Baltimore Healthy Stores (BHS)

Overview

Baltimore Healthy Stores (BHS) is a PSE change and social marketing intervention designed to change 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. **Target Behavior:** Healthy Eating, Food Insecurity/Food Assistance **Intervention Type:** Direct Education, Social Marketing, PSE Change

Intervention Reach and Adoption

BHS targets 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. 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. 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. **Setting:** Retail **Target Audience:** Parents/Mothers/Fathers, Adults, Older Adults **Race/Ethnicity:** All

Intervention Components
BHS includes 5 themes, each with specific behavioral and environmental objectives. 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. The 5 themes include the following:

- **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 Materials

Sample materials are located at [https://healthyfoodsystems.net/previous-projects/baltimore-healthy-stores/](https://healthyfoodsystems.net/previous-projects/baltimore-healthy-stores/)

**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)

### Evidence Summary

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

- 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.
- In the intervention group, weekly sales (determined from store owners’ recall) 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.
- 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).

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. The consumer-level outcome data are based on the 84 post-intervention respondents (intervention group n=45 and comparison group n=39).
- 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).
- 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.

A complete list of BHS publications can be found at https://healthyfoodsystems.net/previous-projects/baltimore-healthy-stores/. **Classification:** Research-tested

## Evaluation Indicators

Based on the SNAP-Ed Evaluation Framework, the following outcome indicators can be used to evaluate intervention progress and success.

<table>
<thead>
<tr>
<th>Individual</th>
<th>Readiness and Capacity – Short Term (ST)</th>
<th>Changes – Medium Term (MT)</th>
<th>Effectiveness and Maintenance – Long Term (LT)</th>
<th>Population Results (R)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ST1, ST2</td>
<td>MT1</td>
<td>LT5, LT7, LT9, LT10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environmental Settings</td>
<td>ST7</td>
<td>MT5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Sectors of Influence**

| ST8 | MT12 | LT12 |

**Evaluation Materials**

Currently, no evaluation tools or materials are available.

**Additional Information**

**Website:** The BHS website ([https://healthyfoodsystems.net/previous-projects/baltimore-healthy-stores/](https://healthyfoodsystems.net/previous-projects/baltimore-healthy-stores/)) includes news, resources, and intervention materials. Additional information can be found in the Center TRT’s intervention template for the BHS intervention. **Contact Person(s):** Joel Gittelsohn, PhD Program Director Email: jgittels@jhsph.edu Cara Shipley Project Coordinator Email: cshiple9@jhu.edu Center for Human Nutrition, Room W2041A Department of International Health Johns Hopkins Bloomberg School of Public Health 615 North Wolfe Street Baltimore, MD. 21205-2179 Work: 410-502-6971 Fax: 410-955-0196