

Eat Right–Live Well! Supermarket Intervention Impact on Sales of Healthy Foods in a Low-Income Neighborhood

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ABSTRACT

Objective: To evaluate a multifaceted supermarket intervention promoting healthier alternatives to commonly purchased foods.

Design: Sales of 385 foods promoted between July and October, 2012 in the *Eat Right–Live Well!* intervention supermarket were compared with sales in a control supermarket.

Setting: Two supermarkets in geographically separate, low-income, urban neighborhoods.

Participants: One control and 1 intervention supermarket.

Intervention: Product labeling, employee training, community outreach, and in-store promotions, including taste tests.

Main Outcome Measures: Number of items sold; absolute and percent differences in sales.

Analysis: Difference-in-difference analyses compared absolute and percent changes between stores and over time within stores. Sub-analyses examined taste-tested items and specific food categories, and promoted items labeled with high fidelity.

Results: Comparing pre- and postintervention periods, within-store difference-in-differences for promoted products in the intervention store (25,776 items; 23.1%) was more favorable than the control (9,429 items; 6.6%). The decrease in taste-tested items' sales was smaller in the intervention store (946 items; 5.5%) than the control store (14,666 items; 26.6%). Increased sales of foods labeled with high fidelity were greater in the intervention store (25,414 items; 28.0%) than the control store (7,306 items; 6.3%).

Conclusions and Implications: Store-based interventions, particularly high-fidelity labeling, can increase promoted food sales.

Key Words: nutrition, food preferences, health promotion, food economics, healthy food (*J Nutr Educ Behav.* 2015; ■:1-10.)

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INTRODUCTION

The role of food environments (at both the neighborhood and store level) in low-income consumers' purchasing and consumption of food has

been studied over the past 15 years, with mixed results.¹⁻³ Low-income neighborhoods often have few options for purchasing healthier foods whereas they have an abundance of opportunities to purchase energy-

dense foods⁴ that are implicated in poor health outcomes including obesity.^{1,5} Supermarkets are often used as a proxy for healthy food access because of the variety and healthfulness of food available, although there are recognized limitations of that assumption.³ The dearth of grocery options in urban poor communities may contribute to racial and socioeconomic health disparities in which the largest gaps exist between ideal and attained goals for fruit and vegetable consumption in low-income and ethnic minority populations of color.^{6,7} Even, and especially, when numbers of supermarkets are limited, their preponderance in the US and their critical role in food purchasing^{8,9} lead to their being viewed as promising venues through which healthy food purchasing can be encouraged.¹⁰

A social ecological framework delineating the influences on what people eat spans from the individual

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to the macro-level environment and highlights the role of supermarkets as an important component in the complex interplay of factors affecting eating behaviors.¹¹ Using this framework, the intervention *Eat Right–Live Well!* (ERLW) was based on nutritional education by emphasizing knowledge transfer, eg, at the level of the individual (through recipe cards, healthy eating tours, staff training, etc); at the store level (through signage, advertising the intervention's promotions and the labeling of healthy products, etc); and at the level of the neighborhood (through community educational events, etc). Through this multifaceted approach, ERLW combined health education strategies with structural changes such as pricing and stocking of healthier foods.¹² To date, relatively little research has evaluated the impact of such supermarket interventions on food sales in large stores after comprehensive implementation and combination of these approaches.¹³

The study aim was to fill this gap by evaluating the effects of ERLW, a multifaceted supermarket intervention, on sales of promoted items in a supermarket located within in a primarily African American low-income neighborhood of Baltimore.

METHODS

The researchers compared food sales for promoted healthy foods or foods that were deemed to be healthier alternative products (eg, a low-sodium version) between an intervention and control supermarket. ERLW was implemented between April and December, 2012, after which sales of promoted foods were evaluated. Hereafter, these are referred to as promoted foods or promoted healthy foods, although technically some substitutions were more healthy alternatives (eg, baked chips in place of regular chips or diet soda in place of regular soda). The intervention supermarket was located in Southwest Baltimore, where residents are 76% African American, 33% are single-parent households, 70% of adults are aged > 25 years with a high school degree or less, 20% of residents are unemployed, and the average life expectancy is 65

years. In the intervention store during 2012, approximately 62% of all purchases were made using the US Government Supplemental Nutrition Assistance Program. Residents in the control supermarket in the Northeast Baltimore neighborhood were demographically similar (87% African American, 32% single-parent households, 63% of adults aged > 25 years with a high school degree or less, life expectancy of 71 years, and 14% unemployed).¹⁴ At the control store in 2012, approximately 56% of all purchases were made using the Supplemental Nutrition Assistance Program. The 2 stores were selected because they are both full-service supermarkets, are under the same ownership and management, and stock similar inventory. This allowed the researchers to implement intervention components in the intervention store and withhold them in the control store while other similarities between the stores were held constant, which made these stores ideal for comparison. The Johns Hopkins Bloomberg School of Public Health Institutional Review Board reviewed and approved the intervention.

The idea for this healthy purchasing intervention emerged from planning meetings with the storeowner and formative research, which consisted of a literature review of food marketing for healthy eating as well as qualitative research including 37 in-depth interviews, 3 focus group discussions, and 20 hours of participant observation in the intervention store to learn about purchasing decisions.¹⁵ Respondents reported wanting to purchase healthier foods, but perishability, costs, and needing to provide filling calories influenced their purchases. They also described uncertainty about being able to find healthy foods and difficulty in getting this type of information from store employees.¹⁵ In-store sampling was suggested as an important way to reduce consumer risk and mitigate the cost of food waste. In addition, participants noted that most store sales focused on processed foods that were high in sugar, salt, and fat.¹⁵ Based on the literature review, the authors adopted health education best practices shown to be effective in driving the purchase of healthy foods, which were related to

food labeling^{16,17} and visual displays of healthful foods.^{18,19} In this phase, organizations in which outreach and educational events could be held in the community were also identified. The intervention sought to increase the purchasing of healthy food through 6 intervention components: increased stocking of healthy foods; shelf labels and signage to enable shoppers to identify promoted foods (low fat, low sodium, healthier sugar level, 100% juice, and better choice); taste tests; advertisements for price reductions in the store circular; store staff training; and community outreach events (see Lee et al¹² for details).

A registered dietitian from the intervention team selected 475 foods based on Food and Drug Administration and Institute of Medicine guidelines for increased stocking, labeling, and promotion through in-store advertising.^{20,21} Although 475 items were promoted through labeling, 385 were included in this analysis because sales data were not available from either the intervention or prior comparison years for the remaining items.

Taste tests, sometimes using simple recipes, promoted healthy items and were held only in the intervention store, which provided an opportunity to evaluate the impact of taste test activities on healthy food sales. Other reinforcing intervention activities included the distribution of recipe cards and in-store healthy shopping tours. Some of the 475 promoted items were also discounted in the weekly store circular; however, the independent impact of the discount could not be evaluated because the circular, and therefore discounts advertised, was common to both stores. Staff trainings sought to provide an orientation to the intervention; improve knowledge on general nutrition; highlight customer service tips to encourage healthy purchasing; review food safety practices; and discuss food marketing/messaging of ERLW. About 65% of employees resided in the surrounding neighborhoods. Ten training sessions with all store employees were conducted during work hours before and at the beginning of the intervention period. Each lasted approximately 2 hours with a format that combined group

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