, antioxidants, and fiber, and contribute to the maintenance of a healthy body weight.[3] There is also evidence to suggest that dietary preferences and patterns that develop during infancy and early childhood track into later life.[4,17,18] Given that young children are not consuming the recommended amounts of fruits and vegetables it is important to explore possible contributors to these eating patterns and behaviors.

Factors that influence child diet

Eating habits and attitudes about food that develop in early childhood often last a lifetime.[19] Research demonstrates that the development of child fruit and vegetable preferences is biological, developmental, and socioenvironmental, beginning in infancy.[71] While infants are genetically predisposed to liking sweet and salty flavors, and disliking bitter flavors, such as vegetables, infants who are breastfed are repeatedly exposed to a variety of flavors early on, leading to a better transition to solid foods.[21] The transition from breastmilk or formula to complementary foods is a narrow acceptance period, followed by the toddler years, which are typically characterized by increased neophobia and decreased intake of vegetables.[71] Research shows that a later introduction of vegetables is associated with decreased acceptance of them.

Parents are the main influencers of child diet, as parents typically make food choices for the family.[21] Sociodemographic factors such as parent education, nutrition knowledge, socioeconomic status, and food marketing to parents and children, as well as parent beliefs, availability of food, the home environment, and feeding practices all play a role in a child's acceptance of fruits and vegetables.[72] Feeding practices are the goal-oriented behaviors used by caregivers to influence their children's eating.[7]

Ways to classify feeding practices

Over the years, different terminology and definitions have been used surrounding feeding practices in the literature. This inconsistency in terminology and definitions have made research in this field more challenging. In 2016, experts in the field came together to create a clearly defined content map to guide future research. The content map outlines 3 higher-order constructs, each containing specific feeding practice subconstructs. The higher-order constructs are coercive control, structure, and autonomy support.

Coercive control is defined as attempts to dominate, pressure, or impose the parents' will upon the child. This construct includes subconstructs such as restriction, pressure to eat, bribes, and using food to control negative emotions. Structure involves the use on non-coercive practices and is defined as parents' organization of children's environment to facilitate children's competence. Subconstructs in this higher-order construct include rules and limits, role modeling, routines, guided choices, and food availability and accessibility. The final higher-order construct of autonomy support can be defined as promoting psychological autonomy and encouragement of independence, and includes subconstructs such as encouragement, praise, reasoning, and child involvement.[73] The following sections will use the terminology of specific feeding practice constructs to describe the literature regarding feeding practices and child diet.

Responsive feeding practices

The literature suggests that responsive feeding practices are associated with the best outcomes in child dietary intake and weight status, such as higher fruit and vegetable intake, and less sweet and sugary snack intake.[7,10,27–31] Responsive feeding practices are child-centered, and involve guiding and teaching children to listen to internal hunger and satiety cues. Responsive feeding practices include, nutrition education, child involvement, encouragement, praise, reasoning and negotiation, limited/guided choices, modeling, and monitoring. On the other hand, overly controlling practices are associated with lower fruit and vegetable consumption and increased pickiness and resistance to eating.[7,31,32,34–41] Controlling practices include restriction, pressure to eat, threats and bribes, and using food to control negative emotions.

Feeding practices of parents

In general, parenting literature concludes that overly controlling feeding practices such as restriction, pressure to eat, and bribes, may be associated to greater aversion to the foods that children are being pressured to eat.[5,73] However, in one study, pressure was found to be associated with higher vegetable intake. Although higher vegetable intake is a positive thing, it is important to consider the long-term implication of pressure on a child's ability to self-regulate. On the other hand, many responsive practices such as encouragement to eat fruits and vegetables, reasoning, negotiating, and praise were associated with higher intake of fruits and vegetables.[12] Research also suggests that positive role modeling may be associated with child diet,[5] and encouragement can help children try new foods, therefore creating repeated exposure and increasing the likelihood that the child will like a certain food.[72] Parental feeding practices are clearly important within the home environment, but the home is not the only environment in which young children spend time.[34] With more mothers entering the workforce, more children are being cared for by someone other than their parents. Therefore, child feeding is a shared responsibility between parents and other child care providers.

Importance of understanding feeding practices of child care providers

According to parental self-reports in 2012, 60% of children under the age of 5 who were not enrolled in kindergarten had some sort of non-parental child care arrangement.[14] Of children cared for by someone else other than a parent, 56% attended center-based child care, such as a day care center, preschool, or prekindergarten, 42% were cared for by a family member, and 24% received child care in a non-relative's home, also called a family child care home (FCCH).[14] Young children spend 26 hours per week in child care on average and it is recommended that they consume up to two thirds

of their daily energy intake while in this setting.[35] Given that children spend significant

amounts of time and consume much of their daily energy in child care, child care

providers are increasingly important in shaping children's eating behaviors.[20] While

feeding practices literature has surrounded parents, feeding practices of other caregivers

may be different from parent practices, and may not have the same impact on child diet.

Therefore, it is important to understand how child care providers are interacting with

children during mealtimes; unfortunately, data exploring this is limited.

Recommendations for feeding practices in child care

Organizations such as Caring for Our Children,[36] the Institute of Medicine's Early

Childhood Obesity Preventions Policies,[37,38] and the Academy of Nutrition and Dietetics

Benchmarks for Nutrition in Child-care,[32] have made recommendations for nutrition

practices in child care, and all are in line with responsive feeding practices. Both Caring

for Our Children and the Academy of Nutrition and Dietetics (AND) recommends

division of responsibility between caregiver and child, where the caregiver provides a

variety of healthy foods and allows children to decide what and how much to eat.[32,39] The

organizations recognize the importance of creating an eating environment that is

responsive to the child's self-regulation, and therefore recommends family-style meals

where children serve themselves.[6,29,37] Other recommended feeding practices include

instruction on how to eat, conversation and education about food and nutrition,

encouraging, and modeling healthy eating behaviors.[32,41]

With regards to less responsive feeding practices, both organizations discourage

overly controlling feeding practices, such as forcing children to eat or using food as a

reward or punishment, as this can lead to higher levels of picky eating and increased

resistance to eating.[32,42] Although these recommendations are evidence based, the literature which they are based on are from studies done with parents and not child care providers; it is unclear if child care provider's feeding practices have a similar impact on child diet. There is a need to explore feeding practices of child care providers, however, of the few studies that have explored feeding practices in a child care setting, most of them have been completed in child care centers as opposed to FCCHs.[6,40–44]

Feeding practices of child care providers

Several studies have been conducted to learn more about child care providers' use to feeding practices. For example, several studies found high use of overall responsive behavior, including encouragement and monitoring.[65,66,74] However, it is important to consider that some of these studies included self-report by providers, which may have led to social desirability bias and over-reporting of positive practices. Other studies found that providers do not often role model eating healthy foods in front of children.[32,75] While some studies generally found low use of restriction, bribes, and pressuring practices,[11,65,75] another study found high use of pressuring practices.[6] Literature has shown that overall, providers help to foster healthy eating in children.[76] Studies reporting what feeding practices providers are using vary in results. Results also vary regarding the association between provider feeding practices and child diet.

Impact of provider feeding practices on child diet

For example, feeding practices consistent with autonomy support have been associated with higher fruit and vegetable intake, as well as lower intake of sweet and salty snacks.[6,7,8,23,28,31,32,41,58] However, there are inconsistencies regarding which

individual practices are associated with these outcomes. For example, three different studies that aimed to explore the association between observed feeding practices and child diet in child care centers had different outcomes. One study found that responsive feeding practices such as role modeling and encouraging were associated with more FVC and less sweet and salty snack intake,[6] while another study found that only the practices of sitting with children during mealtimes and eating the same foods as children were associated with more vegetable intake.[49] A third study found that responsive feeding practices were only significantly associated with more dairy intake.[46] While parenting literature is much more conclusive about responsive feeding practices and higher FVC, research in child care is not as certain.

Family child care homes

In addition to the research gap surrounding feeding practices in child care, there have also been few studies that explore the association between feeding practices and child diet in FCCHs; most studies done in a child care setting have been in a child care center. This is important because there are 552 FCCHs compared to 311 center-based facilities in Rhode Island, meaning about 64% of child care facilities in Rhode Island are a FCCH. Therefore, it is important to further explore these environments, including provider feeding practices and knowledge of feeding practices.

Studies have found that many FCCHs fail to meet child care standards for nutrition, with areas of concern being frequent servings of fruit juice, frequent unhealthy foods for celebrations, and little nutrition training.[65] Another study done with Latino FCCH providers found that that providers had low self-efficacy regarding healthy eating and physical activity, despite their positive beliefs and attitudes about healthy lifestyles,

which may hinder their ability to be influential role models.[77] Lastly, another study done with Latino FCCH providers found that while some positive practices are occurring, such as sitting with children during meals, negative practices were also occurring, such as pressuring children to clean their plates.[59] Overall, this study found that providers were motivated to serve healthy foods to children, they also reported infrequent nutrition training. The literature demonstrates a lack of training for FCCH providers regarding nutrition topics, specifically feeding practices, which may be a cause for concern given the popularity of this form of child care.

Conclusion

Given that children spend significant amounts of time and consume much of their daily energy intake in child care, it is important to understand what practices child care providers are utilizing and how these are associated with fruit and vegetable intake. This information may help inform future programs and interventions to modify the feeding practices of child care providers and increase fruit and vegetable consumption of children in FCCHs. It also may justify increased training for family child care home providers. Thus, the purpose of this study is to determine if feeding practices of FCCH providers are related to fruit and vegetable consumption of the children in their care.

APPENDIX B: EXTENDED METHODOLOGY

Study Design

This study was a secondary data analysis using baseline data from Brown University's study, *Healthy Start/Comienzos Sanos* (National Institutes of Health Grant: 1R01 HL123016; "Improving Nutrition and Physical Activity Environments in Home-based Child-care"). Healthy Start is an ongoing cluster randomized controlled trial evaluating the efficacy of an 8-month novel, culturally tailored intervention that aims to improve food and physical activity practices in FCCHs. The intervention is conducted in both English and Spanish. The intervention includes support from peer counselors with child care experience, tailored print and video materials, a set of portable active toys. Moderate to vigorous physical activity to be measured through an accelerometer and dietary data to be measured by the HEI will be the main outcome measures for determining the effectiveness of the intervention. The study is powered at a total of 132 FCCH, with 66 homes assigned to the intervention and 66 control groups. The Institutional Review Boards of Brown University, University of Rhode Island, and University of Connecticut approved all study procedures and materials for Healthy Start.

Participants

Subjects were 61 providers and 277 children. To be eligible for the study, participants must be a FCCH provider in RI or a surrounding area of Massachusetts (MA). In order to be a participant in the study, providers need to have been in operation for at least 6 months and plan to remain in operation for at least 1 year. FCCH providers must speak and read English or Spanish and have at least 1 child between the ages of 2-5

years old in their care, not including their own child, for a minimum of 10 hours per week, and consumes at least 1 meal and 1 snack prepared by the provider during their time at the FCCH each day. FCCH providers who close their FCCH for more than 3 weeks during the study were excluded.

Recruitment

Providers were recruited through local community organizations that provide training and support for FCCH providers. These organizations provided informational recruitment sessions, flyers, and brochures to FCCH providers to help with recruitment. Additional FCCH providers could be referred to participate from already participating providers. At recruitment sessions, the study and its eligibility requirements were explained to providers and those who were interested had the option to sign registration forms. Research staff then contacted the provider by phone to complete an eligibility survey.

Data Collection

Eligible providers then completed the first part of the baseline survey over the phone, which gathered demographic information. Further demographics information was collected during an in-person survey. There is only one provider per home. Eligible children were required to have consent forms signed by their parents to participate in the study. If participating, parents filled out a demographics survey about their child or children. Anthropometric data was collected for children by research staff. As part of baseline data collection, observers go into the FCCH for two full days and collect relevant data. Of interest to this project, they observed feeding practices of providers for

each meal and snack and collected data on child dietary consumption for each of these meals and snacks.

Measures

The measures used in this study were provider and child demographic information, provider feeding practices, and child fruit and vegetable intake. Demographic information was collected using the provider phone survey, the provider in-person survey, and the child survey, filled out by parents. Provider feeding practices were collected using the Environment and Policy Assessment and Observation (EPAO). Child fruit and vegetable intake was collected using the Dietary Observation in Child Care (DOCC) protocol. All instruments used will be described in further detail.

Demographics Surveys

The baseline provider phone survey is 75 questions long, and the in-person survey is 108 questions long. Each contained demographics information that were of interest to this study, such as provider age, race, ethnicity, and gender, to be used as potential covariates in the analysis. The child demographics survey was 9 questions long, including child age, gender, race, ethnicity, time spent in child care, and meals typically consumed in child care. The child anthropometry form recorded child height and weight, which were used to calculate child BMI percentile and BMI z-score.

Environment and Policy Assessment and Observation (EPAO)

This study used a modified version of the EPAO, developed by Ward et al.[50] It has been validated in child care settings. The EPAO used in this study was modified to reflect cultural differences for the study sample based on formative research, and was

41

used to collect objective observation data about feeding practices during meal times in addition to the dietary data.[50] Feeding practices captured are reflective of parenting literature, and include both responsive, and non-responsive practices.[52]

Dietary Observation in Child Care (DOCC) Protocol

Children's food intake was recorded using the Dietary Observation in Child Care (DOCC), a valid and reliable instrument developed by Ball et al.[51] The gold standard for measuring child dietary intake is observation, because recall completed by the provider is less accurate.[53,54] The DOCC is minimally intrusive and aims to not make children hyper-aware that they are being observed. Once the data from the DOCC was collected, it was entered into Microsoft Excel spreadsheets.

Procedures

The data used in this study were collected by Healthy Start (Comienzos Sanos) staff. Only children that were eligible and had signed consent forms to participate in the study were measured and included in this study. The beginning of each observation period was determined by the arrival of the first eligible child, and continued until the last eligible child has left. Data was not collected for the provider's own child or children. Staff members asked for more details about foods served after the observation if needed, including brands, ingredients, and cooking methods. If possible, food packaging was photographed. According to the DOCC protocol, an observer can only accurately and reliably assess three children at one time; if more than three children are present, two observers collected data.[51] Another observer recorded information about the mealtime environment and feeding practices using the EPAO.

Raw DOCC forms were entered to DOCC Microsoft Excel spreadsheets by Healthy Start research staff. DOCC Microsoft Excel spreadsheets were entered into the Nutrition Data System for Research (NDS-R) 2016, then 2017 as food records. DOCC sheets and NDS-R records were subject to a quality assurance protocol. They were compared to check for data entry errors in NDS-R records two times by two different people, either myself or an undergraduate research assistant. Any errors found are entered into a quality assurance long, and I or a Registered Dietitian Nutritionist makes the appropriate changes to correct errors in NDS-R if necessary. At this point, records are considered finalized and can be imported to SAS for data analysis. EPAO and demographic data is also imported to SAS. All statistical analysis was done using SAS 9.4.

Statistical Analyses

Once all datasets are imported to SAS, they are merged to create one dataset. A score was created for each of the 3 feeding practice constructs that were chosen: role modeling, encouragement, and pressure to eat. On the EPAO, each feeding practice-related item is scored by how often it occurred: never (0) a little (1) sometimes (2) a lot (3) or for some items, not applicable (4). Responses that were not applicable were coded as "missing", so as not to make the score artificially high when a feeding practice was not applicable. A score was created for each practice for each day by multiplying the score for how often the practice occurred at a particular meal by how long the meal occurred, and summing across all meals, creating a weighted score for the practice for the day. This was done for each practice for each day and the scores for each day were then averaged to create an average feeding practice score per day. Based on the literature, feeding

43

practices were grouped into the constructs, role modeling, encouragement, and pressure to eat. Role modeling contained 10 items, encouragement contained 5 items, and pressure to eat contained 11 items. The feeding practices for that construct were summed to make a score for that construct. Some individual practices in the role modeling construct only had the potential score of 0 to 1, where 0 means the practice did not occur and 1 means the practice did occur. However, negative role modeling practices such as consuming fast food, sweet salty snacks, sweet snacks, sugar sweetened beverages, coffee drinks, or nothing in front of the children were reverse scored so that 0 means the practice did occur, and 1 means the practice did not occur. This became my independent variable.

Fruit and vegetable intake were examined using cups as a continuous measure of the mean fruit and vegetable consumption in each home. NDSR generates outputs that group foods into food groups. Dark green vegetables, deep yellow vegetables, tomato, white potatoes, other starchy vegetables, legumes, other vegetables, and vegetable juice were summed to create a vegetable variable, whole citrus fruit, non-citrus fruit, avocado, and fruit-based snacks were summed to create a whole fruit variable, and whole citrus fruit, non-citrus fruit, avocado, fruit-based snacks, citrus juice and other fruit juice were summed to create a total fruit variable (whole fruit plus 100% fruit juice). Fruits and vegetables were analyzed at the home level, not the child level, therefore it was necessary to create variables of average vegetables, whole fruit, and total fruit per home. This was done by taking the average vegetable, whole fruit, and total fruit consumption across all children in a home. Since children each have two days of observation, and up to 4 meals per observation (breakfast, lunch, and 2 snacks), fruits and vegetables were averaged per day of meals, then across the two days, to create the average per home. These became my

dependent variables. I also created a variable of combined vegetables and whole fruit for a total fruit and vegetable variable.

Prior to the main analysis, preliminary analyses and basic data visualization were conducted to generate summary statistics, basic tests of comparison, distribution evaluation for continuous variables, and examination of correlation structure. After preliminary analyses, Pearson's correlation coefficient tested for associations between each of the feeding practice construct and fruit and vegetable consumption as continuous variables. Cronbach's alpha was determined to assess the internal consistency of the constructs. To examine the association between each feeding practice construct and fruit and vegetable consumption, multiple linear regression models were developed. To adjust for covariates, potential covariates were chosen based on the literature, such as provider ethnicity, provider income level, provider education level, and CACFP participation. Potential covariates were added to the model one at a time to determine if the addition of the variable made at least a 10% difference in the β coefficient. If a variable made at least a 10% difference in the β coefficient, it would be added to the model. If there was no meaningful difference, it was not added to the model. G*Power was used to determine sample size. A sample size of 76 providers is appropriate to fit a multiple regression model with up to 3 predictor variables (alpha at the 0.05 level and 80% power and an anticipated effect size of 0.15).

APPENDIX C: DEMOGRAPHICS SURVEY

Person Provider Baseline Eligibility Surveys (Relevant Questions Only)

Family Child Care Homes
Provider Eligibility Survey

Collection: LOGIN
Contains CUSTOMID

FCCH FAMILY CHILD CARE HOME
Provider IN-PERSON Survey

Please click the button below to begin.

BROWN

Question: CUSTOMID
Required

▶ Please enter the CUSTOMID to begin.

Question: ELIGCONSENT
Required

Scale Summary		
Code	Label	Show-If
1	YES	
2	NO	

▶ OK. Before we start the survey, you need to know that:

• There are no known risks to you if you participate in this survey. However, you might feel uncomfortable answering certain questions.
• There are no direct benefits if you participate in the survey, but you may become more aware of your behaviors as a family child care provider.

Sometimes
- ○ Often
- ○ Always
- ○ DON'T KNOW
- ○ REFUSED

Question: BLREAD78
Required

Scale Summary		
Code	Label	Show-If
1	Never	
2	Rarely	
3	Sometimes	
4	Often	
5	Always	
88	DON'T KNOW	
99	REFUSED	

78. Encourage the children to "read" wordless picture books with you and discuss what is happening.

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Often
- ○ Always
- ○ DON'T KNOW
- ○ REFUSED

Collection: DEMOS
Contains: BLDEMO79, BLDEMO80A, BLDEMO80B, BLDEMO81, BLDEMO82, BLDEMO83, BLDEMO84, BLDEMO85, BLDEMO86, BLDEMO87, BLDEMO88, BLDEMO89, BLDEMO90, BLDEMO91, BLDEMO92, BLDEMO93, BLDEMO94, BLDEMO95, BLDEMO96, BLDEMO97, BLDEMO98, BLDEMO99, BLDEMO100, BLDEMO101, BLDEMO102, BLDEMO103, BLDEMO104, BLDEMO105, BLDEMO106, BLDEMO107, BLDEMO108
Show in (ELIGCONSENT = 1:[YES])

Question: BLDEMO79
Required

79. On average, how many hours do you work each week as a child care provider?

Please include the time that you spend caring for the children, as well as administrative time spent planning lessons, managing finances, shopping, etcetera.

[   ]

Question: BLDEMO80A
Required

47

80a. What are your Family Child Care Home's hours of operation?
[START TIME]

Question: BLDEMO80B
Required

80b. What are your Family Child Care Home's hours of operation?
[END TIME]

Question: BLDEMO81
Required

81 How many children (including your own children or grandchildren) are currently enrolled in your Family Child Care Home?

Question: BLDEMO82
Required

82. How many of those enrolled children are your own children or grandchildren?

Question: BLDEMO83
Required

Scale Summary		
Code	Label	Show-If
1	0-12 months old	
2	13-17 months old	
3	18-24 months old	
4	older than 2 but less than 3 years old	
5	3-4 years old	
6	5 or more years old	
88	DON'T KNOW	
99	REFUSED	

83. Of the total number of children reported above (including your own children or grandchildren), please write in how many fall into each age category:

○ 0-12 months old
○ 13-17 months old

○ 18-24 months old [   ]

○ older than 2 but less than
   3 years old   [   ]

○ 3–4 years old [   ]

○ 5 or more years old [   ]

○ DON'T KNOW

○ REFUSED

Question: BLDEMO04
Required

Scale Summary		
Code	Label	Show-If
1	Hispanic:	
2	Non-Hispanic:	

84. We'd like to know about the ethnic background of the children in your care. Please estimate the number of children who are Hispanic or non-Hispanic. If you don't know the exact numbers, please estimate to the best of your ability.

○ Hispanic: [   ]

○ Non-Hispanic: [   ]

Question: BLDEMO05
Required

Scale Summary		
Code	Label	Show-If
1	American Indian/Alaska Native:	
2	Asian American:	
3	Black/African American:	
4	Native Hawaiian / Pacific Islander	
5	White / Caucasian:	
6	Mixed Race	
7	Other	

85. We'd also like to know about the race of the children in your care. Please estimate the number of children in each of the following racial/ethnical groups. If you don't know the exact numbers, please estimate to the best of your ability.

○ American Indian/Alaska
   Native: [   ]

○ Asian American: [   ]

○ Black/African American: [   ]

- Native Hawaiian / Pacific Islander
- White / Caucasian:
- Mixed Race
- Other

Question: BLDEMO86
Required

86. How many years have you been working in the early childhood profession?

Question: BLDEMO87
Required

87. What is your age?

Question: BLDEMO88
Required

Scale Summary		
Code	Label	Show-If
1	Single, never married	
2	Married or living with a partner	
3	Divorced	
4	Separated	
5	Widowed	
88	DON'T KNOW	
99	REFUSED	

88. What is your marital status?

- Single, never married
- Married or living with a partner
- Divorced
- Separated
- Widowed
- DON'T KNOW
- REFUSED

Question: BLDEMO89
Required

Scale Summary		
Code	Label	Show-If
1	U.S.	
2	Other	

88	DON'T KNOW	
99	REFUSED	

89. What country were you born in?

- ○ U.S.
- ○ Other [_____]
- ○ DON'T KNOW
- ○ REFUSED

Question: BLDEMO90
Required
Show if (BLDEMO89 = 1:[U.S.])

90. How many years have you lived in the U.S.?

[_____]

Question: BLDEMO91
Required

Scale Summary		
Code	Label	Show-If
1	English only	
2	Spanish only	
3	Both, more English than Spanish	
4	Both, equal amounts of time	
5	Both, more Spanish than English	
6	Other	
88	DON'T KNOW	
99	REFUSED	

91. Which language(s) are spoken in your home outside of your childcare business?

- ○ English only
- ○ Spanish only
- ○ Both, more English than Spanish
- ○ Both, equal amounts of time
- ○ Both, more Spanish than English
- ○ Other [_____]
- ○ DON'T KNOW
- ○ REFUSED

Question: BLDEMO92
Required

Scale Summary		
Code	Label	Show-If
1	English only	
2	Spanish only	
3	Both, more English than Spanish	

51

4	Both, equal amounts of time	
5	Both, more Spanish than English	
6	Other	
88	DON'T KNOW	
99	REFUSED	

92. Which languages do you speak with the children in your care?

- English only
- Spanish only
- Both, more English than Spanish
- Both, equal amounts of time
- Both, more Spanish than English
- Other [_____]
- DON'T KNOW
- REFUSED

Question: BLDEND93
Required

Scale Summary

Code	Label	Show-If
1	Less than $25,000	
2	$25,001-$50,000	
3	$50,001-$75,000	
4	$75,001-$100,000	
5	$100,001 or more	
88	DON'T KNOW	
99	REFUSED	

93. What is your total yearly household income from all sources? Remember, all your answers are kept confidential.

- Less than $25,000
- $25,001-$50,000
- $50,001-$75,000
- $75,001-$100,000
- $100,001 or more
- DON'T KNOW
- REFUSED

Question: BLDEND94
Minimum checks: 1

94. Which of the following programs do you currently participate in? You can choose more than one.

- WIC
- SNAP or Food Stamps

☐ None of the above
☐ DON'T KNOW
☐ REFUSED

Question: BLDEMO95
Required

Scale Summary		
Code	Label	Show-If
1	I do not have a high school diploma or GED.	
2	I have a high school diploma or GED.	
3	I have an associates degree or 60 semester hours of college credit.	
4	I have a bachelor's degree.	
5	I have a master's degree or higher.	
88	DON'T KNOW	
99	REFUSED	

95. Which of the following best describes your level of education?

○ I do not have a high school diploma or GED.
○ I have a high school diploma or GED.
○ I have an associates degree or 60 semester hours of college credit.
○ I have a bachelor's degree.
○ I have a master's degree or higher.
○ DON'T KNOW
○ REFUSED

Question: BLDEMO96
Required
Show If: {BLDEMO95 is-any-of 3:[I have an associates degree or 60 semester hours of college credit.] or 4:[I have a bachelor's degree.] or 5:[I have a master's degree or higher.]}

Scale Summary		
Code	Label	Show-If
1	Yes	
2	No	
88	DON'T KNOW	
99	REFUSED	

96. Do you have a degree in early childhood education or child development?

○ Yes
○ No
○ DON'T KNOW
○ REFUSED

Question: BLDEMO97
Required

Scale Summary		

Code	Label	Show-if
1	YES	
2	NO	
3	DON'T KNOW	
4	REFUSED	

97. Do you have a current CDA (Child Development Associate, a credential administered through the Council for Professional Recognition)?

- ○ YES
- ○ NO
- ○ DON'T KNOW
- ○ REFUSED

Question: BLDEMO98
Required

98. Not including your own children or grandchildren, how many hours is the average child in your day care each day?

[   ]

Question: BLDEMO99
Required

Scale Summary		
Code	Label	Show-if
1	YES	
2	NO	
88	DON'T KNOW	
99	REFUSED	

99. Do other people work at your Family Child Care Home?

- ○ YES
- ○ NO
- ○ DON'T KNOW
- ○ REFUSED

Question: BLDEMO100
Required
Show if (BLDEMO99 = 1:[YES])

100. How many paid workers do you have?

[   ]

Question: BLDEMO101
Required
Show if (BLDEMO99 = 1:[YES])

101. How many unpaid workers do you have?

54

Question: BLDEMO102
Required
Show If: (BLDEMO99 = 1:[YES])

102. How many family members (paid or unpaid) work in your child care home?

Question: BLDEMO103
Required

103. How many adults (18+), including yourself, live in your household?

Question: BLDEMO104
Required

104. How many children live in your household?

Question: BLDEMO105
Required

Scale Summary		
Code	Label	Show-If
1	YES	
2	NO	
88	DON'T KNOW	
99	REFUSED	

105. Does your child care home accept CACFP subsidies (also known as the food program)?

- ○ YES
- ○ NO
- ○ DON'T KNOW
- ○ REFUSED

Question: BLDEMO106
Minimum checks: 1

106. Do you use the following social media?

- ☐ Facebook
- ☐ Twitter :
- ☐ DON'T KNOW
- ☐ REFUSED

Question: BLDEMO107
Required

Scale Summary		
Code	Label	Show-If
1	YES	
2	NO	

107. Do you use your cell phone to check email, social media, or browse the internet?

- ○ YES
- ○ NO

Question: BLDEMO108
Required

Scale Summary		
Code	Label	Show-If
1	DVD	
2	Email	
3	Text	
4	NONE OF THE ABOVE	

108. Our intervention will include several short (5 minute) videos. How would you prefer to receive them?

- ○ DVD
- ○ Email
- ○ Text
- ○ NONE OF THE ABOVE

We can provide you with a DVD player.

Thank you for completing this survey.

Healthy Start
Provider Baseline Survey

Collection: LOGIN
Contains: CUSTOMID

Healthy Start
Provider Eligibility Survey

Please click the button below to begin.

BROWN

Question: CUSTOMID
Required

▶ Please enter the CUSTOMID to begin.

Please respond to the rest of our questions thinking about the 2-to-5 year old children in your care. Remember, it is very important that you give us honest answers. Don't tell us what you think we want to hear, but what is true for you and the children in your care. We will use the things you tell us to develop the best program for your family child care home and others like yours. Thank you for your most honest answers.

Collection: TAILORING
Contains: BLTAILOR1, BLTAILOR2, BLTAILOR3, BLTAILOR4, BLTAILOR5, BLTAILOR6, BLTAILOR7, BLTAILOR8, BLTAILOR9, BLTAILOR10, BLTAILOR11, BLTAILOR12, BLTAILOR13, BLTAILOR14, BLTAILOR15, BLTAILOR16

Question: BLTAILOR1
Required

Scale Summary		
Code	Label	Show-If
1	TIMES PER DAY	

70. You talk to parents about the Importance of healthy eating. Do you...
- ○ Agree a lot
- ○ Agree a little
- ○ Neither agree nor disagree
- ○ Disagree a little
- ○ Disagree a lot
- ○ DON'T KNOW
- ○ REFUSED

Question: BLPRACTICE26
Required

Scale Summary		
Code	Label	Show-If
1	Agree a lot	
2	Agree a little	
3	Neither agree nor disagree	
4	Disagree a little	
5	Disagree a lot	
88	DON'T KNOW	
99	REFUSED	

71. You talk to children about the Importance of healthy eating. Do you...
- ○ Agree a lot
- ○ Agree a little
- ○ Neither agree nor disagree
- ○ Disagree a little
- ○ Disagree a lot
- ○ DON'T KNOW
- ○ REFUSED

Collection: DEMOGRAPHICS
Contains BLGENDER, BLETHNICITY, BLHISPCULTURE, BLRACE

Now I just have a few more questions about you.

Question: BLGENDER
Required

Scale Summary		
Code	Label	Show-If
1	Male	
2	Female	
99	REFUSED	

72. Are you...?
- ○ Male

58

    ○ Female
    ○ REFUSED

| Question: BLETHNICITY | | |
Required		
Scale Summary		
Code	Label	Show-If
1	YES	
2	NO	
99	REFUSED	

73. Do you consider yourself to be a Latino/Latina/Hispanic?

    ○ YES
    ○ NO
    ○ REFUSED

| Question: BLHISPCULTURE | | |
| Required | | |
Show If: (BLETHNICITY = 1:[YES])		
Scale Summary		
Code	Label	Show-If
1	Dominican	
2	Puerto Rican	
3	Colombian	
4	Guatemalan	
5	Mexican	
6	Haitian	
7	Cuban	
8	Other (please describe)	
88	DON'T KNOW	
99	REFUSED	

74. Which of these groups do you most identify with?

[INT NOTE: THERE SHOULD BE ONLY ONE CHOICE. IF THEY
SAY THEY IDENTIFY WITH MORE THAN ONE CULTURE, ASK
WHICH THEY IDENTIFY WITH MOST. IF THEY STILL SAY MORE
THAN ONE, CHOOSE "OTHER CULTURE" AND DESCRIBE THE
CULTURES THEY SAY THEY IDENTIFY WITH]

    ○ Dominican
    ○ Puerto Rican
    ○ Colombian
    ○ Guatemalan
    ○ Mexican
    ○ Haitian

     ○ Cuban
     ○ Other (please describe) [_____]
     ○ DON'T KNOW
     ○ REFUSED

Question: BLRACE
Minimum checks: 1

75. Which of the following best describes your race? (you can select more than one)

     ☐ American Indian/Alaska Native
     ☐ Asian
     ☐ Black/African American
     ☐ Native Hawaiian/Pacific Islander
     ☐ White / Caucasian
     ☐ Other (please describe) [_____]
     ☐ DON'T KNOW
     ☐ REFUSED

Thank you very much for completing our phone survey. As I mentioned earlier, you are eligible so far to participate in the Healthy Start study. Next you will receive a phone call from Hilda Castillo, our Field Coordinator, who will schedule a time to come to your home to explain the study in more detail. She will also bring some forms that need to be completed by the parents of children in your care. If you agree to participate in the Healthy Start study when Hilda explains it fully to you, there will be 2 more days of observations scheduled at your home. After those 2 observation days, you will receive a $50 gift card and we will be able to tell you whether you are eligible to participate in the study. Hilda will explain all of this again in more detail.

Powered by DatStat

60

APPENDIX D: ENVIRONMENT AND POLICY ASSESSMENT AND OBSERVATION (EPAO) TOOL

BASELINE EPAO OBSERVATION DAY1

FCCH ID _ _ _ _ _ _ _ _

Observer Initials __ __ __

Date of Observation: __ __ / __ __ / __ __ __ __ Observation start time: __ __ : __ __
(Use MILITARY TIME)

Day of Week: M T W R F

Morning: Temperature__ __ °F   Precipitation / Weather_____

Midday: Temperature__ __ °F   Precipitation / Weather_____

GENERAL NOTES:

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Morning Meal Today

MMEAL. Was there an observed morning meal today?

                     1. Y   2. N [if no, skip to Morning Snack]

MMEAL1. What time did the morning meal start? __ __ : __ __ (Use MILITARY TIME)

MMEAL2. What time did the morning meal end? __ __ : __ __ (Use MILITARY TIME)
(when last child finished eating)

MMEAL3. Which of the following practices most closely describes **how food was served to children** during this meal? [Select one.]

1. Children served themselves most/all foods, and decided what size portions to take.

2. Children served themselves most foods and decided what size portions to take. Provider served fruits and/or vegetables.

3. Children served themselves most foods, but the provider decided what size portions children may take.

4. The provider served most foods, and children decided what size portions they wanted.

5. The provider served most foods and decided what size portions to give the children.

6. Food delivered to home already portioned on each child's plate.

7. Children brought food from home.

Specifically, what was served to the children for the morning meal?

_____
_____
_____

MMEAL4. Was the TV on during this meal today?

1. Home does not have a TV that can be seen **OR** heard from eating area

2. No, TV in home, but not on during meal

3. Yes, TV on, but in another room where it can only be **heard** from eating area

4. Yes, TV on and visible from eating area

MMEAL5. Was another device (e.g. tablet, smartphone) used by any children during this meal today?

     1. Y   2. N

MMEAL6.   0 – Never 1 – A little 2 – Sometimes 3 – A lot

  How often did the provider talk on the phone,
  text or work on the computer during meals?   0 1 2 3

MMEAL7. During breakfast in this home did the provider eat any of the following foods in front of the children? [Mark all that apply.]

a. ___ The provider ate **fast food**.
b. ___ The provider ate a **salty snack** (e.g., chips).
c. ___ The provider ate a **sweet snack** (e.g., donuts, pastries, cookies, candy).
d. ___ The provider ate **fruits or vegetables** in front of the children.
e. ___ The provider drank a **soda** or other sweetened beverage.
f. ___ The provider ate the **same foods** as the children.
g. ___ The provider drank **coffee drink** with unknown sugar
h. ___ The provider did not eat or drink anything.

MMEAL8. Were children involved in meal preparation, planning or clean up (for example, setting table, preparing foods, clearing and cleaning table)?   1. Y   2. N

MMEAL9. If yes, how involved were the children?

        __ 1. Minimally involved __ 2. Fully involved

MMEAL10. Did the provider...

a. Take a moment with the children to settle before eating? 1. Y 2. N

b. Encourage the children to sit around the table during the meal? 1. Y 2. N 3. NA

MMEAL11. How often did the provider... 0 – Never 1 – A little 2 – Sometimes 3 – A lot 4 - NA

a. Lead/encourage pleasant non-food conversations during the meal? 0 1 2 3

b. Enforce table manners? (for example, no elbows on the table, 0 1 2 3 4
  chew with your mouth closed)?
  (3=not a relaxed environment
  (4=relaxed environment & kids had good table manners)

c. Rush a child or children to eat?   0 1 2 3 4
  (3=not a relaxed environment)

d. Ignore or show indifference to children during the meal?   0 1 2 3

C:\Users\Tayla Carter\Downloads\BASELINE EPAO OBSERVATION DAY1.docx   3

4/19/2018 3:59 PM

MMEAL12. Were the following interactions observed between the provider and the children?

a. The provider sat with the children during morning meal.   0 1 2 3

b. The provider talked with the children about the foods they were eating.   0 1 2 3

c. The provider talked with the children informally about nutrition.   0 1 2 3

d. The provider enthusiastically role modeled eating healthy foods.   0 1 2 3

e. The provider encouraged (not forced) children to try foods on their plates.   0 1 2 3

f. The provider praised a child for trying new or less preferred foods.   0 1 2 3

g. The provider praised a child for trying healthy foods.   0 1 2 3

MMEAL13. Did the provider…   0 – Never   1 – A little   2 – Sometimes   3 – A lot   4- NA

a. Praise/compliment a child for eating unhealthy foods?   0 1 2 3 4
(4=no unhealthy foods)

b. Praise a child for cleaning his/her plate   0 1 2 3 4
(for example, Good job eating all your food!")?
(4=no child cleaned their plate)

c. Reason with a child to eat   0 1 2 3 4
(for example,"Drinking milk makes your bones strong.")?
(4=kids eat without any prompt)

d. Negotiate with a child to eat healthy foods   0 1 2 3 4
(for example, "What about trying one bite and if you don't like it,
you don't have to finish it.")?
(4=kids eat without any prompt)

e. Let a child choose between two healthy food options?   0 1 2 3

f. Talk about feelings of hunger or fullness with children?   0 1 2 3

MMEAL14. Did the provider support or hinder children's self-regulation?

a. The provider pressured a child to eat more than they seemed to want   0 1 2 3
(e.g., after the child said they were finished or full).

b. Second helpings were served to a child even when the child did not   0 1 2 3 4
ask for more.

(4=every child asked for more)

c. Second helpings were served only after a child requested seconds and   0 1 2 3 4
the provider asked the child if (s)he was still hungry.
(0=seconds given w/o child asking)(4=no seconds given)

C:\Users\Tayla Carter\Downloads\BASELINE EPAO OBSERVATION DAY1.docx   4

d. When a child ate less than half of a meal or snack, the provider removed   0 1 2 3 4
the plate without asking the child if s(he) was full.

    (4=every child ate more than half of their food)

e. When a child ate less than half of a meal or snack, the provider asked   0 1 2 3 4
the child if (s)he was full before removing the plate.

    (4=every child ate more than half of their food)

MMEAL15. Did the provider…

a. Spoon-feed a child to get them to eat?   0 1 2 3

b. Insist that a child eat a certain food?   0 1 2 3

c. Prompt a child to finish one food in   0 1 2 3 4
order to receive another food or seconds of another food
(for example, "First finish all of your
fruits and veggies, if you want more chicken.")?
(4=children finished everything without prompt)

d. Allow a child to have or take multiple servings of a food (e.g., seconds),   0 1 2 3 4
when more than one food or a large amount of one food remains on the plate?
(4=children finished everything on plate or didn't ask for seconds)

e. Make special allowances to provide something different from   0 1 2 3 4
what has already been served for a child that refuses to eat
(for example, child refuses to eat sandwich, so provider gives
them a piece of cheese instead)?
(4=no child refuses to eat)

MMEAL16. Did the provider…   0 – Never   1 – A little   2 – Sometimes   3 – A lot

a. Promise something **other than food** for eating a specific food   0 1 2 3
(e.g., "If you eat your beans, we can play ball outside.")

b. Use **food** as a reward or withhold food as a punishment   0 1 2 3
(e.g., "If you clean up your blocks, you can have a bigger helping of food.")

c. Use **food** as a reward or a bribe for eating a less preferred food   0 1 2 3
(e.g., "You can't have dessert until you eat your beans.")

d. Make fruits and vegetables easier to eat   0 1 2 3
(for example, offered slices, peeled oranges)?

Additional notes regarding the **morning meal:**

_____

_____

_____

Morning Snack Today

AMSNACK. Was there an observed morning snack today?
    1. Y   2. N   [if no, skip to Outdoor Activities Before Lunch]

AMSNACK1. What time did morning snack start? __ __ : __ __ (Use MILITARY TIME)

AMSNACK2. What time did morning snack end? __ __ : __ __ (Use MILITARY TIME)
(When the last child finished eating)

AMSNACK3. Which of the following practices most closely describes **how food was served to** children during this meal? [Select one.]

1. Children served themselves most/all foods, and decided what size portions to take.

7. Children served themselves most foods and decided what size portions to take. Provider served fruits and/or vegetables.

2. Children served themselves most foods, but the provider decided what size portions children may take.

3. The provider served most foods, and children decided what size portions they wanted.

4. The provider served most foods and decided what size portions to give the children.

5. Food delivered to home already portioned on each child's plate.

6. Children brought food from home.

Specifically, what was served to the children for morning snack?
_____
_____
_____
_____

AMSNACK4. Was the TV on during this meal today?

1. Home does not have a TV that can be **seen OR heard** from eating area

2. No, TV in home, but not on during meal

3. Yes, TV on, but in another room where it can only be **heard** from eating area

4. Yes, TV on and visible from eating area

AMSNACK5. Was another device (e.g. tablet, smartphone) used by any children during this meal today?   1. Y   2.N

AMSNACK6.   0 – Never   1 – A little   2 – Sometimes   3 – A lot

How often did the provider talk on the phone,
text or work on the computer during meals?   0   1
         2   3

AMSNACK7. During morning snack in this home did the provider eat any of the following
foods in front of the children? [Mark all that apply.]

   a.   ___ The provider ate fast food.

   b.   ___ The provider ate a salty snack (e.g., chips).

   c.   ___ The provider ate a sweet snack (e.g., donuts, pastries, cookies, candy).

   d.   ___ The provider ate fruits or vegetables in front of the children.

   e.   ___ The provider drank a soda or other sweetened beverage.

   f.   ___ The provider ate the same foods as the children.

   g.   ___ The provider drank coffee drink with unknown sugar

   h.   ___ The provider did not eat or drink anything.

AMSNACK8. Were children involved in meal preparation, planning or clean-up (for example, setting
table, preparing foods, clearing and cleaning table)?   1. Y   2. N

AMSNACK9. If yes, how involved were the children?
                           ___ 1. Minimally involved   ___ 2. Fully involved

AMSNACK10. Did the provider…

   a.   Take a moment with the children to settle before eating?   1. Y   2. N

   b.   Encourage the children to sit around the table during meals?   1. Y   2. N   3. NA

AMSNACK11. How often did the provider… 0 – Never   1 – A little   2 – Sometimes   3 – A lot
4 - NA

   a.   Lead/encourage pleasant non-food conversations during meals? 0   1   2   3

   b.   Enforce table manners? (for example, no elbows on the table,   0   1   2   3
              4
        chew with your mouth closed)?
        (3=not a relaxed environment
        (4=relaxed environment & kids had good table manners)

   c.   Rush a child or children to eat?   0   1   2   3
              4
        (3=not a relaxed environment)

d. Ignore or show indifference to children during the meal?   0   1   2   3

AMSNACK12.Were the following interactions observed between the provider and the children?

a. The provider sat with the children during AM snack.   0   1   2   3

b. The provider talked with the children about the   0   1   2   3
    foods they were eating.

c. The provider talked with the children informally about nutrition. 0   1   2   3

d. The provider enthusiastically role modeled eating healthy foods. 0   1   2   3

e. The provider encouraged (not forced) children to try the foods   0   1   2   3
    on their plates.

f. The provider praised a child for trying new or less preferred foods.   0   1   2   3

AMSNACK13. Did the provider…   0 – Never   1 – A little   2 – Sometimes   3 – A lot   4 - NA

a. Praise/compliment a child for eating unhealthy
    foods?   0   1   2   3   4
    (4=no unhealthy foods)
b. Praise a child for cleaning his/her plate
                                                                                0   1   2   3   4
    (for example, Good job eating all your food!")?
    (4=no child cleaned their plate)
c. Reason with a child to eat
                                                                                0   1   2   3   4
                                                                                (for
    example,"Drinking milk makes your bones strong.")?
    (4=kids eat without any prompt)
d. Negotiate with a child to eat healthy
    foods   0   1   2   3   4

(for example, "What about trying one bite and if you don't like it, you don't have to finish it.")?
(4=kids eat without any prompt)

e.	Let a child choose between two healthy food options?	0	1	2	3
f.	Talk about feelings of hunger or fullness with children?	0	1	2	3

AMSNACK14. Did the provider support or hinder children's self-regulation?

a. The provider pressured a child to eat more than they seemed to want   0 1 2 3
(e.g., after the child said they were finished or full).

b. Second helpings were served to a child even when the child did not

                                                  0 1 2 3

4
ask for more.

(4=every child asked for more)

c. Second helpings were served only after a child requested seconds and   0 1 2 3
4
the provider asked the child if (s)he was still hungry.
(0=seconds given w/o child asking)(4=no seconds given)

d. When a child ate less than half of a meal or snack, the provider
removed   0 1 2 3
4
the plate without asking the child if s(he) was full.

(4=every child ate more than half of their food)

e. When a child ate less than half of a meal or snack, the provider
asked   0 1 2 3
4
the child if (s)he was full before removing the plate.

(4=every child ate more than half of their food)

AMSNACK15. Did the provider…

a.	Spoon-feed a child to get them to eat?	0	1	2	3
b.	Insist that a child eat a certain food?	0	1	2	3

c. Prompt a child to finish one food in

                                                0 1 2 3

4
order to receive another food or seconds of another food
(for example, "First finish all of your
fruits and veggies, if you want more chicken.")?
(4=children finished everything without prompt)

d. Allow a child to have or take multiple servings of a food (e.g., seconds), when more than one food or a large amount of one food remains on the plate? (4=children finished everything on plate or didn't ask for seconds)

    0 1 2 3 4

e. Make special allowances to provide something different from what has already been served for a child that refuses to eat (for example, child refuses to eat sandwich, so provider gives them a piece of cheese instead)? (4=no child refuses to eat)

    0 1 2 3 4

AMSNACK16. Did the provider…   0 – Never   1 – A little   2 – Sometimes   3 – A lot

a. Promise something **other than food** for eating a specific food (e.g., "If you eat your beans, we can play ball outside.")   0 1 2 3

b. Use **food** as a reward or withhold food as a punishment (e.g., "If you clean up your blocks, you can have a bigger helping of food.")   0 1 2 3

c. Use **food** as a reward or a bribe for eating a less preferred food (e.g., "You can't have dessert until you eat your beans.")   0 1 2 3

d. Make fruits and vegetables easier to eat (for example, offered slices, peeled oranges)?   0 1 2 3

Additional notes regarding lunch:
_____
_____
_____

Lunch Today

LUNCH. Was lunch observed today?
    1. Y   2. N [if no, skip to NAP]

LUNCH1. What time did lunch start? __ __ : __ __ (Use MILITARY TIME)

LUNCH2. What time did lunch end? __ __ : __ __ (Use MILITARY TIME)
(when the last child finished eating)

LUNCH3. Which of the following practices most closely describes **how food was served to children** during this meal? [Select one.]

1. Children served themselves most/all foods, and decided what size portions to take.
7. Children served themselves most foods and decided what size portions to take. Provider served fruits and/or vegetables.
2. Children served themselves most foods, but the provider decided what size portions children may take.
3. The provider served most foods, and children decided what size portions they wanted.
4. The provider served most foods and decided what size portions to give the children.
5. Food delivered to home already portioned on each child's plate.
6. Children brought food from home.

Specifically, what was served to the children for lunch?
_____
_____
_____
_____

LUNCH4. Was the TV on during this meal today?

1. Home does not have a TV that can be seen **OR** heard from eating area
2. No, TV in home, but not on during meal
3. Yes, TV on, but in another room where it can only be **heard** from eating area
4. Yes, TV on and visible from eating area

LUNCH5. Was another device (e.g. tablet, smartphone) used by any children during this meal today?   1. Y   2.N

LUNCH6.   0 – Never   1 – A little   2 – Sometimes   3 – A lot

How often did the provider talk on the phone,   0   1   2   3
text or work on the computer during meals?

LUNCH7. During lunch snack in this home did the provider eat any of the following foods in front of the children? [Mark all that apply.]

a. ___ The provider ate **fast food**.

b. ___ The provider ate a salty snack (e.g., chips).

c. ___ The provider ate a sweet snack (e.g., donuts, pastries, cookies, candy).

d. ___ The provider ate fruits or vegetables in front of the children.

e. ___ The provider drank a soda or other sweetened beverage.

f. ___ The provider ate the same foods as the children.

g. ___ The provider drank coffee drink with unknown sugar

h. ___ The provider did not eat or drink anything.

LUNCH8. Were children involved in meal preparation, planning or clean-up (for example, setting table, preparing foods, clearing and cleaning table)?   1. Y   2. N

LUNCH9. If yes, how involved were the children?
___ 1. Minimally involved   ___ 2. Fully involved

LUNCH10. Did the provider…

a. Take a moment with the children to settle before eating?   1. Y   2. N

b. Encourage the children to sit around the table during meals?   1. Y   2. N   3. NA

LUNCH11. How often did the provider…   0 – Never   1 – A little   2 – Sometimes   3 – A lot   4 - NA

a. Lead/encourage pleasant non-food conversations during the meal?   0   1   2   3

b. Enforce table manners? (for example, no elbows on the table,   0   1   2   3   4
   chew with your mouth closed)?
   (3=not a relaxed environment
   (4=relaxed environment & kids had good table manners)

c. Rush a child or children to eat?   0   1   2   3   4
   (3=not a relaxed environment)

d. Ignore or show indifference to children during the meal?   0   1   2   3

LUNCH12. Were the following interactions observed between the provider and the children?

a. The provider sat with the children during lunch.   0   1   2   3

b. The provider talked with the children about the foods
   they were eating.   0   1
           2   3

c. The provider talked with the children informally about nutrition. 0   1   2
           3

d. The provider enthusiastically role modeled eating healthy foods. 0   1   2
           3

e. The provider encouraged (not forced) children to try
   the foods on their plates.   0   1
           2   3

f. The provider praised a child for trying new or less preferred foods.   0   1
           2   3

LUNCH13. Did the provider…   0 – Never   1 – A little   2 – Sometimes   3 – A lot   4-NA

a. Praise/compliment a child for eating unhealthy
   foods?   0   1   2   3
   4
   (4=no unhealthy foods)

b. Praise a child for cleaning his/her plate
                                                                                   0   1   2   3

   4
   (for example, Good job eating all your food!")?
   (4=no child cleaned their plate)

c. Reason with a child to eat
                                                                                   0   1   2   3

   4   (for
   example,"Drinking milk makes your bones strong.")?
   (4=kids eat without any prompt)

d. Negotiate with a child to eat healthy
   foods   0   1   2   3
   4
   (for example, "What about trying one bite and if you don't like it,
   you don't have to finish it.")?
   (4=kids eat without any prompt)

e. Let a child choose between two healthy food options?   0   1   2   3

f. Talk about feelings of hunger or fullness with children?   0   1   2   3

LUNCH14. Did the provider support or hinder children's self-regulation?

a. The provider pressured a child to eat more than they seemed to want   0   1   2   3
(e.g., after the child said they were finished or full).

b. Second helpings were served to a child even when the child did not
    0   1   2   3
4
ask for more.

(4=every child asked for more)

c. Second helpings were served only after a child requested seconds and   0   1   2   3
4
the provider asked the child if (s)he was still hungry.
(0=seconds given w/o child asking)(4=no seconds given)

d. When a child ate less than half of a meal or snack, the provider
removed   0   1   2   3
4
the plate without asking the child if s(he) was full.

(4=every child ate more than half of their food)

e. When a child ate less than half of a meal or snack, the provider
asked   0   1   2   3
4
the child if (s)he was full before removing the plate.

(4=every child ate more than half of their food)

LUNCH15. Did the provider…

a. Spoon-feed a child to get them to eat?   0   1   2   3

b. Insist that a child eat a certain food?   0   1   2   3

c. Prompt a child to finish one food in
    0   1   2   3
4
order to receive another food or seconds of another food
(for example, "First finish all of your
fruits and veggies, if you want more chicken.")?
(4=children finished everything without prompt)

d. Allow a child to have or take multiple servings of a food (e.g., seconds),
    0   1   2   3
4
when more than one food or a large amount of one food remains on the plate?
(4=children finished everything on plate or didn't ask for seconds)

e. Make special allowances to provide something different from
    0   1   2   3
4
what has already been served for a child that refuses to eat
(for example, child refuses to eat sandwich, so provider gives
them a piece of cheese instead)?

(4=no child refuses to eat)

LUNCH16. Did the provider…   0 – Never   1 – A little   2 – Sometimes   3 – A lot

    a. Promise something **other than food** for eating a specific food   0 1 2 3
        (e.g., "If you eat your beans, we can play ball outside.")

    b. Use **food** as a reward or withhold food as a punishment   0 1 2 3
        (e.g., "If you clean up your blocks, you can have a bigger helping
        of food.")

    c. Use **food** as a reward or a bribe for eating a less preferred food   0 1 2 3
        (e.g., "You can't have dessert until you eat your beans.")

    d. Make fruits and vegetables easier to eat   0 1 2 3
        (for example, offered slices, peeled oranges)?

Additional notes regarding **lunch**:
_____
_____
_____
_____

Afternoon Snack Today

PMSNACK. Was an afternoon snack observed today?
           1. Y   2. N [if no, skip to Outdoor Activities After Lunch]
PMSNACK1. What time did pm snack start? __ __ : __ __ (Use MILITARY TIME)

PMSNACK2. What time did pm snack end? __ __ : __ __ (Use MILITARY TIME)
(when the last child finished eating)

PMSNACK3. Which of the following practices most closely describes **how food** was served to
children during this meal? [Select one.]

    1. Children served themselves most/all foods, and decided what size portions to take.

7. Children served themselves most foods and decided what size portions to take. Provider served fruits and/or vegetables.

2. Children served themselves most foods, but the provider decided what size portions children may take.

3. The provider served most foods, and children decided what size portions they wanted.

4. The provider served most foods and decided what size portions to give the children.

5. Food delivered to home already portioned on each child's plate.

6. Children brought food from home.

Specifically, what was served to the children for pm snack?
_____
_____
_____
_____

PMSNACK4. Was the TV on during this meal today?

1. Home does not have a TV that can be seen **OR heard** from eating area

2. No, TV in home, but not on during meal

3. Yes, TV on, but in another room where it can only be **heard** from eating area

4. Yes, TV on and visible from eating area

PMSNACK5. Was another device (e.g. tablet, smartphone) used by any children during this meal today?   1. Y   2. N

PMSNACK6.   0 – Never   1 – A little   2 – Sometimes   3 – A lot

How often did the provider talk on the phone, text or
work on the computer during meals?   0   1   2   3

PMSNACK7. During afternoon snack in this home did the provider eat any of the following foods in front of the children? [Mark all that apply.]

a. ___ The provider ate fast food.

b. ___ The provider ate a salty snack (e.g., chips).

c. ___ The provider ate a sweet snack (e.g., donuts, pastries, cookies, candy).

d. ___ The provider ate **fruits or vegetables** in front of the children.

e. ___ The provider drank a soda or other sweetened beverage.

f. ___ The provider ate the same foods as the children.

g. ___ The provider drank **coffee drink** with unknown sugar

h. ___ The provider did not eat or drink anything.

PMSNACK8. Were children involved in meal preparation, planning or clean-up (for example, setting table, preparing foods, clearing and cleaning table)?   1. Y   2. N

PMSNACK9. If yes, how involved were the children?
                    ___ 1. Minimally involved   ___ 2. Fully involved

PMSNACK10. Did the provider…

    a.   Take a moment with the children to settle before eating?   1. Y   2. N

    b.   Encourage the children to sit around the table during meals?   1. Y   2. N   3. NA

PMSNACK11. How often did the provider… 0 – Never 1 – A little   2 – Sometimes   3 – A lot 4-NA

    a.   Lead/encourage pleasant non-food conversations during the meal?   0   1   2
       3

    b.   Enforce table manners? (for example, no elbows on the table,   0   1   2   3
       4
    chew with your mouth closed)?
    (3=not a relaxed environment
    (4=relaxed environment & kids had good table manners)

    c.   Rush a child or children to eat?   0   1   2   3
       4
    (3=not a relaxed environment)

    d.   Ignore or show indifference to children during the meal?   0   1   2
       3

PMSNACK13. Were the following interactions observed between the provider and the children?

    a.   Praise/compliment a child for eating unhealthy
    foods?   0   1   2   3
    4
    (4=no unhealthy foods)
    b.   Praise a child for cleaning his/her plate
                                               0   1   2   3
    4
    (for example, Good job eating all your food!")?
    (4=no child cleaned their plate)
    c.   Reason with a child to eat
                                                0   1   2   3

4   (for
example,"Drinking milk makes your bones strong.")?
(4=kids eat without any prompt)

d. Negotiate with a child to eat healthy
   foods   0   1   2   3
   4
   (for example, "What about trying one bite and if you don't like it,
   you don't have to finish it.")?
   (4=kids eat without any prompt)

e. Let a child choose between two healthy food options?   0   1   2   3

f. Talk about feelings of hunger or fullness with children? 0   1   2   3

PMSNACK13. Did the provider…   0 – Never   1 – A little   2 – Sometimes   3 – A lot
4-NA

a. Praise/compliment a child for eating unhealthy foods?   0 1 2 3 4

b. Praise a child for cleaning his/her plate   0 1 2 3 4
   (for example, Good job eating all your food!")?

c. Reason with a child to eat   0 1
   2   3   4
   (for example,"Drinking milk makes your bones strong.")?

d. Negotiate with a child to eat healthy foods   0 1
   2   3   4
   (for example, "What about trying one bite and if you don't like it,
   you don't have to finish it.")?

e. Let a child choose between two healthy food options?   0 1 2 3 4

f. Talk about feelings of hunger or fullness with children? 0 1 2 3

PMSNACK14. Did the provider support or hinder children's self-regulation?

a. The provider pressured a child to eat more than they seemed to want   0   1   2   3
   (e.g., after the child said they were finished or full).

b. Second helpings were served to a child even when the child did not
                                                                         0   1   2   3
   4
   ask for more.
   (4=every child asked for more)

c. Second helpings were served only after a child requested seconds and 4
the provider asked the child if (s)he was still hungry.
(0=seconds given w/o child asking)(4=no seconds given)   0 1 2 3

d. When a child ate less than half of a meal or snack, the provider removed
4
the plate without asking the child if s(he) was full.   0 1 2 3

(4=every child ate more than half of their food)

e. When a child ate less than half of a meal or snack, the provider asked
4
the child if (s)he was full before removing the plate.   0 1 2 3

(4=every child ate more than half of their food)

PMSNACK15. Did the provider…

a. Spoon-feed a child to get them to eat?   0 1 2 3

b. Insist that a child eat a certain food?   0 1 2 3

c. Prompt a child to finish one food in
4   0 1 2 3
order to receive another food or seconds of another food
(for example, "First finish all of your
fruits and veggies, if you want more chicken.")?
(4=children finished everything without prompt)

d. Allow a child to have or take multiple servings of a food (e.g., seconds),
4   0 1 2 3
when more than one food or a large amount of one food remains on the plate?
(4=children finished everything on plate or didn't ask for seconds)

e. Make special allowances to provide something different from
4   0 1 2 3
what has already been served for a child that refuses to eat
(for example, child refuses to eat sandwich, so provider gives
them a piece of cheese instead)?
(4=no child refuses to eat)

PMSNACK16. Did the provider…   0 – Never   1 – A little   2 – Sometimes   3 – A lot

a. Promise something **other than food** for eating a specific food
(e.g., "If you eat your beans, we can play ball outside.")   0 1 2 3

b. Use **food** as a reward or withhold food as a punishment
(e.g., "If you clean up your blocks, you can have a

bigger helping of food.")   0   1
2   3

c. Use **food** as a reward or a bribe for eating a less preferred food
(e.g., "You can't have dessert until you eat your beans.")   0   1   2   3

d. Make fruits and vegetables easier to eat
(for example, offered slices, peeled oranges)?   0   1   2   3

Additional notes regarding **afternoon snack**:

_____

_____

_____

_____

APPENDIX E: DIETARY OBSERVATION IN CHILD CARE (DOCC) FORM

Page 1
DIET OBSERVATION FORM

Home ID:_____   Date: _____ / _____ / _____

Observer:_____Meal:_____

Meal start time: _____   Meal end time: _____

Food Item	Description	Amount Served	Amount +/-	Amount Remaining	Amount Consumed
Child ID: _____ **Start time:** _____	**Description:**_____ **End time:** _____				
Child ID: _____ **Start time:** _____	**Description:**_____ **End time:** _____				
Child ID: _____ **Start time:** _____	**Description:**_____ **End time:** _____				

Page 2
DIET OBSERVATION FORM - NOTES

Child Care Center Name: _____

Child ID:_____
NOTES:

Child ID:_____
NOTES:

Child ID:_____
NOTES:

APPENDIX F: SAS CODE

```
libname Data 'C:\Users\Tayla Carter\Desktop\Data Analysis';
/*Day 1*/
PROC IMPORT OUT= Data.EPAO1
            DATAFILE= "C:\Users\Tayla Carter\Desktop\Data
Analysis\ICHP_FCCH_EPAO_D1_Data_Results.sav"
            DBMS=SPSS REPLACE;
RUN;


/*importing dataset from Excel with total mealtime variable*/

proc import datafile="C:\Users\Tayla Carter\Desktop\Data
Analysis\Mealtime\EPAO Total time.xlsx"
      out=data.EPAOTime /*new file name created*/
      dbms=xlsx replace;
      Sheet='Sheet1'; /*sheet name want to read*/
      getnames=yes;
      DATAROW=2; /*start looking at data on row two*/
RUN;



proc sort data=data.EPAOtime; by customid;
proc sort data=data.epao1; by customid;


Data data.EPAOD1Time; /*create new file with total mealtime variable
- merging Epao1 and Epaotime*/
      Merge Data.EPAO1 data.EPAOTime;
      By CUSTOMID;
run;

Data data.EPAOD1Time;
set data.EPAOD1Time;
/*Recoding 7A-7I from . = missing to . = 0*/
/*Breakfast*/
IF BLD1MMEAL7A = . THEN BLD1MMEAL7A = 0;
IF BLD1MMEAL7B  = . THEN BLD1MMEAL7B = 0;
IF BLD1MMEAL7C  = . THEN BLD1MMEAL7C = 0;
IF BLD1MMEAL7D  = . THEN BLD1MMEAL7D = 0;
IF BLD1MMEAL7E  = . THEN BLD1MMEAL7E = 0;
IF BLD1MMEAL7F  = . THEN BLD1MMEAL7F = 0;
IF BLD1MMEAL7G  = . THEN BLD1MMEAL7G = 0;
IF BLD1MMEAL7H  = . THEN BLD1MMEAL7H = 0;
IF BLD1MMEAL7I  = . THEN BLD1MMEAL7I = 0;
/*AM Snack*/
IF BLD1AMSNACK7A  = . THEN BLD1AMSNACK7A = 0;
IF BLD1AMSNACK7B  = . THEN BLD1AMSNACK7B = 0;
IF BLD1AMSNACK7C  = . THEN BLD1AMSNACK7C = 0;
IF BLD1AMSNACK7D  = . THEN BLD1AMSNACK7D = 0;
IF BLD1AMSNACK7E  = . THEN BLD1AMSNACK7E = 0;
IF BLD1AMSNACK7F  = . THEN BLD1AMSNACK7F = 0;
IF BLD1AMSNACK7G  = . THEN BLD1AMSNACK7G = 0;
IF BLD1AMSNACK7H  = . THEN BLD1AMSNACK7H = 0;
IF BLD1AMSNACK7I  = . THEN BLD1AMSNACK7I = 0;
```

```
/*Lunch*/
IF BLD1LUNCH7A  = . THEN BLD1LUNCH7A = 0;
IF BLD1LUNCH7B  = . THEN BLD1LUNCH7B = 0;
IF BLD1LUNCH7C  = . THEN BLD1LUNCH7C = 0;
IF BLD1LUNCH7D  = . THEN BLD1LUNCH7D = 0;
IF BLD1LUNCH7E  = . THEN BLD1LUNCH7E = 0;
IF BLD1LUNCH7F  = . THEN BLD1LUNCH7F = 0;
IF BLD1LUNCH7G  = . THEN BLD1LUNCH7G = 0;
IF BLD1LUNCH7H  = . THEN BLD1LUNCH7H = 0;
IF BLD1LUNCH7I  = . THEN BLD1LUNCH7I = 0;
/*PM Snack*/
IF BLD1PMSNACK7A  = . THEN BLD1PMSNACK7A = 0;
IF BLD1PMSNACK7B  = . THEN BLD1PMSNACK7B = 0;
IF BLD1PMSNACK7C  = . THEN BLD1PMSNACK7C = 0;
IF BLD1PMSNACK7D  = . THEN BLD1PMSNACK7D = 0;
IF BLD1PMSNACK7E  = . THEN BLD1PMSNACK7E = 0;
IF BLD1PMSNACK7F  = . THEN BLD1PMSNACK7F = 0;
IF BLD1PMSNACK7G  = . THEN BLD1PMSNACK7G = 0;
IF BLD1PMSNACK7H  = . THEN BLD1PMSNACK7H = 0;
IF BLD1PMSNACK7I  = . THEN BLD1PMSNACK7I = 0;

/*Re-coding 4(N/A) as . (missing)*/
/*Breakfast*/
IF BLD1MMEAL12F = 4 THEN BLD1MMEAL12F = .;
IF BLD1MMEAL12G  = 4 THEN BLD1MMEAL12G = .;
IF BLD1MMEAL13A  = 4 THEN BLD1MMEAL13A = .;
IF BLD1MMEAL13B  = 4 THEN BLD1MMEAL13B = .;
IF BLD1MMEAL13C  = 4 THEN BLD1MMEAL13C = .;
IF BLD1MMEAL13D  = 4 THEN BLD1MMEAL13D = .;
IF BLD1MMEAL14F  = 4 THEN BLD1MMEAL14F = .;
IF BLD1MMEAL15C  = 4 THEN BLD1MMEAL15C = .;
/*AM Snack*/
IF BLD1AMSNACK12F = 4 THEN BLD1AMSNACK12F = .;
IF BLD1AMSNACK12G  = 4 THEN BLD1AMSNACK12G = .;
IF BLD1AMSNACK13A  = 4 THEN BLD1AMSNACK13A = .;
IF BLD1AMSNACK13B  = 4 THEN BLD1AMSNACK13B = .;
IF BLD1AMSNACK13C  = 4 THEN BLD1AMSNACK13C = .;
IF BLD1AMSNACK13D  = 4 THEN BLD1AMSNACK13D = .;
IF BLD1AMSNACK14F  = 4 THEN BLD1AMSNACK14F = .;
IF BLD1AMSNACK15C  = 4 THEN BLD1AMSNACK15C = .;
/*Lunch*/
IF BLD1LUNCH12F = 4 THEN BLD1LUNCH12F = .;
IF BLD1LUNCH12G  = 4 THEN BLD1LUNCH12G = .;
IF BLD1LUNCH13A  = 4 THEN BLD1LUNCH13A = .;
IF BLD1LUNCH13B  = 4 THEN BLD1LUNCH13B = .;
IF BLD1LUNCH13C  = 4 THEN BLD1LUNCH13C = .;
IF BLD1LUNCH13D  = 4 THEN BLD1LUNCH13D = .;
IF BLD1LUNCH14F  = 4 THEN BLD1LUNCH14F = .;
IF BLD1LUNCH15C  = 4 THEN BLD1LUNCH15C = .;
/*PM Snack*/
IF BLD1PMSNACK12F = 4 THEN BLD1PMSNACK12F = .;
IF BLD1PMSNACK12G  = 4 THEN BLD1PMSNACK12G = .;
IF BLD1PMSNACK13A  = 4 THEN BLD1PMSNACK13A = .;
IF BLD1PMSNACK13B  = 4 THEN BLD1PMSNACK13B = .;
IF BLD1PMSNACK13C  = 4 THEN BLD1PMSNACK13C = .;
IF BLD1PMSNACK13D  = 4 THEN BLD1PMSNACK13D = .;
IF BLD1PMSNACK14F  = 4 THEN BLD1PMSNACK14F = .;
```

```
IF BLD1PMSNACK15C  = 4 THEN BLD1PMSNACK15C = .;

**Re-coding negative role modeling to have 1 be the positive
behavior**;

array s (24)
BLD1MMEAL7A BLD1AMSNACK7A BLD1LUNCH7A BLD1PMSNACK7A
BLD1MMEAL7B BLD1AMSNACK7B BLD1LUNCH7B BLD1PMSNACK7B
BLD1MMEAL7C BLD1AMSNACK7C BLD1LUNCH7C BLD1PMSNACK7C
BLD1MMEAL7E BLD1AMSNACK7E BLD1LUNCH7E BLD1PMSNACK7E
BLD1MMEAL7G BLD1AMSNACK7G BLD1LUNCH7G BLD1PMSNACK7G
BLD1MMEAL7H BLD1AMSNACK7H BLD1LUNCH7H BLD1PMSNACK7H
;

array f (24)
BLD1MMEAL7A_r BLD1AMSNACK7A_r BLD1LUNCH7A_r BLD1PMSNACK7A_r
BLD1MMEAL7B_r BLD1AMSNACK7B_r BLD1LUNCH7B_r BLD1PMSNACK7B_r
BLD1MMEAL7C_r BLD1AMSNACK7C_r BLD1LUNCH7C_r BLD1PMSNACK7C_r
BLD1MMEAL7E_r BLD1AMSNACK7E_r BLD1LUNCH7E_r BLD1PMSNACK7E_r
BLD1MMEAL7G_r BLD1AMSNACK7G_r BLD1LUNCH7G_r BLD1PMSNACK7G_r
BLD1MMEAL7H_r BLD1AMSNACK7H_r BLD1LUNCH7H_r BLD1PMSNACK7H_r
;
do a=1 to 24;
 if s(a)ne . and s(a)=0 then f(a)=1;
 else if s(a)=1 then f(a)=0;

end;


/*Creating new variables for ROLE MODELING
"NewVariableName=Sum((MMeal_Duration/Total_Min_Meal)*(BLD1MMEALX)...D
o for each meal)*/
Data data.EPAOD1Time;
set data.EPAOD1Time;
FastFood_d1=Sum((MMeal_Duration/Total_Min_Meal)*(BLD1MMEAL7A_r),(AMSn
ack_Duration/Total_Min_Meal)*(BLD1AMSNACK7A_r),
(Lunch_Duration/TOTAL_Min_Meal)*(BLD1LUNCH7A_r),(PMSnack_Duration/TOT
AL_Min_Meal)*(BLD1PMSNACK7A_r));
SaltySnack_d1=Sum((MMeal_Duration/Total_Min_Meal)*(BLD1MMEAL7B_r),(AM
Snack_Duration/Total_Min_Meal)*(BLD1AMSNACK7B_r),
(Lunch_Duration/TOTAL_Min_Meal)*(BLD1LUNCH7B_r),(PMSnack_Duration/TOT
AL_Min_Meal)*(BLD1PMSNACK7B_r));
SweetSnack_d1=Sum((MMeal_Duration/Total_Min_Meal)*(BLD1MMEAL7C_r),(AM
Snack_Duration/Total_Min_Meal)*(BLD1AMSNACK7C_r),
(Lunch_Duration/TOTAL_Min_Meal)*(BLD1LUNCH7C_r),(PMSnack_Duration/TOT
AL_Min_Meal)*(BLD1PMSNACK7C_r));
FruitsVegetables_d1=Sum((MMeal_Duration/Total_Min_Meal)*(BLD1MMEAL7D)
,(AMSnack_Duration/Total_Min_Meal)*(BLD1AMSNACK7D),
(Lunch_Duration/TOTAL_Min_Meal)*(BLD1LUNCH7D),(PMSnack_Duration/TOTAL
_Min_Meal)*(BLD1PMSNACK7D));
SodaSSB_d1=Sum((MMeal_Duration/Total_Min_Meal)*(BLD1MMEAL7E_r),(AMSna
ck_Duration/Total_Min_Meal)*(BLD1AMSNACK7E_r),
(Lunch_Duration/TOTAL_Min_Meal)*(BLD1LUNCH7E_r),(PMSnack_Duration/TOT
AL_Min_Meal)*(BLD1PMSNACK7E_r));
SameFoods_d1=Sum((MMeal_Duration/Total_Min_Meal)*(BLD1MMEAL7F),(AMSna
ck_Duration/Total_Min_Meal)*(BLD1AMSNACK7F),
```

```
(Lunch_Duration/TOTAL_Min_Meal)*(BLD1LUNCH7F),(PMSnack_Duration/TOTAL
_Min_Meal)*(BLD1PMSNACK7F));
Coffee_d1=Sum((MMeal_Duration/Total_Min_Meal)*(BLD1MMEAL7G_r),(AMSnac
k_Duration/Total_Min_Meal)*(BLD1AMSNACK7G_r),
(Lunch_Duration/TOTAL_Min_Meal)*(BLD1LUNCH7G_r),(PMSnack_Duration/TOT
AL_Min_Meal)*(BLD1PMSNACK7G_r));
Nothing_d1=Sum((MMeal_Duration/Total_Min_Meal)*(BLD1MMEAL7H_r),(AMSna
ck_Duration/Total_Min_Meal)*(BLD1AMSNACK7H_r),
(Lunch_Duration/TOTAL_Min_Meal)*(BLD1LUNCH7H_r),(PMSnack_Duration/TOT
AL_Min_Meal)*(BLD1PMSNACK7H_r));
SatWith_d1=Sum((MMeal_Duration/Total_Min_Meal)*(BLD1MMEAL12A),(AMSnac
k_Duration/Total_Min_Meal)*(BLD1AMSNACK12A),
(Lunch_Duration/TOTAL_Min_Meal)*(BLD1LUNCH12A),(PMSnack_Duration/TOTA
L_Min_Meal)*(BLD1PMSNACK12A));
RoleModeled_d1=Sum((MMeal_Duration/Total_Min_Meal)*(BLD1MMEAL12D),(AM
Snack_Duration/Total_Min_Meal)*(BLD1AMSNACK12D),
(Lunch_Duration/TOTAL_Min_Meal)*(BLD1LUNCH12D),(PMSnack_Duration/TOTA
L_Min_Meal)*(BLD1PMSNACK12D));
run;

/*proc print; id customid; var
FastFood_d1 MMeal_Duration Total_Min_Meal BLD1MMEAL7A
AMSnack_Duration Total_Min_Meal BLD1AMSNACK7A Lunch_Duration
TOTAL_Min_Meal BLD1LUNCH7A
PMSnack_Duration TOTAL_Min_Meal BLD1PMSNACK7A; run;*/

/*Creating new variables for ENCOURAGEMENT/SUPPORT/REASONING*/
Data data.EPAOD1Time;
set data.EPAOD1Time;
EncourageTable_d1=Sum((MMeal_Duration/Total_Min_Meal)*(BLD1MMEAL10B),
(AMSnack_Duration/Total_Min_Meal)*(BLD1AMSNACK10B),(Lunch_Duration/TO
TAL_Min_Meal)*(BLD1LUNCH10B),(PMSnack_Duration/TOTAL_Min_Meal)*(BLD1P
MSNACK10B));
TalkedFoods_d1=Sum((MMeal_Duration/Total_Min_Meal)*(BLD1MMEAL12B),(AM
Snack_Duration/Total_Min_Meal)*(BLD1AMSNACK12B),(Lunch_Duration/TOTAL
_Min_Meal)*(BLD1LUNCH12B),(PMSnack_Duration/TOTAL_Min_Meal)*(BLD1PMSN
ACK12B));
TalkedNutrition_d1=Sum((MMeal_Duration/Total_Min_Meal)*(BLD1MMEAL12C)
,(AMSnack_Duration/Total_Min_Meal)*(BLD1AMSNACK12C),(Lunch_Duration/T
OTAL_Min_Meal)*(BLD1LUNCH12C),(PMSnack_Duration/TOTAL_Min_Meal)*(BLD1
PMSNACK12C));
EncourageNewFoods_d1=Sum((MMeal_Duration/Total_Min_Meal)*(BLD1MMEAL12
E),(AMSnack_Duration/Total_Min_Meal)*(BLD1AMSNACK12E),(Lunch_Duration
/TOTAL_Min_Meal)*(BLD1LUNCH12E),(PMSnack_Duration/TOTAL_Min_Meal)*(BL
D1PMSNACK12E));
PraiseNewFoods_d1=Sum((MMeal_Duration/Total_Min_Meal)*(BLD1MMEAL12F),
(AMSnack_Duration/Total_Min_Meal)*(BLD1AMSNACK12F),(Lunch_Duration/TO
TAL_Min_Meal)*(BLD1LUNCH12F),(PMSnack_Duration/TOTAL_Min_Meal)*(BLD1P
MSNACK12F));
PraiseHealthyFoods_d1=Sum((MMeal_Duration/Total_Min_Meal)*(BLD1MMEAL1
2G),(AMSnack_Duration/Total_Min_Meal)*(BLD1AMSNACK12G),(Lunch_Duratio
n/TOTAL_Min_Meal)*(BLD1LUNCH12G),(PMSnack_Duration/TOTAL_Min_Meal)*(B
LD1PMSNACK12G));
Reason_d1=Sum((MMeal_Duration/Total_Min_Meal)*(BLD1MMEAL13C),(AMSnack
_Duration/Total_Min_Meal)*(BLD1AMSNACK13C),(Lunch_Duration/TOTAL_Min_
Meal)*(BLD1LUNCH13C),(PMSnack_Duration/TOTAL_Min_Meal)*(BLD1PMSNACK13
C));
```

```
Negotiate_d1=Sum((MMeal_Duration/Total_Min_Meal)*(BLD1MMEAL13D),(AMSn
ack_Duration/Total_Min_Meal)*(BLD1AMSNACK13D),(Lunch_Duration/TOTAL_M
in_Meal)*(BLD1LUNCH13D),(PMSnack_Duration/TOTAL_Min_Meal)*(BLD1PMSNAC
K13D));
ChooseFrom2_d1=Sum((MMeal_Duration/Total_Min_Meal)*(BLD1MMEAL13E),(AM
Snack_Duration/Total_Min_Meal)*(BLD1AMSNACK13E),(Lunch_Duration/TOTAL
_Min_Meal)*(BLD1LUNCH13E),(PMSnack_Duration/TOTAL_Min_Meal)*(BLD1PMSN
ACK13E));
run;

/*Creating new variables for PRESSURE TO EAT*/
Data data.EPAOD1Time;
set data.EPAOD1Time;
Rush_d1=Sum((MMeal_Duration/Total_Min_Meal)*(BLD1MMEAL11C),(AMSnack_D
uration/Total_Min_Meal)*(BLD1AMSNACK11C),(Lunch_Duration/TOTAL_Min_Me
al)*(BLD1LUNCH11C),(PMSnack_Duration/TOTAL_Min_Meal)*(BLD1PMSNACK11C)
);
PraiseUnhealthy_d1=Sum((MMeal_Duration/Total_Min_Meal)*(BLD1MMEAL13A)
,(AMSnack_Duration/Total_Min_Meal)*(BLD1AMSNACK13A),(Lunch_Duration/T
OTAL_Min_Meal)*(BLD1LUNCH13A),(PMSnack_Duration/TOTAL_Min_Meal)*(BLD1
PMSNACK13A));
PraiseCleanPlate_d1=Sum((MMeal_Duration/Total_Min_Meal)*(BLD1MMEAL13B
),(AMSnack_Duration/Total_Min_Meal)*(BLD1AMSNACK13B),(Lunch_Duration/
TOTAL_Min_Meal)*(BLD1LUNCH13B),(PMSnack_Duration/TOTAL_Min_Meal)*(BLD
1PMSNACK13B));
PressureEatMore_d1=Sum((MMeal_Duration/Total_Min_Meal)*(BLD1MMEAL14A)
,(AMSnack_Duration/Total_Min_Meal)*(BLD1AMSNACK14A),(Lunch_Duration/T
OTAL_Min_Meal)*(BLD1LUNCH14A),(PMSnack_Duration/TOTAL_Min_Meal)*(BLD1
PMSNACK14A));
RequireCleanPlate_d1=Sum((MMeal_Duration/Total_Min_Meal)*(BLD1MMEAL14
F),(AMSnack_Duration/Total_Min_Meal)*(BLD1AMSNACK14F),(Lunch_Duration
/TOTAL_Min_Meal)*(BLD1LUNCH14F),(PMSnack_Duration/TOTAL_Min_Meal)*(BL
D1PMSNACK14F));
SpoonFeed_d1=Sum((MMeal_Duration/Total_Min_Meal)*(BLD1MMEAL15A),(AMSn
ack_Duration/Total_Min_Meal)*(BLD1AMSNACK15A),(Lunch_Duration/TOTAL_M
in_Meal)*(BLD1LUNCH15A),(PMSnack_Duration/TOTAL_Min_Meal)*(BLD1PMSNAC
K15A));
InsistFood_d1=Sum((MMeal_Duration/Total_Min_Meal)*(BLD1MMEAL15B),(AMS
nack_Duration/Total_Min_Meal)*(BLD1AMSNACK15B),(Lunch_Duration/TOTAL_
Min_Meal)*(BLD1LUNCH15B),(PMSnack_Duration/TOTAL_Min_Meal)*(BLD1PMSNA
CK15B));
PromptFinish_d1=Sum((MMeal_Duration/Total_Min_Meal)*(BLD1MMEAL15C),(A
MSnack_Duration/Total_Min_Meal)*(BLD1AMSNACK15C),(Lunch_Duration/TOTA
L_Min_Meal)*(BLD1LUNCH15C),(PMSnack_Duration/TOTAL_Min_Meal)*(BLD1PMS
NACK15C));
PromiseNonfood_d1=Sum((MMeal_Duration/Total_Min_Meal)*(BLD1MMEAL16A),
(AMSnack_Duration/Total_Min_Meal)*(BLD1AMSNACK16A),(Lunch_Duration/TO
TAL_Min_Meal)*(BLD1LUNCH16A),(PMSnack_Duration/TOTAL_Min_Meal)*(BLD1P
MSNACK16A));
RewardPunishment_d1=Sum((MMeal_Duration/Total_Min_Meal)*(BLD1MMEAL16B
),(AMSnack_Duration/Total_Min_Meal)*(BLD1AMSNACK16B),(Lunch_Duration/
TOTAL_Min_Meal)*(BLD1LUNCH16B),(PMSnack_Duration/TOTAL_Min_Meal)*(BLD
1PMSNACK16B));
RewardBribe_d1=Sum((MMeal_Duration/Total_Min_Meal)*(BLD1MMEAL16C),(AM
Snack_Duration/Total_Min_Meal)*(BLD1AMSNACK16C),(Lunch_Duration/TOTAL
_Min_Meal)*(BLD1LUNCH16C),(PMSnack_Duration/TOTAL_Min_Meal)*(BLD1PMSN
ACK16C));
```

```
run;


libname Data 'C:\Users\Tayla Carter\Desktop\Data Analysis';
/*Day 2*/
PROC IMPORT OUT= Data.EPAO2
            DATAFILE= "C:\Users\Tayla Carter\Desktop\Data
Analysis\ICHP_FCCH_EPAO_D2_Data_Results.sav"
            DBMS=SPSS REPLACE;
RUN;
/*importing dataset from Excel with total mealtime variable*/

proc import datafile="C:\Users\Tayla Carter\Desktop\Data
Analysis\Mealtime\EPAO Total time.xlsx"
     out=data.EPAOTime /*new file name created*/
     dbms=xlsx replace;
     Sheet='Sheet2'; /*sheet name want to read*/
     getnames=yes;
     DATAROW=2; /*start looking at data on row two*/
RUN;

proc sort data=data.EPAOtime; by customid;
proc sort data=data.epao2; by customid;

Data data.EPAOD2Time; /*create new file with total mealtime variable
- merging Epao2 and Epaotime*/
     Merge Data.EPAO2 data.EPAOTime;
     By CUSTOMID;
Run;

Data data.EPAOD2Time;
set data.EPAOD2Time;
/*Recoding 7A-7I from . = missing to . = 0*/
/*Breakfast*/
IF BLD2MMEAL7A = . THEN BLD2MMEAL7A = 0;
IF BLD2MMEAL7B  = . THEN BLD2MMEAL7B = 0;
IF BLD2MMEAL7C  = . THEN BLD2MMEAL7C = 0;
IF BLD2MMEAL7D  = . THEN BLD2MMEAL7D = 0;
IF BLD2MMEAL7E  = . THEN BLD2MMEAL7E = 0;
IF BLD2MMEAL7F  = . THEN BLD2MMEAL7F = 0;
IF BLD2MMEAL7G  = . THEN BLD2MMEAL7G = 0;
IF BLD2MMEAL7H  = . THEN BLD2MMEAL7H = 0;
IF BLD2MMEAL7I  = . THEN BLD2MMEAL7I = 0;
/*AM Snack*/
IF BLD2AMSNACK7A  = . THEN BLD2AMSNACK7A = 0;
IF BLD2AMSNACK7B  = . THEN BLD2AMSNACK7B = 0;
IF BLD2AMSNACK7C  = . THEN BLD2AMSNACK7C = 0;
IF BLD2AMSNACK7D  = . THEN BLD2AMSNACK7D = 0;
IF BLD2AMSNACK7E  = . THEN BLD2AMSNACK7E = 0;
IF BLD2AMSNACK7F  = . THEN BLD2AMSNACK7F = 0;
IF BLD2AMSNACK7G  = . THEN BLD2AMSNACK7G = 0;
IF BLD2AMSNACK7H  = . THEN BLD2AMSNACK7H = 0;
IF BLD2AMSNACK7I  = . THEN BLD2AMSNACK7I = 0;
/*Lunch*/
IF BLD2LUNCH7A  = . THEN BLD2LUNCH7A = 0;
IF BLD2LUNCH7B  = . THEN BLD2LUNCH7B = 0;
IF BLD2LUNCH7C  = . THEN BLD2LUNCH7C = 0;
```

```
IF BLD2LUNCH7D  = . THEN BLD2LUNCH7D = 0;
IF BLD2LUNCH7E  = . THEN BLD2LUNCH7E = 0;
IF BLD2LUNCH7F  = . THEN BLD2LUNCH7F = 0;
IF BLD2LUNCH7G  = . THEN BLD2LUNCH7G = 0;
IF BLD2LUNCH7H  = . THEN BLD2LUNCH7H = 0;
IF BLD2LUNCH7I  = . THEN BLD2LUNCH7I = 0;
/*PM Snack*/
IF BLD2PMSNACK7A  = . THEN BLD2PMSNACK7A = 0;
IF BLD2PMSNACK7B  = . THEN BLD2PMSNACK7B = 0;
IF BLD2PMSNACK7C  = . THEN BLD2PMSNACK7C = 0;
IF BLD2PMSNACK7D  = . THEN BLD2PMSNACK7D = 0;
IF BLD2PMSNACK7E  = . THEN BLD2PMSNACK7E = 0;
IF BLD2PMSNACK7F  = . THEN BLD2PMSNACK7F = 0;
IF BLD2PMSNACK7G  = . THEN BLD2PMSNACK7G = 0;
IF BLD2PMSNACK7H  = . THEN BLD2PMSNACK7H = 0;
IF BLD2PMSNACK7I  = . THEN BLD2PMSNACK7I = 0;


/*Re-coding 4(N/A) as . (missing)*/
/*Breakfast*/
IF BLD2MMEAL12F = 4 THEN BLD2MMEAL12F = .;
IF BLD2MMEAL12G  = 4 THEN BLD2MMEAL12G = .;
IF BLD2MMEAL13A  = 4 THEN BLD2MMEAL13A = .;
IF BLD2MMEAL13B  = 4 THEN BLD2MMEAL13B = .;
IF BLD2MMEAL13C  = 4 THEN BLD2MMEAL13C = .;
IF BLD2MMEAL13D  = 4 THEN BLD2MMEAL13D = .;
IF BLD2MMEAL14F  = 4 THEN BLD2MMEAL14F = .;
IF BLD2MMEAL15C  = 4 THEN BLD2MMEAL15C = .;
/*AM Snack*/
IF BLD2AMSNACK12F = 4 THEN BLD2AMSNACK12F = .;
IF BLD2AMSNACK12G  = 4 THEN BLD2AMSNACK12G = .;
IF BLD2AMSNACK13A  = 4 THEN BLD2AMSNACK13A = .;
IF BLD2AMSNACK13B  = 4 THEN BLD2AMSNACK13B = .;
IF BLD2AMSNACK13C  = 4 THEN BLD2AMSNACK13C = .;
IF BLD2AMSNACK13D  = 4 THEN BLD2AMSNACK13D = .;
IF BLD2AMSNACK14F  = 4 THEN BLD2AMSNACK14F = .;
IF BLD2AMSNACK15C  = 4 THEN BLD2AMSNACK15C = .;
/*Lunch*/
IF BLD2LUNCH12F = 4 THEN BLD2LUNCH12F = .;
IF BLD2LUNCH12G  = 4 THEN BLD2LUNCH12G = .;
IF BLD2LUNCH13A  = 4 THEN BLD2LUNCH13A = .;
IF BLD2LUNCH13B  = 4 THEN BLD2LUNCH13B = .;
IF BLD2LUNCH13C  = 4 THEN BLD2LUNCH13C = .;
IF BLD2LUNCH13D  = 4 THEN BLD2LUNCH13D = .;
IF BLD2LUNCH14F  = 4 THEN BLD2LUNCH14F = .;
IF BLD2LUNCH15C  = 4 THEN BLD2LUNCH15C = .;
/*PM Snack*/
IF BLD2PMSNACK12F = 4 THEN BLD2PMSNACK12F = .;
IF BLD2PMSNACK12G  = 4 THEN BLD2PMSNACK12G = .;
IF BLD2PMSNACK13A  = 4 THEN BLD2PMSNACK13A = .;
IF BLD2PMSNACK13B  = 4 THEN BLD2PMSNACK13B = .;
IF BLD2PMSNACK13C  = 4 THEN BLD2PMSNACK13C = .;
IF BLD2PMSNACK13D  = 4 THEN BLD2PMSNACK13D = .;
IF BLD2PMSNACK14F  = 4 THEN BLD2PMSNACK14F = .;
IF BLD2PMSNACK15C  = 4 THEN BLD2PMSNACK15C = .;


**Re-coding negative role modeling to have 1 be a the positive
behavior**;
```

```
array s (24)
BLD2MMEAL7A BLD2AMSNACK7A BLD2LUNCH7A BLD2PMSNACK7A
BLD2MMEAL7B BLD2AMSNACK7B BLD2LUNCH7B BLD2PMSNACK7B
BLD2MMEAL7C BLD2AMSNACK7C BLD2LUNCH7C BLD2PMSNACK7C
BLD2MMEAL7E BLD2AMSNACK7E BLD2LUNCH7E BLD2PMSNACK7E
BLD2MMEAL7G BLD2AMSNACK7G BLD2LUNCH7G BLD2PMSNACK7G
BLD2MMEAL7H BLD2AMSNACK7H BLD2LUNCH7H BLD2PMSNACK7H
;

array f (24)
BLD2MMEAL7A_r BLD2AMSNACK7A_r BLD2LUNCH7A_r BLD2PMSNACK7A_r
BLD2MMEAL7B_r BLD2AMSNACK7B_r BLD2LUNCH7B_r BLD2PMSNACK7B_r
BLD2MMEAL7C_r BLD2AMSNACK7C_r BLD2LUNCH7C_r BLD2PMSNACK7C_r
BLD2MMEAL7E_r BLD2AMSNACK7E_r BLD2LUNCH7E_r BLD2PMSNACK7E_r
BLD2MMEAL7G_r BLD2AMSNACK7G_r BLD2LUNCH7G_r BLD2PMSNACK7G_r
BLD2MMEAL7H_r BLD2AMSNACK7H_r BLD2LUNCH7H_r BLD2PMSNACK7H_r
;
do a=1 to 24;
 if s(a)ne . and s(a)=0 then f(a)=1;
 else if s(a)=1 then f(a)=0;

end;

/*Creating new variables for ROLE MODELING
"NewVariableName=Sum((MMeal_Duration/Total_Min_Meal)*(BLD2MMEALX)...Do
 for each meal)*/
Data data.EPAOD2Time;
set data.EPAOD2Time;
FastFood_d2=Sum((MMeal_Duration/Total_Min_Meal)*(BLD2MMEAL7A_r),(AMSn
ack_Duration/Total_Min_Meal)*(BLD2AMSNACK7A_r),
(Lunch_Duration/TOTAL_Min_Meal)*(BLD2LUNCH7A_r),(PMSnack_Duration/TOT
AL_Min_Meal)*(BLD2PMSNACK7A_r));
SaltySnack_d2=Sum((MMeal_Duration/Total_Min_Meal)*(BLD2MMEAL7B_r),(AM
Snack_Duration/Total_Min_Meal)*(BLD2AMSNACK7B_r),
(Lunch_Duration/TOTAL_Min_Meal)*(BLD2LUNCH7B_r),(PMSnack_Duration/TOT
AL_Min_Meal)*(BLD2PMSNACK7B_r));
SweetSnack_d2=Sum((MMeal_Duration/Total_Min_Meal)*(BLD2MMEAL7C_r),(AM
Snack_Duration/Total_Min_Meal)*(BLD2AMSNACK7C_r),
(Lunch_Duration/TOTAL_Min_Meal)*(BLD2LUNCH7C_r),(PMSnack_Duration/TOT
AL_Min_Meal)*(BLD2PMSNACK7C_r));
FruitsVegetables_d2=Sum((MMeal_Duration/Total_Min_Meal)*(BLD2MMEAL7D)
,(AMSnack_Duration/Total_Min_Meal)*(BLD2AMSNACK7D),
(Lunch_Duration/TOTAL_Min_Meal)*(BLD2LUNCH7D),(PMSnack_Duration/TOTAL
_Min_Meal)*(BLD2PMSNACK7D));
SodaSSB_d2=Sum((MMeal_Duration/Total_Min_Meal)*(BLD2MMEAL7E_r),(AMSna
ck_Duration/Total_Min_Meal)*(BLD2AMSNACK7E_r),
(Lunch_Duration/TOTAL_Min_Meal)*(BLD2LUNCH7E_r),(PMSnack_Duration/TOT
AL_Min_Meal)*(BLD2PMSNACK7E_r));
SameFoods_d2=Sum((MMeal_Duration/Total_Min_Meal)*(BLD2MMEAL7F),(AMSna
ck_Duration/Total_Min_Meal)*(BLD2AMSNACK7F),
(Lunch_Duration/TOTAL_Min_Meal)*(BLD2LUNCH7F),(PMSnack_Duration/TOTAL
_Min_Meal)*(BLD2PMSNACK7F));
Coffee_d2=Sum((MMeal_Duration/Total_Min_Meal)*(BLD2MMEAL7G_r),(AMSnac
k_Duration/Total_Min_Meal)*(BLD2AMSNACK7G_r),
(Lunch_Duration/TOTAL_Min_Meal)*(BLD2LUNCH7G_r),(PMSnack_Duration/TOT
AL_Min_Meal)*(BLD2PMSNACK7G_r));
```

```
Nothing_d2=Sum((MMeal_Duration/Total_Min_Meal)*(BLD2MMEAL7H_r),(AMSna
ck_Duration/Total_Min_Meal)*(BLD2AMSNACK7H_r),
(Lunch_Duration/TOTAL_Min_Meal)*(BLD2LUNCH7H_r),(PMSnack_Duration/TOT
AL_Min_Meal)*(BLD2PMSNACK7H_r));
SatWith_d2=Sum((MMeal_Duration/Total_Min_Meal)*(BLD2MMEAL12A),(AMSnac
k_Duration/Total_Min_Meal)*(BLD2AMSNACK12A),
(Lunch_Duration/TOTAL_Min_Meal)*(BLD2LUNCH12A),(PMSnack_Duration/TOTA
L_Min_Meal)*(BLD2PMSNACK12A));
RoleModeled_d2=Sum((MMeal_Duration/Total_Min_Meal)*(BLD2MMEAL12D),(AM
Snack_Duration/Total_Min_Meal)*(BLD2AMSNACK12D),
(Lunch_Duration/TOTAL_Min_Meal)*(BLD2LUNCH12D),(PMSnack_Duration/TOTA
L_Min_Meal)*(BLD2PMSNACK12D));
run;

/*proc print; id customid; var
FastFood_d1 MMeal_Duration Total_Min_Meal BLD1MMEAL7A
AMSnack_Duration Total_Min_Meal BLD1AMSNACK7A Lunch_Duration
TOTAL_Min_Meal BLD1LUNCH7A
PMSnack_Duration TOTAL_Min_Meal BLD1PMSNACK7A; run;*/

/*Creating new variables for ENCOURAGEMENT/SUPPORT/REASONING*/
Data data.EPAOD2Time;
set data.EPAOD2Time;
EncourageTable_d2=Sum((MMeal_Duration/Total_Min_Meal)*(BLD2MMEAL10B),
(AMSnack_Duration/Total_Min_Meal)*(BLD2AMSNACK10B),
(Lunch_Duration/TOTAL_Min_Meal)*(BLD2LUNCH10B),(PMSnack_Duration/TOTA
L_Min_Meal)*(BLD2PMSNACK10B));
TalkedFoods_d2=Sum((MMeal_Duration/Total_Min_Meal)*(BLD2MMEAL12B),(AM
Snack_Duration/Total_Min_Meal)*(BLD2AMSNACK12B),
(Lunch_Duration/TOTAL_Min_Meal)*(BLD2LUNCH12B),(PMSnack_Duration/TOTA
L_Min_Meal)*(BLD2PMSNACK12B));
TalkedNutrition_d2=Sum((MMeal_Duration/Total_Min_Meal)*(BLD2MMEAL12C)
,(AMSnack_Duration/Total_Min_Meal)*(BLD2AMSNACK12C),
(Lunch_Duration/TOTAL_Min_Meal)*(BLD2LUNCH12C),(PMSnack_Duration/TOTA
L_Min_Meal)*(BLD2PMSNACK12C));
EncourageNewFoods_d2=Sum((MMeal_Duration/Total_Min_Meal)*(BLD2MMEAL12
E),(AMSnack_Duration/Total_Min_Meal)*(BLD2AMSNACK12E),
(Lunch_Duration/TOTAL_Min_Meal)*(BLD1LUNCH12E),(PMSnack_Duration/TOTA
L_Min_Meal)*(BLD1PMSNACK12E));
PraiseNewFoods_d2=Sum((MMeal_Duration/Total_Min_Meal)*(BLD2MMEAL12F),
(AMSnack_Duration/Total_Min_Meal)*(BLD2AMSNACK12F),
(Lunch_Duration/TOTAL_Min_Meal)*(BLD2LUNCH12F),(PMSnack_Duration/TOTA
L_Min_Meal)*(BLD2PMSNACK12F));
PraiseHealthyFoods_d2=Sum((MMeal_Duration/Total_Min_Meal)*(BLD2MMEAL1
2G),(AMSnack_Duration/Total_Min_Meal)*(BLD2AMSNACK12G),
(Lunch_Duration/TOTAL_Min_Meal)*(BLD2LUNCH12G),(PMSnack_Duration/TOTA
L_Min_Meal)*(BLD2PMSNACK12G));
Reason_d2=Sum((MMeal_Duration/Total_Min_Meal)*(BLD2MMEAL13C),(AMSnack
_Duration/Total_Min_Meal)*(BLD2AMSNACK13C),
(Lunch_Duration/TOTAL_Min_Meal)*(BLD2LUNCH13C),(PMSnack_Duration/TOTA
L_Min_Meal)*(BLD2PMSNACK13C));
Negotiate_d2=Sum((MMeal_Duration/Total_Min_Meal)*(BLD2MMEAL13D),(AMSn
ack_Duration/Total_Min_Meal)*(BLD2AMSNACK13D),
(Lunch_Duration/TOTAL_Min_Meal)*(BLD2LUNCH13D),(PMSnack_Duration/TOTA
L_Min_Meal)*(BLD2PMSNACK13D));
ChooseFrom2_d2=Sum((MMeal_Duration/Total_Min_Meal)*(BLD2MMEAL13E),(AM
Snack_Duration/Total_Min_Meal)*(BLD2AMSNACK13E),
```

```
(Lunch_Duration/TOTAL_Min_Meal)*(BLD2LUNCH13E),(PMSnack_Duration/TOTA
L_Min_Meal)*(BLD2PMSNACK13E));
run;


/*Creating new variables for PRESSURE TO EAT*/
Data data.EPAOD2Time;
set data.EPAOD2Time;
Rush_d2=Sum((MMeal_Duration/Total_Min_Meal)*(BLD2MMEAL11C),(AMSnack_D
uration/Total_Min_Meal)*(BLD2AMSNACK11C),
(Lunch_Duration/TOTAL_Min_Meal)*(BLD1LUNCH11C),(PMSnack_Duration/TOTA
L_Min_Meal)*(BLD1PMSNACK11C));
PraiseUnhealthy_d2=Sum((MMeal_Duration/Total_Min_Meal)*(BLD2MMEAL13A)
,(AMSnack_Duration/Total_Min_Meal)*(BLD2AMSNACK13A),
(Lunch_Duration/TOTAL_Min_Meal)*(BLD2LUNCH13A),(PMSnack_Duration/TOTA
L_Min_Meal)*(BLD2PMSNACK13A));
PraiseCleanPlate_d2=Sum((MMeal_Duration/Total_Min_Meal)*(BLD2MMEAL13B
),(AMSnack_Duration/Total_Min_Meal)*(BLD2AMSNACK13B),
(Lunch_Duration/TOTAL_Min_Meal)*(BLD2LUNCH13B),(PMSnack_Duration/TOTA
L_Min_Meal)*(BLD2PMSNACK13B));
PressureEatMore_d2=Sum((MMeal_Duration/Total_Min_Meal)*(BLD2MMEAL14A)
,(AMSnack_Duration/Total_Min_Meal)*(BLD2AMSNACK14A),
(Lunch_Duration/TOTAL_Min_Meal)*(BLD2LUNCH14A),(PMSnack_Duration/TOTA
L_Min_Meal)*(BLD2PMSNACK14A));
RequireCleanPlate_d2=Sum((MMeal_Duration/Total_Min_Meal)*(BLD2MMEAL14
F),(AMSnack_Duration/Total_Min_Meal)*(BLD2AMSNACK14F),
(Lunch_Duration/TOTAL_Min_Meal)*(BLD2LUNCH14F),(PMSnack_Duration/TOTA
L_Min_Meal)*(BLD2PMSNACK14F));
SpoonFeed_d2=Sum((MMeal_Duration/Total_Min_Meal)*(BLD2MMEAL15A),(AMSn
ack_Duration/Total_Min_Meal)*(BLD2AMSNACK15A),
(Lunch_Duration/TOTAL_Min_Meal)*(BLD2LUNCH15A),(PMSnack_Duration/TOTA
L_Min_Meal)*(BLD2PMSNACK15A));
InsistFood_d2=Sum((MMeal_Duration/Total_Min_Meal)*(BLD2MMEAL15B),(AMS
nack_Duration/Total_Min_Meal)*(BLD2AMSNACK15B),
(Lunch_Duration/TOTAL_Min_Meal)*(BLD2LUNCH15B),(PMSnack_Duration/TOTA
L_Min_Meal)*(BLD2PMSNACK15B));
PromptFinish_d2=Sum((MMeal_Duration/Total_Min_Meal)*(BLD2MMEAL15C),(A
MSnack_Duration/Total_Min_Meal)*(BLD2AMSNACK15C),(Lunch_Duration/TOTA
L_Min_Meal)*(BLD2LUNCH15C),(PMSnack_Duration/TOTAL_Min_Meal)*(BLD2PMS
NACK15C));
PromiseNonfood_d2=Sum((MMeal_Duration/Total_Min_Meal)*(BLD2MMEAL16A),
(AMSnack_Duration/Total_Min_Meal)*(BLD2AMSNACK16A),(Lunch_Duration/TO
TAL_Min_Meal)*(BLD2LUNCH16A),(PMSnack_Duration/TOTAL_Min_Meal)*(BLD2P
MSNACK16A));
RewardPunishment_d2=Sum((MMeal_Duration/Total_Min_Meal)*(BLD2MMEAL16B
),(AMSnack_Duration/Total_Min_Meal)*(BLD2AMSNACK16B),(Lunch_Duration/
TOTAL_Min_Meal)*(BLD2LUNCH16B),(PMSnack_Duration/TOTAL_Min_Meal)*(BLD
2PMSNACK16B));
RewardBribe_d2=Sum((MMeal_Duration/Total_Min_Meal)*(BLD2MMEAL16C),(AM
Snack_Duration/Total_Min_Meal)*(BLD2AMSNACK16C),(Lunch_Duration/TOTAL
_Min_Meal)*(BLD2LUNCH16C),(PMSnack_Duration/TOTAL_Min_Meal)*(BLD2PMSN
ACK16C));
run;


Data data.EPAODataset; /*Merging Day 1 and Day 2*/
    Merge data.EPAOD1Time data.EPAOD2Time;
    By CUSTOMID;
```

```sas
run;

/*Average across Day 1 and Day 2 feeding practices - ROLE MODELING*/
Data data.EPAODataset;
set data.EPAODataset;
FastFood_Avg=sum(FastFood_d1,FastFood_d2)/2;
SaltySnack_Avg=sum(SaltySnack_d1,SaltySnack_d2)/2;
SweetSnack_Avg=sum(SweetSnack_d1,SweetSnack_d2)/2;
FruitsVegetables_Avg=sum(FruitsVegetables_d1,FruitsVegetables_d2)/2;
SodaSSB_Avg=sum(SodaSSB_d1,SodaSSB_d2)/2;
SameFoods_Avg=sum(SameFoods_d1,SameFoods_d2)/2;
Coffee_Avg=sum(Coffee_d1,Coffee_d2)/2;
Nothing_Avg=sum(Nothing_d1,Nothing_d2)/2;
SatWith_Avg=sum(SatWith_d1,SatWith_d2)/2;
RoleModeled_Avg=sum(RoleModeled_d1,RoleModeled_d2)/2;
run;
/*Average across Day 1 and Day 2 feeding practices - ENCOURAGEMENT*/
Data data.EPAODataset;
set data.EPAODataset;
EncourageTable_Avg=sum(EncourageTable_d1,EncourageTable_d2)/2;
TalkedFoods_Avg=sum(TalkedFoods_d1,TalkedFoods_d2)/2;
TalkedNutrition_Avg=sum(TalkedNutrition_d1,TalkedNutrition_d2)/2;
EncourageNewFoods_Avg=sum(EncourageNewFoods_d1,EncourageNewFoods_d2)/
2;
PraiseNewFoods_Avg=sum(PraiseNewFoods_d1,PraiseNewFoods_d2)/2;
PraiseHealthyFoods_Avg=sum(PraiseHealthyFoods_d1,PraiseHealthyFoods_d
2)/2;
Reason_Avg=sum(Reason_d1,Reason_d2)/2;
Negotiate_Avg=sum(Negotiate_d1,Negotiate_d2)/2;
ChooseFrom2_Avg=sum(ChooseFrom2_d1,ChooseFrom2_d2)/2;
run;
/*Average across Day 1 and Day 2 feeding practices - PRESSURE TO
EAT*/
Data data.EPAODataset;
set data.EPAODataset;
Rush_Avg=sum(Rush_d1,Rush_d2)/2;
PraiseUnhealthy_Avg=sum(PraiseUnhealthy_d1,PraiseUnhealthy_d2)/2;
PraiseCleanPlate_Avg=sum(PraiseCleanPlate_d1,PraiseCleanPlate_d2)/2;
PressureEatMore_Avg=sum(PressureEatMore_d1,PressureEatMore_d2)/2;
RequireCleanPlate_Avg=sum(RequireCleanPlate_d1,RequireCleanPlate_d2)/
2;
SpoonFeed_Avg=sum(SpoonFeed_d1,SpoonFeed_d2)/2;
InsistFood_Avg=sum(InsistFood_d1,InsistFood_d2)/2;
PromptFinish_Avg=sum(PromptFinish_d1,PromptFinish_d2)/2;
PromiseNonfood_Avg=sum(PromiseNonfood_d1,PromiseNonfood_d2)/2;
RewardPunishment_Avg=sum(RewardPunishment_d1,RewardPunishment_d2)/2;
RewardBribe_Avg=sum(RewardBribe_d1,RewardBribe_d2)/2;
run;

/*Creating independent variables - 3 constructs*/
/*REARRANGED CONSTRUCTS*/
Data data.EPAODataset;
set data.EPAODataset;
Role_Modeling=Sum(FastFood_Avg, SaltySnack_Avg, SweetSnack_Avg,
SodaSSB_Avg, Coffee_Avg, Nothing_Avg, SatWith_Avg, SameFoods_Avg,
FruitsVegetables_Avg, RoleModeled_Avg)/10;
```

```
Encouragement=Sum(TalkedFoods_Avg, TalkedNutrition_Avg,
EncourageNewFoods_Avg, PraiseNewFoods_Avg, PraiseHealthyFoods_Avg)/5;
Pressure_Eat=Sum(Rush_Avg, PraiseUnhealthy_Avg, PraiseCleanPlate_Avg,
PressureEatMore_Avg, RequireCleanPlate_Avg, SpoonFeed_Avg,
InsistFood_Avg, PromptFinish_Avg,
PromiseNonfood_Avg, RewardPunishment_Avg, RewardBribe_Avg)/11;
run;

/*DOCC Data*/

libname Data 'C:\Users\Tayla Carter\Desktop\Data Analysis';
PROC IMPORT OUT= DATA.HSBLB109
            DATAFILE= "C:\Users\Tayla Carter\Desktop\Data
Analysis\Outpu
ts\HSBLB1C\HSBLB1C09.txt"
            DBMS=TAB REPLACE;
     GETNAMES=YES;
     DATAROW=2;
RUN;

PROC IMPORT OUT= DATA.HSBLB209
            DATAFILE= "C:\Users\Tayla Carter\Desktop\Data
Analysis\Outpu
ts\HSBLB2C\HSBLB2C09.txt"
            DBMS=TAB REPLACE;
     GETNAMES=YES;
     DATAROW=2;
RUN;
PROC IMPORT OUT= DATA.HSBLB309
            DATAFILE= "C:\Users\Tayla Carter\Desktop\Data
Analysis\Outpu
ts\HSBLB3C\HSBLB3C09.txt"
            DBMS=TAB REPLACE;
     GETNAMES=YES;
     DATAROW=2;
RUN;
PROC IMPORT OUT= DATA.HSBLB409
            DATAFILE= "C:\Users\Tayla Carter\Desktop\Data
Analysis\Outpu
ts\HSBLB4C\HSBLB4C09.txt"
            DBMS=TAB REPLACE;
     GETNAMES=YES;
     DATAROW=2;

RUN;

/*removing second header row as first observation to align first
observation with second row*/
data data.HSBLB109;
     set data.HSBLB109 (firstobs=2);
run;
data data.HSBLB209;
     set data.HSBLB209 (firstobs=2);
run;
data data.HSBLB309;
     set data.HSBLB309 (firstobs=2);
run;
```

```
data data.HSBLB409;
     set data.HSBLB409 (firstobs=2);
run;


/*Merging Batches 1-4*/

/*sort data for merging by ID and date of intake*/
proc sort data=data.HSBLB109; by participant_ID date_of_intake;
proc sort data=data.HSBLB209; by participant_ID date_of_intake;
proc sort data=data.HSBLB309; by participant_ID date_of_intake;
proc sort data=data.HSBLB409; by participant_ID date_of_intake;

/*merging NDSR output files imported into SAS */
data data.totalDOCC;
merge data.HSBLB109 data.HSBLB209 data.HSBLB309 data.HSBLB409;
by participant_ID date_of_intake;
run;


data data.totalDOCC; set data.totalDOCC;
CUSTOMID=substr(participant_ID,3,4);
run;


/*Creating Fruit and Vegetable variables*/
data data.totalDOCC;
set data.totalDOCC;
Vegetables=(VEG0100+VEG0200+VEG0300+VEG0400+VEG0450+VEG0700+VEG0600+V
EG0900+VEG0500);
Total_Fruit=(FRU0100+FRU0200+FRU0300+FRU0400+FRU0500+FRU0600+FRU0700)
;
Whole_Fruit=(FRU0300+FRU0400+FRU0500+FRU0600+FRU0700);
TotalFV=(VEG0100+VEG0200+VEG0300+VEG0400+VEG0450+VEG0500+VEG0600+VEG0
700+FRU0300+FRU0400+FRU0500+FRU0600+FRU0700);
run;


/*Making new dataset with outcome variables*/
proc means data = data.totalDOCC NOPRINT;
     by CUSTOMID;
     var Vegetables Total_Fruit Whole_Fruit TotalFV;
     output out = data.DOCCmeans;
run;


proc means data = data.totalDOCC NOPRINT;
     by CUSTOMID;
     var Vegetables Total_Fruit Whole_Fruit TotalFV;
     output out = data.DOCCmeans1 mean(Vegetables Total_Fruit
Whole_Fruit TotalFV) = VegetablesMEAN Total_FruitMEAN Whole_FruitMEAN
TotalFVmean;
run;


/*Converting EPAO CUSTOMID to character variable to be able to merge
EPAO and DOCC data by CUSTOMID*/
DATA data.EPAODataset;
     SET data.EPAODataset;
     NewCUSTOMID = put(CUSTOMID,4.);
RUN;


DATA data.EPAODataset;
```

```
        SET data.EPAODataset;
        NewCUSTOMID = put(CUSTOMID,4.);
        DROP CUSTOMID;
        RENAME NewCUSTOMID = CUSTOMID;
RUN;


/*Merging EPAO and DOCC data*/
data data.Thesis;
merge data.EPAODataset data.DOCCmeans1;
by CUSTOMID;
run;


/*Importing demographic data to create adjusted model*/

libname Data 'C:\Users\Tayla Carter\Desktop\Data Analysis';
/*Provider demographic data - in-person survey*/
PROC IMPORT OUT= Data.INPERSON
            DATAFILE= "C:\Users\Tayla Carter\Desktop\Data
Analysis\FCCH_BLINPERSON_ALL.sav"
            DBMS=SPSS REPLACE;
RUN;


libname Data 'C:\Users\Tayla Carter\Desktop\Data Analysis';
/*Provider demographic data - phone survey*/
PROC IMPORT OUT= Data.PHONE
            DATAFILE= "C:\Users\Tayla Carter\Desktop\Data
Analysis\FCCH_ELIGBLPHONE_ALL.sav"
            DBMS=SPSS REPLACE;
RUN;


libname Data 'C:\Users\Tayla Carter\Desktop\Data Analysis';
/*Child demographic data*/
PROC IMPORT OUT= Data.CHILDDEMOS
            DATAFILE= "C:\Users\Tayla Carter\Desktop\Data
Analysis\FCCH_CHILD_DEMOS.sav"
            DBMS=SPSS REPLACE;
RUN;


data Data.INPERSON; set Data.INPERSON; CUSTOMID=substr(CUSTOMID,3,4);
run;


data Data.PHONE; set Data.PHONE; CUSTOMID=substr(CUSTOMID,3,4);
run;


data Data.CHILDDEMOS; set Data.CHILDDEMOS;
CUSTOMID=substr(CUSTOMID,3,4);
run;


/*Converting Child Demos CUSTOMID to character variable to be able to
merge other datasets by CUSTOMID*/
DATA Data.CHILDDEMOS;
      SET Data.CHILDDEMOS;
      NewCUSTOMID = put(CUSTOMID,4.);
RUN;


DATA Data.CHILDDEMOS;
      SET Data.CHILDDEMOS;
```

```
        NewCUSTOMID = put(CUSTOMID,4.);
        DROP CUSTOMID;
        RENAME NewCUSTOMID = CUSTOMID;
RUN;

data data.ThesisFinal;
merge data.Thesis data.INPERSON Data.PHONE Data.CHILDDEMOS;
by CUSTOMID;
run;

/*Deleting homes that I do not have all data for*/

data data.ThesisFinal;
set data.ThesisFinal;
if customid = 1015 then delete;
if customid = 1121 then delete;
if customid = 1136 then delete;
if customid = 1159 then delete;
if customid = 1169 then delete;
if customid = 1178 then delete;
if customid = 1186 then delete;
if customid = 1191 then delete;
if customid = 1194 then delete;
if customid = 1195 then delete;
if customid = 1197 then delete;
if customid = 1198 then delete;
if customid = 1199 then delete;
if customid = 1200 then delete;
if customid = 1201 then delete;
if customid = 1204 then delete;
if customid = 1205 then delete;
if customid = 1206 then delete;
if customid = 1207 then delete;
if customid = 1208 then delete;
if customid = 1209 then delete;
if customid = 1211 then delete;
if customid = 1215 then delete;
if customid = 1216 then delete;
if customid = 1219 then delete;
if customid = 1220 then delete;
if customid = 1221 then delete;
if customid = 1223 then delete;
if customid = 1225 then delete;
if customid = 1226 then delete;
if customid = 1229 then delete;
if customid = 1230 then delete;
if customid = 1231 then delete;
if customid = 1233 then delete;
if customid = 1235 then delete;
if customid = 1236 then delete;
if customid = 1238 then delete;
if customid = 1241 then delete;
if customid = 1243 then delete;
if customid = 1004 then delete;
if customid = 1005 then delete;
if customid = 1007 then delete;
if customid = 1015 then delete;
```

```
if customid = 1018 then delete;
if customid = 1024 then delete;
if customid = 1025 then delete;
if customid = 1032 then delete;
if customid = 1033 then delete;
if customid = 1041 then delete;
if customid = 1044 then delete;
if customid = 1059 then delete;
if customid = 1071 then delete;
if customid = 1075 then delete;
if customid = 1096 then delete;
if customid = 1099 then delete;
if customid = 1111 then delete;
if customid = 1114 then delete;
if customid = 1117 then delete;
if customid = 1120 then delete;
if customid = 1121 then delete;
if customid = 1122 then delete;
if customid = 1123 then delete;
if customid = 1136 then delete;
if customid = 1143 then delete;
if customid = 1144 then delete;
if customid = 1159 then delete;
if customid = 1168 then delete;
if customid = 1169 then delete;
if customid = 1174 then delete;
if customid = 1176 then delete;
if customid = 1178 then delete;
if customid = 1182 then delete;
if customid = 1186 then delete;
if customid = 1187 then delete;
if customid = 1191 then delete;
if customid = 1193 then delete;
if customid = 1194 then delete;
if customid = 1195 then delete;
if customid = 1197 then delete;
if customid = 1198 then delete;
if customid = 1199 then delete;
if customid = 1200 then delete;
if customid = 1201 then delete;
if customid = 1204 then delete;
if customid = 1205 then delete;
if customid = 1206 then delete;
if customid = 1207 then delete;
if customid = 1208 then delete;
if customid = 1209 then delete;
if customid = 1210 then delete;
if customid = 1211 then delete;
if customid = 1212 then delete;
if customid = 1214 then delete;
if customid = 1215 then delete;
if customid = 1216 then delete;
if customid = 1218 then delete;
if customid = 1219 then delete;
if customid = 1220 then delete;
if customid = 1221 then delete;
if customid = 1222 then delete;
```

```
if customid = 1223 then delete;
if customid = 1224 then delete;
if customid = 1225 then delete;
if customid = 1226 then delete;
if customid = 1227 then delete;
if customid = 1229 then delete;
if customid = 1230 then delete;
if customid = 1231 then delete;
if customid = 1233 then delete;
if customid = 1234 then delete;
if customid = 1235 then delete;
if customid = 1236 then delete;
if customid = 1237 then delete;
if customid = 1238 then delete;
if customid = 1241 then delete;
if customid = 1242 then delete;
if customid = 1243 then delete;
if customid = 1244 then delete;
if customid = 1245 then delete;
if customid = 1246 then delete;
run;

proc corr nomiss alpha plots=matrix;
var Role_Modeling Encouragement Pressure_Eat VegetablesMEAN
Total_FruitMEAN Whole_FruitMEAN TotalFVmean;
run;

proc freq data=data.thesisfinal;
tables BLGENDER BLETHNICITY BLHISPCULTURE BLRACE BLDEMO88 BLDEMO89
BLDEMO92 BLDEMO93 BLDEMO94 BLDEMO95 BLDEMO96 BLDEMO97 BLDEMO98
BLDEMO105;
RUN;

DATA data.thesisfinal;
SET data.thesisfinal;
Number_Children=BLDEMO81 - BLDEMO82;run;

proc means; VAR BLDEMO90 BLDEMO86 BLDEMO87; RUN;

proc means; VAR NUMBER_CHILDREN CHAGE CDEMHRS; RUN;

PROC FREQ DATA=DATA.THESISFINAL;
TABLES CHRACE CDEMSEX CDEMHISP;
RUN;

proc means; var Vegetables Total_Fruit Whole_Fruit TotalFV; run;

proc means; var FastFood_Avg SaltySnack_Avg SweetSnack_Avg
SodaSSB_Avg Coffee_Avg Nothing_Avg SatWith_Avg SameFoods_Avg
FruitsVegetables_Avg EncourageNewFoods_Avg PraiseNewFoods_Avg
PraiseHealthyFoods_Avg TalkedFoods_Avg TalkedNutrition_Avg
RoleModeled_Avg
Rush_Avg PraiseUnhealthy_Avg PraiseCleanPlate_Avg PressureEatMore_Avg
RequireCleanPlate_Avg InsistFood_Avg SpoonFeed_Avg PromiseNonfood_Avg
RewardPunishment_Avg RewardBribe_Avg PromptFinish_Avg;
run;
```

```
proc means; var Role_Modeling Encouragement Pressure_Eat;
run;

proc freq data=data.thesisfinal;
tables Role_Modeling Encouragement Pressure_Eat;
run;

proc freq data=data.thesisfinal;
tables FastFood_Avg SaltySnack_Avg SweetSnack_Avg SodaSSB_Avg
Coffee_Avg Nothing_Avg SatWith_Avg SameFoods_Avg
FruitsVegetables_Avg EncourageNewFoods_Avg PraiseNewFoods_Avg
PraiseHealthyFoods_Avg TalkedFoods_Avg TalkedNutrition_Avg
RoleModeled_Avg
Rush_Avg PraiseUnhealthy_Avg PraiseCleanPlate_Avg PressureEatMore_Avg
RequireCleanPlate_Avg InsistFood_Avg SpoonFeed_Avg PromiseNonfood_Avg
RewardPunishment_Avg RewardBribe_Avg PromptFinish_Avg;
run;


/*CORRELATIONS WITH FRUIT AND VEGETABLE INTAKE*/
/*role-modeling*/
proc corr nomiss alpha plots=matrix;
var FastFood_Avg SaltySnack_Avg SweetSnack_Avg SodaSSB_Avg Coffee_Avg
Nothing_Avg SatWith_Avg SameFoods_Avg FruitsVegetables_Avg
VegetablesMEAN Total_FruitMEAN Whole_FruitMEAN TotalFVmean;
run;
/*encouragement*/
proc corr nomiss alpha plots=matrix;
var EncourageNewFoods_Avg PraiseNewFoods_Avg PraiseHealthyFoods_Avg
TalkedFoods_Avg TalkedNutrition_Avg RoleModeled_Avg
VegetablesMEAN Total_FruitMEAN Whole_FruitMEAN TotalFVmean;
run;
/*pressure*/
proc corr nomiss alpha plots=matrix;
var Rush_Avg PraiseUnhealthy_Avg PraiseCleanPlate_Avg
PressureEatMore_Avg RequireCleanPlate_Avg InsistFood_Avg
SpoonFeed_Avg PromiseNonfood_Avg
RewardPunishment_Avg RewardBribe_Avg PromptFinish_Avg VegetablesMEAN
Total_FruitMEAN Whole_FruitMEAN TotalFVmean;
run;

/*CORRELATIONS*/

/*role-modeling*/
proc corr nomiss alpha plots=matrix;
var FastFood_Avg SaltySnack_Avg SweetSnack_Avg SodaSSB_Avg Coffee_Avg
Nothing_Avg SatWith_Avg SameFoods_Avg FruitsVegetables_Avg
RoleModeled_Avg;
run;
/*encouragement*/
proc corr nomiss alpha plots=matrix;
var EncourageNewFoods_Avg PraiseNewFoods_Avg PraiseHealthyFoods_Avg
TalkedFoods_Avg TalkedNutrition_Avg;
run;
/*pressure*/
proc corr nomiss alpha plots=matrix;
```

```
var Rush_Avg PraiseUnhealthy_Avg PraiseCleanPlate_Avg
PressureEatMore_Avg RequireCleanPlate_Avg InsistFood_Avg
SpoonFeed_Avg PromiseNonfood_Avg
RewardPunishment_Avg RewardBribe_Avg PromptFinish_Avg;
run;

/*Multiple linear regressions*/

proc reg;
     model VegetablesMEAN = Encouragement Role_Modeling
Pressure_Eat/stb clb;
run;

proc reg;
     model Total_FruitMEAN = Encouragement Role_Modeling
Pressure_Eat/stb clb;
run;

proc reg;
     model Whole_FruitMEAN = Encouragement Role_Modeling
Pressure_Eat/stb clb;
run;

proc reg;
     model TotalFVmean = Encouragement Role_Modeling
Pressure_Eat/stb clb;
run;
```

BIBLIOGRAPHY

1.   All about the Vegetable Group | Choose MyPlate.

       https://www.choosemyplate.gov/vegetables. Accessed March 28, 2017.

2.   All About the Fruit Group | Choose MyPlate.

       https://www.choosemyplate.gov/fruit. Accessed March 28, 2017.

3.   2015-2020 Dietary Guidelines - health.gov.

       https://health.gov/dietaryguidelines/2015/guidelines/. Accessed March 13,

       2017.

4.   Newby P. Plant foods and plant-based diets: protective against childhood

       obesity? *Am J Clin Nutr*. 2009;89(5):1572S-1587S.

       doi:10.3945/ajcn.2009.26736G.

5.   Birch L, Savage JS, Ventura A. Influences on the Development of Children's

       Eating Behaviours: From Infancy to Adolescence. *Can J Diet Pract Res*.

       2007;68(1):s1-s56.

6.   Gubbels JS, Gerards SMPL, Kremers SPJ. Use of food practices by childcare

       staff and the association with dietary intake of children at childcare. *Nutrients*.

       2015;7(4):2161-2175. doi:10.3390/nu7042161.

7.   Shloim N, Edelson LR, Martin N, Hetherington MM. Parenting Styles, Feeding

       Styles, Feeding Practices, and Weight Status in 4-12 Year-Old Children: A

       Systematic Review of the Literature. *Front Psychol*. 2015;6:1849.

       doi:10.3389/fpsyg.2015.01849.

8.   Kremers SP., Brug J, de Vries H, Engels RCM. Parenting style and adolescent

       fruit consumption. *Appetite*. 2003;41(1):43-50. doi:10.1016/S0195-

6663(03)00038-2.

9.   Sleddens EFC, Kremers SPJ, Stafleu A, Dagnelie PC, De Vries NK, Thijs C.
       Food parenting practices and child dietary behavior. Prospective relations and
       the moderating role of general parenting. *Appetite*. 2014;79:42-50.
       doi:10.1016/j.appet.2014.04.004.

10.   Brown R. Children's eating attitudes and behaviour: a study of the modelling
       and control theories of parental influence. *Health Educ Res*. 2004;19(3):261-
       271. doi:10.1093/her/cyg040.

11.   Blissett J. Relationships between parenting style, feeding style and feeding
       practices and fruit and vegetable consumption in early childhood. *Appetite*.
       2011;57(3):826-831. doi:10.1016/j.appet.2011.05.318.

12.   Vereecken C, Rovner A, Maes L. Associations of parenting styles, parental
       feeding practices and child characteristics with young children's fruit and
       vegetable consumption. *Appetite*. 2010;55(3):589-596.
       doi:10.1016/j.appet.2010.09.009.

13.   Tovar A, Vaughn AE, Grummon A, et al. Family child care home providers as
       role models for children: Cause for concern? *Prev Med Reports*. 2017;5:308-
       313. doi:10.1016/j.pmedr.2016.11.010.

14.   Mamedova S, Redford J, Zukerberg A. Early Childhood Program Participation,
       From the National Household Education Surveys Program of 2012.
       https://nces.ed.gov/pubs2013/2013029rev.pdf. Accessed March 13, 2017.

15.   Vital Signs: Fruit and Vegetable Intake Among Children — United States,
       2003–2010. https://www.cdc.gov/mmwr/preview/mmwrhtml/mm6331a3.htm.

Accessed March 13, 2017.

16. Nestlé Feeding Infants and Toddlers Study.
    https://medical.gerber.com/docs/default-source/pdfs/2711_lv-fits2008-
    obesitysocietyinsert_final-fpo.pdf?sfvrsn=0. Accessed March 28, 2017.

17. Grimm KA, Kim SA, Yaroch AL SK. Fruit and Vegetable Intake During
    Infancy and Early Childhood. *Pediatrics*. 2014;134(S63). doi:10.1542.

18. Due P, Krolner R, Rasmussen M, et al. Pathways and mechanisms in
    adolescence contribute to adult health inequalities. *Scand J Public Health*.
    2011;39(6 Suppl):62-78. doi:10.1177/1403494810395989.

19. 4.5.0.8 - Experience with Familiar and New Foods.
    http://cfoc.nrckids.org/StandardView/4.5.0.8. Accessed March 30, 2017.

20. Nicklas TA, Baranowski T, Baranowski JC, Cullen K, Rittenberry L, Olvera N.
    Family and child-care provider influences on preschool children's fruit, juice,
    and vegetable consumption. *Nutr Rev*. 2001;59(7):224-235.
    http://www.ncbi.nlm.nih.gov/pubmed/11475448. Accessed March 14, 2017.

21. Birch L. Influences on the Development of Children's Eating Behaviours: From
    Infancy to Adolescence. *Can J Diet Pr Res*. 2007;68(1):s1-56.
    https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2678872/pdf/nihms-62775.pdf.
    Accessed March 17, 2017.

22. Branen L, Fletcher J. Comparison of College Students' Current Eating Habits
    and Recollections of Their Childhood Food Practices. *J Nutr Educ*.
    1999;31(6):304-310. doi:10.1016/S0022-3182(99)70483-8.

23. Gregory JE, Paxton SJ, Brozovic AM. Maternal feeding practices predict fruit

and vegetable consumption in young children. Results of a 12-month longitudinal study. *Appetite*. 2011;57(1):167-172. doi:10.1016/j.appet.2011.04.012.

24. Zeinstra GG, Renes RJ, Koelen M a, Kok FJ, De C. The effect of a choice-offering strategy on Dutch children ' s liking and consumption of vegetables : a randomized controlled trial. *Communication*. 2010;2010:1-15. doi:10.3945/ajcn.2009.28529.Am.

25. Feeding Guidelines for Infants and Young Toddlers: A Responsive Parenting Approach. 2017. http://healthyeatingresearch.org/wp-content/uploads/2017/02/her_feeding_guidelines_report_021416-1.pdf. Accessed June 29, 2017.

26. Shloim N, Edelson LR, Martin N, Hetherington MM. Parenting Styles, Feeding Styles, Feeding Practices, and Weight Status in 4-12 Year-Old Children: A Systematic Review of the Literature. *Front Psychol*. 2015;6:1849. doi:10.3389/fpsyg.2015.01849.

27. Vaughn AE, Ward DS, Fisher JO, et al. Fundamental constructs in food parenting practices: a content map to guide future research. *Nutr Rev*. 2016;74(2):98-117. doi:10.1093/nutrit/nuv061.

28. Faith MS, Scanlon KS, Birch LL, Francis LA, Sherry B. Parent-Child Feeding Strategies and Their Relationships to Child Eating and Weight Status. *Obes Res*. 2004;12(11):1711-1722. doi:10.1038/oby.2004.212.

29. Cardel M, Willig AL, Dulin-Keita A, Casazza K, Beasley TM, Fernández JR. Parental feeding practices and socioeconomic status are associated with child

adiposity in a multi-ethnic sample of children. *Appetite*. 2012;58(1):347-353. doi:10.1016/j.appet.2011.11.005.

30. Tschann JM, Martinez SM, Penilla C, et al. Parental feeding practices and child weight status in Mexican American families: a longitudinal analysis. doi:10.1186/s12966-015-0224-2.

31. *Early Childhood Obesity Prevention Policies*. Washington, D.C.: National Academies Press; 2011. doi:10.17226/13124.

32. Benjamin Neelon SE, Briley ME. Position of the American Dietetic Association: Benchmarks for Nutrition in Child Care. *J Am Diet Assoc*. 2011;111(4):607-615. doi:10.1016/j.jada.2011.02.016.

33. 4.5.0.11 - Prohibited Uses of Food. http://cfoc.nrckids.org/StandardView/4.5.0.11. Accessed March 30, 2017.

34. Report Brief : Health and Medicine Division. http://www.nationalacademies.org/hmd/Reports/2011/Early-Childhood-Obesity-Prevention-Policies/Report-Brief.aspx?page=1. Accessed March 30, 2017.

35. Ziegler P, Briefel R, Ponza M, Novak T, Hendricks K, Rader JL. Nutrient Intakes and Food Patterns of Toddlers' Lunches and Snacks: Influence of Location. *J Am Diet Assoc*. 2006;106(1):124-134. doi:10.1016/j.jada.2005.09.036.

36. National Resource Center for Health and Safety in Child Care and Early Education. http://cfoc.nrckids.org/. Accessed April 3, 2017.

37. *Early Childhood Obesity Prevention POlicies*.

http://www.nationalacademies.org/hmd/~/media/Files/Activity

Files/Nutrition/Obesity-Roundtable/Action-Guides/Early Childhood_Action

Guide_Healthy Eating_2.pdf. Accessed March 30, 2017.

38. *Early Childhood Obesity Prevention Policies*. Washington, D.C.: National

     Academies Press; 2011. doi:10.17226/13124.

39. 4.3.2.3 - Encouraging Self-Feeding by Older Infants and Toddlers.

     http://cfoc.nrckids.org/StandardView/4.3.2.3. Accessed March 30, 2017.

40. 4.7.0.1 - Nutrition Learning Experiences for Children.

     http://cfoc.nrckids.org/StandardView/4.7.0.1. Accessed March 30, 2017.

41. 4.5.0.6 - Adult Supervision of Children Who Are Learning to Feed Themselves.

     http://cfoc.nrckids.org/StandardView/4.5.0.6. Accessed March 30, 2017.

42. 4.5.0.11 - Prohibited Uses of Food.

43. Hendy HM, Williams KE, Camise TS, Eckman N, Hedemann A. The Parent

     Mealtime Action Scale (PMAS). Development and association with children's

     diet and weight. *Appetite*. 2009;52(2):328-339.

     doi:10.1016/j.appet.2008.11.003.

44. Dev DA, McBride BA, Speirs KE, Donovan SM, Cho HK eun. Predictors of

     head start and child-care providers' healthful and controlling feeding practices

     with children aged 2 to 5 years. *J Acad Nutr Diet*. 2014;114(9):1396-1403.

     doi:10.1016/j.jand.2014.01.006.

45. Hughes SO, Power TG, Orlet Fisher J, Mueller S, Nicklas TA. Revisiting a

     neglected construct: parenting styles in a child-feeding context. *Appetite*.

     2005;44(1):83-92. doi:10.1016/j.appet.2004.08.007.

46. Hughes SO, Patrick H, Power TG, Fisher JO, Anderson CB, Nicklas TA. The Impact of Child Care Providers' Feeding on Children's Food Consumption. *J Dev Behav Pediatr*. 2007;28(2):100-107. doi:10.1097/01.DBP.0000267561.34199.a9.

47. Kremers SP., Brug J, de Vries H, Engels RCM. Parenting style and adolescent fruit consumption. *Appetite*. 2003;41(1):43-50. doi:10.1016/S0195-6663(03)00038-2.

48. Feeding Guidelines for Infants and Young Toddlers: A Responsive Parenting Approach. 2017.

49. Kharofa RY, Kalkwarf HJ, Khoury JC, Copeland KA. Are Mealtime Best Practice Guidelines for Child Care Centers Associated with Energy, Vegetable, and Fruit Intake? *Child Obes*. 2016;12(1):52-58. doi:10.1089/chi.2015.0109.

50. Ward DS, Mazzucca S, McWilliams C, Hales D. Use of the Environment and Policy Evaluation and Observation as a Self-Report Instrument (EPAO-SR) to measure nutrition and physical activity environments in child care settings: validity and reliability evidence. *Int J Behav Nutr Phys Act*. 2015;12(1):124. doi:10.1186/s12966-015-0287-0.

51. Ball SC, Benjamin SE, Ward DS. Development and Reliability of an Observation Method to Assess Food Intake of Young Children in Child Care. *J Am Diet Assoc*. 2007;107(4):656-661. doi:10.1016/j.jada.2007.01.003.

52. Vaughn AE, Dearth-Wesley T, Tabak RG, Bryant M, Ward DS. Development of a Comprehensive Assessment of Food Parenting Practices: The Home Self-Administered Tool for Environmental Assessment of Activity and Diet Family

Food Practices Survey. *J Acad Nutr Diet*. 2016. doi:10.1016/j.jand.2016.07.021.

53. Frank GC. Taking a Bite Out of Eating Behavior: Food Records and Food Recalls of Children. *J Sch Health*. 1991;61(5):198-200. doi:10.1111/j.1746-1561.1991.tb06010.x.

54. Simons-Morton BG, Baranowski T. Observation in Assessment of Children's Dietary Practices. *J Sch Health*. 1991;61(5):204-207. doi:10.1111/j.1746-1561.1991.tb06012.x.

55. Crawford PB, Gosliner W, Anderson C, et al. Counseling latina mothers of preschool children about weight issues: Suggestions for a new framework. *J Am Diet Assoc*. 2004;104(3):387-394. doi:10.1016/j.jada.2003.12.018.

56. Shloim N, Edelson LR, Martin N, Hetherington MM. Parenting Styles, Feeding Styles, Feeding Practices, and Weight Status in 4-12 Year-Old Children: A Systematic Review of the Literature. *Front Psychol*. 2015;6:1849. doi:10.3389/fpsyg.2015.01849.

57. Ritchie LD, Boyle M, Chandran K, et al. Participation in the Child and Adult Care Food Program Is Associated with More Nutritious Foods and Beverages in Child Care. *Child Obes*. 2012;8(3):224-229. doi:10.1089/chi.2011.0061.

58. Multiple Linear Regression Analysis. http://sphweb.bumc.bu.edu/otlt/MPH-Modules/BS/BS704_Multivariable/BS704_Multivariable7.html. Accessed April 17, 2018.

59. Tovar A, Vaughn AE, Grummon A, et al. Family child care home providers as role models for children: Cause for concern? *Prev Med Reports*. 2017;5:308-

313. doi:10.1016/j.pmedr.2016.11.010.

60. O'Neil CE, Nicklas TA. A Review of the Relationship Between 100% Fruit Juice Consumption and Weight in Children and Adolescents. *Am J Lifestyle Med*. doi:10.1177/1559827608317277.

61. Ball SC, Benjamin SE, Ward DS. Dietary Intakes in North Carolina Child-Care Centers: Are Children Meeting Current Recommendations? *J Am Diet Assoc*. 2008;108(4):718-721. doi:10.1016/J.JADA.2008.01.014.

62. Erinosho T, Dixon LB, Young C, Miller Brotman L, Hayman LL. Nutrition Practices and Children's Dietary Intakes at 40 Child-Care Centers in New York City. *YJADA*. 2011;111:1391-1397. doi:10.1016/j.jada.2011.06.001.

63. Gubbels JS, Gerards SMPL, Kremers SPJ. Use of food practices by childcare staff and the association with dietary intake of children at childcare. *Nutrients*. 2015;7(4):2161-2175. doi:10.3390/nu7042161.

64. Tovar A, Risica P, Mena N, Lawson E, Ankoma A, Gans KM. An Assessment of Nutrition Practices and Attitudes in Family Child-Care Homes: Implications for Policy Implementation. *Prev Chronic Dis*. 2015;12:140587. doi:10.5888/pcd12.140587.

65. Trost SG, Messner L, Fitzgerald K, Roths B. Nutrition and Physical Activity Policies and Practices in Family Child Care Homes. *Am J Prev Med*. 2009;37(6):537-540. doi:10.1016/j.amepre.2009.09.020.

66. Elford L, Brown A. Exploring child-feeding style in childcare settings: How might nursery practitioners affect child eating style and weight? *Eat Behav*. 2014;15(2):314-317. doi:10.1016/j.eatbeh.2014.04.001.

67. Hendy HM. Comparison of five teacher actions to encourage children's new food acceptance. *Ann Behav Med*. 1999;21(1):20-26. doi:10.1007/BF02895029.

68. Hendy HM, Raudenbush B. Effectiveness of teacher modeling to encourage food acceptance in preschool children. *Appetite*. 2000;34(1):61-76. doi:10.1006/appe.1999.0286.

69. Nicklas TA, Baranowski T, Cullen KW, Berenson G. Eating patterns, dietary quality and obesity. *J Am Coll Nutr*. 2001;20(6):599-608. http://www.ncbi.nlm.nih.gov/pubmed/11771675. Accessed March 16, 2018.

70. Kranz S, Hartman T, Siega-Riz AM, Herring AH. A Diet Quality Index for American Preschoolers Based on Current Dietary Intake Recommendations and an Indicator of Energy Balance. *J Am Diet Assoc*. 2006;106(10):1594-1604. doi:10.1016/j.jada.2006.07.005.

71. Fisher JO, Dwyer JT. Next Steps for Science and Policy on Promoting Vegetable Consumption among US Infants and Young Children. *Adv Nutr An Int Rev J*. 2016;7(1):261S-271S. doi:10.3945/an.115.009332.

72. Johnson SL. Developmental and Environmental In fl uences on Young Children ' s Vegetable Preferences. *Adv Nutr An Int Rev J* . 2016;7(9):220S-231S. doi:10.3945/an.115.008706.preferences.

73. Vaughn AE, Ward DS, Fisher JO, et al. Fundamental constructs in food parenting practices: a content map to guide future research. *Nutr Rev*. 2016;74(2):98-117. doi:10.1093/nutrit/nuv061.

74. Farrow C V, Haycraft E, Blissett JM. Teaching our children when to eat: how parental feeding practices inform the development of emotional eating--a

longitudinal experimental design. *Am J Clin Nutr*. 2015;101(5):908-913. doi:10.3945/ajcn.114.103713.

75.   Erinosho TO, Hales DP, Mcwilliams CP, Emunah J, Ward DS. Nutrition policies at child-care centers and impact on role modeling of healthy eating behaviors of caregivers. *J Acad Nutr Diet*. 2012;112(1):119-124. doi:10.1016/j.jada.2011.08.048.

76.   Ogden CL, Carroll MD, Kit BK, Flegal KM. Prevalence of Childhood and Adult Obesity in the United States, 2011-2012. *JAMA*. 2014;311(8):806. doi:10.1001/jama.2014.732.

77.   Lindsay AC, Greaney ML, Wallington SF, Wright JA. Easier said than done: a qualitative study conducted in the USA exploring Latino family child care home providers as role models for healthy eating and physical activity behaviours. *BMJ Open*. 2017;7(11):e018219. doi:10.1136/bmjopen-2017-018219.