

Nutrition Labeling and Portion Size Information on Children's Menus in Fast-Food and Table-Service Chain Restaurants in London, UK

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ABSTRACT

Objective: To investigate meals, price, nutritional content, and nutrition and portion size information available on children's menus in fast-food and table-service chain restaurants in London, since the United Kingdom does not currently require such information but may be initiating a voluntary guideline.

Methods: Children's menus were assessed in 22 chain restaurants for portion size information, nutrition information, and price. The most healthful available meal was purchased and analyzed for nutritional content and portion size.

Results: Nutrition and portion size information was not provided in 67% of the restaurants. Fast-food restaurants were significantly cheaper, had smaller portion sizes than table-service restaurants, and provided fewer portions of fruit, vegetables, iron, and vitamin C.

Conclusions and Implications: Not all restaurants provided nutrition or portion size information. Differences in portion size and nutritional content between fast-food and table-service restaurants were established, and both were below recommendations. In the future, nutrition labeling in restaurants in the United Kingdom may provide consumers with the nutrition and portion size information necessary to help make appropriate choices.

Key Words: restaurants, children, menu, portion, nutrition (*J Nutr Educ Behav.* 2011;43:543-547.)

INTRODUCTION

The prevalence of obesity worldwide has increased, and in the United Kingdom (UK) in particular, it has more than doubled in the past 25 years. Today nearly a quarter of adults are obese and 32% of children aged 2-15 years are reported to be overweight or obese.¹ Changes in both dietary and physical activity behavior are regularly reported to be the main drivers of this obesity epidemic.² Changes in food intake habits have been particularly noticeable, as evidenced by a dramatic increase in the amount of food consumed outside of the home; more than 40% of food is consumed in this way.³ Restaurant meals typically provide larger portions that contain greater amounts of calories, fat, and salt than those prepared at home,⁴ causing speculation that eating out could be an important factor

in the incidence of obesity.⁵ In the past, food provided in restaurants, particularly for children, has often been of poor nutritional quality, as burgers, fries, and sub sandwiches are central to the children's menu in many restaurants.⁶ One study⁷ in the UK found that many of the menus marketed to children were high in energy, fat, saturated-fat, and salt and low in carbohydrate, fiber, and micronutrients. Similarly, a United States (US) study from Thurston County, Washington reported most restaurants had a lack of fruit, vegetables, and low-fat options on their menus for children.⁸

Many studies have shown that food and snack portion sizes have increased over the past decade in the UK, Europe, and the US.⁹⁻¹¹ Consequently, when faced with larger portion sizes, consumers usually respond by eating greater

amounts.¹² A recent study in the UK by the Institute of Grocery Distribution reported that 39% of adult participants (n = 1,067) stated they eat larger portions when eating out than when eating at home.¹³

Children are similarly influenced by portion size and are more likely to increase energy intakes when presented with larger portion sizes than when compared to toddlers; older children are more influenced by external/environmental cues.¹² Given the increase in portion sizes and the effects of this increase on the amount of food consumed, as well as the lack of information in this area, accurate portion size information could help make consumers aware of what they are eating and enable researchers and health professionals to correctly estimate energy and nutrient intakes. There have been a few studies in the UK that provide estimations of typical food portion sizes for children,¹⁴ however, information on actual portion sizes of food provided for children in restaurants is lacking. Furthermore, researchers have suggested that children's meals offered in fast-food and table-service restaurants in the US differ,¹⁵ as fast-food restaurants have

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smaller portion size and lower-fat options, but this difference has yet to be explored in the UK.

Consumer surveys in the US have shown that the majority of consumers would like to see portion size and nutrition information on menus,^{16,17} in accordance with the new US health care bill passed in March 2010 that requested chain restaurants with more than 20 outlets display nutritional information at the point of purchase, effective in 2011.¹⁸ In the European Union however, it has been claimed that there is a policy vacuum on legislation surrounding nutrition labeling in the private catering sector that includes fast-food restaurants, which, unlike packaged food, is not regulated.^{4,19}

Subsequently in the UK, this issue has been under review following a Food Standards Agency (FSA) consultation and the publication of the document, "The provision of calorie labeling at point of choice in catering outlets."²⁰ This publication refers to a guideline being tested by FSA to establish calorie and nutrition labeling guidelines for the catering industry in the UK.

Therefore, in view of the FSA's timely intention to introduce voluntary nutritional labeling in the UK and the sparsity of portion size data for children's meals in restaurants, the authors investigated the information available on children's menus and measured the nutrient content and portion size of the meals served in chain restaurants in London. In particular, this study investigated the most healthful meal options available and compared and contrasted the meals offered to children in fast-food and table-service restaurants and compared them to dietary recommendations.

METHODS

The study was conducted in London, UK and ethically approved by the host institution. Based on an Internet search, 22 restaurant chains were identified. The following search terms were used to find relevant chain restaurants in the London area: restaurant, children's menus, London. A wide array of chain restaurants was considered. The criteria for inclusion

were having a nationwide presence with 2 or more outlets in London and a specific children's menu. Where several outlets in London existed, the most central outlet was selected. There were 7 restaurants that were classified as fast-food (counter service), and 15 as table-service (non-fast-food) restaurants.

The authors examined the on-line presence of each of the 22 chain restaurants, and they collected information relating to nutrition information of children's menus and compared it with that available in the restaurant. The restaurants were all visited during July and August 2009, and the in-store availability of nutritional information was also explored. The meal identified by the researchers to be the "most healthful" option from the children's menu was purchased for analysis. The "most healthful" option was selected by assessing the cooking methods (eg, steamed, grilled, and baked was preferable to fried), the portions of fruit and vegetables present, the provision of whole grain food, and other information, such as added salt or sugar, stated on the menu where appropriate.

The purchased meals were ordered as takeout and brought to the research facility, where they were photographed and weighed with a calibrated scale (Salter 1004, Salter Housewares, Tonbridge, Kent, UK). All food items were recorded in grams to the nearest 0.1 g. Any mixed food items—such as salads, pasta dishes, and sandwiches—were separated and weighed. Each individual food item and its respective weight were entered into Dietplan 6 (Forestfield Software, East Sussex, UK, 2006) to allow nutrient analysis. Energy density was calculated for each meal based on the calorie content and portion size in grams. All the macronutrients were analyzed and reported here in addition to the following micronutrients; iron, zinc, calcium, vitamin A, and folate. Results of nutrient analysis were compared with nutrient-based standards for primary school children aged 5-11 years published by the Caroline Walker Trust.²¹ The nutritional data were transferred into SPSS (version 16.0, SPSS, Inc., Chicago, IL, 2008), and additional information such as name of restaurant, price, and availability of nutrition information on-line and in-store were

added. Where restaurants provided kcal data, these were compared with data ascertained from the authors' own analyses.

All variables analysed were normally distributed as determined using 1-way Kolmogorov-Smirnov with $\alpha = .05$, with the exception of cost, which was nonparametric. Mean \pm SD for portion size and the nutritional content of the meals are presented. Chi-square tests compared the availability of nutrition information on-line and in-store in fast-food and table-service restaurants, and *t* tests were used to compare portion size (g), calorie content (kcal), energy density (kcal/g), and the individual nutrient contents of fast-food restaurants and table-service restaurants. A paired *t* test was used to assess differences in the calories reported by restaurants and data ascertained from nutrient analysis performed for this study. The Mann-Whitney *U* test was used to look for a difference between the cost of food in fast-food and table-service restaurants. A significance level of $P < .05$ was adopted.

RESULTS

The presence and occurrence of nutritional labeling information on-line and in-store was investigated. It was revealed that 67% of restaurants surveyed did not offer nutrition information in-store and 57% of restaurants did not offer nutrition information on-line. A chi-square test revealed that fast-food restaurants offered significantly ($\chi^2 = 5.6$, $df = 1$, $P < .05$) more nutritional information in-store and on-line than table-service restaurants. From the restaurants that did provide nutrition information, it was found that the average meal was reported to contain 241 ± 146 kcal, however data from the authors' analysis found the average meal to contain 332 ± 89 kcal; this difference in kcal between the restaurant information and the present analysis was not significant.

Table 1 shows a comparison of food (excluding drinks) in fast-food and table-service restaurants in terms of the price, portion size, and nutrition content. There was a significant difference ($P < .05$) in price between fast-food and table-service restaurants, in

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