For many of Baltimore City’s low-income residents, inadequate access to healthy foods has created unnecessary barriers to achieving good health, and contributes to the high rate of diet-related disease found in the city.

Heart disease ranked as the number one cause of death of Baltimore residents in 1999 and death rates from diabetes doubled from 1990 to 1999. A recent study reported that 60% of adults in Baltimore were overweight and 31% were obese. Many obesity prevention interventions focus on changing individual behavior but do not adequately address the need for systemic environmental change.

The Baltimore Healthy Stores (BHS) project seeks to promote healthier food choices through store promotions and on-site education at a point of purchase. As an environmental intervention, BHS increases the number of healthy food options, offers price incentives, and identifies healthy products.

Beginning with the Marshall Islands Healthy Stores program in 2000, Dr. Joel Gittelsohn of the Johns Hopkins Center for Human Nutrition initiated a series of store-based interventions in low income areas where healthy options are irregularly available, if at all. The Apache Healthy Stores intervention began in July 2003 on the White Mountain and San Carlos Apache reservations in Arizona. The Healthy Stores model is also being implemented with indigenous communities in Hawaii, the Navajo Nation, the Canadian Arctic and Ontario.

In 2005, Dr. Gittelsohn and his study team conducted extensive formative research in Baltimore to understand the social and cultural context of behaviors related to food and health (Gittelsohn et al 2008).

The formative research

Formative assessments took place in 11 of the 200 census tracts in East and West Baltimore. A total of 164 food sources were located with ten times more small/medium-sized food stores than supermarkets. Along with carry-out restaurants, they were the predominant food sources in those neighborhoods. Few healthy food

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Sample intervention materials used in Baltimore Health Stores project.
options were available in these low income areas, with no fresh fruits and vegetables sold in six of the census tracts.

Research assistants conducted interviews with 19 food store owners, 17 low-income residents and 26 community leaders. Fifty residents completed a consumer survey. In addition, 91 community residents completed 24-hour dietary recalls. Not surprisingly, the interviews revealed contradictory perceptions of supply and demand.

While many residents said they would buy healthier food if it was available, reasonably-priced and of good quality, store owners stated that the primary deterrent to stocking healthy foods was a lack of consumer demand. Furthermore, they said that when they did stock healthy foods, the foods were not purchased. Thus, a primary challenge for the Baltimore Healthy Stores program was to create both supply and demand for healthy foods.

**Interventions took place at a number of stores included in the BHS project. Many residents said they would buy healthier food if it was available, but store owners stated that the primary deterrent to stocking healthy foods was a lack of consumer demand.**

Demographics and food security
The consumer survey sample was evenly distributed between female (54%) and male (46%) respondents, with 76% self-identifying as African-American with the remainder identifying as white. Twenty-four percent reported receiving at least one form of government food assistance, which included Food Stamps, WIC, or Commodity Foods. Based on USDA's food respondents security scale, 16% of the respondents classify as food insecure without hunger and 8% were food insecure with hunger.

**Where people get food**
Supermarkets were mentioned by the most respondents as a place where they got food in the last 6 months (94%). Proximity to home was the number one reason for selecting supermarkets, followed by lower prices, and better quality. Other reasons for using supermarkets included good service and cleanliness.

Other food sources included fast food restaurants (77%), carry-outs (76%), full-service restaurants (72%) and corner stores (70%). Of those reporting use of supermarkets, 16% go 3-4 times a week, 52% go 1-2 times a week, and 16% go only every 2 weeks.

Corner stores are an important source for food. Proximity to home and familiarity with the owner were the main reasons for using corner stores. Of those who reported using corner stores, 33% go 3-4 times a week, and 33% go 1-2 times a week.

**What people buy**
Whole milk was the most common form of milk purchased (70% reported purchasing once a month or more), followed by 2% milk (34%). Skim milk was purchased by 14% of the respondents and 1% milk was purchased least frequently (10%). Regular soft drinks were purchased regularly (3 times/week or more) by 36% of the sample, while diet soft drinks were only regularly purchased by 8%. A high percentage of respondents reported purchasing fresh fruits (92%) and fresh vegetables (84%) at least once a month, but these foods were not regularly purchased.

Dr. Gittelsohn and his team used these results to create the Baltimore version of Healthy Stores. The first round was implemented in 17 food stores in East and West Baltimore from February through November, 2006. A second round of the program was implemented in West Baltimore stores from October 2007 through June 2008. BHS is currently preparing to expand its efforts to focus on youth and local churches.

**Reference**

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