

Features in Grocery Stores that Motivate Shoppers to Buy Healthier Foods, ConsumerStyles 2014

Latetia V. Moore¹ · Courtney A. Pinard² · Amy L. Yaroch²

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Abstract We examined nine features in grocery stores shoppers reported motivated them to purchase more healthful foods in the past month. Features were compiled from common supermarket practices for each of the 4 Ps of marketing: pricing, placement, promotion, and product. We examined percentages of the features overall and by shopping frequency using Chi square tests from a 2014 cross sectional web-based health attitudes and behaviors survey, ConsumerStyles. The survey was fielded from June to July in 2014. Participants were part of a market research consumer panel that were randomly recruited by probability-based sampling using address-based sampling methods to achieve a sample representative of the U.S. population. Data from 4242 adults ages 18 and older were analyzed. About 44 % of respondents indicated at least one feature motivated them to purchase more healthful foods. Top choices included in-store coupons or specials (20.1 %), availability of convenient, ready-to-eat more healthful foods (18.8 %), product labels or advertising on packages (15.2 %), and labels or signs on shelves that highlighted more healthful options (14.6 %). Frequent shoppers reported being motivated to purchase more healthful foods by in-store tastings/recipe demonstrations and coupons/specials more often than infrequent shoppers. Enhancing the visibility and appeal of more healthful food items in grocery stores may help improve dietary choices in

some populations but additional research is needed to identify the most effective strategies for interventions.

Keywords Healthful foods · Marketing · Grocery stores · Motivation

Introduction

Although nutrition related chronic diseases such as cardiovascular disease, type 2 diabetes, obesity, and some cancers are common, costly, and preventable [1], dietary quality remains consistently poor [2]. Americans spend approximately half of their food dollars, about \$673 billion dollars in 2012, on food for consumption at home [3]. About 80 % of these food dollars are spent at supermarkets, supercenters, and warehouse clubs [4]. Living closer to these “larger” retailers has been associated with better dietary quality [5, 6]. However, few Americans actually consume adequate amounts of more healthful foods encouraged by the Dietary Guidelines, such as fruits and vegetables, whole grains, low fat dairy, and foods low in solid fats and added sugars [7, 8] in spite of the fact that almost three-quarters of the United States (U.S.) population lives near these types of retailers [5].

Supermarkets and supercenters are often designed to encourage impulse purchases [9]. The majority of foods that are promoted tend to be energy-dense and nutrient-poor and these promotions may result in up to 39 % of purchases according to one study [10, 11]. With supermarkets offering almost 44,000 foods and beverages; [12] identifying the best choices may be difficult and often times overwhelming for shoppers [9, 12, 13]. Changing how foods are offered in grocery stores may ultimately

✉ Latetia V. Moore
lvmoore@cdc.gov

¹ Division of Nutrition, Physical Activity and Obesity, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, 4770 Buford Hwy NE MS F-77, Atlanta, GA 30341, USA

² Gretchen Swanson Center for Nutrition, Omaha, NE, USA

make it easier for individuals to make more healthful choices and improve their overall dietary quality [14].

Various grocery-store-based interventions [15, 16] and frameworks [13] for improving food and beverage selections in grocery stores have been proposed. The 4 P's of marketing framework (product, placement, price and promotion) in particular has been used to roughly organize the multitude of strategies that may be potentially viable for public health intervention [17, 18]. However, it is less clear which of these four strategies should initially be focused on to encourage shifts in current poor dietary practices, especially in light of limited public health funding. To streamline potential promising areas where public health investment may help consumers make more healthful choices, we compiled a list of common practices supermarkets offer in their stores that may promote more healthful choices from several sources [12, 17, 19, 20] for each of the 4 Ps of marketing: pricing, placement, promotion, and product [17, 18]. We then asked consumers to report via a consumer opinion panel, which, if any, of the practices motivated them to purchase more healthful foods in the past month and examined responses by selected demographics.

Methods

We used a 2014 web-based health attitudes and behaviors survey, ConsumerStyles, to explore which grocery store features consumers reported that motivated more healthful purchases. ConsumerStyles is conducted by the public relations firm, Porter Novelli Public Services, (1909 K Street NW, Washington, DC, 20006) and was fielded from June to July in 2014 among 6713 adults ages 18 and older who had previously answered another web-based survey in March and April of 2014.

Participants were part of a 55,000-member market research consumer panel. Members were randomly recruited by probability-based sampling using address-based sampling methods to achieve a sample representative of the U.S. population. A random sample of 7873 panelists ages 18 or older and a supplemental sample of 3145 panelists with children ages 12–17 ($n = 11,018$) were invited to complete an initial survey. The subsequent survey, ConsumerStyles, was sent to a random sample of those who answered the initial survey. Sixty-one percent completed the initial survey and 69 % completed the ConsumerStyles ($n = 4269$ of 6139). Respondents received reward points worth approximately \$10 and were eligible to win a prize. Data were weighted to match the 2014 U.S. Current Population Survey proportions for sex, age, household income, race/ethnicity, household size, education level, census region, metro status, and whether or not a

respondent had internet access prior to joining the panel. Analysis of these data was exempt from institutional review board approval because de-identified data was licensed post-collection from Porter Novelli.

ConsumerStyles participants were asked 'Did any of the following at your primary food store motivate you to buy more healthful foods in the past month?'. More healthful foods were defined in the question as fruits and vegetables, whole grains, low-fat dairy products, and foods lower in sodium, sugar, and fat to be consistent with foods and beverages encouraged in the 2010 Dietary Guidelines [7, 8]. Respondents could select up to nine options related to product, placement, promotion, and price [17, 18]. Two response options were product specific: (1) availability of convenient, ready-to-eat more healthful foods and (2) product labels or advertising on packages. Two options were placement related: (3) attention-grabbing more healthful food displays and (4) check-out lanes with only more healthful foods. Three options were promotion related: (5) labels or signs on shelves that highlighted more healthful foods, (6) in-store tastings and recipe demonstrations, and (7) in-store nutrition education. The remaining two response options were price related: (8) in-store coupons or specials and (9) mobile apps with digital coupons or recipes. Alternatively, respondents could select that none of the listed features motivated them or these features were not offered.

The percentage of participants selecting each feature was assessed overall by self-reported frequency of primary food shopping at supermarkets and supercenters and selected respondent demographics. Frequency of shopping was categorized as frequent (once per week or more) or infrequent (2–3 times per month or less). Demographics included age in years (18–34, 35–49, 50–64, 65 and over), sex, race/ethnicity (non-Hispanic white, non-Hispanic black, Hispanic, and other non-Hispanic), education (less than high school, high school, some college, and bachelor's degree or higher), and annual household income (less than \$20,000, \$20–\$39,999, \$40–\$59,999, \$60,000 or more). Of the 4269 respondents who completed the ConsumerStyles Survey, 27 respondents were excluded because of missing values. Chi square tests were calculated using Statistical Analysis Software (version 9.3, 2010, SAS Institute, Inc.) to explore weighted differences by frequency of shopping and demographics. A Bonferroni correction was used to set the significance cut-off at 0.001.

Results

Forty-two percent of respondents indicated that at least one feature motivated them to buy more healthful foods in the past month with significant differences by frequency of

shopping, sex, and education (Table 1). Those who shopped once per week or more, females, and those with higher educational levels were more likely to report that features in stores motivated them to make more healthful purchases than those who shopped less frequently, males, and those with lower levels of education, respectively. Few respondents (3 %) indicated that their grocery store did not have any of the features surveyed.

Among those who had any of the features included in the survey in their grocery stores (96 %), most (56 %) indicated that none of the features motivated them to purchase more healthful foods in the past month (Fig. 1). Those who did their primary food shopping at supermarkets less frequently were more likely to indicate that none of the features motivated them compared to those who shopped frequently (60.7 % versus 51.7 %, p value < 0.001). In-store coupons

Table 1 Percent reporting one or more features in grocery stores motivated them to make more healthful purchases in the past month by selected characteristics, ConsumerStyles 2014

	N (%) ^a	% Reporting 1 or more features motivated purchases ^b	% Reporting no features offered
Overall	4242 (100 %)	42.4 %	2.6 %
Frequency of shopping			
≥1 per week or more	2276 (53.7 %)	47.0 %	2.4 %
≤2–3 times per month	1966 (46.3 %)	37.6 %	2.7 %
<i>p</i> value ^c		<.0001	0.5997
Age (years)			
18–34	718 (16.9 %)	43.3 %	2.2 %
35–49	1163 (27.4 %)	45.0 %	2.6 %
50–64	1432 (33.8 %)	41.4 %	2.5 %
≥65	929 (21.9 %)	38.8 %	3.3 %
<i>p</i> value		0.1380	0.6561
Sex			
Male	2071 (48.8 %)	36.0 %	2.4 %
Female	2171 (51.2 %)	48.3 %	2.8 %
<i>p</i> value		<.0001	0.4908
Race/ethnicity			
Non-Hispanic White	3192 (75.3 %)	41.0 %	2.7 %
Non-Hispanic Black	402 (9.5 %)	43.6 %	2.2 %
Non-Hispanic Other	233 (5.5 %)	50.6 %	3.7 %
Hispanic	415 (9.8 %)	43.6 %	1.6 %
<i>p</i> value		0.1113	0.4886
Education			
<High school	296 (7.0 %)	40.9 %	2.7 %
High school	1241 (29.3 %)	36.1 %	2.4 %
Some college	1311 (30.9 %)	43.3 %	2.2 %
≥Bachelor's	1394 (32.9 %)	48.6 %	3.1 %
<i>p</i> value		<.0001	0.6375
Household Income			
<\$20,000	509 (12.0 %)	35.9 %	2.4 %
\$20–\$39,999	878 (20.7 %)	40.3 %	2.2 %
\$40–\$59,999	759 (17.9 %)	45.4 %	2.9 %
≥\$60,000	2096 (49.4 %)	43.9 %	2.7 %
<i>p</i> value		0.0138	0.8980

Weighted to the 2014 U.S. Current Population Survey unless otherwise noted

^a Unweighted number of participants

^b Among those who reported that their grocery store offered at least one of the features asked about in the survey (n = 4134)

^c *p* value for differences in percentages using Chi square tests

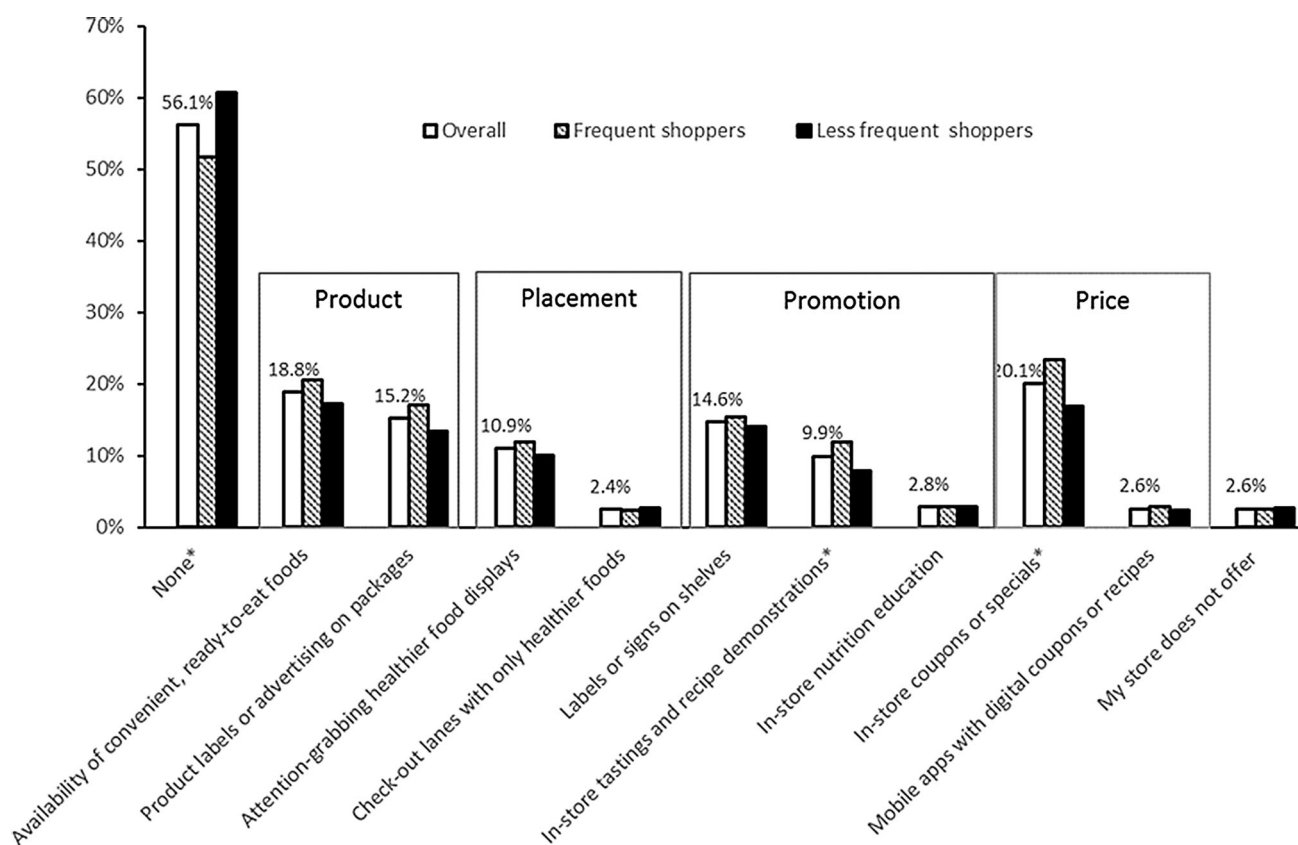


Fig. 1 Self-reported features that motivated more healthful purchases in the past month by frequency of shopping, ConsumerStyles 2014 (N = 4134). **p* value ≤ 0.001 for differences in percentages by frequency of shopping using Chi square tests

or specials, availability of convenient, ready-to-eat more healthful foods, product/packages labels or advertising, and shelf labels or signs were the most commonly reported features that respondents indicated motivated them (15–20%). In-store tastings/recipe demonstrations and attention-grabbing displays motivated approximately 10% of respondents each. Healthy checkout lanes, in-store education, and mobile apps were the features respondents reported were the least likely to motivate them (2–3%). Those who shopped frequently more often indicated in-store coupons/specials and tastings/demonstrations motivated them to purchase more healthful foods than those who shopped less frequently (*p* value < 0.001).

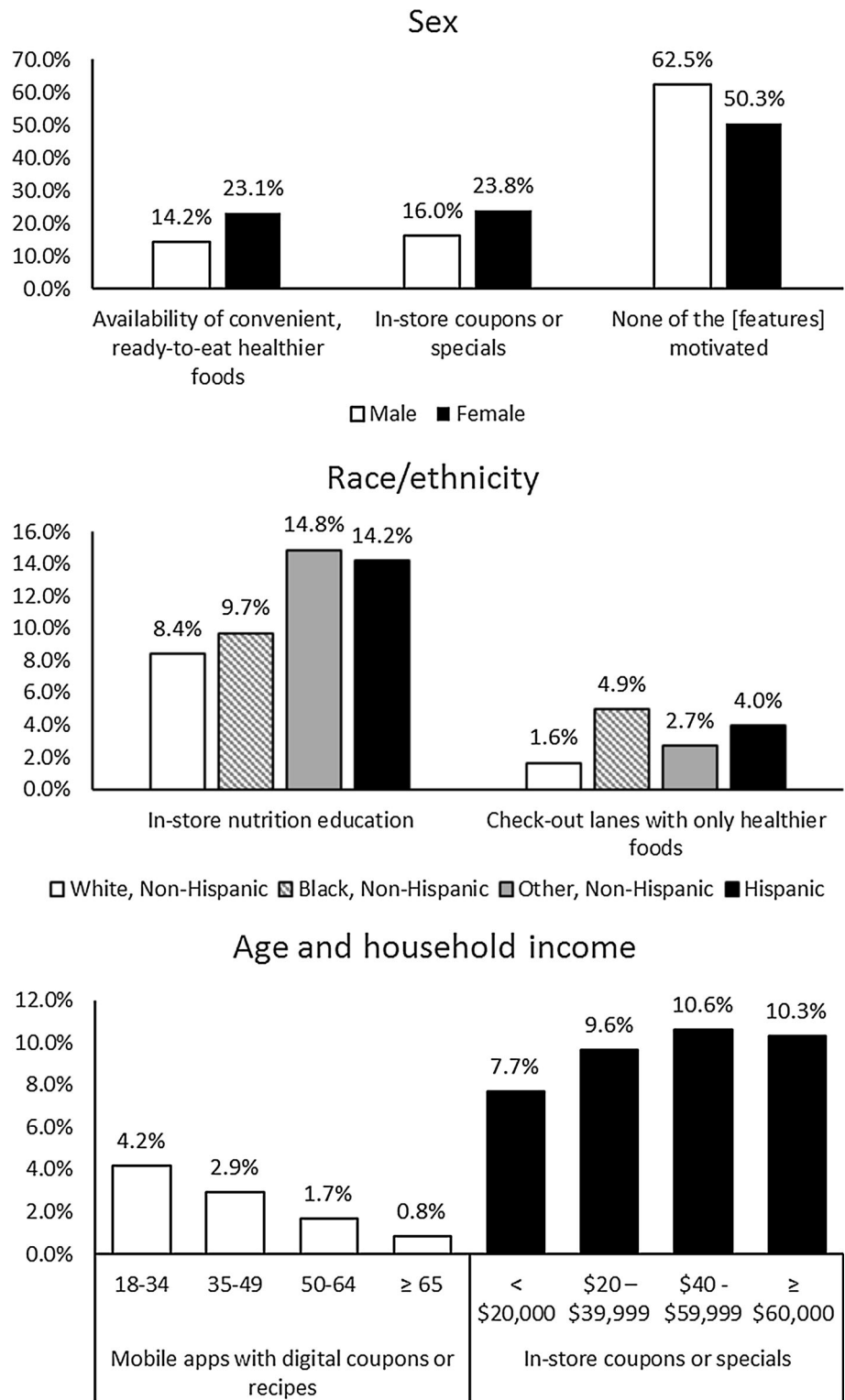
Reported features varied significantly by only a few demographic characteristics as shown in Fig. 2 (*p* values for differences between subgroups ≤ 0.001). Females were more likely to indicate that availability of convenient, ready-to-eat more healthful foods and in-store coupons/specials motivated them than males. Hispanic respondents were more likely to report that in-store nutrition education motivated them to purchase more healthful foods (8–10% of non-Hispanic whites and blacks, vs. 14–15% of Hispanics and other non-Hispanic racial/ethnic groups).

Discussion

The findings from the current study indicated that in-store marketing strategies such as coupons, availability of more healthful options, and product labeling on either the package or the shelf were more likely to motivate purchasing of more healthful foods than other marketing strategies. This is consistent with a recent trend among grocery stores offering features that encourage consumers to select more healthful options [20]. Moreover, those who frequented supermarkets and supercenters once a week or more reported being motivated by in-store marketing strategies to a greater degree than less frequent shoppers. However, most respondents indicated none of the features we included in the survey motivated them.

Public health traditionally focused on the consumption of foods and where they are acquired but not necessarily how they were acquired or the decision processes behind food purchases. While we used the 4 Ps of marketing and prior work to select features to include in this survey, new models of behavior change may detail how to nudge people gently, and “stealthily”, toward more healthful food choices [13]. This can occur by changing what choices are

Fig. 2 Features in grocery stores that motivated more healthful purchases by selected demographics, ConsumerStyles 2014 (N = 4134). *p* value < 0.001 for differences between subgroups using Chi square tests



offered, how choices are made, how choices are communicated, and how intentions are reinforced [13]. The results of the current study can help inform which behavior change strategies may be helpful in guiding public health

investment to make healthy choices easier. Future research efforts could employ new frameworks like the above either in conjunction or separately with other models [14] to build evidence-based recommendations on how to improve more

healthful food choices in the retail setting and inform what role public health professionals can play in promoting more healthful food choices within supermarkets.

The a priori list of features in grocery stores may have led to underreporting. Evidence indicates people may not believe or are willing to admit that they can be influenced by external cues or are unaware of the influences these factors may have on their consumption [21]. In addition, the term “more healthful foods” may have resulted in a positive reporting bias among participants, as self-report of diet-related factors is generally prone to social desirability biases. Another limitation is that the findings may not be generalizable to the U.S. population since the unweighted sample was older, had a higher percentage of non-Hispanic whites, and were more educated than the overall 2014 U.S. population [22]. Previous research has found a general equivalence between results on select measures between random-digit dial and consumer panel approaches [23]. Finally, we were not able to distinguish between what is more motivating versus what the shopper had more exposure to especially for infrequent shoppers.

Psychological factors that influence the decision-making process increase the difficulty of making more healthful choices [13, 14]. If we can better understand the appropriate public health role in food purchasing decisions, we may be able to shift persistently poor dietary practices and reduce nutrition related diseases. This research signifies a need for further investigation of shopper characteristics and decision-making strategies that are appropriate for larger scale public health intervention to identify best practices and strategies for motivating more healthful purchases.

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