

Predictors of Total Calories Purchased at Fast-food Restaurants: Restaurant Characteristics, Calorie Awareness, and Use of Calorie Information

Ian Brissette, PhD¹; Ann Lowenfels, MPH¹; Corina Noble, MS²; Deborah Spicer, RD, MPH¹

ABSTRACT

Objective: To examine purchase patterns at fast-food restaurants and their relation to restaurant characteristics, customer characteristics, and use of calorie information.

Design: Cross-sectional survey.

Setting: Fast-food restaurants in New York State.

Participants: Adult fast-food restaurant customers (n = 1,094).

Variables Measured: Restaurant characteristics (fast-food chain type, presence of calorie labels, and poverty of location), participant characteristics (demographics, calorie knowledge, awareness, and use), and customer purchasing patterns (ordering low-calorie or no beverage, small or no fries, or < 3 items) were used as predictors of total calories purchased.

Analysis: Multiple regression.

Results: In a regression model including restaurant and customer characteristics, fast-food chain customer age, sex, calorie use, and calorie awareness were independently associated with total calories purchased (all $P < .05$; model $R^2 = .19$). When 3 purchasing patterns were added to the model, calorie use ($P = .005$), but not calorie awareness, remained associated with total calories purchased. The 3 purchase patterns collectively accounted for the majority of variance in calorie totals (Δ model $R^2 = .40$).

Conclusions and Implications: Promoting use of calorie information, purchase strategies, and calorie awareness represents complementary ways to support lower-calorie choices at fast-food chains.

Key Words: fast food, restaurant, calorie label, overweight, point of purchase (*J Nutr Educ Behav.* 2013;45:404-411.)

INTRODUCTION

The dramatic increase in the prevalence of obesity during the past 3 decades has moved it to the forefront of current public health priorities in the United States (US). Obesity contributes to diabetes and cardiovascular disease and is 1 of the leading preventable causes of death in the US.¹ Health care to treat obesity-related conditions costs the US an estimated \$75 billion each year in 2003 dollars² and 32% of the adult population is currently obese.³ One factor contributing to the increase in obesity has been the

shift in where people purchase and consume food. Consumption of out-of-home calories has increased significantly during the past few decades⁴ and Americans now spend about half of their food budget in restaurants.⁵ Purchases from fast-food venues have also increased⁶ and frequent fast-food consumption has been linked to high caloric intake and obesity.⁷⁻¹⁰

Calorie labeling at the point of purchase has been identified as a way to inform consumers, improve dietary choices, and reduce the number of calories purchased and consumed at

restaurants. This strategy is consistent with public health practice emphasizing environmental and policy change as a means for chronic disease prevention, and with nutrition practice and theory regarding the contribution of nutrition information to dietary behavior.^{11,12} Numerous cities, counties, and states have already mandated that restaurants in their jurisdictions post calorie labels prominently for customers to use.¹³ Nationally, provisions included in the Patient Protection and Affordable Care Act of 2010 will require calorie labels in all large chain restaurants with ≥ 20 outlets in the US.¹⁴

Previous studies have demonstrated an association between calorie labeling at the point of purchase and increased customer awareness of calories¹⁵⁻¹⁷ and between self-reported use of posted calorie labels and purchasing fewer calories.^{18,19} The evidence regarding the impact of calorie labels on customer behavior alone has been mixed.²⁰ The strongest evidence of an association between calorie labels

¹Division of Chronic Disease Prevention, New York State Department of Health, Albany, NY

²Center for Human Services Research, State University of New York at Albany, Albany, NY

Address for correspondence: Ian Brissette, PhD, Bureau of Chronic Disease Evaluation and Research, New York State Department of Health, 1084 Corning Tower, Empire State Plaza, Albany, NY 12237; Phone: (518) 473-4414; Fax: (518) 474-2086; E-mail: ifb01@health.state.ny.us

©2013 SOCIETY FOR NUTRITION EDUCATION AND BEHAVIOR

<http://dx.doi.org/10.1016/j.jneb.2013.01.019>

and purchasing behavior has been found in experimental studies with specific menus,²¹ for particular customers,²² and at specific restaurant chains.¹⁹

The current study was completed as part of a national chronic disease prevention initiative, *Communities Putting Prevention to Work*. It examined the purchase patterns at fast-food restaurants and their relation to restaurant characteristics, customer characteristics, and use of calorie information. The customer and restaurant characteristics measured were informed by both social cognitive²³ and social ecological²⁴ theories of behavior, which collectively emphasize the independent contributions of the individual, the environment, and the individual–environment interaction to behavior. It was expected that total calories purchased at fast-food restaurants would be independently associated with customer characteristics (individual) and restaurant characteristics (environment), and with use of calorie information during purchase decisions (individual–environment interaction). The current study also examined the extent to which purchase patterns could account for variations in total calories purchased. It was expected that the association between use of calorie information and the total amount of calories purchased could be partially accounted for by 3 purchase patterns that represent strategies for purchasing fewer calories: ordering low- or no calorie beverages, small or no fries, and < 3 items.

METHODS

Design and Sampling

This study was completed with baseline data from a pre–post study designed to evaluate a media campaign promoting awareness and use of calorie labels posted at fast-food venues in New York State (NYS). Five counties were selected for inclusion. These included the 3 counties in NYS (exclusive of New York City) that required chain restaurants to label calories at the time of data collection (Albany, Schenectady, and Ulster), 1 county in NYS that had plans to require calorie labels right after the data collection time frame (Suffolk), and 1 county that had no plans to require calorie la-

bels (Oneida County). Oneida County was selected because it was similar in population size and urban/rural classification and geography to the 3 counties with calorie labels (Albany, Schenectady, and Ulster) but distant enough from them to avoid contamination.

A list of licensed food service establishments from the NYS Department of Health was used to identify the restaurant sample. The sampling frame was limited to fast-food chains that had restaurant sites in each of the study counties: McDonald's, Burger King, Wendy's, and Five Guys ($n = 185$). Eligibility criteria for restaurant sites included having an entrance suitable for data collection, being compliant with their county's calorie labeling policy, and allowing onsite data collection. Eligibility was determined by conducting site visits and meeting with restaurant managers. Restaurants from at least 3 of the 4 fast-food chains were included in each county's sample.

A convenience sample of 70 restaurants was reviewed for eligibility. Of the 70, 17 sites (24%) were determined to be ineligible because they did not have entrances suitable for data collection ($n = 12$), were not in compliance with their county's calorie labeling policies ($n = 3$), or were not located at their listed street address ($n = 2$). An additional 22 sites (31%) did not permit data collection to occur on their properties. Sites that permitted data collection were located in zip codes with poverty levels comparable to sites that did not (means of 26% and 23%, respectively). Data collection occurred in 31 sites (58% of those that were reviewed for eligibility), including 8 in Suffolk County, 5 in Albany County, and 6 each in Schenectady, Ulster, and Oneida counties.

Data Collection and Measures

Data collection occurred between September 22 and November 10, 2010. Four teams of 3 data collectors were hired and trained to interview customers and collect their receipts. Recruitment and data collection usually occurred outside restaurant sites during lunch hours (between 12:00 and 2:30 PM) on Mondays through Fridays. To ensure a consistent sample

size from each site, it was necessary to conduct some surveys during dinner hours (between 4:30 and 7:00 PM). Across the sites, 8% of participants were recruited during dinner hours. Drive-through customers were excluded from the study for safety reasons. As adult customers entered, data collectors explained that they were paying \$2 for meal receipts and survey responses. To minimize response bias, data collectors did not mention the topic of the survey to customers as they entered. As adult customers exited, data collectors asked them to provide their receipts and complete a short interview. The customer survey and methods for collecting receipts were based on instruments used in previous studies.^{16–18} All interviews were conducted in English. The survey process took about 5 minutes to complete. Data collection continued until 35–40 surveys were completed at each site. Because all adult customers were invited to participate in the survey, response rates were calculated by comparing the number of surveys obtained to the number of adult customers who entered the restaurants during data collection. Across the 31 restaurant sites, 52% of all pedestrian customers recruited participated. Response rates at individual restaurant sites ranged from 27% to 73%. A total of 1,096 fast-food customers provided receipts and completed interviews. Data from 2 customers were eliminated from the final analysis because of problems with their receipts, which resulted in an overall study sample of 1,094. The protocol and measures were reviewed and approved by the Institutional Review Board at the NYS Department of Health (study number 10-045). Talking points were used to explain that study participation was anonymous and voluntary; signed consent forms were not required.

Information about the items customers purchased was based on the customer survey and the meal receipts. Data collectors asked customers, "Can you tell me what you ordered for yourself today?" and wrote their responses on survey forms. They also reviewed and collected meal receipts. A combination of self-report and meal receipt was used to validate item sizes (eg, small vs large fries) and item customizations (eg, diet vs regular soda).

Download English Version:

<https://daneshyari.com/en/article/361271>

Download Persian Version:

<https://daneshyari.com/article/361271>

[Daneshyari.com](https://daneshyari.com)