

Original Article



One Menu Please: Parents Want Affordable, Right-sized Portions for Their Children in Restaurants

Seung Hee Lee-Kwan , Sohyun Park , Leah Maynard, Heidi M. Blanck

Division of Nutrition, Physical Activity, and Obesity, National Center for Chronic Disease Prevention and Health Promotion, CDC, Atlanta, GA 30341, USA



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Correspondence to

Seung Hee Lee-Kwan

Division of Nutrition, Physical Activity, and Obesity, National Center for Chronic Disease Prevention and Health Promotion, CDC, 4770 Buford Hwy, MS F-77, Atlanta, GA 30341, USA.
E-mail: sleekwan@cdc.gov

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ORCID iDs

Seung Hee Lee-Kwan

<https://orcid.org/0000-0002-6619-2637>

Sohyun Park

<https://orcid.org/0000-0002-8192-7048>

Conflict of Interest

The authors declare that they have no competing interests.

Disclaimer

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

ABSTRACT

One contributing factor to the obesity epidemic is the large portion sizes served in restaurants. However, no study has looked at the parents' desire for smaller-portioned meals for their children at restaurants in the U.S. This study examined parents' preference for restaurants to offer smaller, lower-priced child portions for their children and reasons for the preference. Multivariable logistic regression was used to estimate adjusted odds ratios (ORs) for the association between preference for child portions and variables on parental sociodemographic characteristics and weight status. About 70% of parents said they would prefer that restaurants offer smaller, lower-priced child portions of all menu offerings. The adjusted odds of preferring child portions were significantly higher among Hispanic parents (OR, 1.95 vs. non-Hispanic whites) but significantly lower among parents with lower education (\leq high school, OR, 0.64; some college, OR, 0.69 vs. college graduate) and parents residing in the Midwest or West (Midwest, OR, 0.61; West, OR, 0.58 vs. South). The most common reason for preferring child portions of all meals was "wanting my child to eat healthier foods that are not offered on the children's menu" (72%). These findings can be used to encourage restaurants and other venues to consider offering child portions of healthier menu items.

Keywords: Children; Fast foods; Restaurants; Parents

INTRODUCTION

The proportion of calories consumed from food-away-from-home has steadily increased among U.S. youth since 1977 [1]. About one-third of their calories are derived from foods away from home, nearly half of which is from full-service and fast food restaurants. These restaurants typically serve foods with more calories per serving than foods served at home [2]. According to nationally representative data collected in 2003–2008, the energy consumption of away-from-home food ranged from 24%–42% of all daily calories for fast food restaurants and 6%–15% of all daily calories for full-service restaurants on a given day among children (2–11 years) and adolescents (12–19 years), depending on the age group and their recall day [3].

Chicken nuggets, macaroni and cheese, French fries, and sugary drinks are common kids' meal options at restaurants [4], even though adult menu items often include healthier

choices such as roasted chicken with vegetable sides, pasta Bolognese with a side salad, or fish tacos with guacamole. Given how often children dine in restaurants and the typical food choices on the children's menu, restaurants have an important role to play in influencing the diets of children. In attempts to provide healthier options in restaurants, the National Restaurant Association launched the Kids Live Well program that aims to improve the dietary quality of kids' meals by increasing nutrient-dense foods such as fruits and vegetables while reducing calories [5,6]. A recent review of the Kids Live Well program showed mixed results; healthy kids' meals sales increased in full service restaurants compared to baseline and decreased in quick service restaurants [7]. These changes are a great start but not all restaurants have the resources to implement healthy kids' meal strategies. Another restaurant strategy to address childhood obesity is to encourage restaurants to offer smaller portions of adults' meals for children. A recent study found that children who ate the same meals as their parents had healthier diets than those who ate meals typically considered "children's food" [8]. However, no study has looked at the parents' desire for smaller-portioned meals for their children at restaurants in the United States. Therefore, this study examined parents' preference for restaurants to offer smaller, lower-priced child portions of all menu items and reasons for the preference.

MATERIALS AND METHODS

Sample and survey administration

Data from the summer wave of Porter Novelli's 2015 *Styles* survey (*SummerStyles*) were used. The *Styles* survey is a national series of annual web-based panel surveys that collect information on the health-related attitudes and behaviors of American consumers. Survey participants were drawn from the KnowledgePanel® [9], consisting of about 55,000 adults. Panel members are randomly recruited by probability-based sampling on the basis of address, which included respondents regardless of phone or internet access. Households without a computer or access to internet were provided with a laptop computer and internet access. Center for Disease Control Prevention Institutional Review Board review was not needed for this analysis because personal identifiers were not included in the data file.

To participate in the *SummerStyles* survey, respondents must have participated in the spring wave of the survey (*SpringStyles*) fielded in April, 2015. The *SpringStyles* survey was sent out to 11,028 adults aged ≥ 18 years, and the response rate was 62% ($n = 6,836$). Subsequently, in June, 2015, the *SummerStyles* survey was randomly sent to 6,172 adults of the 6,836 who completed *SpringStyles* survey. A total of 4,127 of the *SummerStyles* eligible surveys were returned, resulting in a response rate of 67%. The resulting data were weighted to reflect the U.S. Current Population Survey 2014 proportions for sex, age, household income, race/ethnicity, household size, education level, census region, metro status, and internet access prior to joining the survey panel. For the purpose of the current study, adults aged ≥ 18 years who reported being parents/caregivers of at least one child younger than 18 in the household, hereafter referred to as parents ($n = 1,310$) were included. The final analytic sample included 1,299 adults after excluding 11 parents who had missing data on their preference for restaurants to offer smaller, lower-priced child portions of all menu items (**Figure 1**).

Outcome variables

The outcome variable was the preference for restaurants to offer smaller, lower-priced child portions of all menu items, which was assessed by following question: "Would you like

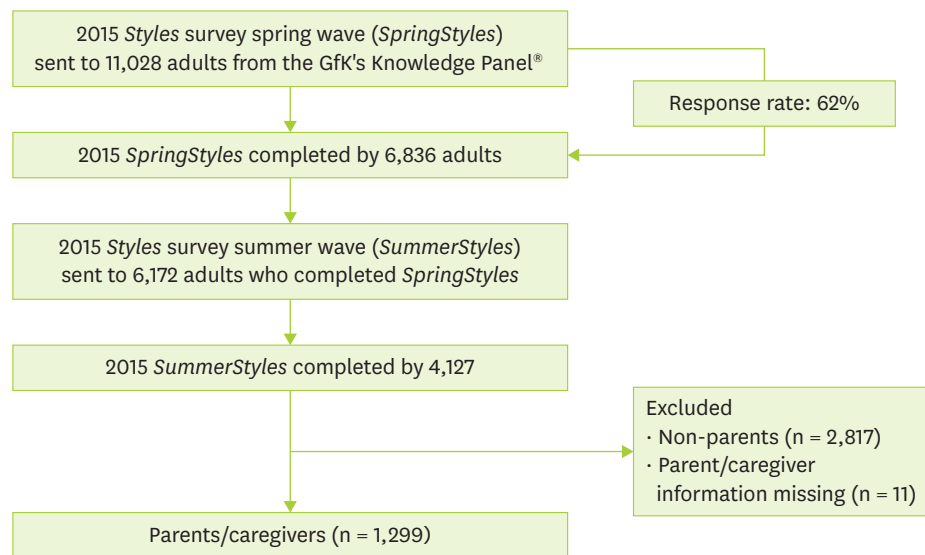


Figure 1. Analytic sampling strategy.

restaurants to offer smaller, lower-priced children's portions of all menu offerings? Response options were dichotomous (yes or no)."

Parents responding 'yes' to the question were asked: "Why would you like restaurants to offer smaller, lower-priced children's portions of all menu offerings? Choose up to three options." Six response options were provided: 1) I want my child to eat healthier foods that are not offered on the children's menu, 2) My child will not order from the children's menu, 3) Ordering from the adult menu provides more options for my child, 4) I want my child to develop a taste for diverse foods, 5) I want to reduce food waste, and 6) None of these.

Exposure variables

Exposure variables included parental sociodemographic characteristics and weight status. Sociodemographic variables were parental age (18–34, 35–49, or ≥ 50 years), sex, race/ethnicity (non-Hispanic white, non-Hispanic black, Hispanic, or non-Hispanic other), education level (\leq high school, some college, or college graduate), annual household income ($< \$35,000$, $\$35,000$ – $\$74,999$, $\$75,000$ – $\$99,999$, or $\geq \$100,000$), geographic region (Northeast, Midwest, South, or West) based on the Census regions [7], and marital status (married/domestic partnership or not married). Weight status was classified into three categories based on the respondent's self-reported height and weight, which were used to calculate body mass index (BMI): underweight/normal weight ($\text{BMI} < 25 \text{ kg/m}^2$), overweight ($\text{BMI} 25 \text{ to } < 30 \text{ kg/m}^2$), and obese ($\text{BMI} \geq 30 \text{ kg/m}^2$) [8]. Underweight and normal weight categories were combined into a single category because $< 2\%$ of participants were underweight.

Statistical analysis

Descriptive statistics were used to examine: 1) parents' preference for restaurants to offer child portions of all menu items, and 2) reasons for their preference among parents who wanted restaurants to offer child portions of all menu. χ^2 tests were used to examine the association between parents' preference and sociodemographic and behavioral characteristics. A p value of ≤ 0.05 was used to define statistical significance.

Multivariable logistic regression analysis was used to estimate adjusted odds ratios (ORs) and 95% confidence intervals (CIs) for the association between preference for child portions of all menu items and variables related to parental sociodemographic characteristics and weight status. All statistical analyses were performed with the Statistical Analysis Software (SAS) (version 9.3; SAS Institute Inc., Cary, NC, USA) and all analyses accounted for the sample weights.

RESULTS

Among the 1,299 parents included in the analytic sample, over half were 35–49 years old (53%), female (56%), and non-Hispanic white (63%). About 39% were college graduates, most were married or in domestic partnership (82%), and 37% had an annual household income of \$35,000–\$74,999. About 70% of all parents reported that they would like restaurants to offer smaller, lower-priced child portions of all menu items (**Table 1**). Based on the bivariate analyses, overall, the preference was not significantly different by parental sociodemographic characteristics or weight status. However, based on multivariable logistic regression analysis, the adjusted odds of preference for restaurants to offer child portions of all menu were significantly higher among Hispanic parents (OR, 1.95; 95% CI, 1.20–3.16 vs. non-Hispanic white), but significantly lower among parents with lower education level (OR, 0.64; 95% CI, 0.42–0.97 for \leq high school and OR, 0.69; 95% CI, 0.48–0.99 for some college vs. college graduate) and parents residing in the Midwest (OR, 0.61; 95% CI, 0.41–0.90) or West (OR, 0.58; 95% CI, 0.38–0.87) compared to those in the South (**Table 1**).

Among parents who would like restaurants to offer smaller, lower-priced children's portions of all menu items ($n = 897$), the top three reasons reported were: 1) wanting my child to eat healthier foods that are not offered on the children's menu (72.3%), 2) wanting my child to develop a taste for diverse foods (53.1%), and 3) ordering from the adult menu provides more options for my child (41.9%) (**Figure 2**).

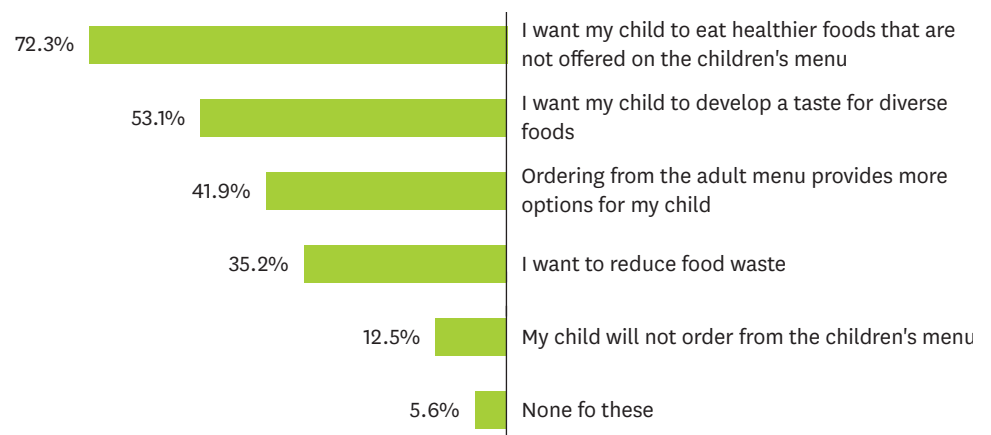


Figure 2. Reasons reported by parents who would like restaurants to offer smaller, lower-priced children's portion of all menu items ($n=897$).

Table 1. Characteristics of parents and their associations with preference for restaurants to offer smaller, lower-priced child portions of all menu items — SummerStyles survey, 2015

Parental characteristics	Total No. (weighted %)*	Would like restaurants to offer smaller, lower-priced child portion of all menu	
		Bivariate analysis [†]	Multivariate
		Yes	Yes
		% ± SE	Adjusted OR (95% CI)
Total sample (n = 1,299)		69.7 ± 1.6	
Age, yr			
18–34	283 (33.2)	70.5 ± 3.0	0.96 (0.62–1.49)
35–49	725 (53.0)	68.5 ± 2.2	0.83 (0.57–1.21)
≥ 50	291 (13.7)	72.1 ± 3.2	Reference
Sex			
Male	516 (43.8)	68.4 ± 2.5	Reference
Female	783 (56.2)	70.7 ± 2.1	1.14 (0.83–1.55)
Race/ethnicity			
White, non-Hispanic	941 (62.9)	68.4 ± 1.9	Reference
Black, non-Hispanic	115 (10.2)	62.6 ± 5.3	0.62 (0.38–1.04)
Hispanic	167 (17.8)	78.6 ± 3.7	1.95 (1.20–3.16)
Other, non-Hispanic	76 (9.1)	68.8 ± 6.7	0.93 (0.51–1.72)
Education level			
≤ High school	329 (31.9)	67.2 ± 3.2	0.64 (0.42–0.97)
Some college	417 (28.8)	67.3 ± 2.8	0.69 (0.48–0.99)
College graduate	553 (39.3)	73.4 ± 2.3	Reference
Annual household income			
≤ \$34,999	271 (19.9)	69.7 ± 3.6	0.85 (0.51–1.42)
\$35,000–\$74,999	489 (36.7)	68.1 ± 2.6	0.73 (0.49–1.11)
\$75,000–\$99,999	218 (16.3)	67.7 ± 4.0	0.72 (0.45–1.16)
≥ \$100,000	321 (27.1)	73.0 ± 3.0	Reference
Marital status			
Married/domestic partnership	1,064 (81.5)	69.2 ± 1.8	Reference
Not married	235 (18.5)	72.0 ± 3.8	1.21 (0.78–1.89)
Geographic regions			
Northeast	222 (16.5)	67.2 ± 4.0	0.66 (0.42–1.03)
Midwest	344 (22.0)	65.4 ± 3.3	0.61 (0.41–0.90)
South	458 (38.0)	74.6 ± 2.4	Reference
West	275 (23.6)	67.5 ± 3.6	0.58 (0.38–0.87)
Weight status			
Underweight/normal weight	472 (39.5)	69.4 ± 2.6	Reference
Overweight	404 (30.5)	69.1 ± 2.9	1.02 (0.70–1.47)
Obesity	432 (30.0)	70.7 ± 2.8	1.20 (0.82–1.75)

SE, standard error; OR, odds ratio; CI, confidence interval.

*Unweighted sample size and weighted percent are presented. Weighted percent may not add up to 100% because of rounding; [†]The χ^2 test was used for each variable to examine differences across categories, and p value was < 0.05.

DISCUSSION

In the present study, nearly 7 out of 10 U.S. parents with a child younger than 18 years, reported that they would like restaurants to offer smaller, lower-priced child portions of all menu items. It is unclear why Hispanic parents were twice as likely as white parents to say that they would like restaurants to offer small portions for children. One possibility may be related to the type of cuisine that Hispanic families consume when they eat out. If Hispanic families are more likely to eat at Mexican or other Hispanic restaurants, they may be accustomed to ordering adult-sized meals for their children even though they would prefer to have child portions, as these restaurants do not typically offer a children's menu [10].

In the present study, parents with lower education compared to college graduates were less likely to want child portions of all menu items. Parents who attained a lower education may

not know the importance of diet quality [11], or appropriate portions for their children may not be their main concern when eating out. Our findings showed that parents residing in the Midwest and West compared to the South were less likely to want child portions of all menu items. Potential reasons for these regional differences are unclear. The South has a higher obesity rate [12] and some poorer dietary patterns, such as higher consumption of sugar-sweetened beverages [13], than other regions in the U.S., which could be a driving factor for wanting more opportunities for their children to eat healthy when eating out.

In the current study, parents reported wanting child portions for all menu items primarily because they wanted their child to eat healthier foods that are not offered on the children's menu. Previously, among parents who did not purchase kids' meals, about 37% of parents responded that they were willing to purchase kids' meals if more healthy options were available in restaurants [14]. In a previous intervention study in 13 outlets of a full-service restaurant chain that serves more than 4 million customers annually, offering healthier children's menus resulted in growth in total revenue exceeding the average revenue growth in leading family dining chains for the same period [11]. Although the current study did not specifically ask about the healthfulness of restaurant meals, restaurants could consider adding child portions for all meals in the effort to provide a wider range healthier menu items for children [15,16].

To our knowledge, this is the first study to examine parents' preferences for children's portions of all restaurant menu offerings. However, this study has a few limitations. First, the *SummerStyles* survey used a sample of adults from an online consumer panel survey. Thus, current findings may not be generalizable to all U.S. parents. However, data were weighted to match the U.S. Current Population Survey proportions for sex, age, household income, race/ethnicity, household size, education level, census region, metro status, and internet access prior to joining the panel. Second, when asked about children's portions for all menu items, the study question did not exclude less healthy items for children, such as sugar-sweetened beverages or high-calorie foods from the menu. It is possible that some parents did not respond that they would like restaurants to offer children's portion of all menu items because they believe that children's menu items should be healthy. Lastly, assessment of acculturation might have provided understanding for why Hispanic parents were twice as likely to report wanting smaller, child-sized portions from full adult menus compared to non-Hispanic Whites. Future research is warranted to understand how acculturation might influence Hispanic parents' ordering habits for their children at the restaurants.

CONCLUSION

In conclusion, 7 out of 10 parents wanted smaller, lower-priced children's portions of menu offerings at restaurants, mainly because they wanted their children to have healthier foods that are not offered on the children's menu and to develop a taste for diverse foods. Restaurants can use this information in efforts to increase options for children.

REFERENCES

1. Poti JM, Popkin BM. Trends in energy intake among US children by eating location and food source, 1977–2006. *J Am Diet Assoc* 2011;111:1156–64.

[PUBMED](#) | [CROSSREF](#)

2. McGinnis MJ, Gootman JA, Kraak VI. Food marketing to children and youth: threat or opportunity? Available from <http://www.nationalacademies.org/hmd/Reports/2005/Food-Marketing-to-Children-and-Youth-Threat-or-Opportunity.aspx> [cited 2018 June 2]. 2005.
3. Powell LM, Nguyen BT. Fast-food and full-service restaurant consumption among children and adolescents: effect on energy, beverage, and nutrient intake. *JAMA Pediatr* 2013;167:14-20.
[PUBMED](#) | [CROSSREF](#)
4. Cohen DA, Lesser L, Wright C, Story M, Economos CD. Kid's menu portion sizes: how much should children be served? *Nutr Today* 2016;51:273-80.
[CROSSREF](#)
5. Anzman-Frasca S, Mueller MP, Sliwa S, Dolan PR, Harelick L, Roberts SB, Washburn K, Economos CD. Changes in children's meal orders following healthy menu modifications at a regional U.S. restaurant chain. *Obesity (Silver Spring)* 2015;23:1055-62.
[PUBMED](#) | [CROSSREF](#)
6. National Restaurant Association (US). Kids LiveWell program. Available from <http://www.restaurant.org/Industry-Impact/Food-Healthy-Living/Kids-LiveWell> [cited 2018 April 30].
7. Lopez NV, Foltz SC, Glenn ME, Lynskey VM, Patel AA, Anzman-Frasca S. Promoting healthier children's meals at quick-service and full-service restaurants: results from a pilot and feasibility study. *Appetite* 2017;117:91-7.
[PUBMED](#) | [CROSSREF](#)
8. Skafida V. The family meal panacea: exploring how different aspects of family meal occurrence, meal habits and meal enjoyment relate to young children's diets. *Sociol Health Illn* 2013;35:906-23.
[PUBMED](#) | [CROSSREF](#)
9. Knowledge Networks (US). KnowledgePanel® design summary. Available from [http://www.knowledgenetworks.com/knpanel/docs/knowledgepanel\(R\)-design-summary-description.pdf](http://www.knowledgenetworks.com/knpanel/docs/knowledgepanel(R)-design-summary-description.pdf) [cited 2016 February 9]. 2013.
10. Ayala GX, Mueller K, Lopez-Madurga E, Campbell NR, Elder JP. Restaurant and food shopping selections among Latino women in Southern California. *J Am Diet Assoc* 2005;105:38-45.
[PUBMED](#) | [CROSSREF](#)
11. Lawrence W, Skinner C, Haslam C, Robinson S, Inskip H, Barker D, Cooper C, Jackson A, Barker M. Why women of lower educational attainment struggle to make healthier food choices: the importance of psychological and social factors. *Psychol Health* 2009;24:1003-20.
[PUBMED](#) | [CROSSREF](#)
12. Centers for Disease Control and Prevention (US). New obesity prevalence maps. Available from <http://www.cdc.gov/obesity/data/prevalence-maps.html> [cited 2017 March 30]. 2016.
13. Park S, Onufrak S, Sherry B, Blanck HM. The relationship between health-related knowledge and sugar-sweetened beverage intake among US adults. *J Acad Nutr Diet* 2014;114:1059-66.
[PUBMED](#) | [CROSSREF](#)
14. Lee-Kwan SH, Park S, Maynard LM, Blanck HM, McGuire LC, Collins JL. Parental characteristics and reasons associated with purchasing kids' meals for their children. *Am J Health Promot* 2018;32:264-70.
[PUBMED](#) | [CROSSREF](#)
15. Kraak VI. US restaurant sector can promote healthy food environments to reduce obesity risk. *Am J Clin Nutr* 2018;107:288-90.
[PUBMED](#) | [CROSSREF](#)
16. Kraak VI, Englund T, Misyak S, Serrano EL. A novel marketing mix and choice architecture framework to nudge restaurant customers toward healthy food environments to reduce obesity in the United States. *Obes Rev* 2017;18:852-68.
[PUBMED](#) | [CROSSREF](#)