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Decision-making processes shaping the home food environments of young adult women with and without children

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ABSTRACT

Although young adult women consume the majority of their total daily energy intake from home food sources, the decision-making processes that shape their home food environments have received limited attention. Further, how decision-making may be affected by the transformative experience of motherhood is unknown. In this study, we explore the factors that influence two key decision-making processes—food choices while grocery shopping and the use of non-home food sources—and whether there are differences by motherhood status. In-depth interviews were conducted with 40 women, aged 20–29, living in southwest Georgia. Thematic analysis was used to analyze qualitative data stratified by whether or not children were present in the home. Decision-making was affected by numerous factors, which differed across groups. In regard to grocery shopping, women with children more frequently discussed the influence of nutrition and the preferences of children, while women without children more frequently discussed the influence of taste and the preferences of other household members. Cost, convenience, weight control, and pre-planning meals emerged as salient in both groups. In regard to the use of non-home food sources, convenience and taste were discussed by both groups, while social factors were only discussed by women without children. The cost of eating out was the only reason cited for eating inside the home, and this factor only emerged among women with children. Motherhood may be an important contributor to the decision-making processes that shape young adult women's home food environments. Interventions may find success in framing messaging to emphasize factors identified as motivating healthy decisions, such as protecting the health of children, and practical strategies may be adapted from those already in use, such as pre-planning and budgeting for healthy meals.
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1. Introduction

The high prevalence of obesity among U.S. women remains a significant public health concern. Young adulthood has been identified as a particularly problematic period for increased weight gain, with young adult women aged 20–29 gaining nearly two pounds per year beyond what would be expected from age-related changes (Lewis et al., 2000; Loria, Signore, & Arteaga, 2010). Poor dietary practices have been cited as key correlates of weight gain during this period (Allman-Farinelli, Partridge, & Roy, 2016). There are marked increases in fast food consumption during the transition from adolescence to young adulthood (Niemeier, Raynor, Lloyd-Richardson, Rogers, & Wing, 2006), and among U.S. adults, 18–30 year olds have the highest prevalence of heavy sugar-sweetened beverage consumption (Han & Powell, 2013), and the lowest prevalence of fruit, vegetable, and whole grain consumption (Hiza, Casavale, Guenther, & Davis, 2013), making the period of young adulthood critical for the implementation of diet- and weight-related interventions (Nelson, Story, Larson, Neumark-Sztainer, & Lytle, 2008).

Individual diet- and weight-related decision-making processes are shaped by multiple levels of environmental influence, including home, school, work, and community settings (Story, Kaphingst,

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Robinson-O'Brien, & Glanz, 2008). The home food environment, which has received increasing attention as an important correlate of dietary behavior and weight status among older adults and children (Campbell et al., 2007; Kegler et al., 2014; Rosenkranz & Dzewaltowski, 2008), has received limited attention among young adults (Laska, Hearst, Lust, Lytle, & Story, 2015; Nelson Laska, Larson, Neumark-Sztainer, & Story, 2010) despite the fact that women aged 20–29 consume the majority of their total daily energy intake from home food sources (USDA 2014). The home food environment has been broadly defined to include features such as the availability and accessibility of foods inside the home, meal preparation techniques, meal locations, and the modeling of eating behaviors (Kegler et al., 2014; Rosenkranz & Dzewaltowski, 2008). Among young adults, home meal preparation (Laska et al., 2015) and limited use of non-home food sources, such as fast food restaurants (Larson, Neumark-Sztainer, Laska, & Story, 2011), have been associated with better diet- and weight-related outcomes. Additionally, recent research has demonstrated that features of the home food environment can be effectively modified in adult populations to be more supportive of healthy eating (Kegler et al., 2016); such an approach may hold similar promise among young adults.

The development of interventions to modify specific features of young adult women's home food environments requires understanding of two key decision-making processes that inform how a woman engages with her home food environment: how she chooses which foods to bring into the home, and why she chooses to use non-home food sources. The foods chosen during grocery shopping comprise a large portion of the food ultimately available in the home, rendering this decision-making process a key antecedent to the development of a healthy home food environment (Kegler et al., 2014). Similarly, understanding why a woman chooses to use non-home food sources provides critical insight into how home food environments can be made into more commonly used and supportive “default” settings for healthy meal preparation and consumption (Kegler et al., 2014). Limited research exists on these decision-making processes among young adult women. As behavioral patterns developed during young adulthood can translate into the establishment of long-term health-promoting behaviors (Nelson et al., 2008), further research in this area is needed in order to identify salient intervention targets that promote the development and use of healthy home food environments.

The period of young adulthood is considered developmentally distinct, marked by transition in various aspects of life (Arnett, 2000). Young adult women are more likely to be living away from home for the first time, beginning postsecondary education, entering the workforce, entering new social and romantic relationships, having children, and generally developing a stronger sense of independence and self-identity (Nelson et al., 2008). Greater autonomy over one's physical, social, and economic environments can have significant bearing on eating and other weight-related behaviors (Loria et al., 2010). Such autonomy is particularly important to examine among women, many of whom are ‘gatekeepers’ of the home food environment, making diet-related decisions for themselves as well as other household members (Rosenkranz & Dzewaltowski, 2008). While current research increasingly seeks to differentiate between various stages of the broadly conceived period of young adulthood (Allman-Farinelli et al., 2016), little attention has been paid to the transformative experience of motherhood, which typically occurs for the first time during young adulthood, but does not necessarily map onto its chronological stages. Transitions to first time motherhood during this period may have unique implications for lifestyle patterns associated with dietary behavior and obesity, such as changes in sleep, time constraints, and stress (Montgomery et al., 2013; Xiao et al., 2014). Previous research has identified heightened motivation to eat a healthy diet (Reyes, Klotz, and Herring 2013), higher levels of nutrition-related information-seeking (Szwajcer, Hiddink, Maas, Koelen, & van Woerkum, 2008), and improved dietary intake (Olson, 2005) among pregnant women and new mothers—behavioral changes that may have significant bearing on decision-making processes affecting the home food environment.

The present study uses in-depth qualitative interviews to elucidate the experiences and perceptions of young adult women regarding two decision-making processes that inform how they engage with their home food environments, food choices while grocery shopping and the decision to use non-home food sources, and to identify differences between women with and without children in the home. Specifically, we sought to assess:

1. What factors influence, and how do they influence, the food choices of young adult women while grocery shopping?
2. What factors influence, and how do they influence, young adult women's decisions to use non-home food sources?
3. How do these factors differ by the presence of children in the home?

2. Materials and methods

The study was conducted by the Emory Prevention Research Center (EPRC) and its Community Advisory Board (CAB). Purposive sampling was used to recruit young adult women (aged 20–29) from two peri-urban cities in southwest Georgia. All recruitment materials were in English, and specific recruitment locations were recommended by the CAB, including health centers, technical schools, public housing developments, and worksites (Curtis, Gesler, Smith, & Washburn, 2000). Women living in dormitory settings were not eligible to participate; no other exclusion criteria were applied. Forty in-person, in-depth, semi-structured interviews were conducted at agreed upon locations, including participant homes, and private rooms located in libraries, neighborhood service centers, Family Connection offices, and a local nonprofit organization. All interviews were conducted in English. The interviewer was a 31-year-old African American woman experienced in qualitative research methods who has worked extensively with the EPRC and CAB. The interviewer conducted five pilot interviews with study staff and CAB members prior to participant interviews. There were no previously established relationships between participants and the interviewer, or any other study staff, prior to commencement of the study. No other individuals were present during the interviews, with the exception of one respondent whose two young child were present. Given the focused nature of the topics covered in the interview guide and the desire to compare across subgroups, it was determined a priori that 40 interviews should be a sufficient sample size to reach saturation (Hennink, Hutter, & Bailey, 2011); data analysis confirmed that saturation was reached. Sixty-nine women called to express interest in the study, and all but two were eligible to participate. Forty-nine women were recruited into the study and the remaining 21 were placed on a waitlist. The interviewer attempted to contact participants up to six times in order to schedule an interview; nine women were unable to be reached yielding a final sample size of 40 women. Quantitative data were collected during the interview using a brief interviewer-administered survey. Each interview lasted approximately one hour, and participants were provided with a $35 gift card for their participation. All interviews were recorded and transcribed verbatim by an external transcription service. The study protocol was approved by the Emory University Institutional Review Board, and written consent was obtained from all study participants.

2.1. Qualitative interview guide

The semi-structured interview guide included open-ended questions covering women's decision-making processes related to grocery shopping and the use of non-home food sources, as well as other topics not reported in the present study, such as weight gain prevention and self-monitoring efforts, and eating, physical activity, and leisure time-related behavior. Development of the interview guide was informed by Social Cognitive Theory, which emphasizes the construct of reciprocal determinism whereby individuals both affect and are affected by their environments (McAlister, Perry, & Parcel, 2008). We apply the construct of reciprocal determinism to the interview guide by examining the social and psychological determinants of individual behavior that govern how women interact with their environments while grocery shopping and using non-home food sources, with the ultimate aim of identifying how these determinants may be translated into modifications to the home food environment to make it more supportive of healthy eating.

Decision-making while grocery shopping. The interview guide included one open-ended question regarding women's grocery shopping practices: "How do you decide what foods to buy when you are grocery shopping?" The interviewer then probed participants regarding the influence of six factors on their decision-making while grocery shopping: taste, cost, convenience, nutrition, weight control, and advice from healthcare professionals (e.g. "How does taste affect your decisions when grocery shopping?").

Decision to use non-home food sources. The interview guide included one open-ended question regarding women's use of non-home food sources: "What affects your decision to eat a particular meal from a restaurant versus going home to eat?"

2.2. Quantitative measures

Quantitative measures regarding grocery shopping behavior, the use of non-home food sources, and demographic and weight-related characteristics were included to contextualize the qualitative findings.

Grocery shopping. Participants were asked three questions regarding their grocery shopping practices; response categories or types are indicated in parentheses: 1) Who is your household's primary grocery shopper (self; parent/grandparent/other); 2) how many times per week are groceries purchased (count) (Yoo et al., 2006); and 3) what type of store do you typically shop at (local/regional supermarket/grocery store; national discount retailer; other).

Non-home food sources. Participants were asked three questions regarding their use of non-home food sources, response categories or types are indicated in parentheses: 1) how many times in the past week and month did you purchase food from various non-home food sources (count) (Fulkerson, Story, Neumark-Sztainer, & Rydell, 2008); 2) what is the location where you usually eat breakfast, lunch, and dinner (meal not eaten; home or brought from home; outside of home; depends on situation); and 3) what restaurant or take-out place do you go to most often (fast food; Chinese-American restaurant; chain full-service restaurant; local full-service restaurant).

Demographic and weight-related characteristics. Demographic information, including number of people in the household, household composition, student status, employment status, age, race/ethnicity, education level, height, and weight were collected through self-report. Participants were also asked whether their own children or the children of a partner were present in their household, which was used to classify participants as having children in the home or not, and to stratify the qualitative analysis.

2.3. Data analysis

NVivo 10 (QSR International Pty Ltd, Melbourne, Australia) was used to organize and query the qualitative data. An initial set of six deductive codes was created by the research team using the probes included in the interview guide (taste, cost, convenience, nutrition, weight control, and advice from healthcare professionals), and applied to the transcript sections covering women's decision-making processes related to grocery shopping and the use of non-home food sources. Two independent investigators read three transcripts, applied the initial codes, and made note of emergent codes. After each transcript, the investigators met to reconcile their coding, and this process continued until no further emergent codes were identified. The codebook was then finalized, and the remaining transcripts were each double-coded and reconciled by members of the research team. Weekly meetings were held with the research team during which questions and discrepancies were resolved through discussion. Thematic analysis, stratified by whether or not children were present in the home, was used to identify themes and sub-themes among the full set of codes and compare findings across women with and without children in the home (Braun & Clarke, 2006). Descriptive and analytic statistics were calculated for quantitative measures using SAS 9.4 (SAS Institute, Cary, NC). Quantitative measures were compared across strata using chi-squared and Fisher's exact tests for categorical dependent variables with expected cell counts greater or less than 5, respectively, and independent sample t-tests and Mann-Whitney-Wilcoxon tests for normally distributed and non-parametric continuous dependent variables, respectively.

3. Results

3.1. Participant characteristics

Participants' demographic and weight-related characteristics, stratified by whether children were present in the home, are presented in Table 1. Half of the women (n = 20) had their own children or the children of a partner present in the home, and the median household size was 3.0 people (IQR = 2.0). Women's mean age was 24.6 years (SD = 2.7). Thirty-five percent of women were living with their parents or grandparents, and 33% were living with a partner or husband. Fifteen percent were not living with any other adults, 10% were living with roommates, and 8% were living with other relatives. The majority of women were African American (65%), followed by white (30%). A little over half of the women were students (55%), the majority of whom attended school full-time. Fifty-four percent of women were employed, with approximately half working full-time and half working part-time. Finally, the majority of women were overweight or obese (68%). Women with children in the home were more frequently African American, the only adult in the home, and living in larger households, and were less frequently employed.

The majority of women were the primary food shopper for their household (85% of women with children in the home and 65% of women without children in the home) (Table 2). Overall, women reported a median value of 0.5 (IQR = 0.5) shopping trips per week, and the majority of women with and without children in the home reported typically shopping at regional supermarkets and grocery stores (85% and 95%, respectively), as well as large national discount retailers (80% and 60%, respectively). Women with children in the home reported eating at fast food chains a median of 1.0 time per week (IQR = 2.0) and at full-service restaurants a median of zero times per week (IQR = 1.0) while women without children in the home reported a median of 2.0 times per week (IQR = 2.0) and 1.0 time per week (IQR = 1.5), respectively. Women in both groups

Table 1
Demographic and weight-related characteristics of study participants (n = 40).

	Total		Children in the home (n = 20)		No children in the home (n = 20)		
Age (in years), mean (SD)	24.6	(2.7)	24.5	(3.0)	24.7	(2.5)	$t(38) = 0.27$, p = 0.79
Race/ethnicity, n (%)							
African American	26	(65.0)	17	(85.0)	9	(45.0)	$\chi^2(1, N = 40) = 7.79$, p = **0.01**[a]
White	12	(30.0)	2	(10.0)	10	(50.0)	
Other	2	(5.0)	1	(5.0)	1	(5.0)	
Employment status[b], n (%)							
Employed full-time	11	(28.2)	2	(10.5)	9	(45.0)	$\chi^2(1, N = 40) = 4.31$, p = **0.04**[c]
Employed part-time	10	(25.6)	5	(26.3)	5	(25.0)	
Not employed, homemaker, student, on disability	18	(46.2)	12	(63.2)	6	(30.0)	
Student status, n (%)							
Full-time	19	(47.5)	10	(50.0)	9	(45.0)	$\chi^2(1, N = 40) = 0.40$, p = 0.53[d]
Part-time	3	(7.5)	2	(10.0)	1	(5.0)	
Not a student	18	(45.0)	8	(40.0)	10	(50.0)	
Education, n (%)							
Less than HS	5	(12.5)	4	(20.0)	1	(5.0)	p = 0.26; FET
High school or GED	11	(27.5)	7	(35.0)	4	(20.0)	
Some college or technical school	17	(42.5)	7	(35.0)	10	(50.0)	
College graduate or higher	7	(17.5)	2	(10.0)	5	(25.0)	
Living situation, n (%)							
Parents/grandparents	14	(35.0)	7	(35.0)	7	(35.0)	p = **0.02**[e]; FET
Spouse/partner	13	(32.5)	7	(35.0)	6	(30.0)	
No other adults	6	(15.0)	6	(30.0)	0	(0.0)	
Roommates	4	(10.0)	0	(0.0)	4	(20.0)	
Other relatives	3	(7.5)	0	(0.0)	3	(15.0)	
Household size, median (IQR)	3.0	(2.0)	4.0	(2.0)	2.5	(1.0)	Z = 2.89, p = **0.004**[f]
BMI category, n (%)							
Normal weight	13	(32.5)	5	(25.0)	8	(40.0)	p = 0.12; FET
Overweight	5	(12.5)	1	(5.0)	4	(20.0)	
Obese	22	(55.0)	14	(70.0)	8	(40.0)	

Note. FET = Fisher's exact test. Significance assessed at $p < 0.05$. Significant values in bold.
[a] Comparing African American vs. white.
[b] n = 39.
[c] Comparing employed vs. not employed, homemaker, student, on disability.
[d] Comparing student vs. not a student.
[e] Comparing no other adults vs. all other categories.
[f] Z-statistic and p-value from Mann-Whitney-Wilcoxon test.

reported ordering takeout and delivery, and purchasing food at convenience stores, gas stations, and vending machines a median of less than once per week. When women chose to eat outside of the home, those with and without children reported most often going to fast food chains (75% and 80%, respectively). Overall, women with children in the home more frequently reported eating meals at home rather than outside of the home, particularly breakfast (80% of women with children vs. 50% of women without children), although these differences were not statistically significant.

3.2. Decision-making while grocery shopping

Of the six deductive codes, nutrition, taste, cost, convenience, and weight control emerged as salient. Three additional themes emerged: accommodating the preferences of children, accommodating the preferences of other household members, and pre-planning meals. Nutrition emerged among both groups of women, but was discussed differently across groups and more frequently by those with children. Taste was discussed similarly across groups, but more frequently by those without children. Cost, convenience, weight control, and pre-planning meals emerged among both groups of women and were discussed similarly across groups. Accommodating the preferences of children only emerged among women with children, while accommodating the preferences of other household members emerged among both groups, but was more frequently discussed by those without children. Subthemes, and a description of which strata they emerged within and whether they were discussed differently across groups, are listed below under each theme.

Nutrition. Although the majority of all women cited nutrition as important, it was more frequently discussed by women with children in the home. Two sub-themes arose: changing behavior and keeping children healthy. Changing behavior emerged in both strata, but was discussed differently across groups. Keeping children healthy only emerged among women with children in the home.

Changing behavior. Almost half of women with children in the home discussed purchasing healthier foods because they wanted to change unhealthy eating behaviors they themselves had developed earlier in life or as children. A 21-year-old woman living with her son and her fiancé explained, *"We both come from families that do have weight issues. So we're really conscious about what we buy. We try to stay away from really, really fatty foods, like fatback, you know, things that we grew up eating."* In contrast, women without children in the home spoke in more general terms about a desire to change current eating habits and purchase more nutritious foods, such as fruits and vegetables, while shopping. As a 29-year-old woman living with her husband explained, *"both my husband and I are making an effort to eat healthier and to eat a wide variety … mainly because we're both getting older … and it's important to start now, not thirty years from now."*

Keeping children healthy. Many women with children expressed a strong desire to keep their own children healthy, which informed their food choices when grocery shopping. One 24-year-old woman living alone with her daughter shared, *"I try to make sure [my daughter] eats healthy and stuff. I don't want her to grow up like me and don't like vegetables … she likes salad so I buy the things to make up a salad."* Similarly, a 24-year-old woman living with her

Table 2
Household food practices of study participants (n = 40).

	Total		Children in the home (n = 20)		No children in the home (n = 20)		
Grocery shopping							
Primary shopper, n (%)							
Self	30	(75.0)	17	(85.0)	13	(65.0)	p = 0.15[a]; FET
Parent/grandparent	6	(15.0)	3	(15.0)	3	(15.0)	
Other	4	(10.0)	0	(0.0)	4	(20.0)	
Number of grocery shopping trips per week, median (IQR)	0.5	(0.5)	0.6	(0.7)	0.5	(0.5)	Z = −0.14, p = 0.89
Type of store typically used for shopping[b], n(%)							
Local or regional supermarket/grocery store	36	(90.0)	17	(85.0)	19	(95.0)	p = 0.61; FET
National discount retailer	28	(70.0)	16	(80.0)	12	(60.0)	p = 0.30; FET
Other	3	(7.5)	2	(10.0)	1	(5.0)	p = 1.0; FET
Use of non-home food sources (frequency per week), median (IQR)							
Fast food	1.5	(1.0)	1.0	(2.0)	2.0	(2.0)	Z = −1.47, p = 0.14
Full-service restaurant	1.0	(1.0)	0.0	(1.0)	1.0	(1.5)	Z = −2.39, p = **0.02**
Takeout	0.0	(1.0)	0.0	(1.0)	0.0	(1.0)	Z = −0.37, p = 0.71
Delivery	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)	Z = −1.75, p = 0.08
Convenience store or gas station[c]	0.3	(0.9)	0.2	(1.0)	0.4	(0.2)	Z = 0.93, p = 0.36
Vending machine[d]	0.0	(0.2)	0.0	(0.3)	0.0	(0.2)	Z = 0; p = 1.0
Type of non-home food source most often used[b], n(%)							
Fast food	31.0	(77.5)	15.0	(75.0)	16.0	(80.0)	p = 1.0; FET
Chinese-American restaurant	8.0	(20.0)	5.0	(25.0)	3.0	(15.0)	p = 0.70; FET
Full-service restaurant (chain)	9.0	(22.5)	4.0	(20.0)	5.0	(25.0)	p = 1.0; FET
Full-service restaurant (local)	6.0	(15.0)	1.0	(5.0)	5.0	(25.0)	p = 0.18; FET
Usual location of meals, n (%)							
Breakfast							
Meal not eaten	6	(15.0)	2	(10.0)	4	(20.0)	p = 0.15[e]; FET
Home or brought from home	26	(65.0)	16	(80.0)	10	(50.0)	
Outside of home	6	(15.0)	2	(10.0)	4	(20.0)	
Depends on situation	2	(5.0)	0	(0.0)	2	(10.0)	
Lunch							
Meal not eaten	1	(2.5)	1	(5.0)	0	(0.0)	p = 0.20[e]; FET
Home or brought from home	22	(55.0)	13	(65.0)	9	(45.0)	
Outside of home	9	(22.5)	3	(15.0)	6	(30.0)	
Depends on situation	8	(20.0)	3	(15.0)	5	(25.0)	
Dinner							
Meal not eaten	0	(0.0)	0	(0.0)	0	(0.0)	p = 0.34[e]; FET
Home or brought from home	35	(87.5)	19	(95.0)	16	(80.0)	
Outside of home	1	(2.5)	0	(0.0)	1	(5.0)	
Depends on situation	4	(10.0)	1	(5.0)	3	(15.0)	

Note. FET = Fisher's exact test. Number of grocery shopping trips and use of non-home food sources compared across strata using Mann-Whitney-Wilcoxon tests. Significance assessed at $p < 0.05$. Significant values in bold.
[a] Comparing self vs. parent/grandparent/other.
[b] Total percentages >100 due to multiple answers provided.
[c] n = 38.
[d] n = 33.
[e] Comparing meal not eaten vs. home or brought from home vs. outside of home/depends on situation.

boyfriend and three children shared, *"I know my kids they love vegetables, I think I instilled that into them. I've been trying to stick to like a healthy plan … when I first became pregnant, that's when I started."* This sub-theme did not arise among women without children in the home.

Taste. Taste was discussed by the majority of women as an important influence on purchase decisions, yet was more frequently discussed by women without children in the home. Two sub-themes emerged: the importance of enjoyment and avoiding foods you dislike; these sub-themes were discussed similarly across groups.

The importance of enjoyment. Women across groups discussed taste in regard to purchasing food items that they like and enjoy eating. One 29-year-old woman living with her husband explained how taste takes precedence over other factors: *"I buy a wide variety of food, but I usually buy things that we actually like to eat or enjoy eating versus, you know, things that are on sale or maybe what we should be eating."* Similarly, a 28-year-old woman living with her husband and two children discussed her decision to purchase a more expensive brand of rice because she likes the taste: *"those are like the two most pricey brands, but I just like the taste and the quality … so if I buy it, you know … I'm maybe spending a little too much, I try to cut something else."*

Avoiding foods you dislike. Women in both groups explained that they avoid purchasing foods that they know they dislike. One 26-year-old women living with her husband shared *"[Taste] affects it a lot. Obviously I don't want to waste money on things that I know we don't like to eat because they won't get eaten, and at that point I'm just wasting money."* Several women discussed this theme in regard to a hesitation to try new foods. One 28-year-old woman living alone with her two children explained, *"I'm not really too much [into] trying stuff out I don't know much about. It has to taste good, and you know, every now and then I try to get stuff … see how it taste. If we ain't feeling the taste, we won't buy it no more."*

Cost. Almost all women cited cost as an important influence on their decision-making when grocery shopping. One sub-theme emerged: the use of food budgets and in-store cost-saving strategies. This sub-theme was discussed similarly across households with and without children in the home, with the exception of one budgeting factor, the use of Supplemental Nutrition Assistance Program benefits (SNAP; formerly known as Food Stamps), which was only discussed by women with children.

Food budgets and in-store cost-saving strategies. The majority of women spoke of developing and closely following food budgets while shopping as well as using a variety of in-store cost-saving strategies, such as choosing sale items and generic brands, using coupons, and shopping at different stores depending on where an item could be purchased for the lowest cost. Several women spoke of the need to purchase less healthy foods than they would like given their constrained budgets and the generally lower cost of these items. One 26-year-old woman living alone with her daughter explained that, *"If we have enough [money] to fit that into our budget, then we get the healthier foods. If not, we kind of have to skim back and do like warm up dinners …"* A 28-year-old woman living with her husband explained how she balances nutrition and cost concerns stating, *"Usually, I will take like one half of the budget and buy nutritional foods that might cost a lot, and then the other half, I will compensate and buy like hot dogs and stuff, you know, cheaper stuff that's not so nutritional."*

The only budgeting factor unique to women with children in the home was the use of SNAP benefits. Several women with children in the home explained that the arrival date and amount of their SNAP benefits affected when they chose to shop and what they could afford to buy. One 24-year-old woman living alone with her daughter explained, *"I'm on a budget because I use my [SNAP benefits] … now I know how much stuff to buy … I buy everything that she needs and wants every month … I'm on a budget, yeah, but I'm still able to get everything."*

Convenience. The majority of women discussed the importance of convenience when grocery shopping. Convenience was interpreted in regard to the ease of getting to a store as well as the convenience of foods chosen. Among women discussing the latter, one sub-theme emerged: quick and easy meal preparation, which was discussed similarly across groups.

Quick and easy meal preparation. The importance of how quick or easy a particular food item is to prepare was discussed in relation to busy schedules and the choice of items such as ingredients for sandwiches or pre-prepared meals that can be heated in the microwave or oven. One 27-year-old woman living alone with her two children stated, *"a lot of times my daughter will want something so she can come home from school and put it in the microwave and that's usually like Ramen noodles or like Eggos or Hot Pockets or pot pies … I probably spend like $75–80 a month on those type of things because it is accessible for her and her brother, you know quickly."* Similarly, a 23-year-old woman living with a roommate explained, *"I tend to go for quick, because I'm on the go a lot, so I go for quick foods like bread, peanut butter, jelly, salad stuff."*

Weight control. The majority of women, both with and without children in the home, cited weight control as affecting their decision-making. One sub-theme emerged: avoiding less healthy items and substituting with healthier foods, which was discussed similarly across groups.

Avoiding less healthy items and substituting with healthier foods. Both groups of women discussed avoiding less healthy foods, such as snack foods and high fat foods, while in the grocery store, and substituting with healthier alternatives, such as fruits and vegetables. A 20-year-old woman living with her sister stated that, *"weight control is one of the biggest things because we sometimes look at stuff and we think, I want it so bad, but I'm not going to get it because I don't want to be big as a house."* Discussing the substitution of less healthy foods with healthier alternatives, a 22-year-old woman living with her mother and two children explained *"… for this Halloween I had wanted to pick up a bag of chocolate, and [my mother] was like 'why not just pick up some mixed fruits and nuts?'"* Several women with children in the home spoke of buying foods that will help their children maintain a healthy weight or lose weight, while women without children in the home spoke of buying foods that would help other household members, such as husbands and parents, lose weight.

Accommodating the preferences of children. About half of women with children in the home spoke of how their children's preferences influenced their decision-making when grocery shopping; this theme did not emerge among women without children in the home. These women frequently discussed choosing which foods to purchase based on what their children like to eat. Several explained that their children were "picky eaters", such as one 28-year-old mother living alone with her two children who said, *"I buy what I eat, what my children like … my children are kind of very picky eaters … mostly quick little meals like corn dogs, hot dogs, which I know we shouldn't eat a lot of."* A 24-year-old woman living with her daughter described how her daughter's needs affect both what she purchases when grocery shopping as well as what she herself eats: *"I get mainly the stuff that my daughter eats because she's real picky. So I eat whatever. She's very picky."*

Accommodating the preferences of other household members. Accommodating the preferences of other household members emerged as a theme among both groups of women, but was discussed more frequently by women without children in the home. Women frequently discussed purchasing foods that other people in the household, primarily husbands and partners, enjoyed eating or needed to eat for health-related reasons. A recently married 28-year-old woman living with her husband stated, *"I try to be healthy, but my husband doesn't like healthy food … and I couldn't really figure how to cook for two separate people or shop for two separate people, so I just pretty much ate what he ate, with a few exceptions."* Speaking about her grandmother's dietary needs as a diabetic, a 27-year-old living with her grandmother and two children explained, *"What I usually do is get a list of what she wants … so when I do grocery shop, I make sure I get her list and our list and just combine them."*

Shopping according to pre-planned meals and menus. Shopping according to pre-planned meals and menus emerged as a theme among approximately half of the women both with and without children in the home. Across both groups, women explained that they plan meals and menus prior to shopping and then construct their shopping lists based on the ingredients needed. One 21-year-old woman living with her son and her fiancé explained, *"Before we go grocery shopping, we try to make a list to see what's missing … and then we'll go in and fill in for things that we're having for dinner that week. So we'll go back in and put in our meats and our vegetables and our fruits."* A 21-year-old living with her boyfriend explained that she decides which foods to purchase based on *"how much we eat a certain food … since we eat chicken a lot, we'll go buy chicken, but if it's something that we may or may not eat, I'll [think] … '[will] I cook this month?' and if I think … I may not feel like it, I won't get it."* Several women with children in the home also discussed pre-planning meals with particular reference to finding and trying new recipes.

3.3. Decisions to use non-home food sources

When asked about the factors driving their decisions to eat inside or outside of the home, most women discussed their reasons for choosing to eat outside of the home. Themes included convenience, social factors, and taste. Convenience emerged among both groups of women, but was discussed differently by those with and without children, whereas social factors only emerged as a theme among women without children in the home. Taste also emerged as a theme among both groups of women, and was discussed similarly across groups. The only theme that emerged in regard to eating inside of the home was cost; this theme was only discussed by women with children in the home.

Convenience. Convenience was discussed by over half of the women, both with and without children in the home, yet was discussed somewhat differently across groups. Women with children in the home often explained that eating out is a faster and easier option when you are already tired and do not feel like cooking, or are out later than anticipated and your children are hungry and nearing their bedtime. Women also spoke of the ease of eating out when you are already away from home, busy, and "on the go". One 22-year-old woman living with her mother and sons shared, *"Because I have two kids … the process of feeding them, bathing them, putting them to sleep, then [needing] to clean up, it's just if we go out to eat, we just go home and go to sleep."* Women without children in the home offered similar explanations, but most frequently discussed the convenience of eating out in more general terms as a faster and easier option than cooking, particularly in the context of work and school-related time constraints. One 22-year-old living with her sister and best friend explained *"during the week I get out of class late and usually I'm at school like all day. So the last thing I want to do is cook and especially if it's something that has to be unthawed. So I just buy food."*

Social factors. Choosing to eat out for reasons related to social gatherings or relationships emerged as a theme only among women without children in the home. Several women discussed going out to eat as an opportunity to get together with friends and family, and enjoy themselves on weekends or special occasions. One 27-year-old woman living with her best friend shared, *"… with it being Thanksgiving, I didn't feel like cooking … we just took two other friends with us, and we just all got whatever we wanted and just kind of, you know, forgot, we're just splurging."* A 26-year-old woman living with her husband discussed going out on weekends with friends explaining, *"if we can afford to go out to eat sometimes it's nice to, you know on a Friday or Saturday night go out to eat rather than staying at home."*

Taste. Several women, both with and without children in the home, cited taste as a factor affecting their decisions to eat outside of the home. Taste was discussed similarly across both groups in regard to craving or wanting a dish or meal that one either did not make or did not know how to make at home. As one 23-year-old woman living with roommates explained, *"Sometimes I just crave something from a restaurant that I might not know how to cook, personally, or I don't like the way that I cook it, and I like the way that somebody else does it."* Similarly, a 21-year-old woman living with her parents and daughter shared *"sometimes at a restaurant I like to get a salad … I know I could eat a salad at home, but we don't usually buy salad things, so, you know, I go to a restaurant and get a salad or just things that my mom doesn't cook at home."*

Cost. The cost of eating out was the only factor women cited as affecting decisions to eat inside the home. This theme only emerged among women with children, several of whom explained that they could not afford to eat outside of the home. One 21-year-old woman living alone with her two sons explained, *"I don't have funding to go out to eat, and if I got Food Stamps I will just eat and cook at home."* Similarly, a 24-year-old woman living with her daughter stated simply, *"I can't afford it. I got to eat what I got at home."*

4. Discussion

The present study aimed to elucidate the experiences and perceptions of young adult women regarding two key decision-making processes that inform how they engage with their home food environments, food choices while grocery shopping and the decision to use non-home food sources, and to identify differences between women with and without children in the home. Women's decision-making when grocery shopping and using non-home food sources was affected by numerous factors, which often exerted simultaneous, and at times competing, influences. This finding is consistent with previous research that has highlighted the complex interplay of psychological, socio-cultural, and environmental factors affecting food choice (Antin & Hunt, 2012). Importantly, there were key differences between women with and without children, indicating that motherhood may be an important contributor to the decision-making processes that shape young adult women's home food environments, and requires consideration in the development and implementation of diet- and weight-related interventions targeted to this age group.

Children were influential in shaping women's decisions when grocery shopping. Women with children in the home chose to purchase foods that they believed would keep their children healthy and that they knew their children liked to eat. Gendered social roles and expectations, such as those regarding caregiving and food provisioning, are salient to the identity formation of many women, particularly mothers (Bisogni, Connors, Devine, & Sobal, 2002; DeVault, 1994). These constructed identities, in turn, are likely to position children as central drivers of the dietary practices in which women choose to engage (Johnson, Sharkey, & Dean, 2011; Johnson, Sharkey, Dean, Alex McIntosh, & Kubena, 2011). While women's desire to purchase healthy foods for their children may be an important facilitator in the creation of healthier home food environments, the purchase of foods that children like may serve as a countervailing force and potential barrier. Recent research has demonstrated that lower income parents may opt to purchase energy-dense and nutrient poor foods that they know their children will like in order to avoid food waste (Daniel, 2016). This finding may be particularly salient to the mothers in our sample who faced greater socio-economic disadvantage, including higher unemployment, than the women without children. Such economic constraints not only have implications for the taste formation, dietary patterns, and health status of children (Daniel, 2016), but also affect home food availability and dietary practices of all household members, including mothers.

In addition to the directly cited influence of children, women with children in the home discussed the influence of nutrition more frequently and in more depth than women without children. Consistent with previous research, we found that the influence of nutrition on the decision making of women with children was manifest in their desire to avoid family histories of obesity, correct unhealthy dietary habits they had developed as children, and to model healthier eating for their own children (Johnson, Sharkey, Dean, et al., 2011; McGee et al., 2008), whereas women without children more often discussed the influence of nutrition in regard to their current eating practices. It is possible that the transition to motherhood prompts women to reflect on the ways in which they would like their children's upbringing to be different from their own, while increased interaction with the health care system during this period may necessitate consideration of family medical histories.

In contrast, taste was more frequently discussed by women without children in the home. Taste preferences and cravings for foods with high fat, salt, and sugar content, as well as the greater affordability and accessibility of these items, have been well documented as important drivers of food choice (Drewnowski & Darmon, 2005; Glanz, Basil, Maibach, Goldberg, & Snyder, 1998; Kourouniotis et al., 2016). It is likely that the influence of taste on decision-making is more compatible with factors such as cost and convenience, yet less compatible with factors like nutrition. In our study, it is possible that women without children were less frequently faced with competing concerns, like nutrition, ultimately allowing their taste preferences to take precedence. Future research should explicitly examine how, in the context of simultaneous and competing influences, some factors come to take

precedence over others during decision-making. It is also worth noting that women in both groups discussed the influence of taste in regard to purchasing foods they enjoyed eating. A qualitative study conducted among young, low-income African-American women in the U.S. suggested that the enjoyment of food may take on particular importance for members of marginalized groups who regularly experience hardship in daily life (Antin & Hunt, 2012). Intervention strategies seeking to target taste as a barrier to healthy eating must be cognizant of the psychosocial function it may serve for particular groups of women.

While not influenced by children, the decision-making processes of women without children were still affected by other household members, such as boyfriends and spouses. Dietary behaviors are likely to change when young adult women begin to live with a partner, a transition that requires both parties to learn and adapt to one another's likes and dislikes (Hartmann, Dohle, & Siegrist, 2014) and develop a new, shared food environment. Previous research from the U.S. and the U.K. has indicated that cohabitation and marriage may improve dietary quality among men, while the effects for women may be less pronounced due to pre-established healthier eating patterns (Lee et al., 2005; Vinther, Conklin, Wareham, & Monsivais, 2016). It is also possible that this transition is deleterious for women, as illustrated by the recently married woman in our study who discussed cooking less healthy meals than she would like because of her husband's preferences and their limited resources to cook separate meals. Transitions into romantic partnerships and cohabitation may be another critical window for the implementation of interventions that proactively address these challenges.

Although their roles and responsibilities as mothers, students, and employees differed, limited resources and busy schedules presented challenges for both groups of women. The influences of cost and convenience were cross-cutting and manifested through the use of specific strategies women employed when shopping, such as pre-prepared food budgets, in-store cost saving strategies, and choosing items that are quick and easy to prepare. Cost and convenience are well established as potent drivers of food choice, and it is widely recognized that health promotion efforts must address the perceived and actual higher cost and lower convenience of many healthier foods (Story et al., 2008). Interventions may find success in adapting or modifying strategies already in use by women. For example, food budgets and in-store cost saving strategies, as well as pre-planned meals and menus, can be tailored to explicitly focus on healthier options available in the locations where women shop. Consistent with nationally representative data from the U.S., the majority of women in our study typically shopped at grocery stores and supermarkets (Todd & Scharadin, 2016), which generally carry a wide range of products at more affordable prices than smaller stores (Economic Research Service, 2009), and may provide women with ample opportunity to make healthy food choices.

Many of the same factors that influenced women's decision-making when grocery shopping also influenced their use of non-home foods sources, including convenience, social factors, taste, and cost. Notably, social factors were only discussed by women without children. Women without children may have access to more extensive social networks, which may positively affect diet quality and weight gain. In a U.S.-based sample of overweight and obese young adults, Leahey, Gokee LaRose, Fava, and Wing (2011) found that having a higher number of social contacts attempting to lose weight was associated with a greater intention to lose weight. In contrast, during the postpartum period and beyond, mothers may feel isolated and disconnected from their social networks due to factors such as time constraints and difficulty identifying with friends who are not parents (Paris & Dubus, 2005). Future research should explore differences in access to social support and related effects on diet-related decision-making among young adult women with and without children.

Despite their reasons for eating out, both groups of women consumed the majority of their meals at home. This finding is consistent with previous research indicating that young adult women consume the majority of their total daily energy intake from home food sources (U.S. Department of Agriculture, 2014), and underscores the home food environment as a salient intervention site for diet- and weight-related behavior in this population. The preparation of food in the home, if prepared with healthy cooking techniques, has been previously associated with less frequent fast food consumption and better dietary quality overall (Lin & Guthrie, 2012). However, it is worth noting that for the women in our sample, more frequent home meal consumption may reflect a lower level of expendable income, and thus may be indicative of larger barriers to affording and accessing healthier foods, even for home meal preparation. Indeed, the only factor to emerge as driving women's decisions to eat inside the home was the cost of eating out. This may be of particular concern among women with children, the only group to discuss the financial constraints of eating out, and higher proportions of whom reported eating meals at home.

This study has several limitations. As with all qualitative research, the results are not generalizable beyond the study sample. It is also possible that the results were subject to recall or social desirability bias. Additionally, the qualitative nature of the research did not allow for the examination of potentially important differences by other characteristics such as race, student status, or BMI. To this end, it is worth noting that over two-thirds of the women in our sample were overweight or obese. Diet-related decision-making is related to weight status (Epstein, Dearing, Paluch, Roemmich, & Cho, 2007), and the unique experiences and perspectives of overweight and obese women likely influenced the responses received. It may be beneficial for future research to compare decision-making processes across weight status. Further, the focus of this study was limited to decision-making processes related to the home food environment, and did not incorporate other important socio-ecologic influences on dietary behavior, such as community, work, and school food environments. Finally, the included quantitative measures are intended to provide context for the qualitative findings, and should be interpreted in light of the small sample size and non-probability sampling methods. Significant differences between groups may have resulted from multiple testing.

5. Conclusions

The present study makes a unique contribution to the limited literature on decision-making processes that shape the home food environments of young adult women. It is the first, to our knowledge, to explicitly examine differences between women with and without children in the home, and extends current research on the drivers of dietary decision-making by not only identifying the factors that influence women's choices, but also exploring *why* particular factors are important and *how* they manifest. Our findings offer useful insights for the development and tailoring of intervention strategies to promote healthy home food environments among young adult women during this transitional period, and suggest the need for continued exploration of diverse experiences, like motherhood, that differentiate the broader period of young adulthood.

Interventions may be able to improve the healthfulness of food choices while grocery shopping and facilitate home meal preparation by framing intervention messaging to emphasize the factors

women identified as motivating healthy choices, such as a desire to manage weight gain, change unhealthy eating habits, and save money. For mothers, a focus on empowering them to make choices that will protect the health of their children may be particularly resonant. Intervention messaging can be supported by the promotion of practical strategies adapted from those already in use by women: pre-planning and pre-preparing healthy meals, budgeting for healthy meals, and skill-building in healthy meal preparation and storage techniques. The salience of the needs of other household members in this population may necessitate intervention strategies that build social support for healthy eating, particularly among young adult women transitioning to new living situations, such as living with a partner for the first time. Empowering women to make healthy choices when grocery shopping and prepare more meals in the home is a foundational step in the development of healthy home food environments. Future research is needed to enhance understanding of specific dimensions of young adult women's home food environments associated with better diet- and weight-related outcomes, such as food placement and accessibility, meal preparation techniques, the use of television while eating, and social support of household members, and how they differ between women with and without children.

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