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## Reasons parents buy prepackaged, processed meals: It is more complicated than “I don’t have time”

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### Abstract

**Objective**—To investigate reasons parents purchase prepackaged, processed meals and associations with parental cooking self-efficacy, meal-planning ability, and home food availability.

**Method**—This secondary data analysis uses HOME Plus study data from parents of 8–12 year old children (n=160). Associations between reasons parents purchase prepackaged, processed meals and the outcomes were assessed with Chi-square, Fisher’s exact, and t-tests.

**Results**—The most frequently endorsed reasons for purchasing prepackaged, processed meals included lack of time (57%) and family preferences (49%). Five of 6 reasons were associated with lower parental cooking self-efficacy and meal planning ability, some reasons were associated with less-healthy home food environments, and few reasons varied by sociodemographic characteristics.

**Conclusions and Implications**—Given lower cooking self-efficacy and meal-planning ability are associated with most reasons reported for purchasing prepackaged, processed meals, strategies to increase these attributes for parents of all backgrounds may reduce reliance on prepackaged processed meals for family mealtimes.

### Keywords

Prepackaged processed meals; Self-efficacy for cooking; Meal planning ability; Parents

## INTRODUCTION

Prepackaged, processed meals, like boxed entrees and frozen dinners, reduce the investment of energy, time, or cooking skills needed for food preparation.<sup>1</sup> These foods are widely available, relatively inexpensive<sup>2</sup> and simplify meal preparation. However, cross-sectional and longitudinal studies have demonstrated that youth who eat more prepackaged, processed

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foods have higher overall energy, sugar, sodium and saturated fat intakes.<sup>3-5</sup> Additional studies have shown positive associations between foods available in the home and dietary intake of those foods; for example, higher home availability of non-nutritious foods has been associated with higher non-nutritious food intake.<sup>6</sup> Therefore, home availability of prepackaged, processed meals may contribute to poorer dietary intake.

Given the negative impact of poor dietary intake on health<sup>7</sup> coupled with the direct associations between dietary intake and home food availability, it is important to understand why parents purchase prepackaged, processed meals for their families. Gaining such an understanding will help to identify potentially modifiable factors for intervention. Previous quantitative<sup>8,9</sup> and qualitative<sup>10</sup> studies have found inverse associations between cooking skills and consumption of highly processed foods. An additional study found low-income mothers prioritized making home-cooked meals if they reported greater cooking skills and self-efficacy; food choices were also influenced by meal planning abilities.<sup>11</sup> Another study has shown a negative correlation between cooking self-efficacy and a preference for time and energy savings around meal preparation.<sup>12</sup> The Social Cognitive Theory (SCT) emphasizes the importance of abilities, cognitions, and self-efficacy on motivation and behavior; therefore, parental cooking self-efficacy and meal planning skills may be important targets for theoretically-driven interventions to improve healthier eating.

Currently research on prepackaged, processed foods has examined purchases by several sociodemographic characteristics. Working more weekly hours has been consistently associated with higher preference for and purchase and consumption of prepackaged, processed foods.<sup>8,13-15</sup> However, to date, research has not evaluated whether a parent sense of balance or lack thereof between home and work responsibilities is associated with convenience foods. Less consistent associations have been found between prepackaged, processed food purchasing and age, gender/sex, education, and perceived time and money.<sup>8,13-16</sup> Additionally, children's presence in the home has been associated with lower preferences for and use of prepackaged, processed foods.<sup>8,13,14</sup> Yet, qualitative research findings suggest parents have felt conflicted about using prepackaged, processed foods as they knew these foods were not as nutritious but they valued time saving benefits or decreasing conflict with picky eaters.<sup>10,17,18</sup> These qualitative findings suggest time is not the exclusive reason for purchasing convenience foods.<sup>10,17,18</sup> Because parents are family food purchasers and gatekeepers,<sup>19</sup> it is important to understand the reasons parents purchase prepackaged, processed meals and factors associated with the purchasing behaviors, in addition to the sociodemographic characteristics associated with them.

This secondary, cross-sectional study adds to the extant literature by assessing multiple reasons why parents purchase prepackaged, processed meals for their families. The present study also tests associations between these reasons and (a) family sociodemographic/work-life balance characteristics; (b) modifiable factors (ie, self-efficacy for cooking and meal planning ability); and (c) home availability of prepackaged, processed meals, fruits and vegetables. Findings will inform intervention development to reduce parent purchases of prepackaged, processed meals and improve the healthfulness of family meals.

## METHODS

The present study uses baseline data of parent/guardian participants (n=160) from the Healthy Home Offerings via the Mealtime Environment (HOME) Plus randomized controlled trial.<sup>20</sup> HOME Plus aimed to prevent excess childhood weight gain through a family intervention promoting family meal frequency, healthfulness of meals and snacks, and reduction in screen time. The University of Minnesota Institutional Review Board approved the trial and procedures and parent/guardian participants provided written informed consent.

In 2011–2012, primary meal preparing parents/guardians and one of their 8–12 year old children were recruited from 6 community center sites within a large metropolitan area of the Midwestern United States.<sup>20,21</sup> Recruitment criteria included English fluency, not planning to move within 6 months of trial start, no medical conditions that would limit study participation (e.g., life threatening food allergies), the 8–12 year old child's BMI percentile (age and gender adjusted) at or above the 50<sup>th</sup>%, and the child must live with the participating parent/guardian most of the time. Recruitment strategies included (a) flyers, (b) site visits by study staff and staff at recreation centers, and (c) small group presentations about nutrition and family meals placed in and around community centers where interventions were held. Participants were randomized after baseline data collection into the intervention (n=81) or control group (n=79). Control group participants received monthly newsletters. Intervention participants were invited to attend 10-monthly intervention sessions; parent/guardian participants also received 5 goal setting phone calls throughout the intervention.<sup>20,21</sup>

The sample of HOME Plus adult participants contained almost all parents (99% parents; 1% guardians; herein called parents) with 94% identifying as mothers, 1% as grandmother, and 5% fathers, which is consistent with the study samples from other research on prepackaged, processed meals.<sup>8–13,15–18</sup> Subject characteristics can be found in Table 1.

### Measures

Trained staff went to family's homes to collect data. In their homes, parents completed a Home Food Inventory (HFI) and a psychosocial survey, which had been pilot tested for overall comprehension and examined for internal consistency.

Psychosocial survey items were developed by the study team after a review of existing literature of qualitative studies<sup>18,22</sup> to assess multiple *reasons for purchasing prepackaged, processed meals* since no scales were available in the literature at that time. The item stem, "I buy prepackaged foods like boxed foods and frozen meals because..." prompted each question: (1) I do not have time to prepare other foods; (2) My family really likes them; (3) They are easy for my child to prepare; (4) They are inexpensive; (5) I do not know what else to make; and (6) They are the only thing my whole family will eat. Response options were "Yes" or "No."

Parents self-reported their *birthdate* (used to calculate age at data collection visit), *gender*, *marital status*, *education level*, *race*, *family receipt of economic assistance*, and *number of*

people in their household (see Table 1). Parents also reported how their *work-life balance* affects family life and activities by responding to a 3-item scale.<sup>23</sup> The *work-life balance scale* had been previously adapted<sup>23</sup> from two longer scales of Marshall and Barnett;<sup>24</sup> the scale used in the present study was found to be reliable in previous research (adapted  $\alpha=.86$ , test re-test  $r=.75$ ).<sup>23</sup> An example item is “Because of the requirements of my job, my family time is less enjoyable or more pressured” and parents rated how much they strongly disagreed/agreed with the statement using 4-point response options. Items were summed with higher scores indicating work negatively interfering with family life (current study  $\alpha=.90$ ).

*Self-efficacy for cooking a healthful meal* was measured with an adapted 4-item scale (original study  $\alpha's=.92, .85$ ;<sup>12</sup> current study  $\alpha=.83$ ). Items were summed with higher scores indicating higher self-efficacy. *Meal planning ability* was measured with a 12-item scale (current study  $\alpha=.71$ ) created with factor analysis (results not shown) using existing items and items created from focus group findings.<sup>22</sup> Items were summed with higher scores indicating higher meal planning ability.

In their homes while going through their pantry/food supply, parents also completed a valid and reliable HFI<sup>26</sup> to measure *home availability of vegetables, fruits, and prepackaged, processed meals*. The vegetable availability score and fruit availability score, respectively (original: Kappas=.80, .83; Sensitivities = .89, .87; Specificities=.90, .95),<sup>26</sup> counted the types of vegetables and fruits available in the home on the date the HFI was completed. A new variable assessing prepackaged, processed meal availability was created for the present study by adapting the “quick-cook food” category of the HFI (original: Kappa=.79; Sensitivity = .83; Specificity= .91).<sup>26</sup> The new prepackaged, processed meal availability score was used to count the total number of types of frozen or boxed meals/dinners available at home (eg, pizza, hot pockets, pizza rolls, chicken nuggets, ramen).

## Analysis

Parent education level and race were dichotomized for analysis (ie, less than associate’s degree or associate’s degree or higher; white or diverse backgrounds), given the small numbers in each category. Percentages were used to assess prevalence of each reason endorsed for purchasing prepackaged, processed meals. Chi-Square Test for Independence, Fisher’s exact and T-tests were used to test bivariate associations between each reason for purchasing prepackaged, processed meals and sociodemographic and work-life balance characteristics. These tests were also used to assess bivariate associations between each reason and the outcomes of interest (ie, self-efficacy for cooking healthful meals, meal planning ability, home availability of fruit, vegetable and prepackaged, processed meal scores). Given this study was exploratory, statistical significance was set at  $p<.05$ ; adjustments for multiple comparisons were not performed as to not increase the probability of making a type 2 error and the harms of making a type 1 error are low.

## RESULTS

In the order of prevalence (as shown in the top row of Table 2), parents endorsed the following reasons for purchasing prepackaged, processed meals: *‘I don’t have time to*

*prepare other foods*' (57%), *'My family really likes them*' (49%), *'They are easy for my child to prepare*' (33%), *'They are inexpensive*' (27%), *'I don't know what else to make*' (22%), and *'They are the only thing my whole family will eat*' (11%).

Reasons endorsed by parents for purchasing prepackaged, processed meals did not differ by receipt of economic assistance, work-life balance, marital status, or number of individuals in the household. Parents endorsed *'I don't have time to prepare other foods*' as a reason for purchasing prepackaged, processed meals significantly more when working more hours per week (71% of parents working full-time, 53% of parents working part-time, and 38% of parents not working;  $\chi^2(2)=13.4, p<.01$ ); no other purchasing reasons varied by hours worked. Parents who reported they purchased prepackaged, processed meals because *'They are inexpensive*' were significantly younger ( $M=38.8$  years,  $SD=7.8$ ) than those who did not report this reason ( $M=42.3, SD=7.2; t(150)=2.5, p<.05$ ). Additionally, parents were significantly more likely to report *'I don't know what else to make*' as a reason for purchasing if they were white (29%) compared to parents of racially-diverse backgrounds (3%; Fisher's Exact Test,  $p<.01$ ); this reason for purchasing was also reported significantly more among parents with higher education levels (28%) than those with lower education levels (10%;  $\chi^2(1)=5.5, p<.05$ ).

Table 2 shows the associations between each reason endorsed by parents for purchasing prepackaged, processed meals and cooking self-efficacy, meal planning ability and home food availability scores. Parents who endorsed any reason for purchasing prepackaged, processed meals had significantly lower cooking self-efficacy scores and meal planning ability scores, with the exception of the reason *'They are easy for my child to prepare.'* Additionally, reasons related to ease of child's ability to prepare, expense, and family preferences were associated with significantly higher home availability of prepackaged, processed meals. Reasons related to expense and not knowing what else to make were associated with significantly lower home vegetable availability, and expense was also associated with lower home fruit availability.

## DISCUSSION

The present study evaluated reasons parents with school-age children buy prepackaged, processed meals. The most commonly endorsed reason for purchasing was not having enough time to prepare other foods. Given the convenience and marketing messages of prepackaged processed meals, this result was not entirely surprising. However, nearly half of parents in this study reported that they purchased prepackaged, processed meals because their family really likes them. Also, about one-third of parents reported that ease of child preparation and price influenced purchase as well. Therefore, while time is most commonly studied in the literature and is the most prevalent reason endorsed in this study, findings suggest there are many additional salient reasons that may influence purchase of prepackaged, processed meals.

Additionally, it is important to note the reasons for purchasing prepackaged, processed meals that parents endorsed were largely not differentiated by sociodemographic and lifestyle characteristics. Most previous studies found some significant associations between

prepackaged, processed meals use and sociodemographic characteristics, with employment being the most consistent correlate.<sup>8,13–15</sup> Present study findings partially support the previous employment findings as employment status was significantly associated with endorsement of *'I don't have time to prepare other foods.'* However, employment was not significantly associated with any other reason for purchasing prepackaged, processed meals. This study also provided a more detailed picture by assessing and finding nonsignificant associations between parent work-life balance and reasons for purchasing prepackaged, processed meals in this sample of mostly mothers. This novel finding suggests citing time as a reason for purchasing prepackaged, processed meals may have less to do with maintaining a work-life balance and more to do with working more hours. Given the number of hours worked is not easily modified, the importance of addressing other related and modifiable factors like cooking self-efficacy and meal planning ability of working parents is warranted.

The present study findings suggest that parent's meal planning ability and self-efficacy for cooking healthful meals are associated with most reasons parents purchase prepackaged, processed meals. These findings are consistent with the significant and inverse associations between cooking skills and prepackaged, processed food purchases found in other studies with adults who were not necessarily parents.<sup>8,13,14</sup> If parents are not confident in their ability to cook, prepackaged, processed meals that require little planning, time, energy and preparation are an appealing, but less nutritious, choice. Thus, study findings extend previous findings by suggesting that in addition to addressing time and energy, increasing parental cooking self-efficacy and meal planning skills could also help to reduce the perceived benefits of purchasing prepackaged processed meals (e.g., family food preferences, cost), which are also common reasons reported for making such purchases.

Reasons for purchasing prepackaged meals related to expense, family food preferences, not knowing what else to make, and ease of child's ability to prepare were associated with less healthful home food environments. Given that past research highlights the significant link between home availability of non-nutritious foods and dietary intake of those foods,<sup>6</sup> the present study's findings are concerning. In particular, although not more likely to be receiving economic assistance, parents who reported purchasing prepackaged, processed meals because they were inexpensive had (a) less fruit and vegetable availability; (b) higher prepackaged, processed meal availability, and (c) lower cooking self-efficacy and meal planning skills. Aligned with past research,<sup>27</sup> these findings stress the importance of a food environment where nutritious foods are affordable for all families. Additionally, these findings highlight the importance of the perception and actual cost of prepackaged, processed meals, as well as, the importance of meal planning and cooking skills. Having and utilizing cost-saving strategies (e.g., buying in-season vegetables, buying in bulk) along with meal preparation skills may help families fit nutritious foods into any budget.

### Strengths and Limitations

The present study provides insight on 6 reasons, which go beyond time, that were endorsed by parents for purchasing prepackaged, processed meals for their families; most reasons were significantly associated with lower self-efficacy for cooking healthful meals and meal planning abilities. Additionally, testing relationships between reasons for purchasing



prepackaged, processed meals and both hours worked per week and work-life balance has provided novel insight for interventions with working parents. The study has several limitations. Parents were not asked a lead-in question to determine whether they purchased prepackaged, processed meals before answering questions on reasons for prepackaged, processed meal purchase, but 97% of parents did have at least one type of these foods within their home. Additionally, the cross-sectional study design does not allow for determining causality. No adjustments for multiple comparisons were completed and results should be interpreted cautiously and as exploratory/provocative for future research considerations.<sup>28,29</sup> In addition, families self-selected to enroll in the healthful eating/family-meals focused HOME Plus study, and therefore may not represent all families with 8–12 year old children.

### Implications for Research and Practice

Study findings suggest parents report many reasons for purchasing prepackaged processed meals for their families. Parent endorsement of these reasons appears to go largely beyond sociodemographic and lifestyle characteristics and may be relevant for families from all backgrounds. Of importance, having a less favorable work-life balance was not associated with endorsing reasons for purchasing prepackaged processed meals but working more hours per week was. Given that most parental reasons for purchasing prepackaged, processed meals are associated with the modifiable parental attributes of self-efficacy for cooking healthful meals and meal planning ability, future prospective research is required to confirm findings and should consider exploring interventions to enhance these factors for parents. Such interventions would be aligned with the SCT and may reduce parents' need for purchasing prepackaged, processed meals and may reduce dietary intake of these foods. Future research should also consider exploring child factors (eg, developmental stage) related to endorsing reasons for prepackaged, processed meal purchase, as these findings may point to additional areas for intervention.

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### Practice Points

- Parents report a variety of reasons for purchasing prepackaged processed meals beyond just lack of time (105 characters; placement near the beginning of the results section around lines 124–128)
- Lower parent cooking self-efficacy and meal-planning ability were associated with most reasons for purchasing prepackaged processed meals (139 characters; placement near the last paragraph of the results section around lines 144–145)
- Increasing cooking and meal planning skills could help reduce perceived benefits of purchasing prepackaged processed meals (124 characters; near the end of the third paragraph of the Discussion around lines 183–185)

**Table 1**

Baseline Healthy Home Offerings via the Mealtime Environment (HOME) Plus Parent Participant Characteristics (N=160)

Variables of interest for the present study	Mean or n	SD or %	Range
Parent age (years)	41.3	7.7	25–66
Parent gender			
Female	152	95%	
Male	8	5%	
Marital Status			
Married	96	60%	
Not married	64	40%	
Parent education			
Some High School/High School Diploma	14	9%	
Some College	31	20%	
Associates Degree	19	12%	
Bachelor's Degree	54	35%	
Graduate Degree	37	24%	
Parent hours worked per week			
No paid employment	53	33%	
Part-time (1–35 hours)	33	21%	
Full-time (>35 hours)	74	46%	
Parent race			
White	123	77%	
Diverse backgrounds <sup>1</sup>	37	23%	
Family economic assistance receipt <sup>2</sup>			
No	98	61%	
Yes	62	39%	
Number of individuals in the household	4.1	1.3	2–9
Child age (years)	10.4	1.4	8–12
Work-life Balance Scale <sup>3</sup>	7.2	2.7	3–12
Cooking Self-Efficacy Scale <sup>4</sup>	12.0	4.1	4–20
Meal Planning Ability Scale <sup>5</sup>	32.7	4.8	12–48
Home Vegetable Availability Score <sup>6</sup>	10.6	3.4	0–20
Home Fruit Availability Score <sup>6</sup>	9.8	4.4	0–26
Home Prepackaged, Processed Meal Availability Score <sup>6</sup>	5.0	3.0	0–14

<sup>1</sup>Diverse backgrounds=Native, Asian, Black or African American, Native Hawaiian or Pacific Islander, Other or more than one race

<sup>2</sup>Parent reported family received some form of public assistance (eg, like food support/stamps, EBT, WIC)

<sup>3</sup>Higher score indicates work negatively interferes with family life

<sup>4</sup>Higher score indicates higher self-efficacy for cooking

<sup>5</sup>Higher score indicates higher meal-planning ability

<sup>6</sup>Number of types of fruits, vegetables or prepackaged processed meals reported within the home at the time for data collection

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**Table 2**

Reasons Parents of the Healthy Home Offerings via the Mealtime Environment (HOME) Plus Study (N=160) Report for Purchasing Prepackaged, Processed Meals by T-test Mean Differences in Cooking Self-Efficacy, Meal Planning Ability and Home Food Availability

	"I buy prepackaged, processed meals because..."											
	...I don't have time to prepare other foods <sup>1</sup>		...My family really likes them <sup>2</sup>		...They are easy for my child to prepare <sup>3</sup>		...They are inexpensive <sup>4</sup>		...I don't know what else to make <sup>5</sup>		...They are the only thing my whole family will eat <sup>6</sup>	
	Yes (57%)	No (43%)	Yes (49%)	No (51%)	Yes (33%)	No (67%)	Yes (27%)	No (73%)	Yes (22%)	No (78%)	Yes (11%)	No (89%)
Self-efficacy for Cooking Scale <sup>1</sup>	10.9	13.2	11.1	12.5	11.6	12.0	9.7	12.7	9.6	12.5	8.1	12.4
	p<.001		p<.05		p=.57		p<.0001		p<.0001		p<.0001	
Meal Planning Ability Scale <sup>2</sup>	31.3	34.2	31.6	33.5	33.1	32.3	29.8	33.6	27.8	33.9	26.2	33.3
	p<.001		p<.05		p=.35		p<.0001		p<.0001		p<.0001	
Home Vegetable Availability Score <sup>3</sup>	10.2	11.0	10.2	10.9	10.3	10.7	9.2	11.1	9.3	10.9	9.8	10.7
	p=.13		p=.21		p=.55		p<.01		p<.05		p=.34	
Home Fruit Availability Score <sup>3</sup>	9.2	10.3	9.6	9.9	9.5	9.8	8.0	10.3	9.0	9.9	8.4	9.8
	p=.12		p=.67		p=.74		p<.01		p=.28		p=.21	
Home Pre-packaged, Processed Meal Availability Score <sup>3</sup>	5.5	4.6	5.2	5.0	6.0	4.6	6.1	4.7	5.3	5.1	6.7	4.9
	p=.06		p=.75		p<.01		p<.05		p=.68		p<.05	

<sup>1</sup> Higher scores indicate higher self-efficacy for cooking

<sup>2</sup> Higher scores indicate higher meal-planning ability

<sup>3</sup> Scores indicate the number of types of fruits, vegetables or prepackaged processed meals reported within the home at the time for data collection