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Diet Quality of Preschool Aged Children in Family Child Care Homes

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DIET QUALITY OF PRESCHOOL AGED CHILDREN IN FAMILY CHILD CARE HOMES

BY

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ABSTRACT

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Background: Although family child care homes (FCCH) are the second most utilized form of non-relative child care in the US, little is known about what children eat in this setting.

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Participants/setting: Family childcare providers completed a demographic survey. Preschool-aged children (n = 124; 2-5 years old) enrolled in 43 FCCH, were observed during two meals and a snack each day for two days, following a standardized protocol.

Main outcome measures: Foods and beverages consumed were analyzed in the Nutrition Data System for Research 2015. Mean amounts consumed of each food group were compared to 2/3 of the daily intake recommendations established by the DGA 2015 for children 1-3 years old (1000 kcal) given that recommendations are not standard across age groups. For the exploratory analysis, acculturation was measured using a proxy measure of language spoken at home.

Statistical analyses: One-sample t-tests and one-sample sign tests tested for differences between mean food group amounts consumed compared to the national guidelines. Spearman's correlations were run to examine the association between acculturation, income and education on food groups.

Results: Median and mean intakes of several foods groups did not meet recommendations. Children did not meet the recommended 0.67 cup of vegetables (Mdn = 0.20 cup, 42% of recommendation) ($p<.001$), 1.0 ounce of whole grains (Mdn = 0.25 ounce, 35% of recommendation) ($p<.001$), 9.34 grams of fiber (5.64±2.15 gram, 60% of recommendation) ($p<.001$) and exceeded the recommended 1.0 ounce of refined grains (1.69±0.77 cup, 169% of recommendation) ($p<.001$). Discretionary calories (17.14±7.02 % kcal), percent of calories from added sugars (Mdn = 6.28 % kcal) ($p<.001$), percent of calories from saturated fat (Mdn = 7.83 % kcal) ($p<.001$), and (834.86±317.33 mg) sodium ($p<.001$) did not exceed recommendations. There was a significant positive association with whole grain intake and acculturation, r =0.315, p <.05.

Conclusion: Dietary intake of children cared for in FCCH was not consistent with national recommendations for vegetables, whole grain, and refined grain intake. Future research should continue to develop and evaluate strategies to increase fruit, vegetable and whole grain intake in this setting.

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PREFACE

This thesis was written to comply with the University of Rhode Island graduate school manuscript thesis format. This thesis contains one manuscript: Diet Quality of Preschool Aged Children in Family Child Care Homes. This manuscript has been written in a form suitable for publication and is prepared for submission to the *Journal of the Academy of Nutrition and Dietetics*.

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INTRODUCTION

According to recent estimates, approximately one in four preschool-aged children, ages 2 to 5, are overweight or obese.[1] Contributing to this problem are dietary patterns high in energy dense foods and beverages, and low in fruits, vegetables and whole grains.[2,3] Since food preferences develop during early childhood,[4-6] and contribute to healthy dietary patterns that can track into adulthood,[7] it is critical to support healthy food environments where children are spending their time.

The child care environment is an ideal setting to promote a healthy environment,[8] given that in the US, 60% of children under five years old receive non-parental care, 24% of which are enrolled in non-relative care. Many of these children are enrolled in family child care homes (FCCH), a form of childcare operated from the home of a non-relative. Children under five years of age spend on average over 26 hours a week in this setting,[9] and are recommended to obtain 1/2 to 2/3 of their daily nutrients, depending on their age, if enrolled full-time or part-time, respectively, from meals and snacks consistent with the Dietary Guidelines for Americans (DGA) served in child care.[10-12] Furthermore, while the home environment plays a considerable influence on children's dietary habits,[13,14] child care settings are subject to nutritional regulations and policies, and supported by federal programs, such as the Child and Adult Food Program (CACFP).[15] Having this institutional structure could support healthy nutrition environments by targeting specific nutrition-related attitudes or practices of family child care home providers (FCCP) in professional education and training programs.[16]

Of the studies that have explored what children are eating in childcare, most have focused on menu evaluations,[17-21] and observed foods served[20,22] and almost all have been

conducted in childcare centers.[23-25] These studies found that children in childcare centers are consuming enough vegetables and whole grains but too much saturated fat, sodium and added sugar consumption.[24,25] Studies, however, of what children are eating in FCCH are limited.

Given that in Rhode Island, at least 40% of FCCP identify as Hispanic, it is important to consider acculturation as possible contributor to the foods they choose to serve. It is well known that the healthfulness of the traditional Latino diet, which is high in legumes, fruit,[26,27] tends to deteriorate with the acculturation process due to both changes in the environment and social factors.[28,29] Some aspects of this dietary acculturation refers to the multi-dimensional process in which immigrants adopt, negotiate, and alter food attitudes and beliefs from the dominant culture that can result in changes to dietary consumption.[30] As caregivers acculturate to the US, their consumption of energy-dense snacks and sweetened beverages in children increases.[31,32] Furthermore, several studies report differences in fruit juice and sugar sweetened beverages consumed by ethnicity; Hispanic/Latino and African-American children disproportionately participate in these unhealthy dietary behaviors than their white counterparts.[33-36] Therefore, higher levels of acculturation could potentially influence increased dietary consumption of fruit juice, sugar sweetened beverages and energy-dense foods in FCCH. A recent study with FCCP found that provider ethnicity was related to certain nutritional practices.[16] Furthermore, focus groups with Hispanic and Latino FCCP also indicate the potential influence of culture on foods served by providers to children in their care.[37-39] The relationship between acculturation, culture, and ethnicity is complex and

multifaceted,[40] therefore, examining acculturation could add nuance to understanding dietary intake and ethnicity.

Given the limited number of studies on what children are consuming in FCCH it is important to examine this and explore if the foods they are consuming adhere to the DGA 2015. Furthermore, it is important to explore factors, such as acculturation, that may influence what FCCP serve. This information could inform contextual-based strategies to maintain or improve healthy eating environments in FCCH. Therefore, the aim of this study was to compare meals and snacks consumed by preschool aged children (2- to -5 years of age) in FCCH (n = 43) to the DGA 2015 food pattern recommendations. We also explored the association between FCCP acculturation and dietary consumption by children enrolled in FCCH.

METHODS

Sample

This cross-sectional study used a subset of baseline data collected between January 2016 and November 2016 from 124 children from 43 FCCH from an ongoing cluster randomized controlled intervention conducted by Brown University Healthy Start/Comienzos Sanos Study (1R01 HL123016; "Improving Nutrition and Physical Activity Environments in Home-based Child-care"). The secondary data analysis has been approved by the Institutional Review Board at University of Rhode Island, and the main trial has been approved by the Institutional Review Board at Brown University.

Rhode Island FCCP were recruited for the main trial through community organizations. For the main trial, eligible FCCP had to read and speak English or Spanish, continue operations open for at least the next year, provide meals and snacks for at least three eligible children, and required a working phone. Providers were excluded from the study if FCCH closed for more than a month during the study. Providers were contacted to participate in the trial and completed an eligibility survey. If eligible, the FCCP completed part of the baseline survey on the phone. Later, FCCP complete the remainder of the survey with a Field Coordinator, who also leaves written consent forms for the parents of eligible children in the FCCH. Parent consent is required for children to be observed by research staff members during the two day in-home observation. To be eligible this study, children needed to be aged 2-5 years old and enrolled in FCCH during the observational period and consented by their parents.

Dietary Observation

Field observers trained and certified in the Dietary Observation in Child Care (DOCC) visually estimated the amounts of foods served and consumed by each child in FCCH, and documented a brief description of the type of foods and the quantities of foods served, dropped, traded or added during meals and snacks served in the morning and afternoon.[41] Direct observation has been shown to be a valid and reliable measure of assessing children's food and beverages in childcare.[41] Post-observation, observers clarified additional details on brands and/or cooking methods with providers. Per protocol, an observer can only accurately and reliably assess three children at a time, therefore, when more than three children were present, two observers collected the data.[41] To prevent estimation drift, staff observers conducted in-house trainings quarterly.

A registered dietitian reviewed records prior to data entry through Nutrition Data System for Research 2015 (NDSR 2015). Certified data entry assistants entered foods consumed by children into NDSR 2015 (University of Minnesota Nutrition Coordinating Center, Minneapolis, MN), generating nutrient values through a reliable, consistent method of imputing data for missing food details not captured during documentation. Nutrients outputs from the software included macronutrients and United States Department of Agriculture (USDA) defined food pattern equivalents. These food pattern equivalents were summed into food groups defined by the DGA 2015 using equations adapted from the Healthy Eating Index 2010 from publicly available SAS codes (**Appendix G**).

Details regarding specific food items with corresponding food pattern equivalent groups are described in the extended methods in **Appendix B**.

Dietary Guidelines for Americans 2015 Food Groups

To compare daily recommendations found in the DGA 2015 to the recommended 2/3 amount to be consumed in childcare settings, 2/3 of the 1000 calorie Healthy Food Pattern recommendations for 1-to 3- year old age group were used as the reference standard.[10-12] Two-thirds of the daily nutrient recommendations was chosen, since 135 of 201 observations of children from the on-going main trial consumed at least a breakfast, lunch, and snack, which corresponds to two-thirds of meals consumed in the day (**Figure 1.**). This age group recommendation was appropriate, since the mean age of children (2.9 years old) with available demographic data from the main trial (n = 170) fell within that age group (data not shown). Subheadings below indicate the food groups measures used to assess diet quality in terms of the DGA 2015.

Vegetable

Vegetable consumption was assessed by summing food group pattern equivalents generated through NDSR 2015. As per the Dietary Guidelines for Americans 2015,[12] fried white potatoes, including other starchy vegetables were included in this analysis. Vegetable consumption was measured by total cups of vegetables, based on the USDA Meal Pattern Equivalents.

Fruit

Fruit contains both whole fruit and 100% fruit juice (as consistent with the DGA 2015). Fruit was measured by total cups of fruits, based on the USDA Meal Pattern Equivalents. Fruit juice was not compared to a reference value, since 100% fruit juice did not have specific recommendations according to the DGA 2015.

Grains

The DGA 2015 recommends that 1/2 of grains should be whole. Total grain was calculated in addition to whole grains and refined grains. Total grain, whole grain and refined grains were measured in ounce equivalents.

Dairy

Dairy was reported in cups, and included low fat, fat free and full fat dairy sources.

Protein

Protein was calculated by summing up proteins from both animal and plant sources. Protein was measured in ounces.

Oils

Healthy fats were calculated by summing together mono-unsaturated fats (MUFA) and poly-unsaturated fats (PUFA) values together. This was reported in grams.

Added sugars

The DGA 2015 includes recommendations for no more than 10% of daily calories as added sugars. For this analysis, percent of added sugars was calculated by multiplying added sugars by total sugars in grams by their calories per gram (4 calories per gram) divided by total calories consumed multiplied by 100.

Macronutrients

Overall calories, percent of calories from saturated fat, percent of calories from added sugars and discretionary calories were determined by summing the total calories obtained from solid fat and added sugars and divided by the total caloric consumption. Dietary fiber was reported in grams.

Acculturation

Language spoken at home at in childcare was chosen as a proxy measure for acculturation, which has been previously used in prior studies on acculturation,[42-44] and is known to be a strong predictor of acculturation.[41,45] Response categories were collapsed: "Spanish only" and "Other" was coded as a proxy for being less acculturated as 0, and more than one language spoken "English only", "Both, more English than Spanish", and "Both, equal amounts of time" and "Both, more Spanish than English" as 1.

Income

Income response categories were also collapsed into two groups: "Less than $25,000 income" was coded as 0, indicating lower income, and "$25,001 - $50,000" and "$50,000 – $75,000" were combined together to form "$25,001 – $75,000" and coded as 1.

Education

Education was also coded by collapsing response categories on the item: "less than high school diploma" and "high school or GED" as 0, and grouping "Associate's degree or equivalent" and "Bachelor's degree" as 1.

Statistical Analyses

Analyses were conducted at the FCCH group level. All descriptive statistics on food group variables were conducted by FCCH, and not by individual child. Normality was assessed visually and by examining skewness and kurtosis. For normal variables, a one-sample *t*-test was used to compare means of food group variables compared to DGA recommendations for FCCH. A one-sample sign test was run to compare medians of non-normally distributed food group variables compared to the DGA recommendations for FCCH. The primary aim was sufficiently powered at $\beta = .80$ with a sample size of 22

FCCH. Since analyses were not adjusted for multiple comparisons, the statistically significant threshold was set at $p < 0.01$.

Spearman's correlations were run to examine the association between acculturation, income and education on legumes, vegetables, fruit, juice, whole grains, refined grains, percent of calories from discretionary calories, and percent of calories from added sugars. These foods were previously chosen in the literature on acculturation and dietary intake, and were feasibly measured in our study.[46]

RESULTS

Demographics

All FCCP (100%) were female, with a mean age of 50.8 years. Family child care home providers identified as Hispanic/Latino (95%), Dominican (75%), spoke only Spanish at home outside the child care business (50%), and were not born in the US (97%), and lived for a mean of 11 years in the United States. Almost all of FCCP reported "More Spanish than English" as the language spoken to children in their care (41%) (**Table 1**).

Over one quarter of FCCPs reported attaining GED or high school degrees (35%) or an Associate's degree (35%), however, only two FCCP reported having an additional child development degree (11%) (**Table 1**).Over half reported an annual household income of $25,000 - $50,000 (62%), were married (70%), and most participated in the CACFP program (88%).

Over half of children were male (52.35%), and the average age of children were 2.9 years.

Comparison of mean food group consumed to recommendations

Food groups consistent with DGA 2015

Children met the recommendation for fruit and total grain consumption while in FCCH (0.5 vs. 0.7 cups, 2.0 vs. 2.0 oz equivalents, respectively) (**Table 2, Table 3**). On average, about 0.2 cups or 1.3 fl oz of 100% fruit juice was being consumed by children. Sodium (834.9 vs. 773.5 mg; $p < 0.001$), percent of calories from added sugars (6.3 vs. 10.0 % kcal; $p < 0.001$), and percent of calories from saturated fats (7.8 vs. 10.00 % kcal; $p < 0.001$) did not exceed recommendations. Discretionary calories also (17.1 vs. 15.0 % kcal) did not exceed recommendations (**Table 2, Table 3**).

Food groups inconsistent with recommendations

Overall average consumed calories (564.7 vs. 667.7 kcal; $p < 0.001$) were lower than recommendations. Children's vegetable (0.2 vs 0.7 cups; $p < .001$), whole grain (0.3 vs. 1 oz equivalents; $p < 0.001$), dietary fiber (5.6 vs. 9.3 grams), and healthy oil (7.4 vs. 10 grams; $p < 0.001$) consumption was lower than the recommended consumption. In addition, children were not meeting recommendations for both protein (0.9 vs. 1.3 oz equivalents; $p < 0.001$) and dairy (0.8 vs. 1.3 cups; $p < 0.001$) (**Table 2, Table 3)**.

Exploring the association between acculturation, income, education and dietary consumption

All correlations conducted between acculturation, income, and education are reported in **Table 4**. There was a significant positive association with whole grain intake and acculturation, $r = 0.315$, $p < .05$, as measured by the proxy measure language. Vegetables and education level were also significantly positively correlated, $r = 0.353$, $p < .05$. and juice and education level were significantly negatively correlated $r = -0.324$, $p < .05$. Medians of significantly correlated items were then compared using Kruskal-Wallis tests. However, once adjusted for multiple comparisons with a Bonferroni correction, the results were no longer significant (**Table 5**).

DISCUSSION

The goal of this study was to describe what children are consuming in FCCH relative to the DGA 2015. We found that overall, children are meeting recommendations for fruit, total grains, sodium, percent of calories from added sugars, percent of calories from saturated fat, and percent of calories from discretionary calories. However, children are not meeting recommendations for vegetables, whole grains, refined grains, dairy, protein, healthy oils, and dietary fiber according to the DGA 2015, which is consistent with previous studies conducted in center-based care.[24] Given the limited number of studies exploring what children are consuming in FCCH, these findings highlight important areas for improvement and possible directions for future interventions.

Contrary to our hypothesis, children were not exceeding the amount of unhealthy food groups such as sodium, added sugars, saturated fat and discretionary calories while in FCCH. These findings are in contrast to prior studies completed in child care centers whereby children were served and consumed these food components in excess.[24,25,47] A recent study in child care centers that included Head Start centers, showed that children were being served very few whole grains, and consumed too much saturated fat, sodium during lunch.[24] Although this study was not comparing intake to the DGA, this is of importance, since the significant body of literature supporting these policies examine center-based care,[24,48-50] rather than FCCH. Our findings were unexpected, indicating that more research is needed to understand the food environment and dietary consumption in FCCH. In addition, future studies should examine differences between nutritional recommendations regulating family child homes, center based care, and national CACFP dietary recommendations across states and the impact of these policies in FCCH.

Although we did not assess or control the effects of participating in the CACFP program, it is possible that the CACFP guidelines may play an important role with regards to what food are being served. For example, prior research in RI indicate that CACFP participating centers reported serving more nutritious foods, while non-CACFP center providers reported accessing and recognizing healthier foods.[51] Although there is limited evidence on the effect of CACFP participation on the nutritional quality of consumed in FCCH,[52] nutritional requirements differ across states by CACFP participation status. However, in RI, licensing requirements established in 2007 for FCCH require all homes, regardless of CACFP participation status, to adhere to the CACFP meal pattern requirements.[53] Our findings that children are not consuming enough vegetables, whole grains and dietary fiber, highlight the importance of ensuring that the new CACFP meal pattern guidelines be implemented with hopes of improving consumption of these foods. Specifically, the new guidelines allow more flexibility to serve vegetables during mealtimes, where there are more opportunities for providers to increase the variety of vegetables being served to children. The current guidelines allow two types of reimbursable vegetables to be served during lunch and dinner.[54] Our results also suggest that refined grains may be displacing whole grains, and could contribute to low whole grain consumption. The new CACFP guidelines could also help reduce refined grain consumption, by excluding grain based desserts from reimbursable meal pattens.[54] In addition to the possible impact of new policies, it will be important to consider interventions and training specific to improving vegetable and whole grain consumption that are consistent with federal nutritional recommendations for children in this age group. In RI, providers are required to attend one orientation with the Department of

Youth, Children, and Families prior to licensure. In addition, it is recommended that they attend additional professional development trainings offered by community organizations. It is also recommended, although not required that they utilize online resources offered by the Rhode Island Department of Education, which includes topics of nutrition. Incorporating more specific information on ways to increase vegetable and whole grain consumption within these trainings, can be used to support healthy dietary habits among preschool aged children. Furthermore, it is important to continue to investigate barriers to vegetable, whole grains being served and consumed in FCCH.[55]

In exploratory analysis, we found that acculturation level of FCCP was associated with dietary consumption of the children they cared for. Our study found a significant, positive association with whole grain intake and acculturation. Given the limited number of studies exploring this association in FCCP and children in their care, it is difficult to compare our findings to the literature. Although no study, to our knowledge, has reported on the effects of childcare provider acculturation on whole grain consumption by preschool-aged children, other studies have explored the relationship between generational status and whole grain consumption. For example, in a study with Mexican-American adolescents, higher whole grain consumption was associated with increasing generational status.[56] Other studies of the general population indicate that acculturation is both a protective and a risk factor to healthy dietary habits in Latino populations, associated with higher consumption of fruits and vegetables, and higher rates of energy dense food consumption, increased whole grain intake.[28,29,46,57] Our results suggest that childcare provider acculturation may play a role in specific types of healthy and unhealthy food groups consumed, and should be further explored.

We also found a positive association with vegetables and education level, and a negative association with juice and education level. Although there are no studies, to our knowledge, of FCCP educational level and dietary intake, one study with childcare centers found that that teacher? education was significantly positively associated with better knowledge of nutrition and health.[58] Given that educational level of adults has been shown to be a significant predictor of nutrition knowledge,[59] investigating the effects of education, acculturation, and nutrition knowledge on the types of healthy and unhealthy food groups consumed within early child care settings will be important.

Limitations and Strengths

This study was not without limitations and results should be interpreted in context of social and environmental factors. The cross-sectional design of our study limits the ability to draw causal inferences. In addition, our sample was primarily composed of Dominican FCCP with a mean age of 50 years old recruited in the greater Providence, RI area. Although social desirability bias cannot be discounted when interpreting our results, observation is the gold standard to assess dietary consumption of children in childcare.[41,60,61] Our study did not account for foods served in childcare, which could be compared to foods consumed. Examining whether children were consuming certain food groups due to what was being served could show us whether the provider acts as a nutritional gatekeeper through purchasing or food preparation decisions, or through how the food is being served to children (i.e. feeding practices). Future studies should also examine differences between foods served and consumed when assessing dietary quality in this setting.

Due to the limited sample size, we were unable to adjust for the confounding effects of education, income, ethnicity on acculturation. In addition, we used proxy measures of acculturation, which may not fully capture acculturation. More comprehensive measures of acculturation exist that account for community-level factors influencing acculturation status, such as preferred media and interactions with friends and family, which could better capture multi-directional nuances of acculturation.[62]

To our knowledge, only one study[63] has reported dietary consumption in FCCH. Our study contributes novel findings on dietary consumption in FCCH, and has direct implications for nutritional guidance in FCCH and directions for future research and training regarding specific food groups in this environment.

Conclusion

Generally, children in this sample of FCCH are meeting recommendations for saturated fat, added sugars, sodium, and discretionary calories, suggesting that uniform nutritional recommendations between FCCH and center-based care could be contributing to some food group adherence of DGA 2015 in RI. However, the children in this study are not consuming enough whole grains, vegetables and consuming too many refined grains, indicating that the current updates to CACFP and national dietary guidance to improve whole grain and vegetable consumption are supported for this age group. Although more research is needed, these findings contribute to the evidence base for improving dietary recommendations and regulations in FCCH. Future research should examine FCCH nutritional recommendations and national guidance on dietary consumption.

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TABLES AND FIGURES

Table 1. Descriptive characteristics of family child care home providers (n = 43)

Characteristic	Data
Sex	
Female (n, % of FCCH)	43 (100)
Age, mean± SD, (range)	50.81±6.99 (34-65)
Years lived in US, mean±SD, (range)	11.62±5.43 (1-27)
Hispanic/Latino, (n, % of FCCH)	
Yes	41 (95.4)
No	2 (4.6)
Provider language spoken in own household (n, % of FCCH)	
English only	1 (2.4)
Spanish only	21 (50.0)
Both, more English than Spanish	1 (2.4)
Both, equal amounts of time	4 (9.5)
Both, more Spanish than English	14 (33.3)
Other	1 (2.4)
Provider language spoken in childcare (n, % of FCCH)	
Spanish only	2 (4.7)
Both, more English than Spanish	14 (32.5)
Both, equal amounts of time	2 (4.7)
Both, more Spanish than English	7 (16.3)
English only	18 (41.8)
Hispanic cultural identification (n, % of FCCH)	
Dominican	31 (75.6)
Colombian	2 (4.9)
Other	3 (7.32)
Puerto Rican	1 (2.4)
Guatemalan	1 (2.4)
Mexican	3 (7.3)
Country Born In (n, % of FCCH)	
Other	42 (97.7)
United States	1 (2.3)
CACFP Participation (n, % of FCCH)	
Yes	38 (88.4)
No	5 (11.6)
Education (n, % of FCCH)	
< High school diploma	10 (23.3)
High school or GED	15 (34.9)
Associates degree or equivalent	15 (34.9)
Bachelor's degree	3 (6.9)
CDA (Child Dev.) Credential (n, % of FCCH)	
Yes	2 (11.1)
No	16 (88.9)
Annual Household Income (n, % of FCCH)	
Less than $25,000	11 (25.6)
$25,001 - $50,000	27 (62.8)
$50,001 - $75,000	5 (11.6)
Marital Status (n, % of FCCH)	
Single, never married	4 (9.3)
Married or living with partner	30 (69.8)
Divorced	4 (9.3)
Separated	2 (4.7)
Widowed	3 (6.9)

Table 2. Food group means of foods consumed by preschool aged children in family child care homes (n = 43)

Food group and subgroup	Mean±SD	Median (IQR)	t / Z
Energy (kcal/day)	564.68±145.96***	548.5 (211.71)	-3.61[a]
Vegetables (cp/day)	0.28±0.22	0.2 (0.24)***	17.5[b]
Fruits (cp/day)	0.73±0.6	0.53 (0.54)	4.5[b]
Grains (oz/day)	2.04±0.78	2 (1.11)	0.42[a]
Whole grains (oz/day)	0.35±0.34	0.25 (0.38)***	-18.5[b]
Refined grains (oz/day)	1.69±0.77***	1.61 (0.93)	6.11[a]
Dairy (cp/day)	0.89±0.45	0.84 (0.54)***	-14.5[b]
Protein (oz/day)	1.05±0.68	0.92 (0.86)***	-9.5[b]
Oils (g/day)	8.46±3.68	7.43 (3.86)***	-12.5[b]
Dietary Fiber (g/day)	5.64±2.15***	5.59 (3.67)	-11.65[a]
Sodium (mg/day)	834.86±317.33***	773.51 (389.94)	-3.61[a]
Added sugars (% kcals/day)	7.55±5.61	6.28 (5.84)***	-11.5[b]
Saturated Fat (% kcal/day)	8.34±3.07	7.83 (2.81)***	-14.5[b]
Discrete kcals (% of kcal/day)	17.14±7.02	15.88 (8.25)	1.82[a]

[a] normally distributed variable assessed using a one-sample t-test
[b] non-normally distributed variable assessed using a one-sample sign test
kcal = kilocalories; cp = cup(s); oz = ounce equivalents; g = grams; mg = milligrams; % kcals = % of kilocalories
*p<0.05; **p<0.01;***p <0.001

Table 3. Average daily 2/3 recommendations to be consumed in FCCH and % of daily recommendations consumed in FCCH (n = 43)

Food group and subgroup	2/3 daily recommendation[a]	% of recommendation
Energy (kcal)	667	85
Vegetables (cp)	0.667	42
Fruits (cp)	0.667	109
Grains (oz)	2	102
Whole grains (oz)	1	35
Refined grains (oz)	1	169
Dairy (cp)	1.34	67
Protein (oz)	1.34	79
Oils (g)	10	85
Dietary Fiber (g)	9.334	60
Sodium (mg)	1000	83
Added sugars (% kcals)	10	76
Saturated Fat (% kcal)	10	83
Discrete kcals (% of kcal)	15	114

[a] based on 2/3 of a 1,000 calorie diet as recommended by the Dietary Guidelines for Americans 2015 for children 1-3 years old
kcal = kilocalories; cp = cup(s); oz = ounce equivalents; g = grams; mg = milligrams; % kcals = % of kilocalories

Table 4. Spearman correlations between food groups consumed in family child care home and FCCP socio-demographics (n = 42)

	Language (n = 42)	Income (n = 43)	Education (n =43)
Legumes (cp)	-0.178	0.020	0.104
Vegetables (cp)	0.049	0.006	0.353*
Fruit (cp)	0.138	0.077	-0.068
Juice (cp)	0.259	-0.026	-0.324*
Whole grains (oz)	0.315*	0.150	0.190
Refined grains (oz)	-0.067	-0.026	0.023
Percent discrete calories (% kcal)	0.122	-0.073	-0.004
Percent added sugars (% kcal)	-0.134	-0.099	-0.091

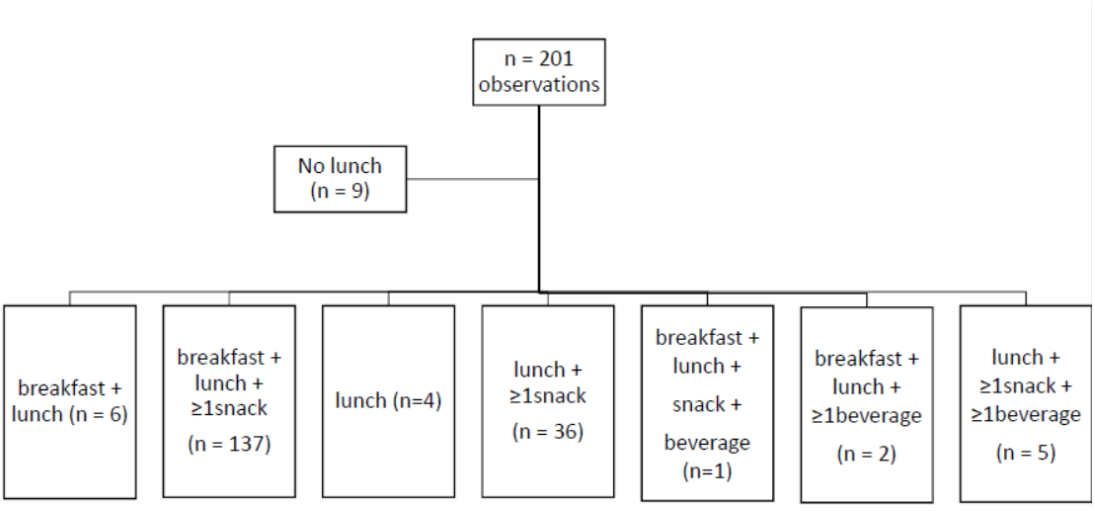
kcal = kilocalories; cp = cup(s); oz = ounce equivalents; g = grams; mg = milligrams; % kcals = % of kilocalories
*p<0.05; **p<0.01; ***p <0.001

Table 5. FCCP language and education on food group intake

	Language (n = 42)						
	Spanish only (n = 22)			More than one language (n = 20)			
	Mean	Median	SD	Mean	Median	SD	
Whole grains (oz)	0.25	0.20	0.22	0.48	0.31	0.40	$p<0.05^b$
	Education (n = 43)[a]						
	High school or less (n = 25)			Some college (n = 18)			
	Mean	Median	SD	Mean	Median	SD	
Vegetables (cp)	0.21	0.21	0.18	0.36	0.31	0.24	$p<0.05^b$
Juice (cp)	0.30	0.30	0.36	0.06	0.02	0.09	$p<0.05^b$

[a] includes associate's degree or equivalent and bachelor's degree
[b] Kruskal-wallis test
cp = cup(s)
*p<0.05; **p<0.01; ***p <0.001

Figure 1. Flow chart of eating occasion patterns breakfast, lunch, snack observations of children in FCCH from main study (ongoing data-set), n represents an observation.



APPENDIX A: REVIEW OF LITERATURE

Introduction

According to the socio-ecological framework for health promotion,[1] biological, social, and environmental factors influence the development of childhood obesity. Contributing in part to this epidemic is the consumption of energy dense, low-fiber, and high fat foods.[2] Since food preferences are established in early childhood,[3] understanding the nutrition contexts in which children spend their time can inform childhood obesity prevention strategies. The scope of this literature review introduces childhood obesity and its disease prevalence and definitions, theoretical frameworks and factors influencing the development of the disease. Finally, this review provides a synthesis of the literature on diet quality and social factors (demographics, acculturation) in child care settings, focusing on family child care homes (FCCH), defined as home-based, non-child care by a non-relative.

Childhood Obesity – A Public Health Concern

Childhood obesity is a major public health crisis. According to National Health and Nutrition Examination Survey (NHANES) data from 2011-2014, approximately one in five preschool-aged (2-5 years old) children are overweight or obese in the United States (US).[4] This is concerning, given that childhood overweight and obesity often tracks into adulthood,[5] and increases the risk for chronic diseases like type 2 diabetes mellitus, cardiovascular disease, and some cancers.[6] To prevent the development of such diseases, the United States Preventive Task force recommends screening for obesity in children older than six years of age and adolescents.[7] Therefore, the Center for Disease Control and Prevention (CDC) has developed screening tools (e.g. indicators of adiposity) to diagnose childhood obesity.[8]

Childhood (ages 2 to 19 years old) overweight and obesity is measured through body mass index (BMI), a measure of weight adjusted by height, which correlates to body fat.[9] Body mass index can also predict future adiposity, morbidity, and mortality in children.[10] In adults, absolute measures of BMI are used, where a BMI range of 18.5 to 24.9 indicates a healthy weight.[11] However, due to periods of rapid growth and development in children, weight and height change with age and differ by sex. [12] Therefore, to determine overweight and obesity in children, percentiles specific to age and sex are used.[12] Currently the CDC defines childhood overweight by the 85th to 94th percentile, and childhood obesity by a BMI of 95th percentile, or BMI of ≥30 kg/m^2, whichever is considered a lower value.[11] However, the United States Preventive Services Task Force recommends screening for childhood obesity using the 95th percentile.[13] Other measures of childhood adiposity include BMI % (both considered better correlates to measuring changes in adiposity over time) and BMI z-score; their use dependent on study design.[1]

Some preschool-aged children are at greater risk for developing overweight and obesity.[14] In 2014, 14.5% low-income US preschool-aged children (ages 2 to 4-years) participating in the Special Supplemental Nutrition Program for Women, Infants and Children (WIC) were obese,[2] compared to the national average of 8.9%.[4] In general, low-income preschool-aged children are at greater risk for developing overweight and obesity due to environmental factors (e.g., food environment)[15,16] and social factors (e.g., feeding practices).[17] Furthermore, ethnic/racial disparities exist in low-income populations. The prevalence of obesity in Hispanic children and youth ages 2-19 is 21.9%, a prevalence 1.5 times greater when compared to white children and youth of the same age group.[4]

This disparity between ethnicity has been examined in a prospective pre-birth cohort study conducted by Taveras *et al.,*[18] whereby Hispanic children exhibited an increased likelihood of exposure to prenatal, pregnancy, infancy, and early childhood dietary, physical inactivity and other obesogenic risk factors compared to their white counterparts. Given that these disparities increase the risk for childhood obesity, culturally appropriate services and interventions that are tailored by ethnicity are important.[19] In addition to tailoring interventions to these populations, early intervention may also be the key to overcoming these disparities and prevention of obesity.[20]

Theoretical Framework

The etiology of childhood obesity is complex, resulting from multiple interacting factors including biological, social, and environmental factors.[21] The socio-ecological model (SEM) has been applied to childhood obesity to understand how individual, social, and environmental factors influence a child's weight status.[21,22] This model identifies the influence of multiple determinants on an individual's weight status, from broader, national levels to localities (e.g. neighborhood, schools, and workplaces), integrating policy, behavioral and genetic factors to obesity.[23]

Of these determinants, developmental environments where children spend their time host other factors that can influence the development of childhood overweight and obesity. With children spending a significant amount of time in non-parental care,[24] studies have examined the impact of child care on obesity outcomes.[25-27] Furthermore, these factors may be unique by type of child care (FCCH or centers) due to differences in the type of care examined. Such differences are even apparent in early development. In longitudinal study of early exposure of child-care in 1138 children from a prospective

cohort of pregnant women and infant dyads at 0-6 months of age, child care in a non-relative's home was associated with increased weight for length at 1 year of age and BMI-z at 3 years of age.[27] In a nationally representative sample of 15,691 children entering kindergarten from the Early Childhood Longitudinal-Study (ECLS) Kindergarten-Cohort, Maher *et al.*[26] found that there was a protective effect in certain types of non-parental care for Latino subgroups. However, other studies report on no difference between types of child care. In another study conducted on 10,700 children entering kindergarten from the ECLS cohort by Isong *et al.*[28], children placed non-parental care did not differ from children placed in parental care after adjusting for fixed effects of additional confounders. Regardless of whether there is a differential risk between types of childcare, it appears that childcare environments will to have an longitudinal effect on weight status,[26,27] therefore, changing the food environment in early developmental settings can potentially impact the development of chronic disease across the lifespan.[29]

Child Care Settings

In 2012, almost 60% of children ages 3 to 5-years were enrolled in some type of non-parental care with 56% enrolled in center-based child care, and 24% enrolled in non-relative home-based child care, also known as a family child care home (FCCH).[24]

Previously, research on the nutrition environment and child diet quality has focused in the home, rather than in childcare.[30] Therefore, factors affecting children in this setting should be explored, given that children on average spend 23-36 hours per week in child care.[24] According to the Academy of Nutrition and Dietetics (AND), children are recommended to consume 1/2 to 2/3 of their daily consumption in the child

care setting, depending on the number of hours spent in care.[31] Given that up to more than half of a child's dietary needs can be consumed in child care settings, it is important to implement policies to promote the development of healthy eating habits.[30] In a recent study surveying 105 FCCP in Rhode Island (RI), providers responded with positive attitudes towards healthy eating, .[32] More than 60% of providers that attended nutrition trainings sponsored by government agencies and community organizations found them helpful, and almost 60% agreed (very) that nutrition trainings tailored towards FCCH could be beneficial.[32] Providers (71%) were also highly motivated to serve healthy foods and snacks to children in their care.[32] In addition, unlike the home environment, child care settings are often regulated by state and federal policies,[33,34] and receive federal subsidies.[35] Thus, the opportunities to improve nutrition environments through the broader scope of policy can be a potential strategy in childhood obesity prevention.

Family child care homes: child and provider demographics

Family child care homes (FCCH), or care provided by a non-relative for one or more children in their home, is the second-most utilized form of non-relative child care.[24] This setting shows potential for prevention,[36] as licensed FCCH are subject to federal and state regulations regarding nutrition and physical activity and can participate in federal nutrition programs. However, standards and policies are states-specific, therefore, degrees of compliance to national recommendations may vary regionally.[37] Children attending FCCH may be at even higher risk for childhood obesity given that nationally, almost 900,000 children living below the federal poverty level in 2012 are enrolled in FCCH.[24] In Rhode Island (RI), 28% of children under 6-years of age in 2012 were enrolled in FCCH.[38,39] Although no national data on family income exist for those with

children in FCCH care, FCCH are associated with lower costs of care,[40] and may be a potential option for low-income families. With some evidence showing that FCCH environments are associated with increased BMI-z scores when compared to child care centers,[27,41] obesity prevention in FCCH in addition to childcare centers will be important. Since dietary patterns of increased energy density and low nutrient density are linked to obesity[2], understanding the quality of foods served in FCCH can help inform nutrition policies or interventions in this setting.

Caregivers are considered the nutritional gatekeepers of a child's diets.[42] In FCCH, child care providers play a major role in shaping children's health behaviors by influencing a child's dietary intake by controlling the availability and access to healthy or unhealthy foods, meal structure, feeding, and mealtime social practices.[43] In a study of 113 childcare providers in Illinois, nutrition knowledge and attitudes are positively correlated with nutrition behaviors at mealtimes.[44] Nutrition knowledge was measured by an instrument assessing knowledge of common nutritional problems, tools, Child and Adult Care Food Program (CACFP), and recommended dietary intakes (RDA) guidelines.[25] Therefore, understanding the nutrition knowledge, attitudes of caregivers can play an important role in supporting positive nutrition behaviors in the childcare environment. Since childcare providers in RI experience little nutrition training, but find them helpful,[32] understanding factors that may influence their nutrition knowledge and attitudes can extend information to develop potential strategies to support nutrition in child care.

The Child and Adult Care Food Program

The CACFP is a federally funded program for reimbursing the cost of meals and snacks offered in child care programs.[45] Child care centers and FCCH that meet eligibility requirements are able to participate in a tiered reimbursement program.[45] The program functions as a food safety net for low-income individuals and vulnerable populations with greater nutritional risk.[45] Participation is contingent on compliance with federal nutrition standards defined by meal-patterns based off of the DGA.[45] Recent updates to the standards have been implemented. These updates include Although not fully implemented in RI currently, these recommendations contain some of the best practice recommendations set forth by the Institute of Medicine.[45] These recommendations provide nutritional guidance for FCCH providers participating in the program. Thus, understanding nutrition environments in this setting can have implications for CACFP policies.

Caregiver dietary socio-demographics and diet

Although literature is well established between socio-demographic factors and diet in adults,[46] little is known about the relationship between caregiver socio-demographics and the diet of children in their care. A study by Erinosho *et al.*[47] reported that caregivers' demographic characteristics, such as increasing caregiver age and education was associated with more healthful dietary intake in children 3-5 years of age and Latino subgroup was associated with less healthful dietary intakes by children 3-5 years of age.[48]

Acculturation refers to the process by which cultural exchange occurs between an immigrant and their host culture, which can result in a change in many behaviors, including diet.[49,50] Although no standards have been established for measuring

acculturation, some measures include length of residence in host country, language spoken, location of birth, and also ethnic identification.[51] Thus, examining acculturation indicators may elucidate how culture influences types of foods consumed.

Although few studies to date have looked at what children are consuming in FCCHs, providers' socio-demographic factors can influence what is served. For example, focus groups conducted with Hispanic FCCH providers found that culture influences what they serve,[52,53] which can impact a child's diet quality. Given that in Latino subgroups, non-parental care could be more protective against obesity,[26] understanding how demographic and cultural factors influence dietary quality is important. Examining factors such as ethnicity, income, education and acculturation could potentially better capture the nuance of diet and ethnicity to improve socio-cultural relevance when tailoring nutrition trainings in early childhood settings.

Nutrition environments of child care settings

The nutrition environments of child care settings have been assessed using self-reported questionnaires,[54] mealtime observations,[55-57] and through review of menu items.[58] Findings show that children's meals and snacks in child care are not meeting dietary recommendations.[56,59,60]

Several validated tools have been developed to assess the nutrition environment in child care centers.[61,62] The Environment Policy and Assessment (EPAO) is a tool utilizing observation to assess frequency of nutrition behaviors observed or policies enforced in the child care setting.[61] Using the EPAO, Neelon *et al*.[63] assessed the environment of 96 child care centers in North Carolina serving children ages 3-5, and found that providers served children juice, high-sugar and high-salt snack foods, and

mostly served whole milk. These findings indicate that generally, there is room to improve for nutrition in childcare. However, since the EPAO only captures home level nutrition environments, and not at the child level diet quality, it is difficult to determine whether children are consuming what they are being served.

To quantify dietary intake in child-care centers without relying on provider report or intrusive weighing methods,[64] Ball *et al.*[55] developed the Diet Observation in Child Care (DOCC) as a validated protocol for observing dietary intakes in child care settings. Results from a larger study utilizing the DOCC protocol indicate that children in North Carolina child care centers were not meeting DGA in 2005, whereby consumption of whole grain and dark green and orange vegetable was limited and consumption of energy dense snacks and condiments was high.[60] By developing the DOCC protocol, Ball *et al.*[55] was able to perform analyses on foods served and consumed, accounting for observed child intake of nutrients or food groups (foods consumed) rather than observing what was served.

In a recent study using the DOCC protocol, Schwartz *et al.*[56] observed 38 child care centers in Connecticut, with an average of five children per center (n=204), during lunch. Both quantities of foods served and consumed were documented capturing child intake. Macronutrient analysis revealed that foods consumed contained high levels of saturated fat, sodium, and low fiber content.[56] Overall, studies in centers show that children consume little whole grains, fiber and vegetables, but consume foods high in salt and saturated fat.

Few studies have been conducted in FCCH. Using self-evaluations data conducted by FCCH providers, Trost *et al.*[65] found that 297 FCCHs in Kansas adequately

complied with recommended practices, providers infrequently served low-fat milk, and frequently served 100% fruit juice. The Keys study, an intervention aimed at improving nutrition environments of FCCH in North Carolina, is the only study that has assessed diet quality in FCCH[66] The Keys study also used the DOCC protocol to collect dietary data and HEI-2005 to assess diet quality of 15 children ages 1-5, attending FCCH.[66] Results revealed a mean total HEI-2005 score of 63.8, compared to a score of 80 for "good" diet quality.[66] Although total scores have been reported, HEI-2005 component scores were not reported by the authors of the study. Findings from both studies indicate that there is room for improving nutrition in FCCH. However, unlike in centers, little is known about what specific food groups children are consuming in FCCH.

Conclusion

Child care settings are critical environments where preschool-aged children develop their dietary habits.[3] Supporting the environments in which habits develop early in life can be critical to prevent the development of chronic disease[67] associated with childhood overweight and obesity.[4] Studies in center-based care show potential for improving consumption of vegetables, whole grains, while decreasing empty calories in child care settings.[56,63,68,69] However, little is known about what preschool-aged children are consuming in family child-care homes, and the environment in which children are consuming 2/3 of their recommended daily intake. Future studies should examine diet of children in this setting compared to other types of non-parental care, particularly with larger samples, to determine whether there is an effect of type of care on dietary intake of children. Furthermore, examining types of healthy and unhealthy foods are being served and comparing to what is being consumed by children can potentially inform mediators

and moderators to dietary intake of children in this setting. However, as previously state, since regulations, recommendations and policies in childcare differ across geographic regions and states, examining these factors in addition to ethnicity, may help prioritize which factors to modify in this setting. Exploring these potential relationships can inform regulations, trainings, and support for providers in the childcare sector.

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APPENDIX B: EXTENDED METHODOLOGY

This cross-sectional study used baseline data from an ongoing cluster randomized controlled intervention conducted by Brown University Healthy Start/Comienzos Sanos study (1R01 HL123016; "Improving Nutrition and Physical Activity Environments in Home-based Child-care") collected between January 2016 and November 2016. The main trial has been approved by the Institutional Review Board at Brown University.

"Healthy Start/Comienzos Sanos"

Participants in the Rhode Island area were recruited for the main trial through community organizations that provided training and support for FCCP. For the main trial, eligible FCCP had to read and speak English or Spanish, continue operations open for at least 6 months with plans to remain in operation for at least 1 year, provide meals and snacks for at least three eligible children, and required a working phone. Providers were excluded if FCCH closed for more than a month during the study. To be eligible this study, children needed to be aged 2-5 years old and enrolled in FCCH during the observational period, eat at least 1 meal and 1 snack prepared by the FCCP during their day at the FCCH, and consented by their parents.

For the main trial, a total of 132 FCCPs will be randomized into 66 matched pairs. These FCCPs will be randomized into the nutrition and physical activity intervention group or early literacy and reading readiness control group. A monthly topic was chosen and FCCP received a newsletter/video with information related to their topic.

Eligibility criteria

For this analysis, we included FCCP (n = 43) who had complete baseline demographic surveys conducted in-person and over the phone, and those that had

completed two days of baseline dietary observation, which encompassed 124 children observed by trained field staff.

Data collection

Field observers trained and certified in the Dietary Observation in Child Care (DOCC) visually estimated the amounts of foods served and consumed by each child in FCCH, and documented a brief description of the type of foods and the quantities of foods served, dropped, traded or added during meals and snacks served in the morning and afternoon. Direct observation has been shown to be a valid and reliable measure of assessing children's food and beverages in child-care. Post-observation, observers clarified additional details on brands and/or cooking methods with providers and example of the form can be seen in **Appendix D**. Per protocol, an observer can only accurately and reliably assess three children at a time, therefore, when more than three children were present, two observers collected the data.[70] To prevent estimation drift, staff observers conducted in-house trainings quarterly.

A Registered Dietitian reviewed records prior to data entry through Nutrition Data System for Research 2015 (NDSR 2015). Certified data entry assistants entered foods consumed by children into NDSR 2015 (University of Minnesota Nutrition Coordinating Center, Minneapolis, MN), generating nutrient values through a reliable, consistent method of imputing data for missing food details not captured during documentation. Starting January 2017, NDSR 2015 was then updated to a newer version of the software. Nutrients outputs from the software included macronutrients and United States Department of Agriculture (USDA) defined food pattern equivalents. These food pattern

equivalents were summed and statistical analyses were run using SAS 9.4 (SAS Institute, Cary, NC).

Comparison of mean food group consumed to recommendations

Measures

Details regarding specific food items with corresponding food pattern equivalent groups are described in the extended methods in **Appendix B**.

Dietary Guidelines for Americans 2015

To compare daily recommendations found in the DGA 2015 to the recommended 2/3 amount to be consumed in child care settings, 2/3 of the 1000 calorie Healthy Food Pattern recommendations for 1-to 3- year old age group were used as the reference standard.[71-73] This age group recommendation was supported by the mean age of children (2.9 years old) with available demographic data (n = 170).

Vegetable

Vegetable consumption was assessed by summing food group pattern equivalents generated through NDSR 2015. As per the Dietary Guidelines for Americans 2015, fried white potatoes and other starchy vegetables were included in this analysis. Vegetable consumption was measured by total cups of vegetables, based on the USDA Meal Pattern Equivalents. This included dark green vegetables, deep-yellow vegetables, tomato, white potatoes, fried potatoes, other starchy vegetables, legumes, other vegetables, fried vegetables, vegetable juice. Values were obtained from NDSR output 09.

Fruit

Fruit contains both whole fruit and 100% fruit juice (as consistent with the DGA 2015. Fruit was measured by total cups of fruits, based on the USDA Meal Pattern

Equivalents. This included citrus juice, fruit juice excluding citrus juice, citrus fruit, fruit excluding citrus fruit, avocado or similar, fried fruits, fruit-based savory snack. Values were obtained from NDSR output 09.

Grains

The DGA 2015 recommends that 1/2 of grains should be whole. Total grain was calculated in addition to whole grains and refined grains. Total grain, whole grain and refined grains were measured in ounce equivalents. Values were obtained from raw NDSR output 04.

Dairy

Dairy was calculated in cups, and included milk – whole, milk – reduced fat, milk – low fat and fat free, milk – nondairy and ready to drink, flavored milk – reduced fat, ready to drink flavored milk – low fat and fat free, sweetened flavored milk beverage powder with non-fat dry milk, artificially sweetened flavored milk beverage powder with non-fat dry milk, cheese – full fat, cheese – low fat and fat free, cheese – non-dairy, yogurt – sweetened with whole milk, yogurt – sweetened low fat, yogurt – sweetened fat free, yogurt – artificially sweetened low fat, yogurt – artificially sweetened fat free, yogurt – nondairy, dairy based sweetened meal replacement/supplement, dairy based artificially sweetened meal replacement/supplement. Values were obtained from NDSR output 09.

Protein

Protein was calculated by summing up proteins from both animal and plant sources. Protein was measured in ounces. This included beef, lean beef, veal, lean veal, lamb, lean lamb, fresh pork, lean fresh pork, cured pork, lean cured, game, poultry, lean

poultry, fish – fresh and smoked, lean fish – fresh and smoked, shellfish, cold cuts and sausage, lean cold cuts and sausage, organ meats, eggs, egg substitute, nuts and seeds, nut and seed butters, meat alternatives. Values were obtained from NDSR output 09.

Oils

Healthy oils group was measured by summing mono-unsaturated fatty acids (MUFA) and poly-unsaturated fatty acids (PUFA). The MUFA and PUFA values were obtained from NDSR output 04 and reported in grams.

Sodium

Sodium was reported in milligrams and obtained from the raw NDSR output 04.

Dietary Fiber

Dietary fiber was reported in grams and obtained from the raw NDSR output 04.

Macronutrients

Overall calories, percent of calories from saturated fat, percent of calories from added sugars and discretionary calories were determined by summing the total calories obtained from total solid fat and added sugars by total sugars and divided by the total calorie consumption multiplied by 100. Percent of saturated fat calories were obtained from the raw NDSR output 04. Percentage of added sugars calories were obtained by multiplying added sugars by total sugars by 4 calories per gram divided by total calories and multiplied by 100. Both of these values were obtained from NDSR output 04.

Acculturation

Language spoken at home at in childcare was chosen as a proxy measure for acculturation, which has been previously used in prior studies on acculturation, and is known to be a strong predictor of acculturation. Response categories were collapsed: “Spanish only” and “Other” was coded as a proxy for being less acculturated as 0, and

more than one language spoken “English only”, “Both, more English than Spanish”, and “Both, equal amounts of time” and “Both, more Spanish than English” as 1.

Income

Income response categories were also collapsed into two groups: “Less than $25,000 income” was coded as 0, indicating lower income, and “$25,001 - $50,000” and “$50,000 – $75,000” were combined together to form “$25,001 – $75,000” and coded as 1.

Education

Education was also coded by collapsing response categories on the item: “ less than high school diploma” and “high school or GED” as 0, and grouping “Associate’s degree or equivalent” and “Bachelor’s degree” as 1.

Statistical Analyses

Analyses were conducted at the FCCH group level. All descriptive statistics on food group variables were conducted by FCCH, and not by individual child. Normality was assessed visually and by examining skewness and kurtosis. For normal variables, a one-sample *t*-test was used to compare means of food group variables compared to DGA recommendations for FCCH. A one-sample sign test was run to compare medians of non-normally distributed food group variables compared to the DGA recommendations for FCCH. The primary aim was sufficiently powered at $\beta = .80$ with a sample size of 22 FCCH. Since analyses were not adjusted for multiple comparisons, the statistically significant threshold was set at $p < 0.01$.

Spearman’s correlations were run to examine the association between acculturation, income and education on legumes, vegetables, fruit, juice, whole grains, refined grains,

percent of calories from discretionary calories, and percent of calories from added sugars. These foods were previously chosen in the literature on acculturation and dietary intake, and were feasibly measured in our study.

APPENDIX C: PROVIDER DEMOGRAPHIC 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	

2	TIMES PER WEEK	
3	TIMES PER MONTH	
88	DON'T KNOW	
99	REFUSED	

Now I'm going to ask you about 100% fruit juice. By 100% fruit juice, I mean juice that you buy at the store that has no added sugar in it as well as homemade juice that has no added sugar. How often do you serve 100% fruit juice to the children?

[Interviewer Note: FOR NONE, ENTER "0" TIMES PER DAY.]

- TIMES PER DAY
- TIMES PER WEEK
- TIMES PER MONTH
- DON'T KNOW
- REFUSED

Question: BLTAILOR2
Required
Showif: (BLTAILOR1.PERDAY > 0) or (BLTAILOR1.PERWEEK > 0) or (BLTAILOR1.PERMONTH > 0)

18. Each time you serve 100% fruit juice to the children, how many ounces do you usually give them? To help you think of the amount, a regular size juice box is 6 ounces.

Question: BLTAILOR3
Required

Scale Summary		
Code	Label	Show-If
1	TIMES PER DAY	
2	TIMES PER WEEK	
3	TIMES PER MONTH	
88	DON'T KNOW	
99	REFUSED	

19. How often do you serve the children fried or pre-fried meats or fish such as chicken nuggets and fish sticks?

[Interviewer Note: FOR NONE, ENTER "0" TIMES PER DAY.]

[Interviewer Note: "If you do not know what a specific food is,

please base your answer on the foods from the question that you do know."]

- TIMES PER DAY
- TIMES PER WEEK
- TIMES PER MONTH
- DON'T KNOW
- REFUSED

Question: BLTAILOR4
Required

Scale Summary		
Code	Label	Show-If
1	TIMES PER DAY	
2	TIMES PER WEEK	
3	TIMES PER MONTH	
88	DON'T KNOW	
99	REFUSED	

20. How often do you serve the children fried or pre-fried potatoes such as French fries, tater tots, or hash browns that are, sold frozen and then cooked in the oven?

[Interviewer Note: FOR NONE, ENTER "0" TIMES PER DAY.]

[Interviewer Note: "If you do not know what some of these pre-fried foods are, please base your answer on the foods from the question that you do know."]

- TIMES PER DAY
- TIMES PER WEEK
- TIMES PER MONTH
- DON'T KNOW
- REFUSED

Question: BLTAILOR5
Required

Scale Summary		
Code	Label	Show-If
1	TIMES PER DAY	
2	TIMES PER WEEK	
3	TIMES PER MONTH	

88	DON'T KNOW	
99	REFUSED	

21. How often do you serve fried foods such as fried sweet plantains, fried yucca, empanadas, tostones, or pastelitos?

[Interviewer Note: FOR NONE, ENTER "0" TIMES PER DAY.]

[Interviewer Note: "If you do not know what some of these fried foods are, please base your answer on the foods from the question that you do know."]

- TIMES PER DAY
- TIMES PER WEEK
- TIMES PER MONTH
- DON'T KNOW
- REFUSED

Question: BLTAILOR6
Required

Scale Summary		
Code	Label	Show-If
1	TIMES PER DAY	
2	TIMES PER WEEK	
3	TIMES PER MONTH	
88	DON'T KNOW	
99	REFUSED	

22. How often do you serve the children high-fat meats such as sausage, bacon, hot dogs, salami, chorizo, bologna, or ground beef that is less than 93% lean?

[Interviewer Note: FOR NONE, ENTER "0" TIMES PER DAY.]

[Interviewer Note: "If you do not know what a specific food is, please base your answer on the foods from the question that you do know."]

- TIMES PER DAY
- TIMES PER WEEK
- TIMES PER MONTH

- DON'T KNOW
- REFUSED

Question: BLTAILOR7
Required

Scale Summary		
Code	Label	Show-If
1	TIMES PER DAY	
2	TIMES PER WEEK	
3	TIMES PER MONTH	
88	DON'T KNOW	
99	REFUSED	

23. How often do you serve the children sweets, such as cookies, cakes, doughnuts, muffins, ice cream, arroz con leche, and pudding?

[Interviewer Note: FOR NONE, ENTER "0" TIMES PER DAY.]

[Interviewer Note: "If you do not know what a specific food is, please base your answer on the foods from the question that you do know."]

- TIMES PER DAY
- TIMES PER WEEK
- TIMES PER MONTH
- DON'T KNOW
- REFUSED

Question: BLTAILOR8
Required

Scale Summary		
Code	Label	Show-If
1	TIMES PER DAY	
2	TIMES PER WEEK	
3	TIMES PER MONTH	
88	DON'T KNOW	
99	REFUSED	

24. How often do you serve the children snack foods, such as potato chips, corn chips, buttered popcorn or buttery or cheesy crackers such as Ritz, Club, or Cheez-It?

[Interviewer Note: FOR NONE, ENTER "0" TIMES PER DAY.]

[Interviewer Note: "If you do not know what some of these snack foods are, please base your answer on the foods from the question that you do know."]

- TIMES PER DAY
- TIMES PER WEEK
- TIMES PER MONTH
- DON'T KNOW
- REFUSED

Question: BLTAILOR9
Required

Scale Summary		
Code	Label	Show-If
1	Rarely or never	
2	1 time per month	
3	2-3 times per month	
4	1 time per week or more	
88	DON'T KNOW	
99	REFUSED	

25. How often do you lead planned nutrition education activities for the children in circle time lessons, story time, or during cooking or gardening activities? Do you lead these planned lessons…

- Rarely or never
- 1 time per month
- 2-3 times per month
- 1 time per week or more
- DON'T KNOW
- REFUSED

Question: BLTAILOR10
Required

Scale Summary		
Code	Label	Show-If
1	Rarely or never	
2	1 time per month	
3	2-3 times per month	
4	1 time per week or more	
88	DON'T KNOW	
99	REFUSED	

26. How often do you lead planned lessons for the children that are focused on building skills that use large muscles such as skipping, jumping, throwing, catching, kicking, balancing, and stretching? Do you lead these planned lessons...

- Rarely or never
- 1 time per month
- 2-3 times per month
- 1 time per week or more
- DON'T KNOW
- REFUSED

Question: BLTAILOR11
Required

Scale Summary		
Code	Label	Show-If
1	Minutes per day	
2	Minutes per week	
3	Minutes per month	
88	DON'T KNOW	
99	REFUSED	

27. How many minutes each day do children 2 years of age and older watch TV in your home? Count all of the minutes that the children watch TV from the time they arrive until the time they leave. Include shows that are educational or just for fun.

[Interviewer Note: FOR NONE, ENTER "0" MINUTES PER DAY. IF PPT ONLY ANSWERS WITH A NUMBER (E.G. "30"), CLARIFY WHETHER THAT IS "EACH DAY"]

- Minutes per day
- Minutes per week
- Minutes per month

- DON'T KNOW
- REFUSED

Question: BLTAILOR12
Required

Scale Summary		
Code	Label	Show-If
1	Minutes per day	
2	Minutes per week	
3	Minutes per month	
88	DON'T KNOW	
99	REFUSED	

28. How many minutes a day do children who are 2 years of age and older usually spend on other screen time such as watching videos, watching shows on a computer or tablet, playing video games or using the computer? Count all of the minutes from the time the children arrive until the time they leave. Count screentime that is educational or just for fun.

[Interviewer Note: FOR NONE, ENTER "0" TIMES PER DAY. IF PPT ONLY ANSWERS WITH A NUMBER (E.G. "30"), CLARIFY WHETHER THAT IS "EACH DAY"]

- Minutes per day
- Minutes per week
- Minutes per month
- DON'T KNOW
- REFUSED

Question Block: BLTAILOR13
Contains: BLTAILOR13A, BLTAILOR13B, BLTAILOR13C, BLTAILOR13D, BLTAILOR13E, BLTAILOR13F
Required

Scale Summary		
Code	Label	Show-If
1	Yes	
2	No	

29. Now, I am going to read you a list of child nutrition topics that you might give parents information about through brochures, tip sheets, newsletters, your website, a bulletin board, or informal meetings. Please tell me if you give parents information on any of the following topics:

Yes	No

The types of food children should or should not eat.		
The types of drinks children should or should not drink		
Recommended serving sizes for children		
The importance of serving children a variety of different foods		
Creating a healthy mealtime environment including sitting down and eating meals together as a family		
Encouraging children to eat healthy foods instead of pressuring or forcing them		

Question Block: BLTAILOR14
Contains: BLTAILOR14A, BLTAILOR14B, BLTAILOR14C, BLTAILOR14D, BLTAILOR14E
Required

Scale Summary		
Code	Label	Show-If
1	Yes	
2	No	

30. Now please tell me whether or not you give parents information on any of the following physical activity topics:

	Yes	No
The amount of time children should spend being physically active		
Encouraging children to be physically active		
Limiting long periods of seated time for children		
The amount of time children should spend playing outdoors		
Using the outdoors to encourage children's active play		

Question Block: BLTAILOR15
Contains: BLTAILOR15A, BLTAILOR15B, BLTAILOR15C
Required

Scale Summary		

Code	Label	Show-If
1	Yes	
2	No	

31. Please tell me whether or not you give parents information on any of the following screen time topics?

	Yes	No
The amount of screen time children should have including watching programs, playing videogames or using the computer		
Why it's important to limit screen time		
Other activities children can do instead of screen time		

Question Block: BLTAILOR16
Contains: BLTAILOR16A, BLTAILOR16B, BLTAILOR16C, BLTAILOR16D
Required

Scale Summary		
Code	Label	Show-If
1	Yes	
2	No	

32. Now I'd like to ask whether you share information with parents about your child care home's policies. Do you give them information about:

	Yes	No
Your child care home's policies on child nutrition		
Your child care home's policies on physical activity		
Your child care home's policies on outdoor play		
Your child care home's policies on screen time		

Now I'm going to read you a series of statements and I would like you to tell me how much you agree or disagree with each statement.

Collection: ATTITUDES
Contains: BLATTITUDE1, BLATTITUDE2, BLATTITUDE3, BLATTITUDE4, BLATTITUDE5, BLATTITUDE6, BLATTITUDE7, BLATTITUDE8, BLATTITUDE9, BLATTITUDE10, BLATTITUDE11, BLATTITUDE12, BLATTITUDE13

Question: BLATTITUDE1
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	

33. You enjoy joining in with the children in play. Do you...

[INT NOTE: DO YOU AGREE, DISAGREE, OR NEITHER? A LITTLE OR A LOT?]

- Agree a lot
- Agree a little
- Neither agree nor disagree
- Disagree a little
- Disagree a lot
- DON'T KNOW
- REFUSED

Question: BLATTITUDE2
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	

34. Children behave better when they are given plenty of physical activity. Do you...

[INT NOTE: DO YOU AGREE, DISAGREE, OR NEITHER? A LITTLE OR A LOT?]

- Agree a lot
- Agree a little
- Neither agree nor disagree
- Disagree a little
- Disagree a lot
- DON'T KNOW
- REFUSED

Question: BLATTITUDE3
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	

35. It is OK to let children watch educational programs on TV or the internet. Do...

[INT NOTE: DO YOU AGREE, DISAGREE, OR NEITHER? A LITTLE OR A LOT?]

- Agree a lot
- Agree a little
- Neither agree nor disagree
- Disagree a little
- Disagree a lot
- DON'T KNOW
- REFUSED

Question: BLATTITUDE4
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	

36. When children serve themselves, they are likely to eat less. Do you...

[INT NOTE: DO YOU AGREE, DISAGREE, OR NEITHER? A LITTLE OR A LOT?]

- Agree a lot
- Agree a little
- Neither agree nor disagree
- Disagree a little

- Disagree a lot
- DON'T KNOW
- REFUSED

Question: BLATTITUDE5
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	

37. Giving children a food treat to reward good behavior is an effective way to manage their behavior. Do you...

[INT NOTE: DO YOU AGREE, DISAGREE, OR NEITHER? A LITTLE OR A LOT?]

- Agree a lot
- Agree a little
- Neither agree nor disagree
- Disagree a little
- Disagree a lot
- DON'T KNOW
- REFUSED

Question: BLATTITUDE6
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	

38. Society has gone overboard limiting sweets and other desirable food. Do you...

[INT NOTE: DO YOU AGREE, DISAGREE, OR NEITHER? A LITTLE OR A LOT?]

- Agree a lot

- Agree a little
- Neither agree nor disagree
- Disagree a little
- Disagree a lot
- DON'T KNOW
- REFUSED

Question: BLATTITUDE7
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	

39. Child care providers should eat the same food as the children in their care. Do you…

[INT NOTE: DO YOU AGREE, DISAGREE, OR NEITHER? A LITTLE OR A LOT?]

- Agree a lot
- Agree a little
- Neither agree nor disagree
- Disagree a little
- Disagree a lot
- DON'T KNOW
- REFUSED

Question: BLATTITUDE8
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	

40. It is important for child care providers to sit with children while they eat. Do you…

[INT NOTE: DO YOU AGREE, DISAGREE, OR NEITHER? A LITTLE OR A LOT?]

- Agree a lot
- Agree a little
- Neither agree nor disagree
- Disagree a little
- Disagree a lot
- DON'T KNOW
- REFUSED

Question: BLATTITUDE9
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	

41. A picky eater should be left alone rather than pressured to try new food. Do you...

[INT NOTE: DO YOU AGREE, DISAGREE, OR NEITHER? A LITTLE OR A LOT?]

- Agree a lot
- Agree a little
- Neither agree nor disagree
- Disagree a little
- Disagree a lot
- DON'T KNOW
- REFUSED

Question: BLATTITUDE10
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	

42. How children eat while at child care has little or no effect on food habits because those are formed at home. Do you…

[INT NOTE: DO YOU AGREE, DISAGREE, OR NEITHER? A LITTLE OR A LOT?]

- Agree a lot
- Agree a little
- Neither agree nor disagree
- Disagree a little
- Disagree a lot
- DON'T KNOW
- REFUSED

Question: BLATTITUDE11
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	

43. Child care settings affect children's lifelong eating habits. Do you…

[INT NOTE: DO YOU AGREE, DISAGREE, OR NEITHER? A LITTLE OR A LOT?]

- Agree a lot
- Agree a little
- Neither agree nor disagree
- Disagree a little
- Disagree a lot
- DON'T KNOW
- REFUSED

Question: BLATTITUDE12
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	

44. Child care settings affect children's lifelong physical activity habits. Do you...

[INT NOTE: DO YOU AGREE, DISAGREE, OR NEITHER? A LITTLE OR A LOT?]

- Agree a lot
- Agree a little
- Neither agree nor disagree
- Disagree a little
- Disagree a lot
- DON'T KNOW
- REFUSED

Question: BLATTITUDE13
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	

45. Children should play outside everyday no matter what the weather is like. Do you...

[INT NOTE: DO YOU AGREE, DISAGREE, OR NEITHER? A LITTLE OR A LOT?]

- Agree a lot
- Agree a little
- Neither agree nor disagree
- Disagree a little
- Disagree a lot
- DON'T KNOW
- REFUSED

Please tell me how often you do the following things with the children you care for.

Collection: PRACTICES
Contains: BLPRACTICE1, BLPRACTICE2, BLPRACTICE3, BLPRACTICE4, BLPRACTICE5, BLPRACTICE6, BLPRACTICE7, BLPRACTICE8, BLPRACTICE9, BLPRACTICE10, BLPRACTICE11, BLPRACTICE12, BLPRACTICE13, BLPRACTICE14, BLPRACTICE15, BLPRACTICE16, BLPRACTICE17, BLPRACTICE18, BLPRACTICE19, BLPRACTICE20, BLPRACTICE21, BLPRACTICE22, BLPRACTICE23, BLPRACTICE24, BLPRACTICE25, BLPRACTICE26

Question: BLPRACTICE1
Required

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

46. You promise children a reward if they eat a specific food. For example: "If you eat your beans, we can play ball outside."

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

Question: BLPRACTICE2
Required

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

47. You reward children with food or sweets when they are well behaved.

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

Question: BLPRACTICE3
Required

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

48. You teach the children about the foods they are eating.

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

Question: BLPRACTICE4
Required

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

49. You give children something to eat to make them feel better when they are upset.

- Never
-

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

Question: BLPRACTICE5
Required

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

50. You leave the TV on during children's meals and snacks.

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

Question: BLPRACTICE6
Required

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

51. You encourage children to wait a few minutes before getting seconds so they can decide if they are still hungry.

- Never
- Rarely
- Sometimes
- Often

- Always
- DON'T KNOW
- REFUSED

Question: BLPRACTICE7
Required

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

52. You let children decide for themselves how much they should eat.

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

Question: BLPRACTICE8
Required

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

53. You encourage children to eat fruits and vegetables by telling them that they taste good.

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

Question: BLPRACTICE9
Required

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

54. You ask children if they are hungry before serving them seconds.

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

Question: BLPRACTICE10
Required

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

55. You encourage children to eat a wide variety of foods.

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

Question: BLPRACTICE11
Required

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

56. You praise children when they try a new food.

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

Question: BLPRACTICE12
Required

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

57. You wait to give children seconds until they have finished another food on their plate.

- Never
- Rarely
- Sometimes

- Often
- Always
- DON'T KNOW
- REFUSED

Question: BLPRACTICE13
Required

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

58. You show children that you enjoy fruits and vegetables so the children are more likely to eat them.

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

Question: BLPRACTICE14
Required

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

59. You encourage children to eat by using food as a reward. (For example, ''if you finish your vegetables, you will get some cookies.'')

- Never
- Rarely
- Sometimes
- Often
- Always

- DON'T KNOW
- REFUSED

Question: BLPRACTICE15
Required

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

60. You eat chips, sweets, or fast food while you are caring for children.

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

Question: BLPRACTICE16
Required

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

61. You watch and guide children's eating so that they don't eat more than they should.

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

Question: BLPRACTICE17
Required

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

62. You play videos for the children during children's meals and snacks.

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

Question: BLPRACTICE18
Required

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

63. You ask the children if they are full before you remove an unfinished plate of food.

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

Question: BLPRACTICE19
Required

Scale Summary		
Code	Label	Show-If

1	Never	
2	Rarely	
3	Sometimes	
4	Often	
5	Always	
88	DON'T KNOW	
99	REFUSED	

64. You watch and guide children's eating so that they don't eat less than they should.

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

Question: BLPRACTICE20
Required

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

65. You drink soda or other sugary drinks while you are caring for children.

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

Question: BLPRACTICE21
Required

Scale Summary		
Code	Label	Show-If
1	Never	
2	Rarely	
3	Sometimes	
4	Often	

5	Always	
88	DON'T KNOW	
99	REFUSED	

66. You encourage children to finish their food even if they say they are not hungry.

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

Question: BLPRACTICE22
Required

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

67. You teach children in your care about being physically active.

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

Question: BLPRACTICE23
Required

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

68. You look for **training** on how to help **children** be more **physically active**.

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

Please tell me how **strongly** you agree or **disagree** with the following **statements**.

Question: BLPRACTICE24
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	

69. You look for **trainings** to learn **about healthy eating for children**. Do you...

- Agree a lot
- Agree a little
- Neither agree nor disagree
- Disagree a little
- Disagree a lot
- DON'T KNOW
- REFUSED

Question: BLPRACTICE25
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	

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

- 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
Showif: (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

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.

• All the answers you give me will be kept strictly confidential. All data for this study will be handled according to Brown University Policy, Federal guidelines, and Rhode Island Law regarding confidentiality. The results of this study may be used for publication, but will not identify you by name.
• Your participation in this survey is voluntary.
• You can stop at any time.
• You can refuse to answer any questions you wish.
• Also, all surveys are audio recorded for quality assurance purposes.

If you have any questions about your participation in this survey, you can call Dr. Patricia Risica, who is in charge of the Family Child Care Homes study at (401) 863-6550. If you have any questions about your rights as a participant in a research study, you can call the Brown University Research Protections Office at (401) 863-3050.

May I continue with the survey?

- ○ YES
- ○ NO

Collection: SURE
Contains: BLSURE1, BLSURE2, BLSURE3, BLSURE4, BLSURE5, BLSURE6, BLSURE7, BLSURE8, BLSURE9, BLSURE10, BLSURE11, BLSURE12, BLSURE13, BLSURE14, BLSURE15, BLSURE16, BLSURE17, BLSURE18, BLSURE19, BLSURE20, BLSURE21, BLSURE22, BLSURE23, BLSURE24, BLSURE25, BLSURE26
Show if: (ELIGCONSENT = 1:[YES])

Question: BLSURE1
Required

Scale Summary		
Code	Label	Show-If
1	Not at all sure	
2	A little sure	
3	Sure	
4	Very sure	
88	DON'T KNOW	
99	REFUSED	

1. How sure are you that you can get the children to drink more water?

- ○ Not at all sure
- ○ A little sure
- ○ Sure

- Very sure
- DON'T KNOW
- REFUSED

Question: BLSURE2
Required

Scale Summary		
Code	Label	Show-If
1	Not at all sure	
2	A little sure	
3	Sure	
4	Very sure	
88	DON'T KNOW	
99	REFUSED	

2. How sure are you that you can limit the amount of fruit juice that the children drink to no more than two 4-6 ounce servings per week?

- Not at all sure
- A little sure
- Sure
- Very sure
- DON'T KNOW
- REFUSED

Question: BLSURE3
Required

Scale Summary		
Code	Label	Show-If
1	Not at all sure	
2	A little sure	
3	Sure	
4	Very sure	
88	DON'T KNOW	
99	REFUSED	

3. How sure are you that you can serve the children only 1% or skim milk?

- Not at all sure
- A little sure
- Sure
- Very sure
- DON'T KNOW
- REFUSED

Question: BLSURE4

Required

Scale Summary		
Code	Label	Show-If
1	Not at all sure	
2	A little sure	
3	Sure	
4	Very sure	
88	DON'T KNOW	
99	REFUSED	

4. How sure are you that you can serve milk without flavoring?

[INT NOTE: FLAVORING INCLUDES SWEETENED SYRUPS SUCH AS CHOCOLATE AND STRAWBERRY]

- ○ Not at all sure
- ○ A little sure
- ○ Sure
- ○ Very sure
- ○ DON'T KNOW
- ○ REFUSED

Question: BLSURE5
Required

Scale Summary		
Code	Label	Show-If
1	Not at all sure	
2	A little sure	
3	Sure	
4	Very sure	
88	DON'T KNOW	
99	REFUSED	

5. Sugary drinks include sodas, Kool-Aid, Hawaiian punch, Sunny Delight, lemonade, Gatorade, juices with added sugar, powders that you make into drinks, and any other drinks with added sugar, such as morir sonando, horchata, and batido.

How sure are you that you can avoid serving the children sugary drinks?

[Interviewer Note: "If you do not know what one or some of these drinks are,, please base your answer on the drinks in the question that you do know."]

- ○ Not at all sure
- ○ A little sure

- Sure
- Very sure
- DON'T KNOW
- REFUSED

Question: BLSURE6
Required

Scale Summary		
Code	Label	Show-If
1	Not at all sure	
2	A little sure	
3	Sure	
4	Very sure	
88	DON'T KNOW	
99	REFUSED	

6. How sure are you that you can serve the children fruit two or more times a day?

- Not at all sure
- A little sure
- Sure
- Very sure
- DON'T KNOW
- REFUSED

Question: BLSURE7
Required

Scale Summary		
Code	Label	Show-If
1	Not at all sure	
2	A little sure	
3	Sure	
4	Very sure	
88	DON'T KNOW	
99	REFUSED	

7. How sure are you that you can serve the children vegetables two or more times a day?

- Not at all sure
- A little sure
- Sure
- Very sure
- DON'T KNOW
- REFUSED

Question: BLSURE8
Required

Scale Summary		
Code	Label	Show-If
1	Not at all sure	
2	A little sure	
3	Sure	
4	Very sure	
88	DON'T KNOW	
99	REFUSED	

8. Fried and pre-fried foods include french fries, tater tots, hash browns, chicken nuggets, fish sticks, empanadas, and fried plantains. How sure are you that you can serve the children fried or pre-fried foods less than one time per week or never?

[Interviewer Note: "If you do not know what a some of these pre-fried foods are, please base your answer on the foods in the question that you do know."]

- ○ Not at all sure
- ○ A little sure
- ○ Sure
- ○ Very sure
- ○ DON'T KNOW
- ○ REFUSED

Question: BLSURE9
Required

Scale Summary		
Code	Label	Show-If
1	Not at all sure	
2	A little sure	
3	Sure	
4	Very sure	
88	DON'T KNOW	
99	REFUSED	

9. High-fat meats include sausage, bacon, hot dogs, salami, chorizo, salchichon, bologna, and ground beef that is less than 93% lean. How sure are you that you can serve the children high-fat meats less than one time per week or never?

[Interviewer Note: "If you do not know what some of these high-fat meats are, please base your answer on the foods in the question that you do know."]

- ○ Not at all sure
- ○ A little sure

- Sure
- Very sure
- DON'T KNOW
- REFUSED

Question: BLSURE10
Required

Scale Summary		
Code	Label	Show-If
1	Not at all sure	
2	A little sure	
3	Sure	
4	Very sure	
88	DON'T KNOW	
99	REFUSED	

10. High-fiber, whole grain foods include whole wheat bread, whole wheat crackers, oatmeal, brown rice, whole grain cereals like Cheerios, and whole grain pasta.

How sure are you that you can serve the children high-fiber, whole grain foods two or more times per day?

- Not at all sure
- A little sure
- Sure
- Very sure
- DON'T KNOW
- REFUSED

Question: BLSURE11
Required

Scale Summary		
Code	Label	Show-If
1	Not at all sure	
2	A little sure	
3	Sure	
4	Very sure	
88	DON'T KNOW	
99	REFUSED	

11. High-salt, high-fat snack foods include potato chips, corn chips, buttered popcorn or buttery or cheesy crackers such as Ritz, Club, Cheez-It, or Cheese Nips.

How sure are you that you can serve the children high-salt,

high-fat foods less than one time per week or never?

- Not at all sure
- A little sure
- Sure
- Very sure
- DON'T KNOW
- REFUSED

Question: BLSURE12
Required

Scale Summary		
Code	Label	Show-If
1	Not at all sure	
2	A little sure	
3	Sure	
4	Very sure	
88	DON'T KNOW	
99	REFUSED	

12. High-sugar, high-fat foods include cookies, cakes, doughnuts, muffins, arroz con leche, and ice cream.

How sure are you that you can serve the children high-sugar, high-fat foods less than one
time per week or never?

- Not at all sure
- A little sure
- Sure
- Very sure
- DON'T KNOW
- REFUSED

Question: BLSURE13
Required

Scale Summary		
Code	Label	Show-If
1	Not at all sure	
2	A little sure	
3	Sure	
4	Very sure	
88	DON'T KNOW	
99	REFUSED	

13. How sure are you that you can let the children serve

themselves at mealtime?

- Not at all sure
- A little sure
- Sure
- Very sure
- DON'T KNOW
- REFUSED

Question: BLSURE14
Required

Scale Summary		
Code	Label	Show-If
1	Not at all sure	
2	A little sure	
3	Sure	
4	Very sure	
88	DON'T KNOW	
99	REFUSED	

14. How sure are you that you can let the children decide for themselves how much food they will eat?

- Not at all sure
- A little sure
- Sure
- Very sure
- DON'T KNOW
- REFUSED

Question: BLSURE15
Required

Scale Summary		
Code	Label	Show-If
1	Not at all sure	
2	A little sure	
3	Sure	
4	Very sure	
88	DON'T KNOW	
99	REFUSED	

15. How sure are you that you can always praise or encourage children for trying new foods and foods they may not like?

- Not at all sure
- A little sure
- Sure

- Very sure
- DON'T KNOW
- REFUSED

Question: BLSURE16
Required

Scale Summary		
Code	Label	Show-If
1	Not at all sure	
2	A little sure	
3	Sure	
4	Very sure	
88	DON'T KNOW	
99	REFUSED	

16. How sure are you that you can lead a planned lesson about nutrition at least once a week?

- Not at all sure
- A little sure
- Sure
- Very sure
- DON'T KNOW
- REFUSED

Question: BLSURE17
Required

Scale Summary		
Code	Label	Show-If
1	Not at all sure	
2	A little sure	
3	Sure	
4	Very sure	
88	DON'T KNOW	
99	REFUSED	

17. How sure are you that you can give families information about child nutrition and physical activity on a variety of topics?

- Not at all sure
- A little sure
- Sure
- Very sure
- DON'T KNOW
- REFUSED

Question: BLSURE18

Required

Scale Summary		
Code	Label	Show-If
1	Not at all sure	
2	A little sure	
3	Sure	
4	Very sure	
88	DON'T KNOW	
99	REFUSED	

18. How sure are you that you can provide the children with at least 60 minutes of outdoor play every day?

- Not at all sure
- A little sure
- Sure
- Very sure
- DON'T KNOW
- REFUSED

Question: BLSURE19
Required

Scale Summary		
Code	Label	Show-If
1	Not at all sure	
2	A little sure	
3	Sure	
4	Very sure	
88	DON'T KNOW	
99	REFUSED	

19. How sure are you that you can provide the children with at least 90 minutes total of physical activity every day?

- Not at all sure
- A little sure
- Sure
- Very sure
- DON'T KNOW
- REFUSED

Question: BLSURE20
Required

Scale Summary		
Code	Label	Show-If
1	Not at all sure	
2	A little sure	
3	Sure	

4	Very sure	
88	DON'T KNOW	
99	REFUSED	

20. How sure are you that you can provide the children with a variety of toys and equipment to promote their physical activity?

- Not at all sure
- A little sure
- Sure
- Very sure
- DON'T KNOW
- REFUSED

Question: BLSURE21
Required

Scale Summary		
Code	Label	Show-If
1	Not at all sure	
2	A little sure	
3	Sure	
4	Very sure	
88	DON'T KNOW	
99	REFUSED	

21. How sure are you that you can always praise and encourage the children for being physically active?

- Not at all sure
- A little sure
- Sure
- Very sure
- DON'T KNOW
- REFUSED

Question: BLSURE22
Required

Scale Summary		
Code	Label	Show-If
1	Not at all sure	
2	A little sure	
3	Sure	
4	Very sure	
88	DON'T KNOW	
99	REFUSED	

22. How sure are you that you can lead a planned physical

activity lesson at least once a week?

- Not at all sure
- A little sure
- Sure
- Very sure
- DON'T KNOW
- REFUSED

Question: BLSURE23
Required

Scale Summary		
Code	Label	Show-If
1	Not at all sure	
2	A little sure	
3	Sure	
4	Very sure	
88	DON'T KNOW	
99	REFUSED	

23. How sure are you that you can regularly participate in physical activity with the children?

- Not at all sure
- A little sure
- Sure
- Very sure
- DON'T KNOW
- REFUSED

Question: BLSURE24
Required

Scale Summary		
Code	Label	Show-If
1	Not at all sure	
2	A little sure	
3	Sure	
4	Very sure	
88	DON'T KNOW	
99	REFUSED	

24. How sure are you that you can avoid screen time like watching TV, or using a computer, tablet, or smartphone in front of the children?

- Not at all sure

- A little sure
- Sure
- Very sure
- DON'T KNOW
- REFUSED

Question: BLSURE25
Required

Scale Summary		
Code	Label	Show-If
1	Not at all sure	
2	A little sure	
3	Sure	
4	Very sure	
88	DON'T KNOW	
99	REFUSED	

25. How sure are you that you can limit the children's screen time to 30 minutes per week or less? Screen time includes watching programs on TV or other device, playing video games, or using a computer. Screen time includes both educational and fun shows and games.

- Not at all sure
- A little sure
- Sure
- Very sure
- DON'T KNOW
- REFUSED

Question: BLSURE26
Required

Scale Summary		
Code	Label	Show-If
1	Not at all sure	
2	A little sure	
3	Sure	
4	Very sure	
88	DON'T KNOW	
99	REFUSED	

26. How sure are you that you can always keep the TV off during meals and snacks?

- Not at all sure
- A little sure

- Sure
- Very sure
- DON'T KNOW
- REFUSED

Collection: BARRIERS
Contains: BLBARRIERS27, BLBARRIERS28, BLBARRIERS29, BLBARRIERS30, BLBARRIERS31, BLBARRIERS32, BLBARRIERS33, BLBARRIERS34, BLBARRIERS35, BLBARRIERS36, BLBARRIERS37, BLBARRIERS38, BLBARRIERS39, BLBARRIERS40, BLBARRIERS41, BLBARRIERS42, BLBARRIERS43, BLBARRIERS44, BLBARRIERS45, BLBARRIERS46, BLBARRIERS47, BLBARRIERS48, BLBARRIERS49, BLBARRIERS50, BLBARRIERS51, BLBARRIERS52, BLBARRIERS53, BLBARRIERS54, BLBARRIERS55, BLBARRIERS56, BLBARRIERS57, BLBARRIERS58
Show if: (ELIGCONSENT = 1:[YES])

Great! I'd like to start by asking you some questions about how sure you are about doing certain things with the children that you care for..

Question: BLBARRIERS27
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	

27. Now I am going to make some statements and ask whether you agree or disagree with them and how strongly you agree or disagree.

If water was the only drink that you offered during play time, the children would drink enough. Do you...?

[INT NOTE: DO YOU AGREE, DISAGREE, OR NEITHER? A LITTLE OR A LOT?]

- Agree a lot
- Agree a little
- Neither agree nor disagree
- Disagree a little
- Disagree a lot
- DON'T KNOW
- REFUSED

Question: BLBARRIERS28
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	

28. If you were to limit the amount of 100% pure fruit juice the children drink, they would get enough vitamins. Do you…

[INT NOTE: DO YOU AGREE, DISAGREE, OR NEITHER? A LITTLE OR A LOT?]

- Agree a lot
- Agree a little
- Neither agree nor disagree
- Disagree a little
- Disagree a lot
- DON'T KNOW
- REFUSED

Question: BLBARRIERS29
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	

29. The children like the taste of skim or lowfat (1%) milk. Do you…?

[INT NOTE: DO YOU AGREE, DISAGREE, OR NEITHER? A LITTLE OR A LOT?]

- Agree a lot
- Agree a little
- Neither agree nor disagree
- Disagree a little
- Disagree a lot
- DON'T KNOW

- REFUSED

Question: BLBARRIERS30
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	

30. You have enough time to prepare healthy foods as often as you would like. Do you…?

[INT NOTE: DO YOU AGREE, DISAGREE, OR NEITHER? A LITTLE OR A LOT?]

- Agree a lot
- Agree a little
- Neither agree nor disagree
- Disagree a little
- Disagree a lot
- DON'T KNOW
- REFUSED

Question: BLBARRIERS31
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	

31. Fresh fruits and vegetables go bad too quickly to be able to serve them very often. Do you…?

[INT NOTE: DO YOU AGREE, DISAGREE, OR NEITHER? A LITTLE OR A LOT?]

- Agree a lot
- Agree a little
- Neither agree nor disagree

- Disagree a little
- Disagree a lot
- DON'T KNOW
- REFUSED

Question: BLBARRIERS32
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	

32. Fresh fruits and vegetables are too expensive to serve as often as you would like. Do you…?

[INT NOTE: DO YOU AGREE, DISAGREE, OR NEITHER? A LITTLE OR A LOT?]

- Agree a lot
- Agree a little
- Neither agree nor disagree
- Disagree a little
- Disagree a lot
- DON'T KNOW
- REFUSED

Question: BLBARRIERS33
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	

33. You are concerned about wasting food because the children won't eat healthy foods. Do you…?

[INT NOTE: DO YOU AGREE, DISAGREE, OR NEITHER? A LITTLE OR A LOT?]

- Agree a lot
- Agree a little
- Neither agree nor disagree
- Disagree a little
- Disagree a lot
- DON'T KNOW
- REFUSED

Question: BLBARRIERS34
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	

34. It is hard to serve healthy foods because the children are picky. Do you…?

[INT NOTE: DO YOU AGREE, DISAGREE, OR NEITHER? A LITTLE OR A LOT?]

- Agree a lot
- Agree a little
- Neither agree nor disagree
- Disagree a little
- Disagree a lot
- DON'T KNOW
- REFUSED

Question: BLBARRIERS35
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	

35. Some dishes you make would taste just as good if you made them with whole grains. Do you…?

[INT NOTE: DO YOU AGREE, DISAGREE, OR NEITHER? A LITTLE OR A LOT?]

- Agree a lot
- Agree a little
- Neither agree nor disagree
- Disagree a little
- Disagree a lot
- DON'T KNOW
- REFUSED

Question: BLBARRIERS36
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	

36. You have enough time to sit at the table with the children at meal and snack times. Do you…?

[INT NOTE: DO YOU AGREE, DISAGREE, OR NEITHER? A LITTLE OR A LOT?]

- Agree a lot
- Agree a little
- Neither agree nor disagree
- Disagree a little
- Disagree a lot
- DON'T KNOW
- REFUSED

Question: BLBARRIERS37
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	

37. If you let the children serve themselves, they will make too much of a mess. Do you…?

[INT NOTE: DO YOU AGREE, DISAGREE, OR NEITHER? A LITTLE OR A LOT?]

- Agree a lot
- Agree a little
- Neither agree nor disagree
- Disagree a little
- Disagree a lot
- DON'T KNOW
- REFUSED

Question: BLBARRIERS38
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	

38. If you let the children serve themselves, they will waste too much food. Do you…?

[INT NOTE: DO YOU AGREE, DISAGREE, OR NEITHER? A LITTLE OR A LOT?]

- Agree a lot
- Agree a little
- Neither agree nor disagree
- Disagree a little
- Disagree a lot
- DON'T KNOW
- REFUSED

Question: BLBARRIERS39
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	

39. Serving the food at meal and snack time is the adult's responsibility. Do you…

[INT NOTE: DO YOU AGREE, DISAGREE, OR NEITHER? A LITTLE OR A LOT?]

- Agree a lot
- Agree a little
- Neither agree nor disagree
- Disagree a little
- Disagree a lot
- DON'T KNOW
- REFUSED

Question: BLBARRIERS40
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	

40. If you let the children decide how much to eat, they will take the right amount. Do you…?

[INT NOTE: DO YOU AGREE, DISAGREE, OR NEITHER? A LITTLE OR A LOT?]

- Agree a lot
- Agree a little
- Neither agree nor disagree
- Disagree a little
- Disagree a lot
- DON'T KNOW
- REFUSED

Question: BLBARRIERS41

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	

41. You like the taste of the healthy food that the children are supposed to eat. Do you…?

[Interviewer Note: IF PPT QUESTIONS WHAT IS HEALTHY FOOD, SAY "HEALTHY FOOD IS WHATEVER IT MEANS TO YOU"]

[INT NOTE: DO YOU AGREE, DISAGREE, OR NEITHER? A LITTLE OR A LOT?]

- Agree a lot
- Agree a little
- Neither agree nor disagree
- Disagree a little
- Disagree a lot
- DON'T KNOW
- REFUSED

Question: BLBARRIERS42
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	

42. You know how to encourage the children to try new foods. Do you…?

[INT NOTE: DO YOU AGREE, DISAGREE, OR NEITHER? A LITTLE OR A LOT?]

- Agree a lot
- Agree a little

- Neither agree nor disagree
- Disagree a little
- Disagree a lot
- DON'T KNOW
- REFUSED

Question: BLBARRIERS43
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	

43. You know how to talk to children about healthy eating. Do you…?

[INT NOTE: DO YOU AGREE, DISAGREE, OR NEITHER? A LITTLE OR A LOT?]

- Agree a lot
- Agree a little
- Neither agree nor disagree
- Disagree a little
- Disagree a lot
- DON'T KNOW
- REFUSED

Question: BLBARRIERS44
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	

44. You have enough time to lead lessons about nutrition. Do you…?

[INT NOTE: DO YOU AGREE, DISAGREE, OR NEITHER? A LITTLE

OR A LOT?]

- Agree a lot
- Agree a little
- Neither agree nor disagree
- Disagree a little
- Disagree a lot
- DON'T KNOW
- REFUSED

Question: BLBARRIERS45
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	

45. You know how to find materials to use to teach children about nutrition. Do you…?

[INT NOTE: DO YOU AGREE, DISAGREE, OR NEITHER? A LITTLE OR A LOT?]

- Agree a lot
- Agree a little
- Neither agree nor disagree
- Disagree a little
- Disagree a lot
- DON'T KNOW
- REFUSED

Question: BLBARRIERS46
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	

46. You have enough time to help the children be physically

active. Do you…?

[INT NOTE: DO YOU AGREE, DISAGREE, OR NEITHER? A LITTLE OR A LOT?]

- Agree a lot
- Agree a little
- Neither agree nor disagree
- Disagree a little
- Disagree a lot
- DON'T KNOW
- REFUSED

Question: BLBARRIERS47
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	

47. You know how to help the children be more physically active. Do you…?

[INT NOTE: DO YOU AGREE, DISAGREE, OR NEITHER? A LITTLE OR A LOT?]

- Agree a lot
- Agree a little
- Neither agree nor disagree
- Disagree a little
- Disagree a lot
- DON'T KNOW
- REFUSED

Question: BLBARRIERS48
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	

48. The children would rather watch TV or play videogames than do physical activities. Do you…?

[INT NOTE: DO YOU AGREE, DISAGREE, OR NEITHER? A LITTLE OR A LOT?]

- Agree a lot
- Agree a little
- Neither agree nor disagree
- Disagree a little
- Disagree a lot
- DON'T KNOW
- REFUSED

Question: BLBARRIERS49
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	

49. You get too tired to join in active play with the children. Do you…?

[INT NOTE: DO YOU AGREE, DISAGREE, OR NEITHER? A LITTLE OR A LOT?]

- Agree a lot
- Agree a little
- Neither agree nor disagree
- Disagree a little
- Disagree a lot
- DON'T KNOW
- REFUSED

Question: BLBARRIERS50
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	

50. You know how to get the children to be physically active during bad weather. Do you…?

[INT NOTE: DO YOU AGREE, DISAGREE, OR NEITHER? A LITTLE OR A LOT?]

- Agree a lot
- Agree a little
- Neither agree nor disagree
- Disagree a little
- Disagree a lot
- DON'T KNOW
- REFUSED

Question: BLBARRIERS51
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	

51. Parents send the right clothing for children to play outside. Do you…?

[INT NOTE: DO YOU AGREE, DISAGREE, OR NEITHER? A LITTLE OR A LOT?]

- Agree a lot
- Agree a little
- Neither agree nor disagree
- Disagree a little
- Disagree a lot
- DON'T KNOW
- REFUSED

Question: BLBARRIERS52

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	

52. Parents want children to go outside even when it's cold or raining. Do you…?

[INT NOTE: DO YOU AGREE, DISAGREE, OR NEITHER? A LITTLE OR A LOT?]

- Agree a lot
- Agree a little
- Neither agree nor disagree
- Disagree a little
- Disagree a lot
- DON'T KNOW
- REFUSED

Question: BLBARRIERS53
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	

53. Parents feel it is safe for children to play outside. Do you…?

[INT NOTE: DO YOU AGREE, DISAGREE, OR NEITHER? A LITTLE OR A LOT?]

- Agree a lot
- Agree a little
- Neither agree nor disagree
- Disagree a little
- Disagree a lot
- DON'T KNOW

- REFUSED

Question: BLBARRIERS54
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	

54. You worry about the children's safety when they are playing outside. Do you…

[INT NOTE: DO YOU AGREE, DISAGREE, OR NEITHER? A LITTLE OR A LOT?]

- Agree a lot
- Agree a little
- Neither agree nor disagree
- Disagree a little
- Disagree a lot
- DON'T KNOW
- REFUSED

Question: BLBARRIERS55
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	

55. You know how to lead physical activity lessons. Do you…

[INT NOTE: DO YOU AGREE, DISAGREE, OR NEITHER? A LITTLE OR A LOT?]

- Agree a lot
- Agree a little
- Neither agree nor disagree
- Disagree a little

- Disagree a lot
- DON'T KNOW
- REFUSED

Question: BLBARRIERS56
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	

56. The children eat unhealthy foods at home, so it's hard to get them to eat healthy foods in your care. Do you…

[INT NOTE: DO YOU AGREE, DISAGREE, OR NEITHER? A LITTLE OR A LOT?]

- Agree a lot
- Agree a little
- Neither agree nor disagree
- Disagree a little
- Disagree a lot
- DON'T KNOW
- REFUSED

Question: BLBARRIERS57
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	

57. The children are not physically active at home, so it's hard to get them to be physically active in your care. Do you…

[INT NOTE: DO YOU AGREE, DISAGREE, OR NEITHER? A LITTLE OR A LOT?]

- Agree a lot

- Agree a little
- Neither agree nor disagree
- Disagree a little
- Disagree a lot
- DON'T KNOW
- REFUSED

Question: BLBARRIERS58
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	

58. The children have a lot of screen time at home, so it's hard to limit their screen time in your care. Do you…

[INT NOTE: DO YOU AGREE, DISAGREE, OR NEITHER? A LITTLE OR A LOT?]

- Agree a lot
- Agree a little
- Neither agree nor disagree
- Disagree a little
- Disagree a lot
- DON'T KNOW
- REFUSED

Collection: READING
Contains: BLREAD59, BLREAD60, BLREAD61, BLREAD62, BLREAD63, BLREAD64, BLREAD65, BLREAD66, BLREAD67, BLREAD68, BLREAD69, BLREAD70, BLREAD71, BLREAD72, BLREAD73, BLREAD74, BLREAD75, BLREAD76, BLREAD77, BLREAD78
Show if: (ELIGCONSENT = 1:[YES])

For this next set of statements, please tell me how often you do the following activities.

Question: BLREAD59
Required

Scale Summary		
Code	Label	Show-If
1	Never	
2	Rarely	
3	Sometimes	

4	Often	
5	Always	
88	DON'T KNOW	
99	REFUSED	

59. Read to the children as a group or in small groups everyday.

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

Question: BLREAD60
Required

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

60. Borrow a wide variety of children's books about pretend and real situations.

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

Question: BLREAD61
Required

Scale Summary		
Code	Label	Show-If
1	Never	
2	Rarely	
3	Sometimes	
4	Often	

5	Always	
88	DON'T KNOW	
99	REFUSED	

61. Change the books that you have in your home; so the children have new books to read as well as some old favorites.

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

Question: BLREAD62
Required

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

62. Read books with the children that include rhymes or phrases that are repeated.

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

Question: BLREAD63
Required

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

99	REFUSED	

63. While reading to the children, you point out important features of the book such as the front, back, title, and author.

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

Question: BLREAD64
Required

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

64. Provide at least one planned activity each day to introduce the children to letters, sounds, and printed words.

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

Question: BLREAD65
Required

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

65. Encourage the playful use of language through nursery rhymes and songs.

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

Question: BLREAD66
Required

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

66. Encourage the children to talk about their experiences by asking open-ended questions.

[INTERVIEWER NOTE: Open-ended questions are questions that you can't answer with a yes or a no. An example of an open-ended question is: "What did you do at the library today?"]

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

Question: BLREAD67
Required

Scale Summary		
Code	Label	Show-If
1	Never	
2	Rarely	

3	Sometimes	
4	Often	
5	Always	
88	DON'T KNOW	
99	REFUSED	

67. Introduce new words and their meanings to children during discussions or while reading picture books.

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

Question: BLREAD68
Required

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

68. Engage children in games and activities that encourage them to learn and practice new words.

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

Question: BLREAD69
Required

Scale Summary		
Code	Label	Show-If
1	Never	
2	Rarely	
3	Sometimes	

4	Often	
5	Always	
88	DON'T KNOW	
99	REFUSED	

69. You encourage children to scribble and experiment with pretend writing during pretend play.

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

Question: BLREAD70
Required

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

70. Help children to practice writing their own names and try making books and writing notes.

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

Question: BLREAD71
Required

Scale Summary		
Code	Label	Show-If
1	Never	
2	Rarely	
3	Sometimes	
4	Often	

5	Always	
88	DON'T KNOW	
99	REFUSED	

71. Encourage young children to scribble and pretend to be writing.

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

Question: BLREAD72
Required

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

72. Conduct games and activities to help children learn to rhyme.

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

Question: BLREAD73
Required

Scale Summary		
Code	Label	Show-If
1	Never	
2	Rarely	
3	Sometimes	
4	Often	
5	Always	

88	DON'T KNOW	
99	REFUSED	

73. Encourage children to describe things or tell you stories, that you write down so they can see their own words in print.

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

Question: BLREAD74
Required

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

74. Include the children's home languages and cultures in the activities, books or songs that you use in your childcare home.

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

Question: BLREAD75
Required

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

75. Use descriptive words when talking and playing with the

children.

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

Question: BLREAD76
Required

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

76. How often have you received training in early language and literacy?

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

Question: BLREAD77
Required

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

77. Read wordless picture books with children.

- Never
- Rarely
-

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 if: (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

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: BLDEMO84
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: BLDEMO85
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	

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: BLDEMO93
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: BLDEMO94
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?

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.

Powered by DatStat

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

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: _____ **Description:**_____ **Start time:** _____ **End time:** _____					
Child ID: _____ **Description:**_____ **Start time:** _____ **End time:** _____					
Child ID: _____ **Description:**_____ **Start time:** _____ **End time:** _____					

APPENDIX E: NDSR OUTPUT FILES

Intake Properties Totals File (File 04)		
Column	**Description**	**Units**
14	Life Stage Group (based on the current Dietary Reference Intakes (1997-2001 National Academy of Sciences, Food and Nutrition Board) for Recommended Dietary Allowances (RDA) and Adequate Intakes (AI))	101 = Infants 0-6 months 102 = Infants 7-12 months 103 = Children 1-3 104 = Children 4-8 105 = Males 9-13 106 = Males 14-18 107 = Males 19-30 108 = Males 31-50 109 = Males 51-70 110 = Males over 70 years old 111 = Females 9-13 112 = Females 14-18 113 = Females 19-30 114 = Females 31-50 115 = Females 51-70 116 = Females over 70 years old 117 = Pregnancy 18 or younger 118 = Pregnancy 19-30 119 = Pregnancy 31-50 120 = Lactation 18 or younger 121 = Lactation 19-30 122 = Lactation 31-50
	NDSR 4.0_28 through 4.04_32 RDA Category (based on 1989 RDAs)	01 = Infants 0.0-0.5 years 02 = Infants 0.5-1.0 years 03 = Children 1-3 04 = Children 4-6 05 = Children 7-10 06 = Males 11-14 07 = Males15-18 08 = Males19-24 09 = Males 25-50 10 = Males 51+ 11 = Females 11-14 12 = Females 15-18 13 = Females 19-24 14 = Females 25-50 15 = Females 51+ 16 = Pregnant 17 = Lactating 1st 6 months 18 = Lactating 2nd 6 months
15	Intake Amount	0 = Close to the amount that you usually eat? 1 = A lot more than usually eat? 2 = A lot less than usually eat?
16	Intake Reliability	0 = Reliable 1 = Unreliable because the participant was unable to recall one or more meals 2 = Unreliable for other reasons
17	Data Collected in NCC Database Version	

Intake Properties Totals File (File 04)		
Column	**Description**	**Units**
18	Data Collected in Software Version	
19	Total Grams	Calculated from the Food File (File 02). May not include the weights of all preparation ingredients.

Intake Properties Totals File (File 04)		
Column	**Description**	**Units**
20	Energy (kilocalories)	kcal
21	Total Fat	g
22	Total Carbohydrate	g
23	Total Protein	g
24	Animal Protein	g
25	Vegetable Protein	g
26	Alcohol	g
27	Cholesterol	mg
28	Total Saturated Fatty Acids (SFA)	g
29	Total Monounsaturated Fatty Acids (MUFA)	g
30	Total Polyunsaturated Fatty Acids (PUFA)	g
31	Fructose	g
32	Galactose	g
33	Glucose	g
34	Lactose	g
35	Maltose	g
36	Sucrose	g
37	Starch	g
38	Total Dietary Fiber	g
39	Soluble Dietary Fiber	g
40	Insoluble Dietary Fiber	g
41	Pectins	g
42	Total Vitamin A Activity (International Units)	IU
43	Beta-Carotene Equivalents (derived from provitamin A carotenoids)	mcg
44	Retinol	mcg
45	Vitamin D (calciferol)	mcg
46	Total Alpha-Tocopherol Equivalents (see columns 171-173)	mg
47	Vitamin E (Total Alpha-Tocopherol) (see columns 171-173)	mg
48	Beta-Tocopherol	mg
49	Gamma-Tocopherol	mg
50	Delta-Tocopherol	mg
51	Vitamin K (phylloquinone)	mcg
52	Vitamin C (ascorbic acid)	mg
53	Thiamin (vitamin B1)	mg
54	Riboflavin (vitamin B2)	mg
55	Niacin (vitamin B3)	mg
56	Pantothenic Acid	mg

Intake Properties Totals File (File 04)		
Column	**Description**	**Units**
57	Vitamin B6 (pyridoxine, pyridoxyl, and pyridoxamine)	mg
58	Total Folate (see columns 149-151)	mcg
59	Vitamin B12 (cobalamin)	mcg
60	Calcium	mg
61	Phosphorus	mg
62	Magnesium	mg
63	Iron	mg
64	Zinc	mg
65	Copper	mg
66	Selenium	mcg
67	Sodium	mg
68	Potassium	mg
69	SFA 4:0 (butyric acid)	g
70	SFA 6:0 (caproic acid)	g
71	SFA 8:0 (caprylic acid)	g
72	SFA 10:0 (capric acid)	g
73	SFA 12:0 (lauric acid)	g
74	SFA 14:0 (myristic acid)	g
75	SFA 16:0 (palmitic acid)	g
76	SFA 17:0 (margaric acid)	g
77	SFA 18:0 (stearic acid)	g
78	SFA 20:0 (arachidic acid)	g
79	SFA 22:0 (behenic acid)	g
80	MUFA 14:1 (myristoleic acid)	g
81	MUFA 16:1 (palmitoleic acid)	g
82	MUFA 18:1 (oleic acid)	g
83	MUFA 20:1 (gadoleic acid)	g
84	MUFA 22:1 (erucic acid)	g
85	PUFA 18:2 (linoleic acid)	g
86	PUFA 18:3 (linolenic acid)	g
87	PUFA 18:4 (parinaric acid)	g
88	PUFA 20:4 (arachidonic acid)	g
89	PUFA 20:5 (eicosapentaenoic acid [EPA])	g
90	PUFA 22:5 (docosapentaenoic acid [DPA])	g
91	PUFA 22:6 (docosahexaenoic acid [DHA])	g
92	Tryptophan	g
93	Threonine	g
94	Isoleucine	g
95	Leucine	g
96	Lysine	g
97	Methionine	g
98	Cystine	g
99	Phenylalanine	g
100	Tyrosine	g

Intake Properties Totals File (File 04)		
Column	**Description**	**Units**
101	Valine	g
102	Arginine	g
103	Histidine	g
104	Alanine	g
105	Aspartic Acid	g
106	Glutamic Acid	g
107	Glycine	g
108	Proline	g
109	Serine	g
110	Aspartame	mg
111	Saccharin	mg
112	Caffeine	mg
113	Phytic Acid	mg
114	Oxalic Acid	mg
115	3-Methylhistidine	mg
116	Sucrose Polyester	g
117	Ash	g
118	Water	g
119	% Calories from Fat	%
120	% Calories from Carbohydrate	%
121	% Calories from Protein	%
122	% Calories from Alcohol	%
123	% Calories from SFA	%
124	% Calories from MUFA	%
125	% Calories from PUFA	%
126	Polyunsaturated to Saturated Fat Ratio	
127	Cholesterol to Saturated Fatty Acid Index	
128	Total Vitamin A Activity (Retinol Equivalents)	mcg
129	18:1 TRANS (*trans*-octadecenoic acid)	g
130	18:2 TRANS (*trans*-octadecadienoic acid)	g
131	16:1 TRANS (*trans*-hexadecenoic acid)	g
132	Total *Trans*-Fatty Acids (TRANS)	g
133	User Nutrient #1	mg
134	User Nutrient #2	mg
135	User Nutrient #3	mg
136	User Nutrient #4	mg
137	User Nutrient #5	mg
138	User Nutrient #6	mg
139	User Nutrient #7	mg
140	User Nutrient #8	mg
141	User Nutrient #9	mg
142	User Nutrient #10	mg
143	Notes from the Header Tab (up to 200 characters)	
144	Beta-Carotene (provitamin A carotenoid)	mcg

Intake Properties Totals File (File 04)		
Column	**Description**	**Units**
145	Alpha-Carotene (provitamin A carotenoid)	mcg
146	Beta-Cryptoxanthin (provitamin A carotenoid)	mcg
147	Lutein + Zeaxanthin	mcg
148	Lycopene	mcg
149	Dietary Folate Equivalents	mcg
150	Natural Folate (food folate)	mcg
151	Synthetic Folate (folic acid)	mcg
152	Data Generated in NCC Database Version (see column 17)	
153	Data Generated in Software Version (see column 18)	
154	Notes from the Trailer Tab (up to 200 characters)	
155	User Nutrient #11	mg
156	User Nutrient #12	mg
157	User Nutrient #13	mg
158	User Nutrient #14	mg
159	User Nutrient #15	mg
160	User Nutrient #16	mg
161	User Nutrient #17	mg
162	User Nutrient #18	mg
163	User Nutrient #19	mg
164	User Nutrient #20	mg
165	Total Vitamin A Activity (Retinol Activity Equivalents)	mcg
166	Energy (kilojoules)	kj
167	Niacin Equivalents	mg
168	Total Sugars	g
169	Omega-3 Fatty Acids	g
170	Manganese	mg
171	Vitamin E (International Units)	IU
172	Natural Alpha-Tocopherol (RRR-alpha-tocopherol or d-alpha-tocopherol)	mg
173	Synthetic Alpha-Tocopherol (all rac-alpha-tocopherol or dl-alpha-tocopherol)	mg
174	Daidzein	mg
175	Genistein	mg
176	Glycitein	mg
177	Coumestrol	mg
178	Biochanin A	mg
179	Formononetin	mg
180	Column intentionally left blank	
181	Column intentionally left blank	
182	Column intentionally left blank	
183	Column intentionally left blank	
184	Added Sugars (by Available Carbohydrate)	g
185	Acesulfame Potassium	mg
186	Sucralose	mg
187	Available Carbohydrate	g
188	Glycemic Index (glucose reference)	

Intake Properties Totals File (File 04)		
Column	**Description**	**Units**
189	Glycemic Index (bread reference)	
190	Glycemic Load (glucose reference)	
191	Glycemic Load (bread reference)	
192	Choline	mg
193	Betaine	mg
194	Erythritol	g
195	Inositol	g
196	Isomalt	g
197	Lactitol	g
198	Maltitol	g
199	Mannitol	g
200	Pinitol	g
201	Sorbitol	g
202	Xylitol	g
203	Nitrogen	g
204	Total Conjugated Linoleic Acid (CLA 18:2)	g
205	CLA cis-9, trans-11	g
206	CLA trans-10, cis-12	g
207	Tagatose	mg
208	Vitamin D2 (ergocalciferol)	mcg
209	Vitamin D3 (cholecalciferol)	mcg
210	Added Sugars (by Total Sugars)	g
211	Total Grains (ounce equivalents)	oz equiv
212	Whole Grains (ounce equivalents)	oz equiv
213	Refined Grains (ounce equivalents)	oz equiv
214	PUFA 18:3 n-3 (alpha-linolenic acid [ALA])	g
215	Solid Fats	g

Serving Count Totals File (File 09):

Serving Count Totals File (File 09)		
Column	**Description**	**Comments**
1	Project Abbreviation	Up to 12 characters
2	Participant ID	Up to 12 characters
3	Date of Intake	mm/dd/yyyy
4-171	Serving Count Subgroups	Specifications page 8.39

Serving Count Subgroup Specifications:

Serving Count Subgroup Specifications		
Subgroup ID Code	**Description**	**Comments**
FRU0100	Citrus Juice	Must be 100% citrus juice; includes sweetened and unsweetened.

FRU0200	Fruit Juice excluding Citrus Juice	Must be 100% juice; includes sweetened and unsweetened.
FRU0300	Citrus Fruit	
FRU0400	Fruit excluding Citrus Fruit	Includes fruit in cereal, excludes fruit in candy, ice cream, granola bars, pie, cake and other baked goods.
FRU0500	Avocado and Similar	Includes avocado in guacamole.
FRU0600	Fried Fruits	e.g., fried apple, banana, plantain, etc.
FRU0700	Fruit-based Savory Snack	e.g., apple chips, banana chips, dried banana flakes, etc.
VEG0100	Dark-green Vegetables	Includes vegetables in salads, soups, stews, stir-fry and similar mixed dishes. e.g., broccoli, collards, romaine, spinach, etc.
VEG0200	Deep-yellow Vegetables	Includes vegetables in salads, soups, stews, stir-fry and similar mixed dishes. e.g., carrots, winter squash, sweet potatoes, pumpkin, etc.
VEG0300	Tomato	Includes tomato in salads, soups, stews, stir-fry and similar mixed dishes. e.g., salsa, tomato sauce, tomato-based spaghetti sauce, tomato puree, and tomato paste.
VEG0400	White Potatoes	Includes white potatoes in recipes, potato

Serving Count Subgroup Specifications		
Subgroup ID Code	**Description**	**Comments**
		salad, scalloped potatoes, etc.
VEG0800	Fried Potatoes	e.g., French fries, hash browns, pan fried potatoes, fried potato skins, etc.
VEG0450	Other Starchy Vegetables	Includes vegetables in salads, soups, stews, stir-fry and similar mixed dishes. e.g., corn, immature lima beans, lentil sprouts, peas, etc.
VEG0700	Legumes (cooked dried beans)	Includes mature cooked dried beans in salads, soups, stews, stir-fry, and similar mixed dishes. e.g., mature lima beans, refried beans, baked beans, pork and beans, etc.
VEG0600	Other Vegetables	Includes vegetables in salads, soups, stews, stir-fry, and similar mixed dishes. e.g., beets, cabbage, mung bean sprouts, summer squash, etc.
VEG0900	Fried Vegetables	e.g., breaded and fried broccoli, mushrooms, onion rings etc. Excludes stir-fry or sauté.
VEG0500	Vegetable Juice	Must be 100% juice. e.g., carrot, tomato, V-8, etc.
FMC0100	Vegetable-based Savory Snack	e.g., potato chips, canned onion rings, etc.
GRW0100	Grains, Flour and Dry Mixes - Whole Grain	e.g., brown rice, cracked wheat, oatmeal, whole grain corn meal, whole rye meal, whole wheat flour, etc.
GRS0100	Grains, Flour and Dry Mixes - Some Whole Grain	e.g., oat bran, rice bran, wheat germ, etc.
GRR0100	Grains, Flour and Dry Mixes - Refined Grain	e.g., corn meal, pearled barley, rye flour, wheat flour, white rice, etc.
GRW0200	Loaf-type Bread and Plain Rolls - Whole Grain	
GRS0200	Loaf-type Bread and Plain Rolls - Some Whole Grain	
GRR0200	Loaf-type Bread and Plain Rolls - Refined Grain	
GRW0300	Other Breads (quick breads, corn muffins, tortillas) - Whole Grain	
GRS0300	Other Breads (quick breads, corn muffins, tortillas) - Some Whole Grain	
GRR0300	Other Breads (quick breads, corn muffins, tortillas) - Refined Grain	
GRW0400	Crackers - Whole Grain	
GRS0400	Crackers - Some Whole Grain	
GRR0400	Crackers - Refined Grain	
GRW0500	Pasta - Whole Grain	
GRS0500	Pasta - Some Whole Grain	

Serving Count Subgroup Specifications		
Subgroup ID Code	**Description**	**Comments**
GRR0500	Pasta - Refined Grain	
GRW0600	Ready-to-eat Cereal (not presweetened) - Whole Grain	
GRS0600	Ready-to-eat Cereal (not presweetened) - Some Whole Grain	
GRR0600	Ready-to-eat Cereal (not presweetened) - Refined Grain	
GRW0700	Ready-to-eat Cereal (presweetened) - Whole Grain	
GRS0700	Ready-to-eat Cereal (presweetened) - Some Whole Grain	
GRR0700	Ready-to-eat Cereal (presweetened) - Refined Grain	
GRW0800	Cakes, Cookies, Pies, Pastries, Danish, Doughnuts and Cobblers - Whole Grain	
GRS0800	Cakes, Cookies, Pies, Pastries, Danish, Doughnuts and Cobblers - Some Whole Grain	
GRR0800	Cakes, Cookies, Pies, Pastries, Danish, Doughnuts and Cobblers - Refined Grain	
GRW1000	Snack Bars - Whole Grain	e.g., breakfast bars, energy bars, granola bars, etc.
GRS1000	Snack Bars - Some Whole Grain	e.g., breakfast bars, energy bars, granola bars, etc.
GRR1000	Snack Bars - Refined Grain	e.g., breakfast bars, energy bars, granola bars, etc.
GRW0900	Snack Chips - Whole Grain	e.g., corn chips, rice cakes, etc.
GRS0900	Snack Chips - Some Whole Grain	e.g., wheat nuts, etc.
GRR0900	Snack Chips - Refined Grain	e.g., cheese puffs, pretzels, etc.
GRW1100	Popcorn	
GRW1200	Flavored Popcorn	e.g., caramel, cheese, etc.
GRR1300	Baby Food Grain Mixtures – Refined Grain	
MRF0100	Beef	
MRL0100	Lean Beef	‧ 10% fat
MRF0200	Veal	
MRL0200	Lean Veal	‧ 10% fat
MRF0300	Lamb	
MRL0300	Lean Lamb	‧ 10% fat
MRF0400	Fresh Pork	
MRL0400	Lean Fresh Pork	‧ 10% fat
MCF0200	Cured Pork	
MCL0200	Lean Cured Pork	‧ 10% fat
MRF0500	Game	e.g., buffalo, venison, rabbit, squirrel, etc.
MPF0100	Poultry	e.g., chicken, duck, grouse, pheasant, quail, turkey, etc.

Serving Count Subgroup Specifications		
Subgroup ID Code	**Description**	**Comments**
MPL0100	Lean Poultry	e.g., chicken, duck, grouse, pheasant, quail, turkey, etc.
MPF0200	Fried Chicken - Commercial Entrée and Fast Food	
MFF0100	Fish - Fresh and Smoked	
MFL0100	Lean Fish - Fresh and Smoked	
MFF0200	Fried Fish - Commercial Entrée and Fast Food	
MSL0100	Shellfish	
MSF0100	Fried Shellfish - Commercial Entrée and Fast Food	
MCF0100	Cold Cuts and Sausage	Fresh and cured
MCL0100	Lean Cold Cuts and Sausage	Fresh and cured, · 10% fat
MOF0100	Organ Meats	
MOF0200	Baby Food Meat Mixtures	e.g., dinner combinations with meat, pasta and/or vegetables.
FMC0200	Meat-based Savory Snack	e.g., fried pork rinds.
MOF0300	Eggs	
MOF0400	Egg Substitute	
MOF0500	Nuts and Seeds	
MOF0600	Nut and Seed Butters	
MOF0700	Meat Alternatives	e.g., tofu, tempeh, soy nuts, veggie burgers, etc.
DMF0100	Milk - Whole	
DMR0100	Milk - Reduced Fat	
DML0100	Milk - Low Fat and Fat Free	
DMN0100	Milk - Nondairy	
DMF0200	Ready-to-drink Flavored Milk - Whole	e.g., chocolate, strawberry flavored, etc.
DMR0200	Ready-to-drink Flavored Milk - Reduced Fat	e.g., chocolate, strawberry flavored, etc.
DML0200	Ready-to-drink Flavored Milk - Low Fat and Fat Free	e.g., chocolate, strawberry flavored, etc.
DML0300	Sweetened Flavored Milk Beverage Powder with Non-fat Dry Milk	e.g., powdered hot chocolate or cocoa to mix with water, etc.
DML0400	Artificially Sweetened Flavored Milk Beverage Powder with Non-fat Dry Milk	e.g., powdered hot chocolate or cocoa to mix with water, etc.
SWT0600	Sweetened Flavored Milk Beverage Powder without Non-fat Dry Milk	e.g., powdered hot chocolate or cocoa to mix with milk, etc.
MSC1100	Artificially Sweetened Flavored Milk Beverage Powder without Non-fat Dry Milk	e.g., powdered hot chocolate or cocoa to mix with milk, etc.
DCF0100	Cheese - Full Fat	Includes natural and process cheese, cottage cheese, cream cheese, etc.
DCR0100	Cheese - Reduced Fat	Includes natural and process cheese, cottage cheese, cream cheese, etc.
DCL0100	Cheese - Low Fat and Fat Free	Includes natural and process cheese, cottage cheese, cream cheese, etc.

Serving Count Subgroup Specifications		
Subgroup ID Code	**Description**	**Comments**
DCN0100	Cheese - Nondairy	
DYF0100	Yogurt - Sweetened Whole Milk	
DYR0100	Yogurt - Sweetened Low Fat	
DYL0100	Yogurt - Sweetened Fat Free	
DYF0200	Yogurt - Artificially Sweetened Whole Milk	
DYR0200	Yogurt - Artificially Sweetened Low Fat	
DYL0200	Yogurt - Artificially Sweetened Fat Free	
DYN0100	Yogurt - Nondairy	
DOT0100	Frozen Dairy Dessert	e.g., frozen yogurt, ice cream, ice cream treats, etc.
DOT0200	Frozen Nondairy Dessert	
DOT0300	Pudding and Other Dairy Dessert	
DOT0400	Artificially Sweetened Pudding and Other Dairy Dessert	
FCF0100	Cream	e.g., coffee cream, whipping cream, sour cream, etc.
FCR0100	Cream - Reduced Fat	e.g., coffee cream, whipping cream, sour cream, etc.
FCL0100	Cream - Low Fat and Fat Free	e.g., coffee cream, whipping cream, sour cream, etc.
FCN0100	Cream - Nondairy	e.g., coffee cream, whipping cream, sour cream, etc.
DOT0500	Dairy-based Sweetened Meal Replacement/Supplement	
DOT0600	Dairy-based Artificially Sweetened Meal Replacement/Supplement	
DOT0700	Infant Formula	Includes concentrate, ready-to-feed and dry powder.
DOT0800	Infant Formula - Nondairy	Includes concentrate, ready-to-feed and dry powder.
FMF0100	Margarine - Regular	
FMR0100	Margarine - Reduced Fat	
FOF0100	Oil	Includes cooking sprays.
FSF0100	Shortening	
FAF0100	Butter and Other Animal Fats - Regular	Includes butter/margarine blends and honey butter.
FAR0100	Butter and Other Animal Fats - Reduced Fat	Includes butter/margarine blends and honey butter.
FDF0100	Salad Dressing - Regular	Includes mayonnaise and mayonnaise-type dressing.
FDR0100	Salad Dressing - Reduced Fat/Reduced Calorie/Fat Free	Includes mayonnaise and mayonnaise-type dressing.
SWT0400	Sugar	
MSC1200	Sugar Substitute	e.g., aspartame, saccharin, etc.
SWT0500	Syrup, Honey, Jam, Jelly, Preserves	

Serving Count Subgroup Specifications		
Subgroup ID Code	**Description**	**Comments**
SWT0700	Sauces, Sweet - Regular	e.g., fudge, caramel, butterscotch, etc.
SWT0800	Sauces, Sweet - Reduced Fat/Reduced Calorie/Fat Free	e.g., fudge, caramel, butterscotch, etc.
SWT0100	Chocolate Candy	
SWT0200	Non-chocolate Candy	
SWT0300	Frosting or Glaze	
BVS0400	Sweetened Soft Drinks	Includes with and without caffeine.
BVA0400	Artificially Sweetened Soft Drinks	Includes with and without caffeine.
BVU0300	Unsweetened Soft Drinks	Includes with and without caffeine.
BVS0300	Sweetened Fruit Drinks	
BVA0300	Artificially Sweetened Fruit Drinks	
BVS0500	Sweetened Tea	
BVA0500	Artificially Sweetened Tea	
BVU0400	Unsweetened Tea	
BVS0100	Sweetened Coffee	
BVA0100	Artificially Sweetened Coffee	
BVU0100	Unsweetened Coffee	
BVS0200	Sweetened Coffee Substitutes	
BVA0200	Artificially Sweetened Coffee Substitutes	
BVU0200	Unsweetened Coffee Substitutes	
BVS0600	Sweetened Water	
BVA0600	Artificially Sweetened Water	
BVU0500	Unsweetened Water	e.g., spring, tap, bottled, etc.
BVS0700	Nondairy-based Sweetened Meal Replacement/Supplement	Includes meal replacement drinks, sports drinks.
BVA0700	Nondairy-based Artificially Sweetened Meal Replacement/Supplement	Includes meal replacement drinks, sports drinks.
BVU0600	Nondairy-based Unsweetened Meal Replacement/Supplement	Includes meal replacement drinks, sports drinks.
BVO0100	Non-alcoholic Beer	
BVO0200	Non-alcoholic Light Beer	
BVE0100	Beer and Ales	
BVE0400	Cordial and Liqueur	
BVE0300	Distilled Liquor	
BVE0200	Wine	
MSC0100	Gravy - Regular	
MSC0200	Gravy - Reduced Fat/Fat Free	
MSC0300	Sauces and Condiments - Regular	e.g., alfredo sauce, cheese sauce, hollandaise sauce, tartar sauce, white sauce, etc.
MSC0400	Sauces and Condiments - Reduced Fat	e.g., barbeque sauce, catsup, mustard, soy sauce, steak sauce, taco sauce, etc.
MSC0500	Pickled Foods	e.g., capers, olives, sauerkraut, pickled vegetables, etc.

Serving Count Subgroup Specifications		
Subgroup ID Code	**Description**	**Comments**
MSC0600	Miscellaneous Dessert	e.g., gelatin dessert, lemon pudding and pie filling, etc.
MSC0700	Non-grain Flour and Similar	e.g., chickpea, potato, peanut, soy flour, etc.
MSC0800	Soup Broth	e.g., clear broth, consommé, bouillon, etc.
MSC0900	Baby Food Dessert	e.g., fruit cobblers, fruit desserts, etc.
MSC1000	Miscellaneous Baby Food Mixtures	e.g., baby food soups, vegetable and cheese mixtures, fruit and vegetable combinations, etc.
GRW1300	Baby Food Grain Mixtures – Whole Grain	
GRS1300	Baby Food Grain Mixtures – Some Whole Grain	

APPENDIX F: FOOD GROUP EQUATIONS

Food Group	SAS Variable Name	NDSR SERVING COUNT SIZE	Summation equations by NDSR Output variable names (these are NDSR output columns for food groups equivalents by their label)	Summation equation	Variable type
Vegetables (CUPS)	vegetables	Leafy veg	Dark-green vegetables + Deep-yellow vegetables + Tomato + White potatoes + Fried Potatoes + Other starchy vegetables + Legumes (cooked dried beans) + Other vegetables + Fried vegetables + Vegetable juice	(VEG0100+VEG0200+VEG0300+VEG0400+VEG0800+VEG0450+VEG0700+VEG0600+VEG0900+VEG0500)/2;	continuous
		1 CP = 1 serving			
		½ CP = 1 serving			
Dark green veg	dgrnveg		Dark-green vegetables	VEG0100/2;	continuous
Red orange veg	roveg		Deep-yellow vegetables + Tomato	(VEG0200+VEG0300)/2;	continuous
Legumes	legumes		Legumes	VEG0700/2	continuous
Starchy veg	starchyveg		Other starchy vegetables	=(VEG0400+VEG0800+VEG0450)/2;	continuous
Other veg	otherveg		Other vegetables	=(VEG0900)/2;	continuous
Fruit (CUP Servings)	fruit	½ CP = 1 serving	Citrus Juice + Fruit juice excluding citrus juice + Citrus Fruit + Fruit excluding Citrus Fruit + Avocado or similar + Fried Fruits + Fruit-based savory snack	=(FRU0100+FRU0200+FRU0300+FRU0400+FRU0500+FRU0600+FRU0700)/2;	continuous
Juice	juice		Citrus Juice + Fruit Juice excluding Citrus Juice	(FRU0100+FRU0200)/2;	continuous
Whole Grains (OZ)	wholegrainsozeq	1 oz = 1 serving	Whole Grains ounce equivalents	no summation (raw NDSR output)	continuous
Refined Grains (OZ)	refgrainsozeq	1 oz = 1 serving	Refined Grains ounce equivalents	no summation (raw NDSR output)	continuous
Dairy (CUPS)	dairy	1 CP milk	Milk – whole + Milk – Reduced fat + Milk – Low Fat and Fat free + Milk – Nondairy + Ready to drink - Flavored + Ready-to-drink Flavored milk-Reduced fat + Ready-to-drink Flavored milk – Low Fat and Fat Free + Sweetened Flavored Milk beverage Powder with Non-fat dry milk + Artificially Sweetened Flavored Milk Beverage Power with Non-fat Dry Milk + Cheese – full fat + Cheese – Reduced Fat + Cheese – Low Fat and Fat Free + Cheese – non Dairy + Yogurt – sweetened whole milk + Yogurt – sweetened Low fat + Yogurt – sweetened Fat free + Yogurt – artificially sweetened low fat + Yogurt – artificially sweetened fat free + Yogurt – nondairy + diary based sweetened meal replacement/supplement + diary based artificially sweetened meal replacement/ supplement	(DMF0100+DMR0100+DML0100+DMN0100+DML0400+DCF0100+DCR0100+DCL0100+DCN0100+DYF0200+DYR0200+DYL0200+DOT0400+DOT0600);	continuous

Low-fat dairy	lfatdairy		Milk + Milk – nondairy + RTD flavored milk + Sweetened flavored milk beverage powder with non-fat dry milk + Artificially sweetened flavored milk beverage powder with non-fat dry milk + Cheese – low fat and fat free + Cheese – nondairy + Yogurt sweetened + Yogurt – non-dairy	=(DML0100+DMN0100+DML0200+DML0300+DML0400+DCL0100+DCN0100+DYL0100+DYN0100+DYR0200+DYL0200);	continuous
Protein (OZ)	totpro	1 oz = 1 serving	Beef + lean beef + veal + lean veal + lamb + lamb + lean lamb + fresh pork + lean fresh pork + cured pork + lean cured pork + game + poultry + lean poultry + Fish – fresh and smoked + lean fish – fresh and smoked + shellfish + cold cuts and sausage + lean cold cuts and sausage + organ meats + eggs + egg substitute + nuts and seeds + Nuts and seeds + nut and seed butters + meat alternatives	=(MRF0100+MRL0100+MRF0200+MRL0200+MRF0300+MRL0300+MRF0400+MRL0400+MCF0200+MCL0200+MRF0500+MPF0100+MPL0100+MPF0200+MFF0100+MFL0100+MFF0200+MSL0100+MSF0100+MCF0100+MCL0100+MOF0100+MOF0200+MOF0300+MOF0400+MOF0500+MOF0600+MOF0700);	continuous
Seafood	seafood		Fish – fresh and smoked + lean fish – fresh and smoked + shellfish	=(MFF0100+MFL0100+MSL0100);	continuous
Plant Protein	plantpro		Nuts and seeds + nut and seed butters + meat alternatives	=(MOF0500+MOF0600+MOF0700)+(VEG0700*2);	continuous
Oils (grams)	oils	Grams	MUFA + PUFA	=(totMUFA+totPUFA);	continuous
Discretionary Calories (%KCAL)	pctdiscretekcal		(Total solid fat + added sugars by total sugars) / kcals * 100	=(totSOF*9+addedsugbytot*4)/kcal*100;	continuous
Saturated fat (% kcal)	percentkcalsSFA		% calories from SFA	no summation (raw NDSR output)	continuous
Added sugars (% kcal)	addedsugbytot pctaddsugars		Added sugars by total sugars * 4 / kcals * 100	=(addedsugbytot*4/kcal)*100;	continuous
Sodium	**sodium**	Mg	Sodium	no summation (raw NDSR output)	continuous
Dietary Fiber	**totfiber**	Grams	Total Dietary fiber	no summation (raw NDSR output)	continuous
Total KCAL	kcal			no summation (raw NDSR output)	continuous

APPENDIX G: SAS CODE

```
*---Maggie Thesis Final Analysis---*/
/*-------03.13.2017-------*/
libname mtsai 'C:\Users\mtsai\Dropbox\Healthy Start_URI data\Data -
Statiscal Analyses\Maggie\Results';
/**importing NDSR batch 1, batch 2, batch 3 baseline tab delimited
files 04 and 09 .txt files from folder**/
proc import datafile="C:\Users\mtsai\Dropbox\Healthy Start_URI
data\Data\Maggie\HSBLB1Cd\HSBLB1C04.txt"
out=mtsai.HSBLB1C04 dbms=tab replace;
getnames=yes;
proc import datafile="C:\Users\mtsai\Dropbox\Healthy Start_URI
data\Data\Maggie\HSBLB2Cd\HSBLB2C04.txt"
out=mtsai.HSBLB2C04 dbms=tab replace;
getnames=yes;
proc import datafile="C:\Users\mtsai\Dropbox\Healthy Start_URI
data\Data\Maggie\HSBLB3Cd\HSBLB3C04.txt"
out=mtsai.HSBLB3C04 dbms=tab replace;
getnames=yes;
proc import datafile="C:\Users\mtsai\Dropbox\Healthy Start_URI
data\Data\Maggie\\HSBLB1Cd\HSBLB1C09.txt"
out=mtsai.HSBLB1C09 dbms=tab replace;
getnames=yes;
proc import datafile="C:\Users\mtsai\Dropbox\Healthy Start_URI
data\Data\Maggie\HSBLB2Cd\HSBLB2C09.txt"
out=mtsai.HSBLB2C09 dbms=tab replace;
getnames=yes;
proc import datafile="C:\Users\mtsai\Dropbox\Healthy Start_URI
data\Data\Maggie\HSBLB3Cd\HSBLB3C09.txt"
out=mtsai.HSBLB3C09 dbms=tab replace;
getnames=yes;

proc sort data=mtsai.HSBLB1C04; by participant_ID date_of_intake;
proc sort data=mtsai.HSBLB1C09; by participant_ID date_of_intake;
proc sort data=mtsai.HSBLB2C04; by participant_ID date_of_intake;
proc sort data=mtsai.HSBLB2C09; by participant_ID date_of_intake;
proc sort data=mtsai.HSBLB3C04; by participant_ID date_of_intake;
proc sort data=mtsai.HSBLB3C09; by participant_ID date_of_intake;

/*merging raw followup NDSR file 04 and file 09 from baseline batch 1 ;
merge data from baseline*/
data mtsai.HSBLB1C0409raw;
merge mtsai.HSBLB1C04 mtsai.HSBLB1C09;
by participant_ID Date_of_Intake;
/*merging raw followup NDSR file 04 and file 09 from baseline batch 2;
merge data from baseline*/
data mtsai.HSBLB2C0409raw;
merge mtsai.HSBLB2C04 mtsai.HSBLB2C09;
by participant_ID Date_of_Intake;
/*merging raw followup NDSR file 04 and file 09 from baseline batch 2;
merge data from baseline*/
data mtsai.HSBLB3C0409raw;
merge mtsai.HSBLB3C04 mtsai.HSBLB3C09;
by participant_ID Date_of_Intake;

/*removing second header row as first observation for batch 1*/
```

```
data mtsai.HSBLB1C0409;
set mtsai.HSBLB1C0409raw (firstobs=2);

/*removing second header row as first observation for batch 2*/
data mtsai.HSBLB2C0409;
set mtsai.HSBLB2C0409raw (firstobs=2);

/*removing second header row as first observation for batch 3*/
data mtsai.HSBLB3C0409;
set mtsai.HSBLB3C0409raw (firstobs=2);

/*merging together Batch 2, Batch 1, Batch 3 File0409 datasets*/
data mtsai.HSBLB1B2B3C0409;
merge mtsai.HSBLB1C0409 mtsai.HSBLB2C0409 mtsai.HSBLB3C0409;
by participant_ID Date_of_Intake;

/*renaming variables*/
data mtsai.rename_HSBLB1B2B3C0409;
set mtsai.HSBLB1B2B3C0409
(rename=(Participant_ID=partid
Date_of_Intake=dintake
Project_Name=quarter
Date_of_Entry=dentry
Day_of_Intake=dayintake
Visit_Number=visitnum
Interviewer_ID=intid
Site_ID=homeid
Total_Grams=totgrams
Energy__kcal_=kcal
Total_Fat__g_=totfat
Total_Carbohydrate__g_=totcho
Total_Protein__g_=totpro
Animal_Protein__g_=anipro
Vegetable_Protein__g_=vegpro
Alcohol__g_=alcohol
Cholesterol__mg_=cholesterol
Total_Saturated_Fatty_Acids__SFA=totSFA
Total_Monounsaturated_Fatty_Acid=totMUFA
Total_Polyunsaturated_Fatty_Acid=totPUFA
Total_Dietary_Fiber__g_=totfiber
Soluble_Dietary_Fiber__g_=solfiber
Sodium__mg_=sodium
__Calories_from_Fat=percentkcalsFAT
__Calories_from_Carbohydrate=percentkcalsCHO
__Calories_from_Protein=percentkcalsPRO
__Calories_from_Alcohol=percentkcalsALC
__Calories_from_SFA=percentkcalsSFA
__Calories_from_MUFA=percentkcalsMUFA
__Calories_from_PUFA=percentkcalsPUFA
Total_Trans_Fatty_Acids__TRANS_=totTFA
Added_Sugars__by_Total_Sugars___=addedsugbytot
Total_Grains__ounce_equivalents_=totgrainsozeq
Whole_Grains__ounce_equivalents_=wholegrainsozeq
Refined_Grains__ounce_equivalent=refgrainsozeq
Solid_Fats__g_=totSOF
));
```

```
/*dropping unnecessary variables for analysis*/
data mtsai.drop_HSBLB1B2B3C0409;
set mtsai.rename_HSBLB1B2B3C0409
(drop=Project_Abbreviation
Record_Type
Participant_Name
Gender
Date_of_Birth
DRI_Life_Stage_Group_or_RDA_Cate
Intake_Amount
Intake_Reliability
Data_Collected_in_NCC_Database_V
Data_Collected_in_Software_Versi
Fructose__g_
Galactose__g_
Glucose__g_
Lactose__g_
Maltose__g_
Sucrose__g_
Starch__g_
Insoluble_Dietary_Fiber__g_
Pectins__g_
Total_Vitamin_A_Activity__Intern
Beta_Carotene_Equivalents__deriv
Retinol__mcg_
Vitamin_D__calciferol___mcg_
Total_Alpha_Tocopherol_Equivalen
Vitamin_E__Total_Alpha_Tocophero
Beta_Tocopherol__mg_
Gamma_Tocopherol__mg_
Delta_Tocopherol__mg_
Vitamin_K__phylloquinone___mcg_
Vitamin_C__ascorbic_acid___mg_
Thiamin__vitamin_B1___mg_
Riboflavin__vitamin_B2___mg_
Niacin__vitamin_B3___mg_
Pantothenic_Acid__mg_
Vitamin_B_6__pyridoxine__pyrido
Total_Folate__mcg_
Vitamin_B_12__cobalamin___mcg_
Calcium__mg_
Phosphorus__mg_
Magnesium__mg_
Iron__mg_
Zinc__mg_
Copper__mg_
Selenium__mcg_
Potassium__mg_
SFA_4_0__butyric_acid___g_
SFA_6_0__caproic_acid___g_
SFA_8_0__caprylic_acid___g_
SFA_10_0__capric_acid___g_
SFA_12_0__lauric_acid___g_
SFA_14_0__myristic_acid___g_
SFA_16_0__palmitic_acid___g_
SFA_17_0__margaric_acid___g_
SFA_18_0__stearic_acid___g_
```

SFA_20_0__arachidic_acid___g_
SFA_22_0__behenic_acid___g_
MUFA_14_1__myristoleic_acid___g_
MUFA_16_1__palmitoleic_acid___g_
MUFA_18_1__oleic_acid___g_
MUFA_20_1__gadoleic_acid___g_
MUFA_22_1__erucic_acid___g_
PUFA_18_2__linoleic_acid___g_
PUFA_18_3__linolenic_acid___g_
PUFA_18_4__parinaric_acid___g_
PUFA_20_4__arachidonic_acid___g_
PUFA_20_5__eicosapentaenoic_acid
PUFA_22_5__docosapentaenoic_acid
PUFA_22_6__docosahexaenoic_acid
Tryptophan__g_
Threonine__g_
Isoleucine__g_
Leucine__g_
Lysine__g_
Methionine__g_
Cystine__g_
Phenylalanine__g_
Tyrosine__g_
Valine__g_
Arginine__g_
Histidine__g_
Alanine__g_
Aspartic_Acid__g_
Glutamic_Acid__g_
Glycine__g_
Proline__g_
Serine__g_
Aspartame__mg_
Saccharin__mg_
Caffeine__mg_
Phytic_Acid__mg_
Oxalic_Acid__mg_
_3_Methylhistidine__mg_
Sucrose_Polyester__g_
Ash__g_
Water__g_
Polyunsaturated_to_Saturated_Fat
Cholesterol_to_Saturated_Fatty_A
Total_Vitamin_A_Activity__Retino
TRANS_18_1__trans_octadecenoic_a
TRANS_18_2__trans_octadecadienoi
TRANS_16_1__trans_hexadecenoic_a
User_Nutrient_1__mg_
User_Nutrient_2__mg_
User_Nutrient_3__mg_
User_Nutrient_4__mg_
User_Nutrient_5__mg_
User_Nutrient_6__mg_
User_Nutrient_7__mg_
User_Nutrient_8__mg_
User_Nutrient_9__mg_
User_Nutrient_10__mg_

Header_Notes
Beta_Carotene__provitamin_A_caro
Alpha_Carotene__provitamin_A_car
Beta_Cryptoxanthin__provitamin_A
Lutein___Zeaxanthin__mcg_
Lycopene__mcg_
Dietary_Folate_Equivalents__mcg_
Natural_Folate__food_folate___mc
Synthetic_Folate__folic_acid___m
Data_Generated_in_NCC_Database_V
Data_Generated_in_Software_Versi
Trailer_Notes
User_Nutrient_11__mg_
User_Nutrient_12__mg_
User_Nutrient_13__mg_
User_Nutrient_14__mg_
User_Nutrient_15__mg_
User_Nutrient_16__mg_
User_Nutrient_17__mg_
User_Nutrient_18__mg_
User_Nutrient_19__mg_
User_Nutrient_20__mg_
Energy__kj_
Niacin_Equivalents__mg_
Total_Sugars__g_
Omega_3_Fatty_Acids__g_
Manganese__mg_
Vitamin_E__International_Units_
Natural_Alpha_Tocopherol__RRR_al
Synthetic_Alpha_Tocopherol__all
Daidzein__mg_
Genistein__mg_
Glycitein__mg_
Coumestrol__mg_
Biochanin_A__mg_
Formononetin__mg_
Column_intentionally_left_blank
Added_Sugars__by_Available_Carbo
Acesulfame_Potassium__mg_
Sucralose__mg_
Available_Carbohydrate__g_
Glycemic_Index__glucose_referenc
Glycemic_Index__bread_reference_
Glycemic_Load__glucose_reference
Glycemic_Load__bread_reference_
Choline__mg_
Betaine__mg_
Erythritol__g_
Inositol__g_
Isomalt__g_
Lactitol__g_
Maltitol__g_
Mannitol__g_
Pinitol__g_
Sorbitol__g_
Xylitol__g_
Nitrogen__g_

```
Total_Conjugated_Linoleic_Acid__
CLA_cis_9__trans_11__g_
CLA_trans_10__cis_12__g_
Tagatose__mg_
Vitamin_D2__ergocalciferol___mcg
Vitamin_D3__cholecalciferol___mc
PUFA_18_3_n_3__alpha_linolenic_a
quarter
dentry
dayintake
intid
totgrams);

/*using dataset from HSBLB1B2B3 dropped variables and renamed variables
set*/
data mtsai.HSBLB1B2B3C_MT;
set mtsai.drop_HSBLB1B2B3C0409;
/*creating food group variables*/
vegetables=(VEG0100+VEG0200+VEG0300+VEG0400+VEG0800+VEG0450+VEG0700+VEG
0600+VEG0900+VEG0500)/2;
dgrnveg=VEG0100/2;
roveg=(VEG0200+VEG0300)/2;
legumes=VEG0700/2;
starchyveg=(VEG0400+VEG0800+VEG0450)/2;
otherveg=(VEG0900)/2;
fruit=(FRU0100+FRU0200+FRU0300+FRU0400+FRU0500+FRU0600+FRU0700)/2;
juice=(FRU0100+FRU0200)/2;
dairy=(DMF0100+DMR0100+DML0100+DMN0100+DML0400+DCF0100+DCR0100+DCL0100+
DCN0100+DYF0200+DYR0200+DYL0200+DOT0400+DOT0600);
/*variables for whole grains and refined grains intake:
wholegrainsozeq, refgrainsozeq and totgrainsozeq*/
lfatdairy=(DML0100+DMN0100+DML0200+DML0300+DML0400+DCL0100+DCN0100+DYL0
100+DYN0100+DYR0200+DYL0200);
protein=(MRF0100+MRL0100+MRF0200+MRL0200+MRF0300+MRL0300+MRF0400+MRL040
0+MCF0200+MCL0200+MRF0500+MPF0100+MPL0100+MPF0200+MFF0100+MFL0100+MFF02
00+MSL0100+MSF0100+MCF0100+MCL0100+MOF0100+MOF0200+MOF0300+MOF0400+MOF0
500+MOF0600+MOF0700);
seafood=(MFF0100+MFL0100+MSL0100);
meat=(MRF0100+MRL0100+MRF0200+MRL0200+MRF0300+MRL0300+MRF0400+MRL0400+M
CF0200+MCL0200+MRF0500+MPF0100+MPL0100+MPF0200+MCF0100+MCL0100+MOF0100+
MOF0200+MOF0300+MOF0400);
plantpro=(MOF0500+MOF0600+MOF0700)+(VEG0700*2);
oils=(totMUFA+totPUFA);
pctdiscretekcal=(totSOF*9+addedsugbytot*4)/kcal*100;/*variable for
percent of saturated fat intake: percentkcalsSFA*/
pctaddsugars=(addedsugbytot*4/kcal)*100;/*variable for sodium intake:
sodium */
/*variable for total dietary fiber: totfiber */;

/*datacheck of each component sum*/
proc print data=mtsai.HSBLB1B2B3C_MT;
var vegetables VEG0100 VEG0200 VEG0300 VEG0400 VEG0800 VEG0450 VEG0700
VEG0600 VEG0900 VEG0500 /*divided by 2*/
dgrnveg VEG0100 /*divided by 2*/
roveg VEG0200 VEG0300 /*divided by 2*/
legumes VEG0700 /*divided by 2*/
starchyveg VEG0400 VEG0800 VEG0450 /*divided by 2*/
```

```
otherveg VEG0900 /*divided by 2*/
fruit FRU0100 FRU0200 FRU0300 FRU0400 FRU0500 FRU0600 FRU0700 /*divided
by 2*/
juice FRU0100 FRU0200 /*divided by 2*/
dairy DMF0100 DMR0100 DML0100 DMN0100 DML0400 DCF0100 DCR0100 DCL0100
DCN0100 DYF0200 DYR0200 DYL0200 DOT0400 DOT0600 /*divided by 2*/
lfatdairy DML0100 DMN0100 DML0200 DML0300 DML0400 DCL0100 DCN0100
DYL0100 DYN0100 DYR0200 DYL0200
protein MRF0100 MRL0100 MRF0200 MRL0200 MRF0300 MRL0300 MRF0400 MRL0400
MCF0200 MCL0200 MRF0500 MPF0100 MPL0100 MPF0200 MFF0100 MFL0100 MFF0200
MSL0100 MSF0100 MCF0100 MCL0100 MOF0100 MOF0200 MOF0300 MOF0400 MOF0500
MOF0600 MOF0700
seafood MFF0100 MFL0100 MSL0100
meat MRF0100 MRL0100 MRF0200 MRL0200 MRF0300 MRL0300 MRF0400 MRL0400
MCF0200 MCL0200 MRF0500 MPF0100 MPL0100 MPF0200 MCF0100 MCL0100 MOF0100
MOF0200 MOF0300 MOF0400
plantpro MOF0500 MOF0600 MOF0700 VEG0700 /*VEG0700x2*/
oils totMUFA totPUFA
pctdiscretekcal totSOF addedsugbytot kcal /**totSOF x 9 +
addedsugbytotx4 divided by kcalx100**/
pctaddsugars /**addedsugbytotx4 divided by kcalx100**/
;
where partid='HS1008CH01';

/*choosing relevant variables to keep in dataset*/
data mtsai.HSBLB1B2B3C_MTvar;
set mtsai.HSBLB1B2B3C_MT;
keep homeid partid dintake visitnum kcal totfat totcho totpro anipro
vegpro alcohol cholesterol totSFA totMUFA totPUFA totfiber solfiber
sodium percentkcalsFAT percentkcalsCHO percentkcalsPRO percentkcalsALC
percentkcalsSFA percentkcalsMUFA percentkcalsPUFA totTFA
addedsugbytot totgrainsozeq wholegrainsozeq refgrainsozeq totSOF kcal
vegetables dgrnveg roveg legumes starchyveg otherveg fruit juice dairy
lfatdairy protein meat seafood plantpro oils pctdiscretekcal
pctaddsugars;

/*Averaging scores by FCCHID without dropped observations*/
proc means data=mtsai.HSBLB1B2B3C_MTvar;
class homeid;
var kcal totfat totcho totpro anipro vegpro alcohol cholesterol totSFA
totMUFA totPUFA totfiber solfiber
sodium percentkcalsFAT percentkcalsCHO percentkcalsPRO percentkcalsALC
percentkcalsSFA percentkcalsMUFA percentkcalsPUFA totTFA
addedsugbytot totgrainsozeq wholegrainsozeq refgrainsozeq totSOF
vegetables dgrnveg roveg legumes starchyveg otherveg fruit juice dairy
lfatdairy protein meat seafood plantpro oils pctdiscretekcal
pctaddsugars;
output out=mtsai.HSBLB1B2B3C_MTavg (where=(_type_=1))
mean=kcal totfat totcho totpro anipro vegpro alcohol cholesterol totSFA
totMUFA totPUFA totfiber solfiber
sodium percentkcalsFAT percentkcalsCHO percentkcalsPRO percentkcalsALC
percentkcalsSFA percentkcalsMUFA percentkcalsPUFA totTFA
addedsugbytot totgrainsozeq wholegrainsozeq refgrainsozeq totSOF
vegetables dgrnveg roveg legumes starchyveg otherveg fruit juice dairy
lfatdairy protein meat seafood plantpro oils pctdiscretekcal
pctaddsugars;
;
```

```
proc print data=mtsai.HSBLB1B2B3C_MTavg; run;

/*merging dataset by home_IDs*/
proc import datafile="C:\Users\mtsai\Dropbox\Healthy Start_URI
data\Data\Maggie\Provider_SocioDemo\FCCH_BLINPERSON_3152017.csv"
out=mtsai.ProvDemoBL1raw dbms=csv replace;
getnames=yes;

proc import datafile="C:\Users\mtsai\Dropbox\Healthy Start_URI
data\Data\Maggie\Provider_SocioDemo\FCCH_ELIGBLPHONE_3152017.csv"
out=mtsai.ProvDemoBL2raw dbms=csv replace;
getnames=yes;

/*renaming customid variable from DATSTAT to homeid to match FCCH IDs
together*/
data mtsai.ProvDemo1;
set mtsai.ProvDemoBL1raw
(rename=(CUSTOMID = homeid));

/*renaming customid variable from DATSTAT to homeid to match FCCH IDs
together*/
data mtsai.ProvDemo2;
set mtsai.ProvDemoBL2raw
(rename=(CUSTOMID = homeid));

/*merging FCCHBLINPERSON and FCCHPHONE surveys*/
data mtsai.ProvDemo12;
merge mtsai.ProvDemo1 mtsai.ProvDemo2;
by homeid;

/*choosing relevant variables to keep in ProvDemo dataset*/
data mtsai.ProvDemo;
set mtsai.ProvDemo12;
keep homeid
BLGENDER
BLETHNICITY
BLHISPCULTURE
BLDEMO88
BLDEMO89
BLDEMO91
BLDEMO92
BLDEMO93
BLDEMO94
BLDEMO95
BLDEMO96
BLDEMO105
BLDEMO86
BLDEMO87
BLDEMO90
BLDEMO103
BLDEMO104;

proc sort data=mtsai.HSBLB1B2B3C_MTavg; by homeid; run;
proc sort data=mtsai.ProvDemo; by homeid; run;

/*merging Provider data and Child DOCC data from baseline consumed*/
data mtsai.HSBLB1B2B3C_Pmerge;
```

```
merge mtsai.HSBLB1B2B3C_MTavg mtsai.ProvDemo;
by homeid;
run;

/**dropping homes without dietary data datacheck - 34; cleaning dataset
for incorrect data variables (BLGENDER 1 = 2. 100% female providers)**/
data mtsai.HSBLB1B2B3C_nodropclean;
set mtsai.HSBLB1B2B3C_Pmerge;
if nmiss(of kcal) > 0 then delete;
if nmiss(of BLGENDER) = 1 then delete;
if BLGENDER = 1 then BLGENDER = 2;
if BLDEMO91 = 99 then BLDEMO91 = ".";
if BLDEMO93 = 99 then BLDEMO93 = ".";
if BLDEMO95 = 99 then BLDEMO95 = ".";
proc print;
run;

/**descriptives for categorical variables**/
proc freq data=mtsai.HSBLB1B2B3C_nodropclean;
tables BLGENDER
BLETHNICITY
BLHISPCULTURE
BLDEMO88
BLDEMO89
BLDEMO91
BLDEMO92
BLDEMO93
BLDEMO94
BLDEMO95
BLDEMO96
BLDEMO105
;
run;

/**descriptives for continuous variables**/
proc univariate data=mtsai.HSBLB1B2B3C_nodropclean
OUTTABLE=mtsai.HSBLB1B2B3C_univariates normal;
var BLDEMO86 BLDEMO87 BLDEMO90 BLDEMO103 BLDEMO104
kcal totfat totcho totpro anipro vegpro alcohol cholesterol totSFA
totMUFA totPUFA totfiber solfiber
sodium percentkcalsFAT percentkcalsCHO percentkcalsPRO percentkcalsALC
percentkcalsSFA percentkcalsMUFA percentkcalsPUFA totTFA
addedsugbytot totgrainsozeq wholegrainsozeq refgrainsozeq totSOF
vegetables dgrnveg roveg legumes starchyveg otherveg fruit juice dairy
lfatdairy protein meat seafood plantpro oils pctdiscretekcal
pctaddsugars;
histogram;
proc print;
run;

/**descriptives for child demos**/
/*importing child demo data*/
proc import datafile="C:\Users\mtsai\Dropbox\Healthy Start_URI
data\Data\Maggie\Child_SocioDemo\FCCH_ChildDemos.txt"
out=mtsai.ChildDemoraw dbms=tab replace;
getnames=yes;
run;
```

```
/*renaming childid variable from DATSTAT to homeid to match FCCH IDs
together*/
data mtsai.ChildDemo;
set mtsai.ChildDemoraw
(rename=(childID = partid));
proc print;
run;

proc freq data=mtsai.ChildDemo;
tables CDEMSEX;
run;

proc means data=mtsai.ChildDemo N Mean STD;
var CATCHAGE;
run;

/**conducting 2-sided t-test for food groups and 1,000 kcal, 1/2
recommendations**/
proc ttest data=mtsai.HSBLB1B2B3C_nodropclean sides=2 alpha=0.05
h0=750;
      var sodium;
   run;
proc ttest data=mtsai.HSBLB1B2B3C_nodropclean sides=2 alpha=0.05
h0=1.5;
      var totgrainsozeq;
   run;
proc ttest data=mtsai.HSBLB1B2B3C_nodropclean sides=2 alpha=0.05
h0=0.75;
      var refgrainsozeq;
   run;
proc ttest data=mtsai.HSBLB1B2B3C_nodropclean sides=2 alpha=0.05 h0=15;
      var pctdiscretekcal;
   run;
proc ttest data=mtsai.HSBLB1B2B3C_nodropclean sides=2 alpha=0.05 h0=7;
      var totfiber;
   run;

/**conducting 2-sided t-test for food groups and 1,000 kcal, 2/3
recommendations**/
proc ttest data=mtsai.HSBLB1B2B3C_nodropclean sides=2 alpha=0.05
h0=1000;
      var sodium;
   run;
proc ttest data=mtsai.HSBLB1B2B3C_nodropclean sides=2 alpha=0.05 h0=2;
      var totgrainsozeq;
   run;
proc ttest data=mtsai.HSBLB1B2B3C_nodropclean sides=2 alpha=0.05 h0=1;
      var refgrainsozeq;
   run;
proc ttest data=mtsai.HSBLB1B2B3C_nodropclean sides=2 alpha=0.05 h0=15;
      var pctdiscretekcal;
   run;
proc ttest data=mtsai.HSBLB1B2B3C_nodropclean sides=2 alpha=0.05
h0=9.34;
      var totfiber;
   run;
```

```
/**conducting one-sample median test for food groups and 1,000 kcal,
1/2 recommendations**/
proc univariate data =mtsai.HSBLB1B2B3C_nodropclean loccount mu0 = 0.5;
  var vegetables;
run;
proc univariate data =mtsai.HSBLB1B2B3C_nodropclean loccount mu0 = 0.5;
  var fruit;
run;
proc univariate data =mtsai.HSBLB1B2B3C_nodropclean loccount mu0 = 1;
  var dairy;
run;
proc univariate data =mtsai.HSBLB1B2B3C_nodropclean loccount mu0 = 1;
  var protein;
run;
proc univariate data =mtsai.HSBLB1B2B3C_nodropclean loccount mu0 = 7.5;
  var oils;
run;
proc univariate data =mtsai.HSBLB1B2B3C_nodropclean loccount mu0 = 10;
  var pctaddedsugars;
run;
proc univariate data =mtsai.HSBLB1B2B3C_nodropclean loccount mu0 = 10;
  var percentkcalsSFA;
run;
/**conducting one-sample median test for food groups and 1,000 kcal,
2/3 recommendations**/
proc univariate data =mtsai.HSBLB1B2B3C_nodropclean loccount mu0 =
0.667;
  var vegetables;
run;
proc univariate data =mtsai.HSBLB1B2B3C_nodropclean loccount mu0 =
0.667;
  var fruit;
run;
proc univariate data =mtsai.HSBLB1B2B3C_nodropclean loccount mu0 = 1;
  var wholegrainsozeq;
run;
proc univariate data =mtsai.HSBLB1B2B3C_nodropclean loccount mu0 =
1.334;
  var dairy;
run;
proc univariate data =mtsai.HSBLB1B2B3C_nodropclean loccount mu0 =
1.334;
  var protein;
run;
proc univariate data =mtsai.HSBLB1B2B3C_nodropclean loccount mu0 = 10;
  var oils;
run;
proc univariate data =mtsai.HSBLB1B2B3C_nodropclean loccount mu0 = 10;
  var pctaddedsugars;
run;
proc univariate data =mtsai.HSBLB1B2B3C_nodropclean loccount mu0 = 10;
  var percentkcalsSFA;
run;

/** building acculturation scale from demographic data **/
data mtsai.HSBLB1B2B3C_nativ;
set mtsai.HSBLB1B2B3C_nodropclean;
```

```
/*nativity scoring algorithm*/
/* BLDEMO89 = Country of origin 1=US, 2=Other*/
if BLDEMO89 = 1 then nativity = 3; /*assign highest nativity score=3*/
else if BLDEMO89 = 2 then do;
end;
if BLDEMO90 ge 20 then /*years lived in US gt 20*/
nativity = 2;/*assign nativity score=2*/
else if BLDEMO89 = 2 then do;
if BLDEMO90 in (10:19) then /*years lived in US bt 10 to 19 years*/
nativity = 1; /*assign nativity score=1*/
end;
else if BLDEMO89= 2 then do;
if BLDEMO90 lt 10 then /*years lived in US lt 10 years*/
nativity =0; /*assign nativity score=0*/
end;
proc print;
run;

/*datacheck for BLDEMO89, BLDEMO 90 for nativ algorithm =2*/
proc print data=mtsai.HSBLB1B2B3C_nativ;
var homeid BLDEMO89 BLDEMO90 nativity;
where nativity = 2;
run;

/*datacheck for BLDEMO89, BLDEMO 90 for nativ algorithm =1*/
proc print data=mtsai.HSBLB1B2B3C_nativ;
var homeid BLDEMO89 BLDEMO90 nativity;
where nativity = 1;
run;

/*datacheck for BLDEMO89, BLDEMO 90 for nativ algorithm =0*/
proc print data=mtsai.HSBLB1B2B3C_nativ;
var homeid BLDEMO89 BLDEMO90 nativity;
where nativity = 0;
run;

/*datacheck for BLDEMO89, BLDEMO 90 for nativ algorithm =3*/
proc print data=mtsai.HSBLB1B2B3C_nativ;
var homeid BLDEMO89 BLDEMO90 nativity;
where nativity = 3;
run;

/*language scoring algorithm*/
data mtsai.HSBLB1B2B3C_nativlang;
set mtsai.HSBLB1B2B3C_nativ;
/*BLDEMO91 = language spoken at home; 1=English, 2=Spanish, 3= both,
more Eng than Span,4=both, equal, 5 = both, more span than eng, 6 =
other*/
if BLDEMO91 = 2 or BLDEMO91 = 5 or BLDEMO91 = 6 then /*Spanish, Other -
Creole, More Span*/
lang = 0; /*assign lowest language acculturation score=0*/
else if BLDEMO91 = 4 then /*both equally*/
lang = 1; /*assign lowest language acculturation score=0*/
else if BLDEMO91 = 1 OR BLDEMO91 = 3 then /*English or more eng than
span*/
lang = 2; /*assign language acculturation score=2*/
run;
```

```
/*datacheck for BLDEMO91 language acculturation algorithm =0*/
proc print data=mtsai.HSBLB1B2B3C_nativlang;
var homeid BLDEMO91 lang;
where lang = 0;
run;

/*datacheck for BLDEMO91 language acculturation algorithm =1*/
proc print data=mtsai.HSBLB1B2B3C_nativlang;
var homeid BLDEMO91 lang;
where lang = 1;
run;

/*datacheck for BLDEMO91 language acculturation algorithm =2*/
proc print data=mtsai.HSBLB1B2B3C_nativlang;
var homeid BLDEMO91 lang;
where lang = 2;
run;

/*building composite acculturation score*/
data mtsai.HSBLB1B2B3C_accult;
set mtsai.HSBLB1B2B3C_nativlang;
accult=nativity+lang;
proc print;
run;

/*checking acculturation descriptives*/
proc means data=mtsai.HSBLB1B2B3C_accult N MEAN STD MIN MAX SKEWNESS
KURTOSIS; var accult; run;

/*checking reliability of acculturation*/
proc corr alpha data=mtsai.HSBLB1B2B3C_accult; var nativity lang;
run; quit;

/*checking correlations between acculturation and variables of
interest*/
proc sgplot data = mtsai.HSBLB1B2B3C_accult;
xaxis label = "Acculturation score (0-5)";
yaxis label = "Vegetables consumed (cups)";
scatter x = accult y = vegetables;
loess x = accult y = vegetables/nomarkers;
reg x = accult y = vegetables ;
ellipse x = accult y = vegetables;
run;
proc sgplot data = mtsai.HSBLB1B2B3C_accult;
xaxis label = "Acculturation score (0-5)";
yaxis label = "Juice consumed (cups)";
scatter x = accult y = juice;
loess x = accult y = juice/nomarkers;
reg x = accult y = juice;
ellipse x = accult y = juice;
run;
proc sgplot data = mtsai.HSBLB1B2B3C_accult;
xaxis label = "Acculturation score (0-5)";
yaxis label = "Fruit consumed (cups)";
scatter x = accult y = fruit;
loess x = accult y = fruit/nomarkers;
```

```
reg x = acculT y = fruit;
ellipse x = acculT y = fruit;
run;
proc sgplot data = mtsai.HSBLB1B2B3C_acculT;
xaxis label = "Acculturation score (0-5)";
yaxis label = "Legumes consumed (cups)";
scatter x = acculT y = legumes;
loess x = acculT y = legumes/nomarkers;
reg x = acculT y = legumes;
ellipse x = acculT y = legumes;
run;
proc sgplot data = mtsai.HSBLB1B2B3C_acculT;
xaxis label = "Acculturation score (0-5)";
yaxis label = "Whole grains consumed (ounces)";
scatter x = acculT y = wholegrainsozeq;
loess x = acculT y = wholegrainsozeq/nomarkers;
reg x = acculT y = wholegrainsozeq;
ellipse x = acculT y = wholegrainsozeq;
run;
proc sgplot data = mtsai.HSBLB1B2B3C_acculT;
xaxis label = "Acculturation score (0-5)";
yaxis label = "Refined grains consumed (ounces)";
scatter x = acculT y = refinedgrainsozeq;
loess x = acculT y = refinedgrainsozeq/nomarkers;
reg x = acculT y = refinedgrainsozeq;
ellipse x = acculT y = refinedgrainsozeq;
run;
proc sgplot data = mtsai.HSBLB1B2B3C_acculT;
xaxis label = "Acculturation score (0-5)";
yaxis label = "Empty calories consumed (%kcal)";
scatter x = acculT y = pctdiscretekcal;
loess x = acculT y = pctdiscretekcal/nomarkers;
reg x = acculT y = pctdiscretekcal;
ellipse x = acculT y = pctdiscretekcal;
run;
proc sgplot data = mtsai.HSBLB1B2B3C_acculT;
xaxis label = "Acculturation score (0-5)";
yaxis label = "Percent added sugars (%kcal)";
scatter x = acculT y = pctaddsugars;
loess x = acculT y = pctaddsugars/nomarkers;
reg x = acculT y = pctaddsugars;
ellipse x = acculT y = pctaddsugars;
run;

/*spearman correlation*/
proc corr data=mtsai.HSBLB1B2B3C_acculT SPEARMAN
OUTS=mtsai.HSBLB1B2B3B3C_pearson; var acculT fruit vegetables legumes
wholegrainsozeq refgrainsozeq pctdiscretekcal juice pctaddsugars; run;
quit;
/*pearson correlation*/
proc corr data=mtsai.HSBLB1B2B3C_acculT PEARSON
OUTP=mtsai.HSBLB1B2B3B3C_pearson; var acculT fruit vegetables legumes
wholegrainsozeq refgrainsozeq pctdiscretekcal juice pctaddsugars; run;
quit;
/*checking frequencies and cross-tabs for acculturation and other
demographics*/
proc freq data= mtsai.HSBLB1B2B3C_acculT;
```

```
      tables accult;
run;

/*collapsing AA degree and bachelor's degree together for educational
level - BLDEMO95*/
data mtsai.HSBLB1B2B3C_colledu;
set mtsai.HSBLB1B2B3C_accult;

/*BLDEMO95 = educational attainment; 1= <HS, 2=HS, 3=AA degree or some
college, 4= Bachelor's,5=Grad School*/
if BLDEMO95 = 1 then
college = 1; /* < HS */
else if BLDEMO95 = 2 then /*HS level*/
college = 2; /**/
else if BLDEMO95 = 3 OR BLDEMO95 = 4 OR BLDEMO95 = 5 then /*collapsing
AA degree + educational levels*/
college = 3; /*college*/
run;

/*collapsing income demographic variables*/

data mtsai.HSBLB1B2B3C_income;
set mtsai.HSBLB1B2B3C_colledu;

if BLDEMO93 = 1 then /*<25k*/
income = 1; /*<25k*/
else if BLDEMO93 = 2 then
income = 2; /*25k-75k*/
else if BLDEMO93 = 3 then /*50k -75k*/
income = 2; /*25k-75k*/
run;

/*checking correlations between acculturation and variables of
interest*/
proc corr data=mtsai.HSBLB1B2B3C_income; var accult vegetables legumes
wholegrainsozeq refgrainsozeq pctdiscretekcal juice pctaddsugars; run;
quit;

/*performing ANOVA with acculturation as DV, and demographics as
categorical IV*/
proc means data = mtsai.HSBLB1B2B3C_income N MEAN STD MIN MAX SKEWNESS
KURTOSIS; var income college accult; run;
proc corr data = mtsai.HSBLB1B2B3C_income; var college accult income;
run;

proc anova data = mtsai.HSBLB1B2B3C_income;
      class college;
      model accult = college;
   run;

/*performing ANOVA with acculturation as DV, and income as categorical
IV*/
proc means data = mtsai.HSBLB1B2B3C_income N MEAN STD MIN MAX SKEWNESS
KURTOSIS; var BLDEMO93 accult; run;
proc corr data = mtsai.HSBLB1B2B3C_income; var BLDEMO93 accult; run;

proc anova data = mtsai.HSBLB1B2B3C_income;
```

```
      class BLDEMO93;
      model accult = BLDEMO93;
   run;
proc anova data = mtsai.HSBLB1B2B3C_income;
      class BLDEMO93;
      model vegetables = BLDEMO93;
   run;

/*finding means of low acculturation vs high acculturation for food
groups*/
proc means data = mtsai.HSBLB1B2B3C_accult; var legumes; where accult =
1 OR accult = 2; run;

proc means data = mtsai.HSBLB1B2B3C_accult; var legumes; where accult =
3 OR accult = 4 OR accult = 5; run;

proc means data = mtsai.HSBLB1B2B3C_accult; var vegetables; where
accult = 1 OR accult = 2; run;

proc means data = mtsai.HSBLB1B2B3C_accult; var vegetables; where
accult = 3 OR accult = 4 OR accult = 5; run;

proc means data = mtsai.HSBLB1B2B3C_accult; var wholegrainsozeq; where
accult = 1 OR accult = 2; run;

proc means data = mtsai.HSBLB1B2B3C_accult; var wholegrainsozeq; where
accult = 3 OR accult = 4 OR accult = 5; run;

proc means data = mtsai.HSBLB1B2B3C_accult; var fruit; where accult = 1
OR accult = 2; run;

proc means data = mtsai.HSBLB1B2B3C_accult; var fruit; where accult = 3
OR accult = 4 OR accult = 5; run;

proc means data = mtsai.HSBLB1B2B3C_accult; var juice; where accult = 1
OR accult = 2; run;

proc means data = mtsai.HSBLB1B2B3C_accult; var juice; where accult = 3
OR accult = 4 OR accult = 5; run;

proc means data = mtsai.HSBLB1B2B3C_accult; var refgrainsozeq; where
accult = 1 OR accult = 2; run;

proc means data = mtsai.HSBLB1B2B3C_accult; var refgrainsozeq; where
accult = 3 OR accult = 4 OR accult = 5; run;

proc means data = mtsai.HSBLB1B2B3C_accult; var pctdiscretekcal; where
accult = 1 OR accult = 2; run;

proc means data = mtsai.HSBLB1B2B3C_accult; var pctdiscretekcal; where
accult = 3 OR accult = 4 OR accult = 5; run;

proc means data = mtsai.HSBLB1B2B3C_accult; var pctaddsugars; where
accult = 1 OR accult = 2; run;

proc means data = mtsai.HSBLB1B2B3C_accult; var pctaddsugars; where
accult = 3 OR accult = 4 OR accult = 5; run;
```

```
/*collapsing data into low acculturation and high acculturation*/
data mtsai.HSBLB1B2B3C_incomeaccult;
set mtsai.HSBLB1B2B3C_income;
if accult = 1 OR accult =2 then
low1high2accult = 1; /*assigns 0-1 scores into low acculturation*/
else if accult ge 3 then /*assigns 3-5 scores into low acculturation*/
low1high2accult = 2; /*assigns 3+ scores into high acculturation*/
run;

proc freq data=mtsai.HSBLB1B2B3C_incomeaccult;
tables low1high2accult;
run;

/* yes/no dichotomizations of meeting food reqs */
data mtsai.HSBLB1B2B3C_scores; set mtsai.HSBLB1B2B3C_incomeaccult;
if vegetables lt 0.667 then veg = 0;
else if vegetables ge 0.667 then veg = 1;
if refgrainsozeq le 1.5 then refgrain = 1;
else if refgrainsozeq gt 1.5 then refgrain = 0;
if wholegrainsozeq lt 1.5 then wgrain = 0;
else if wholegrainsozeq ge 1.5 then wgrain = 1;
if fruit lt 0.667 then fru = 0;
else if fruit ge 0.667 then fru = 1;
if dairy lt 1.334 then milk = 0;
else if dairy gt 1.334 then milk = 1;
if protein lt 1.334 then pro = 0;
else if protein ge 1.334 then pro = 1;
if sodium le 1000 then sod = 1;
else if sodium gt 1000 then sod = 0;
if oils lt 7.5  then oil = 0;
else if oils ge 7.5 then oil = 1;
if totfiber lt 9.334  then fiber = 0;
else if totfiber ge 9.334  then fiber = 1;
if pctdiscretekcal le 15 then discretekcal = 1;
else if pctdiscretekcal gt 15 then discretekcal = 0;
if pctaddsugars le 10 then addsugars = 1;
else if pctaddsugars gt 10 then addsugars = 0;
if percentkcalsSFA le 10 then pctkcalSFA = 1;
else if percentkcalsSFA gt 10 then pctkcalSFA = 0;
run;

/*looking at frequencies of dichotomized data*/
proc freq data=mtsai.HSBLB1B2B3C_scores;
tables low1high2accult college income veg wgrain refgrain fru milk pro
sod oil fiber discretekcal addsugars pctkcalSFA;
run;

/*running chi-squared tests*/
proc freq data=mtsai.HSBLB1B2B3C_scores;
tables low1high2accult*veg/ chisq; /*accult by vegetaables rec*/
run;
proc freq data=mtsai.HSBLB1B2B3C_scores;
tables low1high2accult*fru/ chisq; /*accult by fruit rec*/
run;
proc freq data=mtsai.HSBLB1B2B3C_scores;
tables low1high2accult*wgrain/ chisq; /*accult by whole grains rec*/
```

```
run;
proc freq data=mtsai.HSBLB1B2B3C_scores;
tables low1high2accult*refgrain/ chisq; /*accult by refined grains
rec*/
run;
proc freq data=mtsai.HSBLB1B2B3C_scores;
tables low1high2accult*milk/ chisq; /*accult by dairy rec*/
run;
proc freq data=mtsai.HSBLB1B2B3C_scores;
tables low1high2accult*pro/ chisq; /*accult by protein rec*/
run;
proc freq data=mtsai.HSBLB1B2B3C_scores;
tables low1high2accult*sod/ chisq; /*accult by sodium rec*/
run;
proc freq data=mtsai.HSBLB1B2B3C_scores;
tables low1high2accult*oil/ chisq; /*accult by oil rec*/
run;
proc freq data=mtsai.HSBLB1B2B3C_scores;
tables low1high2accult*fiber/ chisq; /*accult by fiber rec*/
run;
proc freq data=mtsai.HSBLB1B2B3C_scores;
tables low1high2accult*discretekcal/ chisq; /*accult by discretionary
calories rec*/
run;
proc freq data=mtsai.HSBLB1B2B3C_scores;
tables low1high2accult*addsugars/ chisq; /*accult by addedsugars rec*/
run;
proc freq data=mtsai.HSBLB1B2B3C_scores;
tables low1high2accult*pctkcalSFA/ chisq; /*accult by percent of kcals
SFA rec*/
run;

/*transforming variables*/
data mtsai.HSBLB1B2B3C_trans;
set mtsai.HSBLB1B2B3C_scores;
loils=log10(oils);
run;

/*checking descriptives on univariate data*/
proc univariate data= mtsai.HSBLB1B2B3C_trans;
var loils; histogram; run;

proc freq data=mtsai.HSBLB1B2B3C_mtvar;
tables partid;
run;

/**conducting 2-sided t-test for food groups and 1,000 kcal, 2/3
recommendations on transformed dataset, and with kurtotic data**/
proc ttest data=mtsai.HSBLB1B2B3C_trans sides=2 alpha=0.05 h0=1; /*not
used in analysis*/
      var loils; /*log-10 transformed oils*/ run;
proc ttest data=mtsai.HSBLB1B2B3C_trans sides=2 alpha=0.05 h0=667;
      var kcal; run;
proc ttest data=mtsai.HSBLB1B2B3C_trans sides=2 alpha=0.05 h0=.667;
      var vegetables; run;
proc ttest data=mtsai.HSBLB1B2B3C_trans sides=2 alpha=0.05 h0=.667;
      var fruit; run;
```

```
proc ttest data=mtsai.HSBLB1B2B3C_trans sides=2 alpha=0.05 h0=2;
      var totgrainsozeq; run;
proc ttest data=mtsai.HSBLB1B2B3C_trans sides=2 alpha=0.05 h0=1;
      var refgrainsozeq; run;
proc ttest data=mtsai.HSBLB1B2B3C_trans sides=2 alpha=0.05 h0=1;
      var wholegrainsozeq; run;
proc ttest data=mtsai.HSBLB1B2B3C_trans sides=2 alpha=0.05 h0=11.334;
      var dairy; run;
proc ttest data=mtsai.HSBLB1B2B3C_trans sides=2 alpha=0.05 h0=1.334;
      var protein; run;
proc univariate data =mtsai.HSBLB1B2B3C_nodropclean loccount mu0=10;
  var oils; /*kurtosis value = 14*/ run;
proc ttest data=mtsai.HSBLB1B2B3C_trans sides=2 alpha=0.05 h0=9.334;
      var totfiber; run;
proc ttest data=mtsai.HSBLB1B2B3C_trans sides=2 alpha=0.05 h0=1000;
      var sodium; run;
proc ttest data=mtsai.HSBLB1B2B3C_trans sides=2 alpha=0.05 h0=10;
      var pctaddsugars; run;
proc ttest data=mtsai.HSBLB1B2B3C_trans sides=2 alpha=0.05 h0=10;
      var percentkcalsSFA; run;
proc ttest data=mtsai.HSBLB1B2B3C_trans sides=2 alpha=0.05 h0=15;
      var pctdiscretekcal; run;

/*running chi-squared with income*foodgroup data*/
proc freq data=mtsai.HSBLB1B2B3C_scores;
tables income*veg/ chisq; /*income by vegetables rec*/
run;
proc freq data=mtsai.HSBLB1B2B3C_scores;
tables income*fru/ chisq; /*income by fruit rec*/
run;
proc freq data=mtsai.HSBLB1B2B3C_scores;
tables income*wgrain/ chisq; /*income by whole grains rec*/
run;
proc freq data=mtsai.HSBLB1B2B3C_scores;
tables income*refgrain/ chisq; /*income by refined grains rec*/
run;
proc freq data=mtsai.HSBLB1B2B3C_scores;
tables income*milk/ chisq; /*income by dairy rec*/
run;
proc freq data=mtsai.HSBLB1B2B3C_scores;
tables income*pro/ chisq; /*income by protein rec*/
run;
proc freq data=mtsai.HSBLB1B2B3C_scores;
tables income*sod/ chisq; /*income by sodium rec*/
run;
proc freq data=mtsai.HSBLB1B2B3C_scores;
tables income*oil/ chisq; /*income by oil rec*/
run;
proc freq data=mtsai.HSBLB1B2B3C_scores;
tables income*fiber/ chisq; /*income by fiber rec*/
run;
proc freq data=mtsai.HSBLB1B2B3C_scores;
tables income*discretekcal/ chisq; /*income by discretionary calories
rec*/
run;
proc freq data=mtsai.HSBLB1B2B3C_scores;
tables income*addsugars/ chisq; /*income by addedsugars rec*/
```

```
run;
proc freq data=mtsai.HSBLB1B2B3C_scores;
tables income*pctkcalSFA/ chisq; /*income by percent of kcals SFA rec*/
run;

/*running chi-squared with education*foodgroup data*/
proc freq data=mtsai.HSBLB1B2B3C_scores;
tables college*veg/ chisq; /*educational level by vegetables rec*/
run;
proc freq data=mtsai.HSBLB1B2B3C_scores;
tables college*fru/ chisq; /*educational level by fruit rec*/
run;
proc freq data=mtsai.HSBLB1B2B3C_scores;
tables college*wgrain/ chisq; /*educational level by whole grains rec*/
run;
proc freq data=mtsai.HSBLB1B2B3C_scores;
tables college*refgrain/ chisq; /*educational level by refined grains
rec*/
run;
proc freq data=mtsai.HSBLB1B2B3C_scores;
tables college*milk/ chisq; /*educational level by dairy rec*/
run;
proc freq data=mtsai.HSBLB1B2B3C_scores;
tables college*pro/ chisq; /*educational level by protein rec*/
run;
proc freq data=mtsai.HSBLB1B2B3C_scores;
tables college*sod/ chisq; /*educational level by sodium rec*/
run;
proc freq data=mtsai.HSBLB1B2B3C_scores;
tables college*oil/ chisq; /*educational level by oil rec*/
run;
proc freq data=mtsai.HSBLB1B2B3C_scores;
tables college*fiber/ chisq; /*educational level by fiber rec*/
run;
proc freq data=mtsai.HSBLB1B2B3C_scores;
tables college*discretekcal/ chisq; /*educational level by
discretionary calories rec*/
run;
proc freq data=mtsai.HSBLB1B2B3C_scores;
tables college*addsugars/ chisq; /*educational level by addedsugars
rec*/
run;
proc freq data=mtsai.HSBLB1B2B3C_scores;
tables college*pctkcalSFA/ chisq; /*educational level by percent of
kcals SFA rec*/
run;

/*finding means of low and high acculturation*/
proc sort data = mtsai.HSBLB1B2B3C_scores; by low1high2accult; run;
proc means data = mtsai.HSBLB1B2B3C_scores; var legumes vegetables
wholegrainsozeq fruit juice refgrainsozeq pctdiscretekcal pctaddsugars;
by low1high2accult; run;

/*updated t-test, check for adjustment to planned comparisons*/
proc ttest data=mtsai.HSBLB1B2B3C_trans sides=2 alpha=0.01 h0=667;
      var kcal; run;
proc ttest data=mtsai.HSBLB1B2B3C_trans sides=2 alpha=0.01 h0=.667;
```

```
      var vegetables; run;
proc ttest data=mtsai.HSBLB1B2B3C_trans sides=2 alpha=0.01 h0=.667;
      var fruit; run;
proc ttest data=mtsai.HSBLB1B2B3C_trans sides=2 alpha=0.01 h0=2;
      var totgrainsozeq; run;
proc ttest data=mtsai.HSBLB1B2B3C_trans sides=2 alpha=0.01 h0=1;
      var refgrainsozeq; run;
proc ttest data=mtsai.HSBLB1B2B3C_trans sides=2 alpha=0.01 h0=1;
      var wholegrainsozeq; run;
proc ttest data=mtsai.HSBLB1B2B3C_trans sides=2 alpha=0.01 h0=11.334;
      var dairy; run;
proc ttest data=mtsai.HSBLB1B2B3C_trans sides=2 alpha=0.01 h0=1.334;
      var protein; run;
proc univariate data =mtsai.HSBLB1B2B3C_nodropclean loccount mu0=10
alpha=0.01;
  var oils; /*kurtosis value = 14*/ run;
proc ttest data=mtsai.HSBLB1B2B3C_trans sides=2 alpha=0.01 h0=9.334;
      var totfiber; run;
proc ttest data=mtsai.HSBLB1B2B3C_trans sides=2 alpha=0.01 h0=1000;
      var sodium; run;
proc ttest data=mtsai.HSBLB1B2B3C_trans sides=2 alpha=0.01 h0=10;
      var pctaddsugars; run;
proc ttest data=mtsai.HSBLB1B2B3C_trans sides=2 alpha=0.01 h0=10;
      var percentkcalsSFA; run;
proc ttest data=mtsai.HSBLB1B2B3C_trans sides=2 alpha=0.01 h0=15;
      var pctdiscretekcal; run;

/*******************04.24.2017*********************************/
/*******************final check of numerical
data*************************/
proc univariate data=mtsai.HSBLB1B2B3C_scores
OUTTABLE=mtsai.HSBLB1B2B3C_univariates normal;
var kcal totfat totcho totpro anipro vegpro alcohol cholesterol totSFA
totMUFA totPUFA totfiber solfiber
sodium percentkcalsFAT percentkcalsCHO percentkcalsPRO percentkcalsALC
percentkcalsSFA percentkcalsMUFA percentkcalsPUFA totTFA
addedsugbytot totgrainsozeq wholegrainsozeq refgrainsozeq totSOF
vegetables dgrnveg roveg legumes starchyveg otherveg fruit juice dairy
lfatdairy protein meat seafood plantpro oils pctdiscretekcal
pctaddsugars;
histogram;
proc print;
run;
```