Postpartum teens' perception of the food environments at home and school

Rachel G. Tabak, PhD, RD[1], **Corinne E. Joshu, PhD**[2], **Megan A. Clarke, MHS**[2], **Cynthia D. Schwarz, MPH, MS, RD**[1], and **Debra L. Haire-Joshu, PhD**[1]

[1]Washington University in St. Louis, The Brown School of Social Work and Public Health, and The School of Medicine

[2]Department of Epidemiology, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD

Abstract

Background—An environment that supports healthy eating is one factor to prevent obesity. However, little is known about postpartum teen's perceptions of their home and school environments and how this relates to dietary behaviors.

Purpose—This study explores the relationship between home and school environments and dietary behaviors for postpartum teens.

Design—Conducted cross-sectionally during 2007-2009 across 27 states; included 889 postpartum teens enrolled in Parents as Teachers Teen Program. Data included measures of sociodemographics and perceptions of school and home food environments. A 7-day recall of snack and beverage frequency assessed dietary behaviors. Logistic regression explored associations between baseline environment measures and dietary behaviors at baseline and post-intervention (approximately 5 months after baseline) for the control group.

Results—Respondents reported greater access and selection (i.e., variety of choices) of healthy foods and beverages at home than school. At baseline, fruit and vegetable intake was associated with home selection (1.9, 95% CI: 1.3-2.9) and availability (1.8, 95% CI: 1.3-2.6), sweet snack consumption was associated with selection (1.5, 95% CI: 1.0-2.1), and total snack consumption and sugar-sweetened beverage intake were associated with selection (snack: 2.1, 95% CI: 1.5-3.0; beverage: 1.7, 95% CI: 1.2-2.4) and availability (snack: 2.1, 95% CI: 1.4-3.1; beverage: 1.5, 95% CI: 1.0-2.3). Water intake at baseline and at the post-intervention for control group teens was associated with selection (1.6, 95% CI: 1.1-2.2). No significant associations were identified between the school environment and dietary behaviors.

Conclusions—Interventions should target improvements in the home environment for high risk, postpartum teens.

Corresponding Author: Rachel G. Tabak, PhD, RD, George Warren Brown School of Social Work and School of Medicine, Washington University in St. Louis, 1 Brookings Drive, Campus Box 1196, St. Louis, MO 63110, 314-935-0153, Fax: 314-935-0150, rtabak@wustl.edu.

Introduction

Over the past 20 years the prevalence of obese and overweight youth in the US has nearly doubled (Finkelstein, Trogdon, Cohen, & Dietz, 2009). In 2012, 32% of children ages 2-19 years were classified as overweight or obese (Ogden, Carroll, Kit, & Flegal, 2012). Poor health, social problems, and impaired school performance have been related to obesity. Being obese in childhood increases the risk of obesity in adulthood and development of chronic diseases, (Halfon, Larson, & Slusser, 2013; Reilly & Kelly, 2011) which can increase morbidity, reduce quality of life, and result in millions in healthcare-related costs (Finkelstein et al., 2009). Obesity is related to dietary behaviors such as intake of energy dense foods and intake of sweetened beverages (Pate et al., 2013).

One potentially modifiable factor to influence obesity and obesity related behaviors, such as dietary behaviors, is the environment (van der Horst et al., 2007). This might be particularly relevant for postpartum adolescents, a group already at high risk for overweight (Birch, 2006). Micro-level factors, such as those within the home (Bauer, Berge, & Neumark-Sztainer, 2011; Davison & Birch, 2001) and school, (Baxter et al., 2010; Briefel, Wilson, & Gleason, 2009) may be more directly related to behaviors in youth, as children and adolescents have more limited autonomy, and are more dependent on their school and home environments to shape their behaviors (Hendrie, Brindal, et al., 2012).

Existing work has related home food availability to adolescent dietary behaviors (Haire-Joshu et al., 2008; Hendrie, Coveney, & Cox, 2012; Pearson, Biddle, & Gorely, 2009; Raynor, Polley, Wing, & Jeffery, 2004). Studies have found relationships between sweetened beverage consumption as well as fruit and vegetable intake, two important influences on obesity risk, and the availability of these items in the home. Beyond just the availability of food items in the home, the selection, or variety of these items may also influence dietary behavior. Studies have found that a greater selection or variety of foods, which offer youth more options, can lead to increased intake (Roe, Meengs, Birch, & Rolls, 2013; Wansink, 2004; Zampollo, Kniffin, Wansink, & Shimizu, 2012; Zeinstra, Renes, Koelen, Kok, & de Graaf, 2010). School food environments have also been found to relate to dietary behaviors in students (Haire-Joshu, Yount, et al., 2011). Much of the research on the relationship between environment and dietary behaviors has been cross-sectional in nature (Raynor et al., 2004), limiting the interpretation with regard to temporality. Additionally, research to date has not addressed the important, but difficult to reach (especially due to transient living situations), population of postpartum adolescents. These teens represent a group which is at particularly high risk for obesity; existing research has shown that weight gain during pregnancy can contribute to adolescent obesity among teen moms. (Groth, 2008; Joseph et al., 2008). Data about dietary behaviors in this population remain under-studied. The few studies that have explored dietary data in this population have found that, in general, adolescent mothers' diets are not consistent with recommended intakes. (Black et al., 2006; Davis et al., 2013; Papas, Hurley, Quigg, Oberlander, & Black, 2009) The current study addresses this gap by exploring these associations in this important population as well as using environment and dietary behavior data collected at separate times to allow for longitudinal analysis. This study aims to explore the relationship between baseline home and school environments and dietary behaviors such as fruit, vegetable, sweetened beverage,

water, and snack intake at baseline and at post-intervention for the control group of teen moms enrolled in an intervention study.

Methods

Study Design and Participants

This study is a cross-sectional, baseline analysis among all participants and longitudinal (baseline to post), analysis for the control group of the Moms for a Healthy Balance Weight-loss Intervention Study (BALANCE), a group-randomized, nested cohort study with an intervention component designed to reduce postpartum weight retention in young mothers (Budd, Schwarz, Yount, & Haire-Joshu, 2012; Haire-Joshu, Yount, et al., 2011). BALANCE was developed in partnership with Parents As Teachers (PAT), a national parenting and child development, home visitation program with over 3,000 sites across all 50 United States (Parents As Teachers, 2013). PAT trains parent educators to deliver an evidence-based curriculum to support a parent's role in promoting school readiness and healthy development of children until age three. BALANCE activities were incorporated within the PAT Teen Program, a specialty program addressing the unique needs of young parents (12 to 19 years). PAT Teen Programs serve over 26,000 high risk youth; from this sample 1,325 young mothers were enrolled, representing 27 states during the years 2007-2009.

Potential participants in the BALANCE study were deemed eligible if they were enrolled in the PAT Teen Program, were less than one year postpartum, and were not pregnant or planning to become pregnant during the study. For the baseline analysis, all participants were included, and the intervention and control groups were pooled. For the longitudinal (baseline to post) analysis, only participants from the control group were included, to avoid any bias due to intervention participation. Post measures took place approximately 5 months after baseline.

Only those attending school (n=431 excluded) and those reporting home food environment data (n=5 excluded) were included for analyses (Figure), leaving 889 baseline participants. Control group participants (n=15) who were pregnant at post-intervention were excluded, for a total of 328 control participants for the longitudinal analysis (baseline to post). Women were considered early postpartum if they had given birth within the past 12 weeks. The Institutional Review Board of Washington University in St. Louis reviewed and approved all study activities, and informed consent for study participation was obtained from each mother. Participants received a $15 gift card for completing the baseline survey and $30 gift card for completing the post survey.

Measures

Participants completed baseline and post surveys online (74%) or on paper (26%), when necessary. The demographic survey measures are from prior studies with PAT (Haire-Joshu et al., 2003; Haire-Joshu et al., 2008) and assessed race/ethnicity, current grade level, and breastfeeding status. Mothers reported use of the Supplemental Nutrition Assistance Program (SNAP) and the National School Lunch Program (NSLP) as indicators of socioeconomic status and contextual effects. Heights and weights were collected in

accordance with National Health and Nutrition Examination Survey (NHANES) procedures (CDC NHANES, 2008) by trained PAT staff. These data were used to determine (Body Mass Index) BMI classification.

Questions regarding the young mothers' perceived food environment were adapted from Echeverria et. al. and Glanz et. al. (Echeverria, Diez-Roux, & Link, 2004; Glanz, Sallis, Saelens, & Frank, 2005). Sixteen items assess perceived access to healthful food items at home and school. Participants were asked to rate their agreement with the availability and selection of healthful food at home, e.g., "it is easy to find fresh fruits and vegetables in my home", using a five-point Likert Scale with "strongly disagree" (5), "disagree" (4), "neutral" (3), "agree" (2), and "strongly agree" (1) response options. Similar statements were constructed for the school environment, however participants rated their agreement with the ease of purchase of healthful items in place of availability. Thus, a healthy environment was high in selection of fresh fruits and vegetables, low fat products, water or low-calorie beverages, and low-calorie snacks; an unhealthy environment offered little availability or selection of these types of foods.

Specific dietary behaviors were assessed using the Snack and Beverage Food Frequency Questionnaire (SBFFQ), developed from our previous work (Haire-Joshu et al., 2003; Haire-Joshu et al., 2008) and the Diet History Questionnaire (Subar et al., 2001). High-calorie snack and beverage items were selected based on those reported as commonly consumed by young females from NHANES. A validation study and pilot testing were completed with 60 participants; test-retest reliability for the composite measure of total calories was acceptable (0.63). The SBFFQ examined intake of 31 items during the prior seven days by asking how many days, how many times per day, and how much of the item the respondent consumed. Using NHANES standards, intake was converted into the total calories consumed for each individual item and summed to obtain the daily caloric total. Items were assessed by subgroup: sweetened beverages (e.g., soda and fruit drinks), salty snacks (e.g., potato chips), sweet snacks (e.g., hard candy), meal-type snacks (e.g., pizza), fruits and vegetables, and total calories from snacks, Water consumption was measured in ounces. Characteristics of healthy diets were considered to be high in fruits and vegetables and water and low in sweet snacks, salty snacks, meal-type snacks, sweetened beverages and total snacks based on the nutrient density of the items in these categories.

Data Analysis

The data analyses aimed to estimate perceptions of the home and school food environments of the young mothers participating in BALANCE at baseline assessment and to determine if discernable relationships existed between perceptions and dietary behaviors cross-sectionally, at baseline, and longitudinally, among post-intervention control participants.

The percentage of those agreeing or strongly agreeing with statements regarding the accessibility of healthful foods in the home and school environment were calculated. To assess differences in agreement across demographic and behavioral characteristics, we first grouped individual items into factors representing 'availability of healthful foods in the home environment' (Cronbach's Alpha=0.781), 'large selection of healthful foods in the home environment' (Cronbach's Alphs=0.807), ease of purchase of healthful food in school

environment (Cronbach's Alpha=0.778), and selection of healthful foods in the school environment (Cronbach's Alpha=0.837), and then averaged agreement ratings of items within each factor. Factor ratings were then dichotomized into "agree" (greater than 3.0) and "neutral/disagree" (less than or equal to 3.0). The dichotomized factors were compared across demographic and behavioral characteristics using chi-square statistics.

Relationships between environment and consumption of water and dietary behavior subgroups were evaluated using logistic regression for the sample at baseline and for the control participants at post-intervention. Since the data on dietary behaviors were collected using food frequency methods, categorical data analysis was considered more appropriate and conservative than analysis of continuous variables (Willett, 1998). Distributions were dichotomized at the top twenty-fifth percentile of consumers for water and fruits and vegetables and at the bottom twenty-fifth percentile of consumers for sweetened snacks, salty snacks, sweetened beverages, and total snacks subgroups. Due to a lack of clustering of diet variables by school, multilevel analysis was not appropriate. Sample characteristics that differed across environment factors were evaluated as potential confounders. Age, breastfeeding, and postpartum status (+/- 12 weeks) were retained in models.

Results

Participant characteristics at baseline are listed in Table 1. Most participants were in 11th or 12th grade (30% and 42%, respectively). Just under half (47%) were white, while 29% were Black and 21% were Hispanic. High proportions of participants were overweight or obese (24% and 19%, respectively), with only 57% of the participants classified as normal weight. Twelve percent of the sample reported they were currently breastfeeding; 30% reported receiving SNAP, and 40% reported participation in the NSLP. Participants ranged from five days to one year postpartum.

Descriptions of the Home and School Environments

Table 2 shows agreement with the statements in each home- and school-food environment scale. Overall, more respondents agreed or strongly agreed that they had access to healthy food and beverages at home compared with school. However, even at home, the highest agreement with any statement was 75% for "It is easy to find water or low-calorie beverages in my home." For most of the school items, fewer than 50% of the respondents agreed with any of the statements. Looking across both the home and school environments, the healthy item most respondents agreed or strongly agreed to having access to was water/low-calorie beverages, while the fewest respondents agreed with the statement asking about access to low-calorie snacks.

Home and School Environments by Demographic Factors

When agreement with access at home and school were compared by demographic factors (Table 3), access differed based on participation in nutrition programs and breastfeeding status. Fewer participants in SNAP and the NSLP agreed or strongly agreed with the statements about availability and selection at home. Interestingly, participants in the NSLP were more likely to agree or strongly agree with ease of purchase at school. Breastfeeding

moms were more likely to agree there was availability and selection at home. Differences in SNAP and breastfeeding were only observed for the home, not the school, environment. No differences were observed by grade level, race, or BMI. However, there was a trend toward agreement with availability and selection at home and increased likelihood of having a higher BMI status.

Associations between Environment and Behavior

There were several associations between the baseline home environment and dietary behaviors both at baseline and post-intervention (Table 4 a and b). Participants were more likely to be in the top quartile for fruit and vegetable intake at baseline if they agreed or strongly agreed with statements regarding large selection and availability at home. The findings were similar for sweet snack and total snack consumption at baseline (Table 4 a).

For beverages, teens reporting the lowest quartile of sweetened beverage intake at baseline were those most likely to agree or strongly agree with statements about the selection and availability of healthy foods and beverages at home, including water and low-calorie beverages. Similarly, those agreeing or strongly agreeing with statements regarding the selection of healthy items reported being in the top quartile for water intake at baseline and at the post time point for the control group (Table 4 a and b). No significant associations were identified between ease of purchase or selection in the school environment and dietary behaviors (Table 4 a and b).

Discussion

We identified three key findings in this under-studied, high risk population. First, associations between food environment perceptions and dietary behaviors were stronger for home than school. Our findings are consistent with previous work, which has shown that the home environment might have a stronger influence on youth because it is the most proximal environment (Bauer et al., 2011; Verloigne, Van Lippevelde, Maes, Brug, & De Bourdeaudhuij, 2013). These impacts may be through direct effects of an intervention on the environment as well as mediation or moderation due to the interaction of other contexts such as family living situation. This may explain the more consistent associations with the home environment than the school environment (Hendrie, Coveney, et al., 2012; Pearson et al., 2009; Poti & Popkin, 2011; Van Lippevelde et al., 2012; Verloigne et al., 2013). Also, the home environment may shape dietary behaviors, which youth carry with them into other contexts and throughout their lives.

These results provide support for the hypothesized intergenerational impact of obesity (Birch, 2006; Costa-Font & Gil, 2013; Dattilo et al., 2012; Thompson, 2013). Improving the home environment is especially important among teen mothers who are in a position to pass down their food behaviors to their children (Birch, Anzman-Frasca, & Paul, 2012; Dattilo et al., 2012; Haire-Joshu et al., 2008). Intervening on teen parents may therefore help improve their own health, and may set them up to prevent the intergenerational transfer of obesity. Research suggests many factors influence a child's dietary behaviors and BMI status (Birch, 2006; Briefel, Wilson, et al., 2009; Haire-Joshu, Schwarz, Budd, Yount, & Lapka, 2011; Webber & Loescher, 2013). However, having healthy foods available at home is an

important first step for parents toward being a healthy role model. By the nature of their youth, the home environments for teen parents are likely shaped by their own parents, and interventions incorporating these individuals may yield additional benefits in terms of improvements in the home environment and dietary behaviors. Thus interventions targeting teen moms and their parents should focus on improvements to the availability and selection of food and beverage items in the home environment. This may include grocery store tours or shopping guides focusing on low-cost healthy items as well as seasonal foods. Additionally, materials on how to best store fresh foods to avoid spoilage may help encourage healthy food purchase and minimize waste. Finally, education and practice reading and utilizing food labels could facilitate purchase and availability of low-fat and low-calorie products for the home.

Second, interesting differences in teen's perceptions of their home and school environments were observed based on their participation in government food assistance programs. Those participating in SNAP reported less availability and selection at home, perhaps confirming the food insecure situation. Research has shown families considered food insecure are at greater risk for adverse health outcomes (Cook et al., 2013; Nackers & Appelhans, 2013). However, participation in the NSLP was related to increased perception of availability and selection in school. Previous studies have shown mixed associations between NSLP participation and dietary behaviors (Baxter et al., 2010; Briefel, Wilson, et al., 2009; Hernandez, Francis, & Doyle, 2011; Paxton et al., 2012; Schanzenbach, 2009). Our research suggests that participation in the NSLP appears to improve teens' perceptions of their school's food environment, but high needs families may need education on availability and selection of healthy foods at home.

Lastly, home selection was associated with water intake at the baseline and the post-intervention (for the control group-longitudinal analysis) time points. This hints at the possibility of a temporal effect, indicating the environment may precede the dietary behavior. In addition, outside the home we did not find significant associations between the school environment and dietary behavior at baseline or at post-intervention. In youth, the percent of calories consumed outside the home in general, and at school specifically, is less than that consumed at home (Briefel, Wilson, et al., 2009; Cradock et al., 2011; Poti & Popkin, 2011; Taber, Chriqui, Powell, & Chaloupka, 2013). However, other work has shown important associations between school based policies related to availability of unhealthy foods and dietary behaviors in youth (Briefel, Crepinsek, Cabili, Wilson, & Gleason, 2009). Research has found evidence for mediation of the effect of school based interventions through the home environment (Van Lippevelde et al., 2012). For example, an intervention study found that changes in parental support mediated school-based intervention effects on adolescent changes in fat intake from snacks. It is important to continue to explore and understand these associations, particularly in this vulnerable population.

Limitations

This study has limitations worth noting. Data on the environment and dietary behaviors were self-reported; responses regarding the environment represent perceptions. Further, the environmental measures lack significant test-retest and validity testing, though the internal

consistency for the scales (Table 2) was acceptable (Kline, 2013). While the study benefits from a longitudinal design, it is still observational in nature, limiting our ability to draw causal inferences. Additionally, seasonality may be related to dietary behaviors, and was not considered in the current study; however, subjects were assessed across the year and in various locations and dietary behaviors and environmental perceptions were measured in the same season. Finally, as only the control group was included in the follow-up analysis, this sample size was smaller, limiting the ability to detect differences.

Strengths

This study is strengthened by the longitudinal nature of the data allowing us to explore the association between baseline environment and dietary behaviors five months later. Associations were stronger between the baseline environment and baseline dietary behaviors than the baseline environment with post-intervention dietary behaviors. This may have been due to the proximity of the data collection points or may indicate some bi-directional effect, which is not present at post-intervention. This study also explores these important associations in a unique and hard to reach population who are at an important life-stage for their own health and who are beginning to play an important role in shaping the health of their children.

Implications for Theory, Policy, and/or Practice

This study explored the relationships between the home and school food environments and dietary behaviors in the under-studied population of postpartum adolescents cross-sectionally and longitudinally. We identified demographic characteristics, such as participation in SNAP and the NSLP, which were associated with environmental perceptions, with those reporting participation in either program reporting less availability/selection at home. It is possible these programs are not fully addressing issues of food security in the home, and may indicate that policies promoting enhanced nutrition education could improve the food environments in food insecure households. Our results indicated stronger, more consistent associations between home availability and selection and dietary behaviors at baseline, with only one association remaining between home selection and intake in the longitudinal analysis. No associations were found between dietary behaviors and the school environment. Current theories describe relationships between multiple environments, including the home and school, and dietary behaviors. This work is consistent with these theories in this population, with regard to the home environment. The study findings suggest the importance of interventions targeting improvements in the selection and availability of food and beverage items in the home environments of high risk, postpartum teen mothers.

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Figure 1.

Table 1

Sample Characteristics of 889 Participants of the Moms for a Healthy Balance Weight Loss Intervention Study (Baseline Assessment).

Demographic and Behavioral Characteristics	N	
Grade Level		
9th grade or less	91	10 %
10th grade	161	18 %
11th grade	269	30 %
12th grade	368	42 %
Race and Ethnicity		
White, Non-Hispanic	406	47 %
Black, Non-Hispanic	258	29 %
White or Black Hispanic	181	21 %
Other	22	3 %
Missing	22	
Body Mass Index Classification		
Normal Weight	484	57 %
Overweight	207	24 %
Obese	159	19 %
Missing	36	
Breastfeeding at time of Survey	101	12 %
Participate in Supplemental Nutrition Assistance Program (SNAP)	265	30 %
Participate in National School Lunch Program (NSLP)	355	40 %
Postpartum Status (<12 weeks postpartum)	44	13 %

Table 2

Agreement with Perceptions of Home and School Environment in 889 Participants of the Moms for a Healthy Balance Weight Loss Intervention Study (Baseline Assessment)

Home Food Environment	Agree with Statement[*]
Availability (Cronbach's Alpha=0.781)	
It is easy to find fresh fruits and vegetables in my home	72 %
It is easy to find low-fat products in my home	53 %
It is easy to find water or low-calorie beverages in my home	75 %
It is easy to find low-calorie snacks in my home	46 %
Selection (Cronbach's Alpha=0.807)	
There is a large selection of fresh fruits and vegetables in my home	61 %
There is a large selection of low-fat products in my home	47 %
There is a large selection of water or low-calorie beverages in my home	67 %
There is a large selection of low-calorie snacks in my home	40 %
School Food Environment	
Ease of Purchase (Cronbach's Alpha=0.778)	
It is easy to purchase fresh fruits and vegetables in my school	46 %
It is easy to purchase low-fat products in my school	42 %
It is easy to purchase water or low-calorie beverages in my school	69 %
It is easy to purchase low-calorie snacks in my school	42 %
Selection (Cronbach's Alpha=0.837)	
There is a large selection of fresh fruits and vegetables in my school	34 %
There is a large selection of low-fat products in my school	37 %
There is a large selection of water or low-calorie beverages in my school	53 %
There is a large selection of low-calorie snacks in my school	34 %

[*] Respondents selecting 'agree' or 'strongly agree'.

Table 3

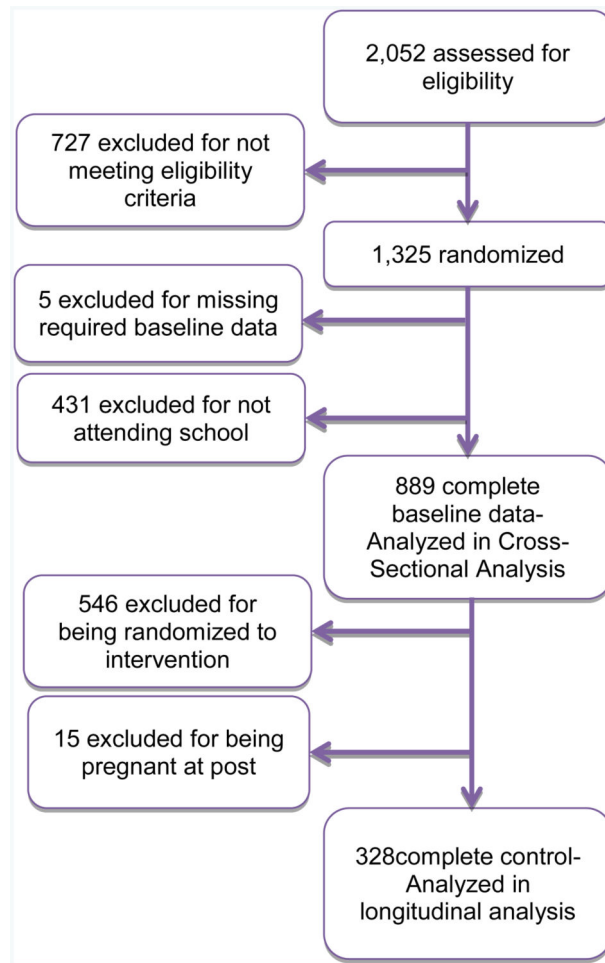**Agreement with Perceptions of Home and School Environment, by Sample Characteristic, in 889 Participants of the Moms for a Healthy Balance Weight Loss Intervention Study (Baseline Assessment)**

Demographic and Behavioral Characteristic	Home Food Environment				School Food Environment			
	Availability	p*	Selection	p*	Ease of Purchase	p*	Selection	p*
Grade Level		0.69		0.84		0.36		0.44
9th grade or less	66%		59%		66%		50%	
10th grade	71%		64%		55%		49%	
11th grade	72%		60%		58%		43%	
12th grade	72%		60%		56%		44%	
Race/Ethnicity		0.32		0.15		0.85		0.48
White, Non-Hispanic	74%		63%		57%		43%	
Black, Non-Hispanic	66%		55%		59%		48%	
Other	77%		73%		55%		55%	
White or Black Hispanic	71%		62%		55%		45%	
Participate in SNAP		0.05		<0.01		0.86		0.84
Yes	66%		52%		58%		46%	
No	73%		64%		57%		45%	
Participate in NSLP		0.01		<0.01		0.04		0.60
Yes	66%		55%		62%		46%	
No	74%		65%		54%		44%	
Breastfeeding at time of Survey		<0.01		0.01		0.18		0.46
Yes	85%		72%		64%		49%	
No	69%		59%		57%		45%	
BMI Category		0.09		0.48		0.70		0.73
Normal Weight	68%		58%		58%		43%	
Overweight	72%		61%		54%		45%	
Obese	76%		63%		57%		46%	

*
chi-squared analysis/Cochran–Mantel–Haenszel

Table 4

Adjusted[*] Likelihood of Being in the Top 25% of Consumers of Water and Fruits and Vegetables and the Bottom 25 % of Snacks and Sweetened Beverages among (a) 889 Baseline Participants and (b) 142 Control Participants at Post of the Moms for a Healthy Balance Weight Loss Intervention Study when Participants Agree that Healthy Foods are Accessible in each of the Home and School Environments[**]

	a. Baseline			
	Home Food Environment			
Consumption	**Availability (95% CI)**		**Selection (95% CI)**	
Water	1.261	0.87-1.827	**1.596**	**1.131-2.252**
Sweet Snack	1.359	0.926-1.993	**1.495**	**1.051-2.125**
Salty Snack	1.009	0.701-1.454	1.11	0.794-1.551
Meal-type Snack	1.082	0.744-1.572	1.104	0.783-1.556
Fruit & Vegetable	**1.955**	**1.306-2.926**	**1.844**	**1.29-2.636**
Sweetened Beverage	**1.546**	**1.043-2.291**	**1.662**	**1.167-2.368**
Total Snack	**2.081**	**1.382-3.134**	**2.111**	**1.471-3.028**
	School Food Environment			
	Ease of Purchase (95% CI)		Selection (95% CI)	
Water	0.93	0.671-1.29	0.918	0.659-1.277
Sweet Snack	0.838	0.6-1.169	1.012	0.724-1.414
Salty Snack	0.964	0.693-1.34	0.988	0.712-1.372
Meal-type Snack	1.138	0.813-1.594	0.984	0.704-1.376
Fruit & Vegetable	0.934	0.67-1.301	1.143	0.819-1.594
Sweetened Beverage	0.837	0.598-1.172	0.796	0.568-1.118
Total Snack	1.023	0.733-1.429	0.976	0.7-1.361
	b. Longitudinal-Post			
	Home Food Environment			
	Availability (95% CI)		Selection (95% CI)	
Water	1.41	0.585-3.397	**2.586**	**1.139-5.871**
Sweet Snack	1.088	0.467-2.536	2.048	0.927-4.525
Salty Snack	0.829	0.346-1.982	1.097	0.5-2.406
Meal-type Snack	1.033	0.421-2.536	1.078	0.491-2.364
Fruit & Vegetable	1.552	0.624-3.859	1.684	0.775-3.658
Sweetened Beverage	1.23	0.512-2.954	0.974	0.464-2.044
Total Snack	1.139	0.487-2.665	1.441	0.673-3.087
	School Food Environment			
	Ease of Purchase (95% CI)		Selection (95% CI)	
Water	1.467	0.723-2.975	1.256	0.635-2.482

	a. Baseline			
	Home Food Environment			
Consumption	**Availability (95% CI)**		**Selection (95% CI)**	
Sweet Snack	1.197	0.593-2.413	1.287	0.648-2.557
Salty Snack	2.123	0.962-4.688	1.088	0.519-2.282
Meal-type Snack	1.412	0.658-3.031	0.824	0.391-1.736
Fruit & Vegetable	1.924	0.916-4.039	1.129	0.566-2.253
Sweetened Beverage	1.347	0.653-2.775	0.919	0.454-1.862
Total Snack	1.111	0.547-2.259	0.742	0.367-1.5

[*] Logistic Regression models are adjusted for age, breastfeeding, and postpartum status

[**] In comparison to those that are neutral on, or disagree with, accessibility of healthful foods