

Baltimore Healthy Stores (BHS)
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INTENT OF THE INTERVENTION

Small stores (often termed corner stores in urban settings) have unique potential to improve the nutrition environment in low-income communities due to their high prevalence and frequent use in these settings.

Small store initiatives use different approaches to increase the availability and consumption of healthy foods. One approach is to use a store's existing facilities; other strategies may involve changing a store's infrastructure (e.g., purchasing refrigeration units and display cases, adding to or reorganizing a store's interior, renovating a store's façade). Baltimore Healthy Stores (BHS) uses a store's existing facilities to improve access to healthy food and to increase consumers' knowledge, self-efficacy and behavioral intentions about healthy food choices and food preparation through health education and point-of-purchase marketing strategies.

BHS targets two levels of the socio-ecologic model: 1) the individual level by seeking to change consumer behaviors and 2) the organizational level by seeking to change corner stores practices, in particular by increasing the availability of healthy options.

OVERVIEW

Baltimore Healthy Stores (BHS), a research-tested intervention, focuses on changing the local food environment by directly influencing the availability of healthier food options in stores and increasing awareness and skills of patrons to select and prepare healthier foods through point-of-purchase promotions. Exposure to this intervention has the potential to increase patrons' knowledge and self-efficacy and to improve their behavioral intentions to select, prepare, and consume healthier foods. A complementary component is directed at small store owners, and provides guidance on how best to select healthy and affordable food options for their stores.

BHS has five phases, each phase lasting about two months. The phases have different themes: healthy breakfast, cooking at home, healthy snacks, carry-out foods (e.g., prepared foods offered at store delis), and healthy beverages. Each phase includes theme-specific behavioral objectives, promoted foods, and health communication (point-of-purchase marketing and nutrition education) strategies.

Intended population: Residents and store owners in underserved, low-income communities where prepared food venues (e.g., carryout/fast food restaurants) and corner/convenience stores are primary food sources due to limited access to supermarkets

Setting: Corner stores, small markets and grocery stores in low-income, urban communities

Length of time in the field: The Baltimore Healthy Stores research study was conducted in 2005-2006. Three new studies are under way as the Johns Hopkins Center for Human Nutrition research team is extending the reach of the original BHS intervention by developing additional

modules to reach youth through recreation centers, to reach older adults through churches, and to expand materials to modify prepared food sources (e.g., carryouts).

CORE ELEMENTS

This section outlines the aspects of an intervention that are central to its theory and logic and that are thought to be responsible for the intervention's effectiveness. Core elements are critical features of the intervention's intent and design and should be kept intact when the intervention is implemented or adapted.

- 1. Creating a program identity:** Customers should recognize the program's name and/or logo and associate program materials with healthier food choices; e.g. shelf labels paired with certain products indicate healthier food choices. The program logo appears on all print materials, including posters, flyers and educational displays.
- 2. Recruitment of small store owners:** In urban settings, the ethnic and cultural background of store owners is frequently different from their primary customer base. Different strategies have been used successfully to recruit store owners to participate in a healthy corner stores program. In the BHS intervention, the majority of small store owners were Korean Americans who belonged to a local chapter of the Korean American Grocers Association (KAGRO). BHS developers established a collaborative relationship with KAGRO which agreed to send a letter of support and program materials to individual store owners. For Korean-owned stores, BHS recruiters were Korean-speaking. It was determined that personal contact to recruit store owners should ideally be made by someone with whom store owners identify culturally and who speaks their native language.
- 3. Support and education for store owners:** Once store owners have been recruited, they will need support and education to successfully participate in the program. Providing nutrition education for store owners can help them personally and professionally. BHS provided store owners with specific guidelines for stocking and preparing healthier food options, and cultural guidelines to encourage positive interaction between store owners and their customers.
- 4. Stocking healthy foods:** Small stores may need help to purchase and stock specific minimum quantities of promoted foods. This can be done a) by providing store owners with a wholesaler gift card to purchase a small stock of the promoted items and/or b) by providing the store owners with small amounts of the target foods for promotion. In BHS, many store owners would stock the promoted food on their own, without additional incentives, once they had done this for 1-2 rounds of the intervention.
- 5. Promotion of healthy products through culturally relevant signage:** Develop a social marketing campaign that uses culturally appropriate nutrition messages. As part of the campaign, create and display program materials such as shelf labels, flyers, and posters to help increase demand for, and consumption of, healthy products stocked in stores. Focus groups, community workshops and/or interviews with customers and community members are critical steps in the development of culturally-relevant materials.
- 6. Tailoring program activities to target venues:** Small stores vary in size and layout. When designing program activities, consider the organizational layout and space of each participating store and develop strategies in accordance with each store owner's wishes. A collaborative partnership with store owners is essential for program buy-in and sustainability.

7. **Nutrition education and client interaction:** Customer interest to try healthy products can be built by providing opportunities to taste new foods and products through cooking demonstrations and taste tests. Spend time in the stores encouraging people to try new products and answering questions about nutrition and the purpose of the healthy stores project. Customer interaction is crucial to the success of the program.

RESOURCES REQUIRED

Staff:

Identify a lead agency and other agencies and community organizations to support the effort. The full-time equivalent (FTE) staff position(s) required for one complete implementation of the intervention will depend on the number of stores included in the program at one time. It is estimated that 1 FTE will be required for every 8-10 stores involved in the intervention.

Staff will be needed to perform the following responsibilities:

- **Project coordination:** to oversee the entire project, manage community involvement, partner collaboration (e.g., KAGRO), staff training, materials development
- **Implementation:** to deliver the program to stores
- **Evaluation:** a small percent FTE of an evaluator's time is recommended

Training:

- **Training session for store owners:** 1-2 hours per store
- **Implementation training:** 1-2 days for base training, 1 day prior to each new phase for booster trainings

Materials:

- Cost to modify existing or develop new materials
- Cost to reproduce program materials for each store is estimated at \$250/store (including promotional items)
- Cost of providing wholesaler gift cards and/or the provision of small amounts of the target foods to the store owners is estimated at \$250/store (\$50/phase of the BHS intervention)

IMPLEMENTATION

How It Works: Baltimore Healthy Stores has been implemented in supermarkets and in small corner stores, including seven Korean-American independently owned stores.

Five themed phases were implemented, at about 2 months in duration per phase. Each theme had specific behavioral and environmental objectives, in which certain foods were promoted and minimum standards set for food and beverage stocking and for marketing materials (posters and shelf labels) within stores. Posters advertised the promoted foods for each phase. Shelf labels identified foods and beverages that were low-fat (<10% of daily value [DV]), low-sugar (<10% of DV) and high-fiber (> 10% DV) and healthy alternatives (e.g., low-fat versus regular mayonnaise).

Formative work for selection of foods to include in the 5 phases

The selection of foods for promotion was based on: 1) extensive dietary recalls (modified Food Inventory Questionnaires) from community members to identify the foods that contributed the

most fat, sugar, and total calories to their diets; 2) in-depth interviews with key stakeholders; and 3) community workshops/focus groups to identify affordable and culturally acceptable alternatives. The nutrition education component associated with these promotions was based on knowledge questions included in the pre-intervention survey. The design and key messages of marketing materials (e.g., posters and fliers) were based on feedback from community workshops/focus groups.

The 5 Themes:

- **Healthy breakfast:** Behavioral objectives focused on increasing low-sugar, high-fiber cereals (< 10% of the daily value of sugar; >10% of the fiber) and low-fat milk (skim, 1%, and 2%). Environmental objectives included initiating and/or maintaining the stocking of these items.
- **Healthy cooking at home:** Behavioral strategies included promoting the use of cooking spray for eggs, pancakes, and vegetables, and draining and rinsing cooked ground meat to reduce excess fat. Environmental objectives included the availability of cooking spray.
- **Healthy snacks:** Behavioral objectives focused on encouraging the consumption of low-fat snack alternatives, including fresh fruits, low-sugar granola bars and trail mix (<10% of DV of sugar), pretzels, and baked chips (e.g., Sun Chips). Environmental objectives included initiating and/or maintaining the stocking of these healthier snacks.
- **Carry-out purchasing:** Behavioral strategies concentrated on choosing whole wheat bread, lean meats (e.g., baked chicken and turkey) and healthier alternatives to high-fat condiments (low-fat or fat-free mayonnaise and mustard). Environmental objectives focused on initiating and/or maintaining the stocking of these items, particularly in small stores with carry-out facilities.
- **Healthy beverages:** Behavioral promotions focused on the purchase and consumption of water and diet soda as alternatives to regular soda. Environmental objectives included initiating and/or maintaining the stocking of these healthier beverages.

Intervention components targeting store owners

Store owners are requested to stock minimum quantities of healthy food options, specific to each phase of the intervention. All store owner intervention materials should be provided in English or in store owners' language as appropriate.

- **Small monetary incentives** (\$25-\$50) provided per intervention phase to cover initial stocking costs. Incentives were in the form of wholesaler gift cards and/or the provision of small amounts of food for promotion.
- **Nutrition education session/booklet** provided to ensure longer sustainability by improving nutrition-related knowledge of corner store owners.
- **Cultural guidelines** were developed to assist store owners in building better relationships with community members.
- **Corner store guidelines** for providing strategic guidance on food purchasing, stocking, and placing. Guidelines included practical suggestions about which types of foods the store owners should buy, stock, and promote and placement of foods for easy access.

Intervention Components targeting consumers

In-store intervention materials

- Shelf labels (lower in fat, lower in sugar, higher in fiber, healthy choice)
- Informational posters, fliers, giveaways bearing the BHS logo and promoting healthy foods

In-store promotions

- Incentive cards (buy 3 BHS-promoted foods and get the fourth free)
- Program staff conducted brief (1-4 minutes) interactive nutrition education sessions at stores approximately twice per month, including:
 - the dissemination of phase-specific nutrition information
 - the use of educational displays
 - the implementation of taste tests
 - the distribution of food samples
 - the promotion of product giveaways

Note: (in small stores, space for this activity at peak shopping times was an issue; this component felt to be essential to give consumers the opportunity to sample healthier options)

- Nutrition education sessions and marketing were conducted at local community centers, as a means to expand upon the in-store sessions. Sessions included cooking demonstrations and taste tests, and marketing (e.g., posters and flyers)
- Posting and distribution of print materials in stores (posters, fliers, shelf labels, etc)

Role of program staff:

- Work with store owners to encourage them to stock healthier food options to be promoted each phase
- Visit each of the stores regularly (approximately 1 time/week) to conduct intervention
- Conduct taste tests of promoted foods
- Distribute food samples, fliers, giveaways
- Interact with visitors and store owners to explain the promotional and educational messages for each phase and answer inquiries
- Monitor store compliance with poster and shelf labels availability and visibility standards
- Monitor store compliance with food and beverage availability standards.

Keys to Success:

- Consider the types and sizes of food stores that are the focus of the intervention and develop intervention components specific to these store types (e.g., smaller stores require smaller print materials and may permit taste tests only, not cooking demonstrations).
- Initiate store recruitment process with local chapter of grocers' association
- Employ program staff that store owners can identify with (language, ethnicity and culture)
- Use the same program staff throughout the program to establish and maintain strong relationships with store owners and community members
- Provide store owners with small incentives, at least initially, to encourage stocking of healthy food choices for each phase
- Be flexible in working with store owners to meet their needs (e.g., the placement of materials and time/location of activities, and the provision of cost-neutral stocking and food preparation strategies)

- Work with a variety of food suppliers (e.g., vendors, supermarkets, wholesale stores) to resolve the stocking issues. Wholesale stores and/or large chain supermarkets in the area are frequently the suppliers to the smaller corner stores, and can provide foods at discounts.
- Conduct taste tests as a means to increase program exposure, trialability, and health. Taste tests were well attended during the BHS programs, and are highly recommended.
- Provide small giveaways (such as water bottles, refrigerator magnets, etc.) as a means of attracting consumers. The provision of giveaways provides an appealing mechanism to initiate nutrition education and encourage consumers to try new foods and beverages.
- Use shelf labels for the promotion of target foods as a relatively simple way to identify and encourage purchasing of healthy foods.
- Maintain the increased availability of initially promoted foods. Customer demand for promoted products will lead to better sales, which will, in turn, motivate corner store owners to try and stock other healthy foods. The maintenance of initial stocks, which can be monitored by conducting random post-intervention inspections, is key to program sustainability.

Barriers to Implementation:

- Intervention strategies have to be adapted to specific types of stores depending on size, layout, and how owners decide to stock foods.
- Corner store interventions can be labor intensive, demanding frequent visits and high ratio of staff to stores in order to implement interactive sessions.
- Obtaining store owner support can be difficult because there are often cultural and language barriers to communication.
- Small store owners can be hesitant to risk any decrease to sales, and some fear an increase in crime as a result of store crowding during intervention activities.
- Distributors may be unwilling to regularly deliver fresh foods, given the low demand (and subsequent high cost per delivery), and high crime rates in low-income urban settings.
- If initial customer demand for healthier products is low, program sustainability is hampered by decreases in sales and store owner willingness to maintain stocks.

EVIDENCE REVIEW SUMMARY

Underlying Logic: The Baltimore Healthy Stores (BHS) intervention uses constructs of the Social Ecological Models and Social Cognitive Theory, including: knowledge; reciprocal determinism; and self-efficacy and behavioral intentions to select, prepare and consume healthier foods.

Strategies Used¹: The BHS intervention includes strategies related to healthy eating:

- *Increased availability of healthy foods* through changes in the local food environment, in particular the stocking of healthier foods in corner stores
- *Point-of-purchase labeling* on the store shelves and posters promoting healthier food items

Evaluation Outcomes:

The BHS intervention was evaluated as a quasi-experimental study with a comparison group.

¹ A full description of the *intervention strategies* used can be found on www.center-trt.org with references to the sources of evidence to support the strategies.

The intervention group consisted of 9 stores (7 corner and 2 supermarkets) in East Baltimore, while the comparison group was comprised of 8 stores (6 corner and 2 supermarkets) in West Baltimore. East and West Baltimore are two of the poorest areas in Baltimore City.

Data were collected at multiple levels: 1) at the store level, data were collected related to environmental and practice changes (e.g., food stocking, placement, and preparation); 2) at the store owner level, data were collected related to psycho-social impact of the intervention (e.g., knowledge of nutrition, self-efficacy to change stocking and food preparation, and intentions to change stocking and food preparation); and 3) at the consumer level, data were collected related to behavior change (e.g., increased purchasing and consumption of healthier foods) and psycho-social impact of the intervention (e.g., knowledge of nutrition, self-efficacy to change diet, and intentions to change diet).

At the consumer-level, 175 people were recruited at baseline from study supermarkets and corner stores and community action centers that serve East and West Baltimore. Despite multiple attempts to re-contact participants, only 84 (48% of original baseline sample) were re-interviewed at post intervention. The consumer-level outcome data are based on the 84 post-intervention respondents (intervention group n=45 and comparison group n=39).

Intervention Effect:

Store-level: More corner stores in the intervention group showed increased stocking of some of the promoted healthy foods (low-sugar cereals, baked/low-fat chips, low-salt crackers, and cooking spray) from baseline to immediately post intervention ($p=0.009$). Six months after the intervention, the stocking of baked/low-fat chips, low-salt crackers, cooking spray, and whole wheat breads was sustained in the intervention group. No other data was collected at the six-month follow-up period.

In the intervention group, weekly sales* of low-sugar cereals, cooking spray, baked/low-fat chips, low-salt crackers, whole wheat bread, and 100% fruit juices increased from baseline to post-intervention. However, sales of cooking spray was the only statistically significant outcome for a particular food ($p=0.05$). Weekly sales of other promoted foods, such as diet soda/diet drinks and water, decreased in the same time period, although the results were not significant.

*Weekly sales data were determined from store owners' recall.

Store owner-level: Overall, no significant changes in overall outcome expectations, self-efficacy and knowledge scores were observed comparing the intervention and comparison group store owners. However, significant changes were observed for some specific foods: outcome expectations for sales of low-salt crackers decreased for comparison store owners ($p=0.04$); outcome expectations for the effectiveness of taste tests tended to increase for intervention store owners ($p=0.06$); self-efficacy scores for stocking certain healthy foods such as low-sugar cereals increased for intervention store owners, while it decreased for comparison store owners ($p=0.01$).

Consumer-level: Healthy food preparation behavior, measured by pre-and post-intervention questionnaires, significantly improved in the intervention consumers as compared to comparison group ($p<0.05$). While overall food purchasing behavior did not significantly change, an association between exposure to shelf labels and increases in healthy food purchasing was found among consumers in the intervention group as compared to those in the comparison group ($p=0.02$). In addition, positive changes were observed in most of the food-related

psychosocial factors (knowledge, self-efficacy, intentions) from baseline to post-intervention, and these changes were greater in the intervention compared to the comparison group; none of the results were statistically significant.

POTENTIAL PUBLIC HEALTH IMPACT

Reach: This program has the potential to reach a large number of low-income individuals as it aims to increase the availability of healthy foods in existing small stores within low-income, urban areas, which generally have limited access to healthy foods. However, the reach of the different components of the intervention varied. Taste tests/interactive sessions had good reach, while the reach of print materials and coupons/incentive cards was inconsistent.

Effectiveness: There is evidence for small environmental and behavioral changes resulting from this intervention. Data available at the time of the review suggest that, compared to the comparison stores, the intervention stores were more likely to stock healthier foods. However, some corner stores stocked certain healthy foods prior to the intervention. The intervention stores did have increased sales of promoted healthy foods, but, with the exception of cooking sprays, those increases were statistically non-significant. Participants based in the intervention area of Baltimore also reported improved healthy food preparation.

Adoption: The Healthy Stores intervention approach has been implemented in other locations, including the Republic of the Marshall Islands, Apache Reservations in Arizona, Ontario First Nation Reserves, and Hawaii with significant impacts observed related to food purchasing, consumption, and preparation behavior. The Apache Healthy Store (AHS) program included in-store point-of-purchase signage (shelf labels, posters, displays), working with stores to stock a broader range of healthy foods, interactive sessions (taste tests, cooking demonstrations), and mass media communication (radio and local newspapers) to reinforce key themes using culturally appropriate messages. Respondents living in the intervention areas were significantly more likely to increase their consumption of vegetables, lowfat milk, and high-fiber cereals, and less likely to increase their frequency of consumption of sweets and fast food than those living in comparison areas. The Ontario First Nations trial, Zhiwaapenewin Akinomaagewin (ZA), worked with schools, food stores, and health and social services agencies and included stocking and labeling of healthier foods, curricula for grades 3 and 4, cooking demonstrations, mass media, and community events. ZA participants showed higher healthy food intentions and significantly increased frequency of choosing healthy foods.

Implementation: Good partnerships with corner store owners are needed to support implementation of this intervention. In the Baltimore test of the intervention, implementation of different components was inconsistent. Taste tests/interactive sessions conducted by the research staff were implemented well, while implementation of coupons and incentive cards was challenging as store owners expressed concern over customer misuse. Implementation of print materials varied according to availability of wall space, and who was responsible for posting signage (e.g., research staff or store owners).

Maintenance: Limited data assessing long-term maintenance of the intervention was available. Six months after the intervention, the stocking of certain healthy foods, such as baked/low-fat chips, low-salt crackers, cooking spray and whole wheat breads, was sustained by the intervention store owners.

INTERVENTION MATERIALS

Intervention materials are available for download from the Baltimore Healthy Stores website:
<http://www.healthystores.org/BHSMaterials.html>

Materials for consumers

- Shelf labels
- Recruitment materials for shoppers
- Nutrition education flyers
- See below, materials for 5 themed phases

Materials for store owners

- Store owner Frequently Asked Questions
- Cultural Guidelines
- Store Guidelines

Note: each of these materials must be translated into the native language of store owners

Materials for 5 themed phases

- Posters for promoted foods, by phase
- Food for taste testing of promoted foods, by phase
- Recipe cards for promoted foods, by phase
- Giveaways (e.g., lunch bags, strainers and water bottles)

TRAINING AND TECHNICAL ASSISTANCE

The Baltimore Healthy Stores project was developed by a team of researchers from the Johns Hopkins Bloomberg School of Public Health. Please see **Additional Information** for contact information.

ADDITIONAL INFORMATION

Web links: <http://www.healthystores.org/BHS.html>

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Related Resources:

The Healthy Corner Stores Network (HCSN) supports efforts to increase the availability and sales of healthy, fresh, affordable foods through small-scale stores in underserved communities
<http://healthycornerstores.org>

Publications:

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