

Reported Influences on Restaurant-Type Food Selection Decision Making in a Grocery Store Chain

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ABSTRACT

Objective: To examine food decision-making priorities for restaurant-type foods at grocery stores and determine whether adding calorie information, as required by federal menu labeling laws, affected decision-making priorities.

Design: Natural experiment: intervention and control groups with baseline and follow-up.

Setting: Regional grocery store chain with 9 locations.

Participants: Participants (n = 393; mean age, 54.8 ± 15.1 years) were primarily women (71%) and Caucasian (95%).

Intervention: Data were collected before and after calorie information was added to restaurant-type foods at 4 intervention locations.

Main Outcome Measure(s): Primary influencers of food selection decision making for restaurant-type foods and frequency of use of nutrition information.

Analysis: Quantitative analysis examined the top 3 influencers of food selections and chi-square goodness of fit test determined whether the calorie labeling intervention changed food decision-making priorities. Qualitative data were used to describe responses.

Results: Taste, cost, and convenience were the most frequently reported influencers of restaurant-type food selections; 20% of participants rated calories as influential. Calorie labeling did not affect food selection decision making; 16% of participants in intervention stores noticed calorie labels. Qualitative explanations confirmed these findings.

Conclusions and Implications: Menu labeling laws increase access to calorie information; however, use of this information is limited. Additional interventions are needed to encourage healthier restaurant-type food selections in grocery stores.

Key Words: food selection, menu labeling, restaurant-type food (*J Nutr Educ Behav.* 2018;■■:■■–■■.)

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INTRODUCTION

Rates of obesity in the US have reached an all-time high, affecting nearly 40% of adults.¹ In addition to inadequate energy expenditure, excessive energy intake is an important contributor to the obesity epidemic.² Many factors influence individuals' nutrient intake and food selections,³ including knowledge about the nutrient content of food options and perceptions or beliefs about the consequences of consuming

certain foods.⁴ The impact of the consumption of foods prepared away from home on overall dietary intake has been increasing.⁵ The percentage of daily energy intake coming from foods prepared away from home (eg, at restaurants and other retail food establishments) almost doubled for Americans, from 17.7% of total energy intake in 1977–1978 to 31.6% in 2005–2008.⁵ These foods tend to be higher in energy and fat and lower in essential micronutrients than are foods

prepared at home.⁶ In addition, the greater frequency of eating foods prepared away from home has been associated with negative health consequences such as higher rates of overweight and obesity, weight gain, and type 2 diabetes.^{7,8}

One challenge associated with eating at restaurants or purchasing foods prepared away from home is that customers may not be aware of the preparation methods used or the nutrient content of the foods they are consuming. Cognitive behavioral theory, which has strong evidence to support its utility when applied to food selection and associated behavior change,⁹ proposes that both external and internal cues inform decisions about behavior. External (or environmental) cues such as nutrient labels provide information about the potential consequences of a food choice, and internal cues (eg, thoughts, emotions) provide recognition that

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experiencing or avoiding such consequences is desirable.^{3,9} Menu labeling laws that require establishments to make nutrient information available are intended to improve customers' awareness of the nutrient content of the foods; consistent with cognitive behavioral theory, increasing awareness of nutrient content should allow for more informed decisions regarding dietary intake and health.¹⁰

A federal menu labeling law was passed in 2014 that requires restaurants and other similar retail food establishments to provide calorie information at the point of purchase (on menus, menu boards, or packaging) for any food considered to be restaurant-type.¹¹ A restaurant-type food is defined as food prepared for immediate human consumption that is "Usually eaten on the premises, while walking away, or soon after arriving at another location."¹¹ Institutions that fall under this law include restaurants and grocery and convenience stores with ≥ 20 locations that offer restaurant-type foods. Establishments will be required to comply with this law by May, 2018.¹² Research on the effect of calorie labeling on food selections in restaurants has been mixed; most found a slight although nonsignificant decrease in calories purchased or consumed.¹³⁻¹⁵

To date, the effects of calorie labeling on selections of restaurant-type foods at locations other than restaurants (such as grocery stores) have not yet been examined. Restaurant-type foods sold at grocery stores include ready-to-eat salads, sandwiches, wraps, and meals, as well as individual servings of bakery goods such as muffins, bagels, cookies, and all foods purchased from salad and hot food bars.¹¹ Currently, until the federal menu labeling law is enacted, restaurant-type foods sold in grocery stores are exempt from nutrition labeling laws and are not required to provide nutrition information.¹⁶ A majority of grocery stores in the US now sell restaurant-type foods.¹⁷ A recent survey published by *Consumer Reports* found that half of their subscribers (over 63,000 individuals) reported purchasing restaurant-type foods from grocery stores.¹⁸ In addition, they reported that the sales of restaurant-type foods are increasing at double the rate of overall

store sales and account for \$29 billion in sales per year.¹⁸

Because restaurant-type foods from grocery stores comprise a growing portion of food consumed, it is important to examine the process by which customers select these foods. Therefore, the primary purpose of this study was to examine which factors customers consider when selecting restaurant-type foods in a grocery store chain. The secondary purpose was to determine whether the availability of calorie labeling on restaurant-type foods influenced customers' reports of food selection decision making. Consistent with cognitive behavioral theory, the hypothesis was that in stores where calorie labeling was made available (vs stores where it was not), a greater proportion of customers would report calories as being influential to their restaurant-type food selection decision making.

METHODS

Study Design and Participants

All study procedures were approved by the institutional review board at the University of Scranton. Data were collected at all 9 locations of a regional grocery store chain, Gerrity's Supermarkets. Four locations were assigned to receive a calorie labeling intervention (selected by the owner of the grocery store chain). The researchers analyzed recipes for all of the restaurant-type foods provided at the stores using NutriBase 16 dietary assessment software (version 16.21, NutriBase 2016, CyberSoft, Inc, Phoenix, AZ). The calorie information was provided to Gerrity's Supermarkets, which then designed and printed the labels that were added to the foods (Figure). The 4 intervention locations added calorie labels to the restaurant-type foods in the deli/bakery section in March, 2017. Of interest were the proportions of subjects who reported (vs did not report) that calories and other aspects of bakery/deli restaurant-type foods influenced their purchase decisions.

Customers shopping in the deli/bakery section (where the restaurant-type food products were located) were approached by trained research assistants to invite them to participate in this study. Customers had to speak



Figure. Example of calorie labeling used in the intervention locations.

English and be aged ≥ 18 years to participate. Interested customers had the informed consent information verbalized to them. If they agreed to participate, they were asked to respond to the survey described subsequently. Data were collected from participants at 2 time points, with different individuals comprising the samples at each time point. The target sample size for each time point was 200 individuals; approximately half of the sample was recruited from intervention locations (vs control locations) at each time point. The researchers selected the target sample size at each time point to maximize the power to detect small to medium effects and to fit within the available time frame for collecting data before the introduction of calorie labels on restaurant-type foods in collaborating supermarkets. However, 1 location that was assigned to the intervention did not comply with calorie labeling within the study timeline and thus was switched to a control location in the database and analyses. This resulted in more control than intervention locations (5 vs 4, respectively) and the final sample included more control than intervention participants (233 vs 160, respectively).

Baseline survey data were collected in February, 2017 ($n = 193$) and postintervention surveys were collected in April, 2017 ($n = 200$). Consequently, the final sample was composed of the following 4 groups: baseline control ($n = 113$), baseline intervention ($n = 80$), postintervention control ($n = 120$), and postintervention follow-up ($n = 80$).

Survey Instrument

All surveys included the same 8 questions. The first 2 asked participants to

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