Improving the Nutritional Resource Environment for Healthy Living Through Community-based Participatory Research

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OBJECTIVES: To build health promotion capacity among community residents through a community-based participatory model, and to apply this model to study the nutritional environment of an urban area to better understand the role of such resources in residents' efforts to live a healthy life.

DESIGN: A multiphase collaborative study that inventoried selected markets in targeted areas of high African-American concentration in comparison with markets in a contrasting wealthier area with fewer African Americans.

 $\ensuremath{\textit{SETTING:}}$ A community study set in the Los Angeles metropolitan area.

PARTICIPANTS: African-American community organizations and community residents in the target areas.

INTERVENTIONS: Two surveys of market inventories were conducted. The first was a single-sheet form profiling store conditions and the availability of a small selection of healthy foods. The second provided detailed information on whether the store offered fruit, vegetables, low-fat dairy products, dried goods and other items necessary for residents to consume a nutritious diet.

RESULTS: The targeted areas were significantly less likely to have important items for living a healthier life. The variety and quality of fresh fruit and vegetable produce was significantly lower in the target areas. Such products as 1% milk, skim milk, low-fat and nonfat cheese, soy milk, tofu, whole grain pasta and breads, and low-fat meat and poultry items were significantly less available.

CONCLUSIONS: Healthy food products were significantly less available in the target areas. The authors conclude from these results that the health disparities experienced by African-American communities have origins that extend beyond the health delivery system and individual behaviors inasmuch as

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adherence to the healthy lifestyle associated with low chronic disease risk is more difficult in resource-poor neighborhoods than in resource-rich ones.

KEY WORDS: community nutritional resources; communitybased participatory research; African American; diabetes; obesity.

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Community-based participatory research (CBPR) is the concept that health promotion research should be conducted in a manner that allows community members to influence and control decisions that affect them and their community. This research paradigm reflects an evolution in the scientific literature on community health interventions from benevolent paternalism, to "community-based" interventions, to the more recent call for "community-directed" interventions.

Ethnic groups such as African Americans that have been socioeconomically marginalized and disenfranchised have a particular claim for involvement in the direction of research ostensibly designed to address problems in their communities.⁵⁻⁷ African Americans have good reason to distrust medical and public health researchers.8 CBPR provides a process model that, if instituted appropriately, elicits the trust of residents by responding to perceived community needs. Researchers and community members can develop a true partnership that builds community capacity by training residents in research skills, involving them in decision-making processes, and engaging them in change activities.9 Community-research partnerships respond to the community needs and culture rather than imposing a preconceived idea of what would help the community. 10,11

Community-based participatory research is also predicated upon an examination of the environmental and social determinants of health status. The increasingly apparent health disparities associated with socioeconomic and ethnic marginalization is the subject of increasing national attention from policy makers. ^{12,13} These determinants are obscured by the emphasis on individual-level risk factors with the randomized clinical trial as the gold standard, limiting the generalizability of data and exportability of intervention modalities.²

Nutritious eating and regular physical activity are well accepted in the prevention of chronic medical conditions, especially diabetes, cardiovascular diseases and cancers. ^{13–16} Furthermore, these behaviors can

alleviate the effects of significant comorbid conditions that increase the risk for poorer outcomes, such as obesity and hyperlipidemia. 14,16 Unfortunately, recent studies examining the current epidemic of obesity and sedentariness in the United States demonstrate worsening trends, with nearly two thirds of Americans categorized as overweight, nearly one third as obese, and about 40% as extremely sedentary. 17-19 The tie between the resource environment and health has begun to receive attention as part of an effort to improve eating and physical activity behaviors. Variations in access to healthy foods have been demonstrated to influence observed food choices. 20-25

Individuals and families rely on a variety of sources for their food, including markets and restaurants. The food options available at these locations almost certainly influence peoples' choices of what they consume on a day-to-day basis.26 Not all food facilities are the same, and even the food at chain businesses may vary from area to area. This variation in food options may reflect some degree of cultural variation, but may also reflect a level of inequity. 27,28 The potential for environmental variations in pricing and food availability has recently led to legislative efforts to limit access to "empty calories" in school nutrition programs²² and calls from experts for policy initiatives to mandate healthier nutrition environments. 29-33 This study was designed to assess the nutritional resource environment in targeted African-American areas of Los Angeles County, and to contrast the findings to a predominantly white area that was presumed to have a fuller resource environment.

METHODS

Study Context

In February 1999, the Community Health Councils, Inc. (CHC), a Los Angeles-based nonprofit health advocacy organization, launched "African Americans Building a Legacy of Health" (AABLH). CHC mobilized a broad coalition of African-American community residents and health and social service organizations to address health disparities around cardiovascular disease and diabetes. In October 1999, CHC received a 1-year planning grant from the CDC as part of the national programming initiative, Racial and Ethnic Approaches to Community Health 2010 (REACH). Promoting health through improved nutrition and increased physical activity was perceived as critical in attacking the root causes of the targeted diseases. The University of Southern California (USC) and University of California at Los Angeles (UCLA) faculty evaluated the planning process and, with county health department professionals, served as project advisors. The coalition engaged in a series of conversations that identified 3 target areas and developed 3 strategic directions with 9 accompanying interventions. The 3 target areas were South Los Angeles, Inglewood and North Long Beach (Fig. 1).

Target and Contrast Areas. Meetings included key informant interviews with individuals from local community-based organizations as well as discussions held at the AABLH quarterly meetings. Participants were asked to identify predominantly African-American communities, give their perceptions of the differences in the communities, and identify communities' characteristics with respect to nutrition and physical activity resources. Researchers then used census population data to the estimate the proportion of the areas' African-American populations. A service area subsequently was defined through the identification of zip codes where residents might shop or travel to engage in physical activity.³⁴ Los Angeles County provided data from its biannual health survey to assist in identifying populations at greatest risk for chronic disease (Fig. 1).

The 3 target areas differ in size and population characteristics. All are former manufacturing areas that have suffered from divestment, struggle with inadequate resources for their educational facilities, and confront relatively high crime rates. The southernmost area is North Long Beach, located in the old industrial heartland of the region. This single zip code has 96,801 residents, 23.2% (22,457) of whom are African Americans. Inglewood is a city in the western portion of the county, adjacent to the Los Angeles International Airport and the aerospace industry in which many residents work. The target area's 4 zip codes hold a population of 114,744 residents, 46.7% (53,585) of whom are African American.

South Los Angeles is the largest of the target areas, spanning 12 zip codes. The area covers the historic African-American community, from the older section near Central Avenue to the Crenshaw and Ladera Heights districts, which are widely acknowledged as the community's center. This target area has 528,292 residents, 49.2% (259,919) of whom are African American.

In comparison, the "contrast" area in West Los Angeles consists of 6 zip codes that have 235,273 residents, 8.1% (19,057) of whom are African American. The contrast area is also wealthier. The contrast area has a median household of \$45,917. Only 17% of the population live below the poverty line. Conversely, the target areas as a whole have a median income of \$29,237. The target areas have a poverty rate of 28%, roughly eleven percent higher than the contrast area. Among the target areas, the rates of poverty range from 4.3%, in a very small wealthy African-American enclave, to 41.8%. Inglewood was the most prosperous target area, with a median household income of \$34,515 (Table 1).

Strategic Directions. This article is concerned with the coalition's strategic direction regarding creating economic parity through community development. Two of the 3 activities associated with this strategic direction are the subject of this paper: 1) facilitate neighborhood-based assessment and advocacy to improve the quality and availability of healthy foods in local markets, restaurants

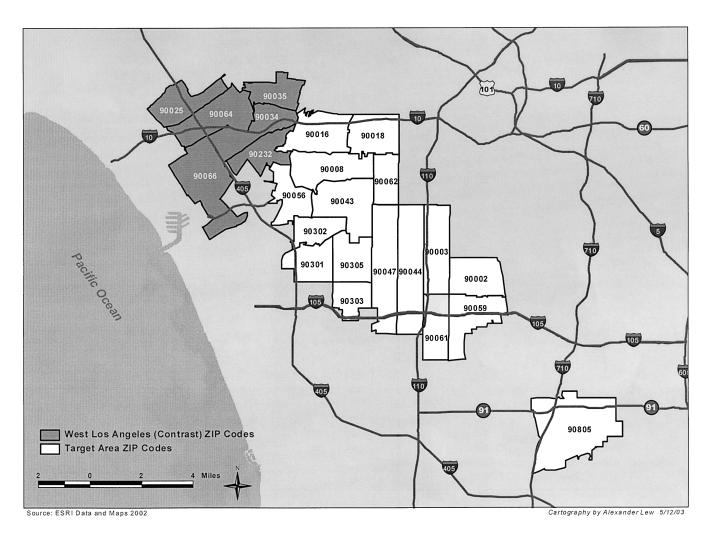


FIGURE 1. Target and comparison neighborhoods by ZIP code in Los Angeles.

and schools; 2) complete an analysis of current food venues, and advocate for the establishment of new healthy food outlets within the African-American community.

The AABLH coalition received a 4-year grant from the CDC REACH initiative in late 2000 to implement the proposed multicomponent intervention plan. The CDC was not involved in the study design, data collection or analyses. Institutional review board approval or exemption from review for this research was obtained from the USC, the UCLA, and the Los Angeles County Department of

Health Services. Youth ages 16 to 17 participated as surveyors only when accompanied by an adult.

Study Design

The community-based inventory process was intended to describe in more detail the nutritional resource environment with the intention of mobilizing community action against gaps and inadequacies. An "Economic Parity" advisory group started with a core group of 4 to 7 community members, supplemented by

Table 1. Number of Persons per Grocery Store

	Population	African-American Population	Percentage African American	Grocery Stores	People per Store
United States	281,421,906	36,419,434	13	66,694	4,015
California	33,871,648	2,513,041	7	9,738	3,305
Target areas	679,148	317,894	47	114	5,957
Contrast area	222,019	17,768	8	59	3,763

Source: United States 2000 Population Census and the 1997 Economic Census.

AABLH staff and evaluators. Over the next 18 months, the group expanded, acquiring a stable cohort of more than a dozen participants, with another two dozen people attending periodically.

The advisory group's primary activity was developing, implementing, and overseeing a mini-grant process. Community organizations were invited to submit applications for funding of up to \$5,000 to inventory markets. Organizations that had experience working with African Americans and in health issues were encouraged to participate. The mini-grant process for market inventories was initiated in summer 2001.

A community-based participatory research model explicitly drove the mini-grant process.² Although the evaluation team and an academic subcontractor largely developed the template of the 2 instruments, the Economic Parity advisors were involved in finalizing them. The "Shopping List" is a 1-page survey that provides an overview of services and healthy items, such as types of milk and vegetables. Second, "The Healthy Food Assessment" is a 12-page instrument that details the availability of vegetables, fruits, meats, other items, and special food sections. This second instrument was adapted from an existing, validated instrument.³⁵

The advisory group then solicited grant applications. Applicants detailed how they would inventory the stores, who would perform the inventory, and a budget. The advisors read the applications, and scored them for relevance, appropriateness, scope of work, and 3 other categories. The advisors then met to tally the scores and to discuss the applications. Funding was often granted with mandates for improvements in work plans, budgets, and timelines. Six grantees represented churches, nonprofit community development centers, a farmers' market, and a community collaborative. In addition, students from the USC were hired to profile the nutritional resource environment in the contrast area.

Community and student surveyors underwent an 8-hour training, facilitated by AABLH staff and project evaluators. This training covered the project's mission, the inventory methodology, surveying techniques, and instrument procedures. Training the community participants in these survey methods was part of an effort by the project to leave the community with enhanced skills. Survey teams were required to inventory every third store on their list of markets. A project being run simultaneously was supposed to share surveys of larger chain supermarkets using a similar instrument. Surveyors in the target areas were asked to focus their attention on smaller markets and convenience stores. Project staff supplemented the surveys of larger stores when the other group's project faltered.

As a quality control component, completed inventories were given to group coordinators from the grantee organization. They checked the forms for possible miscoding and omissions. Group coordinators then sent the inventories to the AABLH Community Liaison for examination. Finally,

the project evaluation staff further cleaned and entered the data into a database.

The next stage of the participatory process was the sharing of the data with study participants, community residents, and policymakers. Community-based minigrant subcontractors presented the findings in an Indaba (a Zulu word meaning "deep talk") during late 2002 and early 2003. The dialog was intended to galvanize community support for challenging problems identified by the inventory process.

Data Analysis

The population data presented here were taken from the United States Census Bureau web site, 2000 Summary File 3, which provides social, economic, and housing data. This database provides data for ZCTAs (Zip Code Tabulation Areas). The ZCTAs do not correspond exactly to the United States Postal Service's zip codes, but closely mirror the communities discussed here. Ratios of the area population to markets were derived from the United States 1997 Economic Census. After compiling the survey information from the inventories, statistical analyses were performed and the results were presented in bivariate form. The bivariate significance tests utilized χ^2 and Fisher's exact tests. Statistical comparisons were made between the combined target areas and the contrast area as well as between the individual target areas. All statistical analyses were performed using SAS software, version 8.0 (SAS, Inc., Research Triangle Park, NC).

RESULTS

The data gathered in the planning phase strongly suggested that the target areas' resource environment had gaps. The number of supermarkets and other grocery stores per population differed dramatically between the target areas and the contrast area, the state of California, and the United States (Table 1). Even fewer markets were present in the South Los Angeles target area, where the ratio was 6,824 persons per grocery store.

However, that phase did not provide information on the services offered by stores. The mini-grant inventory process filled that void. Inventories for 261 stores in the target areas (Inglewood, n=28; North Long Beach, n=75; South Los Angeles, n=156), and 69 stores in the contrast area (331 total) were finished using the "Shopping List." The target areas had a higher proportion of convenience stores and local markets than the contrast area, which had larger markets that were franchises of a regional or national chain (Table 2). Stores in both areas were rated similarly on cleanliness and rates of excellent/good service. However, within the target areas, Inglewood stores had a much higher rating of poor quality service (28.6% vs 5.6% and 5.8%, P < .001).

Fruits and vegetables, nonfat milk and low-fat snacks were less often available in the target areas as compared to stores in the contrast area. Meat was sold less commonly at

Table 2. Shopping List Survey Findings (N = 330)

	Target Area	Contrast Area	
	(N = 261)	(N = 69)	P Value
Store type, %			.001
Convenience store	34.8	26.1	
Local market	60.2	44.9	
Supermarket	5.0	29.0	
Chain store, %	18.3	46.2	.001
Cleanliness, %			.05
Very clean	20.4	33.8	
Somewhat clean	50.6	39.7	
Somewhat dirty	23.5	26.5	
Very dirty	5.5	0.0	
Service, %			.01
Excellent	14.2	32.4	
Good	46.1	30.9	
Fair	31.5	22.3	
Poor	8.3	8.7	
Meat sold, %	41.0	71.0	.001
Fruit/vegetables sold, %	49.4	66.7	.05
Whole-grain bread sold, %	41.8	49.3	ns
Nonfat milk sold, %	37.9	79.7	.001
Low-fat snacks sold, %	42.2	69.6	.001

the stores in the target areas than those in the contrast area (Table 2), with the lowest rate among markets in North Long Beach and the highest rate in Inglewood (18.7% vs 53.5%, P < .001; Table 2).

The more detailed "Healthy Food Assessment" was conducted in 54 sites in the target areas and 17 sites in the contrast area. Again, markets in the target area were less likely than those in the contrast area to be part of a regional or national chain, but this time not in terms of size (Table 3). Among the target areas, South Los Angeles had the greatest proportion of smaller stores compared to Inglewood and North Long Beach (61.1% vs 37.5% vs 22.2%, P < .05). This result may have been impacted by the failure by another project to survey larger stores in the target areas. However, a check of the U.S. Economic Census found that the proportion of larger stores in our sample was only slightly smaller than that in the census. The level of service at

Table 3. Healthy Food Assessment Characteristics of Markets (N = 71)

	Target (N = 54)	Contrast (N = 17)	P Value
Type of store, %			
Not a chain store	69.2	46.7	.05
Local chain store	17.3	6.7	
Regional/national chain store	13.5	46.7	
Size of store, %			
Small	50.9	33.3	ns
Medium	30.2	33.3	
Large	18.9	33.3	
Service: excellent/good, %	70.4	100.0	.05
Cleanliness, %	87.0	93.3	ns

markets in the target areas was less frequently reported to be excellent/good, although significant variation among the target areas was found, with the lowest rate of excellent/good service in South Los Angeles markets and the highest rate at Inglewood stores (18.9% vs 62.5%, P < .01). The reported level of cleanliness did not vary significantly (Table 3).

Less than three quarters of markets in the target areas sold fresh fruit or vegetables compared to over 90% of stores in the contrast area (70.4% vs 93.8%, P < .05; Table 4). In addition to the lower frequency of these offerings in the target areas, the variety of produce was limited. The target areas had only about half of the selection of fruits and vegetables (13 types of fruits vs 26, P < .05; 21 types of vegetables vs 38, P < .05). The fruit and vegetables sections were also significantly less likely to be situated in the front of the store in the target areas (53% vs 87%, P < .05). Finally, inventories found the color, texture, consistency, damage, and cleanliness of apples, grapes, strawberries, lettuce, green beans, avocados, and celery to be inferior in target area markets compared to contrast area establishments. Conversely, the availability of meat, poultry and fish products was similar in all areas, including accessibility to meat options with a lower fat content (Table 4).

The survey was designed to make the results as comparable as possible by asking for specific items, such as quarts and half-gallons of milk. If the store did not have those sizes, surveyors were required to check "No" on the survey. In all areas, whole milk was easily obtainable. However, significant variation existed between the target and contrast areas in the availability of milk with lower fat content. Over four fifths of the markets in the contrast area had 2% fat milk compared to only half in the target area (P < .05; Table 5). Additionally, over half of stores in the contrast area carried 1% fat milk compared to less than one third in the target areas (P < .05). Furthermore, while over 80% of markets in the contrast area had skim milk available, only 37% of target area stores carried it (P < 0.01). Specifically, only 11% of North Long Beach markets had skim milk for

Table 4. Availability of Fruits, Vegetables, and Meats (N = 71)

	Target (N = 54)	Contrast (N = 17)	P Value
Sells fresh fruit or vegetables, %	70.4	93.8	.05
Fruit juice (100%), %	84.6	100.0	ns
Whole chicken, %	55.6	56.3	ns
Skinless chicken breast, %	38.9	50.0	ns
Regular beef, %	57.4	37.5	ns
Lean beef, %	20.4	31.3	ns
Extra-lean beef, %	11.1	12.5	ns
Pork, %	53.7	43.8	ns
Lean pork, %	7.4	18.8	ns
Turkey, %	29.6	43.8	ns
Fish, %	40.7	43.8	ns

Table 5. Availability of Dairy Products (N = 71)

	Target (N = 54)	Contrast (N = 17)	P Value
Milk, %			
Whole milk	88.9	100.0	ns
2% milk	50.0	81.3	.05
1% fat milk	29.6	56.3	.05
Skim milk	37.0	81.3	.01
Nonfat yogurt, %	25.9	50.0	ns
Low-fat butter substitute, %	25.9	50.0	ns
Cheese, %			
Regular cheese	68.5	68.8	ns
Low-fat cheese	20.4	50.0	.05
Nonfat cheese	7.4	31.3	.05
Soy milk, %	22.2	50.0	ns
Tofu, %	11.1	50.0	.01

sale compared to 41% of South Los Angeles stores and 50% of Inglewood venues.

Although there was no significant difference in availability of yogurt or regular cheese between the target and contrast areas, low-fat and nonfat cheese were more commonly found in the contrast area (P < .05; Table 5). A trend for a lesser availability of soy milk did exist in the target versus contrast areas (22.2% vs 50.0%, P = .0555), as did a significant discrepancy in the availability of tofu in the target areas versus contrast area (11.1% vs 50.0%, P < .01).

Markets in the target areas were as likely as those in the contrast areas to sell white and brown rice, but contrast area markets were much more likely to sell whole grain pasta (1.9% vs 31.3%, P < .01). A variety of vegetable oils were available in the target and contrast areas. Some variation existed among the individual target areas. Over two thirds of markets in Inglewood carried canola oil compared to only 35% and 22% of stores in South Los Angeles and North Long Beach, respectively (P < .05). Lowfat as well as regular condiments such as mayonnaise and salad dressing were readily available in the target and contrast areas (Table 6).

Snack foods such as crackers, potato chips and cookies were sold at nearly all stores surveyed (98.5%). Markets in the target areas were less likely than contrast area stores to sell low-fat potato chips (Table 6).

Contrast area stores were much more likely than those in the target areas to have sections designated as diabetic or which carried specific low-sugar or sugar-free food options (3.9% vs 33.3%, P < .01). Additionally, stores in the target areas were less likely to have a particular section devoted to low-salt food options (3.9% vs 26.7%, P < .05). However, no difference was found between the markets in the availability of printed dietary guidelines.

DISCUSSION

The community-based participatory research model has proven particularly effective for the AABLH Project.

Coalition members, researchers, staff members, and community residents have developed strong bonds, suggestive of the trust building that researchers have identified as crucial in overcoming African Americans' feelings toward academic research. 8,10,36 These bonds have enabled the coalition to develop surveillance that illuminates the inadequacies of the resource environment. First, study areas were identified through a dialog between residents and researchers. Then, community members shaped the coalition's strategic objectives. Then coalition members formulated 9 activities intended to diminish the health disparities among African Americans.

The collaborative nature of the project only intensified during the implementation and analysis/interpretation phases. The entire process of inventorying was developed, conducted, and overseen by an advisory group of community members, project staff and researchers. Then, community participants made substantial contributions to the process of analysis and interpretation. Further, the group developed a program that the grantees presented at Indabas in December 2002 and February 2003. These Indabas were marketed as opportunities for the wider community to discuss "brown bananas and bad meat" in their markets. At the suggestion of the community presenters, the survey data were presented between the combined target areas and the contrast area, as well as with specific information about the target area where the Indaba was held. In this manner, the data were made relevant to the local conditions of the community.

At these meetings, residents, project staff, and researchers discussed action agendas that grew out of the inventory process. Specifically, the group discussed plans

Table 6. Availability of Grains, Oils, Condiments, and Snack Foods (N = 71)

	Target (N = 54), %	Contrast (N = 17), %	P Value
White rice	83.3	81.3	ns
Brown rice	38.9	43.8	ns
Whole-grain pasta	1.9	31.3	.01
Olive oil	61.1	75.0	ns
Canola oil	37.0	56.3	ns
Corn oil	83.3	75.0	ns
Safflower oil	22.2	25.0	ns
Vegetable oil	61.1	56.3	ns
Salt substitute	35.2	37.5	ns
Low-fat mayonnaise	35.2	56.3	ns
Low-fat salad dressing	40.7	50.0	ns
Low-fat crackers	48.2	68.8	ns
Low-salt crackers		68.8	
Low-fat potato chips	33.3	68.8	.05
Low-salt potato chips	14.8	12.5	ns
Low-fat cookies	33.3	50.0	ns
Sugar-free cookies	16.7	50.0	.05
Diabetic food section	3.9	33.3	.01
Low-salt food section	3.9	26.7	.05
Diet guidelines	5.7	13.3	ns

to use the inventory data to shape 3 parallel campaigns. First, the information needs to be more broadly disseminated, perhaps through churches and other communitybased organizations, to educate the community more widely about the limited nutritional resources available to them. Second, the information needs to be put into a form that can be used to engage small and medium market owners in a dialog about possibly offering healthier options. Third, building on earlier efforts to compel regional chains to offer services currently available in other sections of the city, the data need to be used to confront larger markets about the need for more equitable resources being devoted to South Los Angeles chain stores. Each of these interventions is now in the planning stage, with expectations that during 2003, groups in the target areas supported by project staff and researchers will take some action.

For many participants, the market inventory process included the development of new skills, such as critiquing instruments and analyzing data, building community capacity in seeking redress for deficiencies identified. The coalition members are now planning ways that they can use the resulting data to challenge gaps in the existing resource environment. For instance, a similar set of physical activity inventories is currently serving to guide efforts to fund new community-based programs through a second phase of the mini-grant program. The findings of these observational studies are being used in other AABLH intervention studies (activities falling under the coalition's other strategic directions).

As the inventories demonstrate, the target areas do not have an equitable set of nutritional resources. Supermarkets are far apart, with convenience stores "filling" in the gaps. South Los Angeles residents are significantly less likely to have access to items that health advocates are encouraging Americans to adopt in their diets, such as low-fat or skim milk, low-fat or nonfat cheese, soy milk, tofu, whole grain pasta, and a greater variety of fruits and vegetables.

The CPBR process provides an important opportunity to develop a collaborative project that could improve the health of communities confronting such inequities. 21,28,33 The strengths of CBPR are the engagement of community residents in the research and their unique perspective on the research problems and process. CBPR offers the potential to build community capacity and form community coalitions that could use the findings as a powerful tool to confront public officials and private corporations. The process also has limitations. The participatory research method poses threats to the validity and reliability of the data. The method requires less elaborate survey instruments and less control over the data collection process. This study experienced problems in the quality of the initial inventories (initially too many errors, with improvement over time). The advantages of this approachespecially the perspectives and experiences of community members—may overshadow the disadvantages of using less trained investigators and less rigorously controlled

research design, since the data can address important health policy questions.

Our research complements a growing literature that argues that African-American communities have disproportionately been the objects of increased marketing and advertising for unhealthful foods³⁷ while also receiving less targeted marketing for healthy products. 37,38 This lower level of advertising influences the demand for products, as does the higher relative cost of healthier choices (e.g., skinless vs poultry with skin). Price elasticity produces disproportionate effects on low-income consumers, which has been used to health promotion advantage with tobacco taxes/surcharges. Federal policy provides price supports to some of the least healthy options-corn used to feed livestock and to supply raw materials for the high-fructose corn syrup used to sweeten sodas, juice drinks, and refined-grain, low-nutrient-dense snacks³⁹—thereby creating a health promotion disadvantage. Mobilizing these community organizations increased the capacity for health promotion within the sociocultural environment of South Los Angeles. Hopefully, this project will create the political will and momentum for legislative policy change and advocacy with the business community to change the physical environment toward greater support of healthful behaviors.

Community members and researchers continue to meet to discuss the findings and to formulate action steps. Community-based participatory research provides a promising model that researchers, staff members, and community residents can use to develop a collaborative approach to better combat critical public health problems in their community.

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