

Community-based Participatory Research and Baltimore Healthy Stores:
Goals, Progress and Future Steps

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Abstract:

To address the epidemic of obesity and obesity-related chronic conditions, the factors that contribute to poor nutrition must be addressed. Application of community based participatory research (CBPR) methodology is a means of approaching disparities in nutrition resources and knowledge through research, action, and education. This paper discusses the Baltimore Healthy Stores (BHS) project in regards to the adaptation, application and advancement of the community-based participatory research methodology. Baltimore Healthy Stores aims to develop a culturally appropriate, acceptable and sustainable environmental nutrition intervention in Baltimore City through research methods that engage the community, such as in-depth interviews with community leaders and storeowner and workshops. The principles of CBPR facilitate these goals by providing a framework for trust building, communications, and iterative feedback in materials development. The Baltimore Healthy Stores project can serve as a model for application of CBPR to nutrition research and social action in an urban setting.

A primary goal of *Healthy People 2010* is to eliminate health disparities among segments of the population, including differences that occur by gender, race or ethnicity, education or income, disability, geographic location, or sexual orientation. The past two decades have seen a rapid proliferation of participatory research methodologies as alternatives to traditional population-based research practices in an effort to resolve health disparities (O’Fallon and Dearry, 2002). Application of community based participatory research (CBPR) methodology is a means of approaching disparities in nutrition resources, knowledge through research, action, and education. CBPR is a research orientation that strives to be a democratic and ecological in its approach by focusing on issues of trust, power, dialogue, community capacity building, and collaborative inquiry with the goal of improved community health (Minkler and Wallerstein, 2003).

Healthy People 2010 states that overweight and obesity are observed in all population groups, but obesity is particularly common among Hispanic, African American, Native American, and Pacific Islander women. Other studies have reported higher rates of nutrition related diseases, such as hypertension, diabetes, heart and heart disease among minority populations (Graziano et al, 2003). Many complex and integrated factors contribute to the difference in lifestyle that are manifested as difference in health status, such as finances, culture, education and neighborhood resources. To address the epidemic of obesity and obesity-related chronic conditions, the factors that contribute to poor nutrition must be addressed.

Baltimore City residents have a high incidence of many nutrition-related health problems, including hypertension, diabetes, cardiovascular disease, and infant mortality (Graziano et al, 2002). Research indicates that 50 percent of males and females have a body mass index greater than the recommended cut-offs for their gender and age (Kayrooz et al, 1998). Nutrition-related chronic disease is associated with poor eating habits. People’s ability to maintain a healthy diet is shaped both by individual’s choices, and, also, by community resources that ensure access to an adequate diet for its residents (Morland et al, 2002). Lack of access to food stores and inability to obtain

nutritious food can be a significant barrier to the maintenance of a healthy diet. The Baltimore Healthy Stores (BHS) project is a community-based, environmental intervention to improve availability of healthy food options and promote these foods at the point of purchase in Baltimore City. In an effort to make the intervention culturally appropriate, acceptable, and sustainable in the Baltimore community, BHS is engaging the community in the design and development of intervention strategies and materials. To insure sustainable access to healthier food options, stakeholders (retailers, city leadership, community organizations, and community members) will need to be stakeholders in the Baltimore Healthy Store project. Community-based participatory research may serve as an intellectual framework for addressing this research challenge.

In the last decade, community-based participatory research has been applied to a wide range of setting, predominately in Western countries, to improve a variety of public health issues ranging from housing and domestic violence to diabetes and breast cancer (Parker et al, 2003; Giachello AL et al, 2003; Metzler et al, 2003; Yassi et al, 2003). Few CBPR projects address nutrition (Sloane et al, 2001; Levine et al, 2003; Pelletier D et al, 2003; McCullum et al, 2002). McCullum et al identified advocacy groups within a Texas community related to issues of food security, but did not report on a CBPR project aimed at addressing food security issues. Sloane et al studied the nutrition environment in Los Angeles. The study mobilized African American community residents, health and social organizations to address health disparities related to cardiovascular disease. Sloane et al concluded that healthy food products were significantly less available in the target areas, suggesting that health disparities have origins outside personal behavior or the health care system. The Baltimore Healthy Stores project has the opportunity to contribute to the body of literature by detailing the participatory process and evaluation of the development of an urban nutrition intervention.

This paper will discuss the Baltimore Healthy Stores (BHS) project in regards to the adaptation, application and advancement of the community-based participatory research methodology

Community Based Participatory Research: Research, Action and Education

The goal of community based participatory research is that the research agenda, process, and evaluation that involves community members, rather than merely having the research situating in a community setting. The W.K. Kellogg Foundation's Community Health Scholar's Program states that, "Community based participatory research in health is a collaborative approach to research that equitable involves all stakeholders in the research process and recognizes the unique strengths that each brings. CBPR begins with a research topic of importance to the community with the aim of combining knowledge and action for social change to improve community health and eliminate health disparities," (Minkler and Wallerstein, 2003) The term "community-based participatory research" has evolved from a host of closely related disciplines with largely overlapping principles, such as action research, participatory research, participatory action research, and collaborative action research. A core set of principles is shared: participation, equality between researchers and the community, co-learning, development of community systems and capacities, empowerment, and balance research and action goals (Minkler and Wallerstein, 2003). Using the term added the term "community-based" stresses and demands the definition of community and accountability to that community (Wallerstein and Duran, 2003). CBPR involves three interconnected goals: research, action and education. What is meant, specifically, by these terms will be discussed in more detail.

The innumerable labels attached to various methods of interactive research arose because of differences in goals and theories ascribed to the technique. Two distinct traditions have resulted in the myriad of participatory action methods mentioned above, the Northern tradition and the Southern tradition (Wallerstein and Duran, 2003). The Northern tradition is collaborative

utilization-focused research with the goal of systems improvement built on Kurt Lewin's theories. The Southern tradition developed as a challenge to the "colonizing" practices of the intellectually and politically dominating elites, particularly in South America (Hall, 1999). The two traditions differ in how they approach what role the community plays in agenda setting, location of power for the research process, types of knowledge creation, goals of research in terms of problem solving and/or social transformation.

Lewin coined the term "action research" in 1940 as a technique to connect theory to practice and practical problem solving. Lewin defined action research as "a three-step spiral process of (1) planning which involves reconnaissance, (2) taking action and (3) fact-finding about the results of that action," (Beebe, 2003). Action research, in this form, does take an educational mission as a means to problem solving, but without looking at further social change beyond the affected participants (Minkler and Wasserstien, 2003). The initial concepts of action research were utilized by those in the Northern tradition as a means to bring together stakeholders predominately in institutional settings to solve system level problems (Wallerstien and Duran, 2003). For example, in the educational setting, teachers instead of outside academic researchers would become primary researchers in their own classrooms to solve problems on a continuing basis. In the 1970's, participatory research was conducted in Latin America, Africa and Asia and, thus referred to as the Southern tradition. This practice was rooted in educational theory and aimed to interrupt the "monopoly of knowledge" and shift power to community-based non-governmental structures, largely as an immediate response to the political realities of dictatorship and economic underdevelopment (Hall, 1999; Wallerstein and Duran, 2003). Wallerstein and Duran explain that, "the Southern tradition, originating in Marxist social theory, has viewed social progress through mass participation in challenging inequitable distribution of resources." For researchers of the Southern tradition the crux of the research relationship resides in the issue of power, the determination and control of the process, and aims share power equally among stakeholders. Action

research and participatory research were incorporated into participatory action research (PAR) in 1985 to emphasize the “action” component of the research, i.e. problem solving, as a part of the empowering and equitable process of participatory research.

Participatory rural appraisal (PRA) emerged in the 1980’s incorporating some of the principals of participatory action research with rapid rural appraisal. PRA is associated with Robert Chambers of the University of Sussex and was developed in Thailand in the mid-1980’s and its use was discussed in the early 1990’s (Chambers R 1992). The term “rural” is used because the method developed out of rapid rural appraisal (RRA) and was originally used in agroecosystem analysis, but PRA can be applied to other settings. (Beebe 2003, Ensign 1998, worldbank.org). PRA relies on the participation of the community as sources of information as well as participation in gathering and analyzing the information, flexibility, and is most informative when conducted by a local team. PRA work aims to gain enough information to make recommendation and decisions, striving for “optimal ignorance.” Since PRA works with qualitative data, triangulation, meaning the utilization of at least three sources or techniques of information gathering, is necessary to support the validity and reliability of the information. Common tools used are mapping techniques, ideally with naturally available elements such as sticks, rock, and dirt, ranking exercises, and trend analysis. Semi-structured interviews and focus group discussions are also commonly undertaken. As an outgrowth RRA, PRA is naturally conducted over a short period of time, a month or less, and, necessarily, focus on a few topics in a small area. Reports are written optimally written during the fieldwork period and disseminated within a few weeks to all participants. This is a participatory method in data collection and analysis, but, for the most part, researchers and government institution have used the data to create interventions, rather than empowering the community participants to take action.

Community based participatory research can include qualitative and quantitative methodologies in the gathering of the data. In-depth interviews, focus groups, workshops, mapping,

and surveys are commonly used. The distinction from traditional research is in the mindset of the researchers that the community needs to be a partner in the research and the research should have some application to the advancement of greater social change.

Principles of Community Based Participatory Research

CBPR represents the evolution of the PAR methodology. General principles of CBPR have been established, largely by Barbara Israel and colleagues out of the Detroit Community-Academic Urban Research Center, to serve as guidelines and goals for CBPR research (Figure 1). She emphasizes the importance of flexibility, reflection, and critical analysis in adapting these principles to a specific setting. The following section defines and describes each of the core principles and discusses some initial issues in academic researchers participating in CBPR.

CBPR recognizes community as a unit of identity. How can community be defined? A community is characterized by a sense of identification and emotional connections to other members, common symbol system, shared values and norms, mutual influence, common interests, and commitment to meeting shared needs (Israel and Duran 2003). Communities are often defined by geographic boundaries, but geography may represent an aggregation of people who do not share the previously mentioned characteristics. For this reason, discovering the unit of identity through which a community can be recognized is crucial to CBPR. Once a community is recognized, then determining strengths and resources that are included in that unit can be accurately assessed.

CBPR builds on the strengths and resources within the community to support or/and expand social structures and social processes that contribute to the ability of community members to work together to improve health. As a community, networks of support and social interaction exist otherwise a common identity would not exist. Exploring why these existing structures work and how they have maintained a trusted and respected role in the community provides a means of

understanding the community and also building trust and support within the community.

Evaluation of the existing social networks is used in CBPR as a means of understanding the resources that can be mobilized for intervention strategies. *CBPR facilitates collaborative, equitable partnerships in all phases of research, involving an empowering and power-sharing process that addresses social inequalities.* The strength of CBPR is that it acknowledges and aims to bring in parties that have been marginalized or left out of the process of identifying and solving problems that affect them. Lasker and Weiss call for broader participation and advocate for empowering those who have not previously been involved, including people from various background, professional and academic disciplines, and a wide range of resources and skills (Lasker and Weiss, 2003). One of the larger issues is who is involved in the determining the research question and process. The ideal is for the process to be collaborative, meaning that a diverse group of participants are determining the process, not a single stakeholder, such as a university or health department. Attempts to engage a diverse group of collaborators by making them aware of the process instead of selling them the process. With that said, creating an environment of equality in the context of previous marginalization is a challenge. Sharing responsibility and leadership duties among a variety of individuals has been a part of successful community collaborations (Weiss, 2002). Making time for collaborators to interact in informal ways as well as formal meetings facilitates personal exchanges and the sense of equality that may be difficult to achieve in a structured meeting setting (Lasker and Weiss, 2003). Equality in the research process, demonstrated by power sharing, is fundamental to empowering the participants in the process. Zimmerman defines empowerment as (1) believe they have the ability to exert control over forces that affect their lives, (2) have the knowledge, skills, and resource to do so, (3) are actually involved in making decisions and taking actions (Lasker and Weiss, 2003). Without empowerment, participants are following the directive of one stakeholder, which undermines the participatory nature of the process. *CBPR promotes co-learning and capacity building among all partners.* The articulation of

co-learning emphasizes that information needs to go in both directions in order to facilitate research and improve the problem solving ability that can be applied to the current issue as well as future issues. Researchers need to learn from community members communication and management strategies that are used and work in their communities (Israel and Duran, 2003). This process should be an integral part of formative research. Community members can learn skills and build networks outside their immediate environment through the experience. In this way, community competence is improved. Community competence, a term coined by Cottrell, refers to the ability of community members to collaborate effectively in identifying problems and needs, to reach consensus on goals and strategies, to agree on ways and means to implement their agree-upon goals, and to collaborate effectively in the required action (Lasker and Weiss, 2003). Community competence building begins during the formative research phase and should proceed through the entirety of CBPR. Empowerment can be seen as both a process and an outcome, on an individual level or at the community level.

CBPR integrates and achieves a balance between research and action for the mutual benefit of all partners. Information is gathered to inform action. The research generated is meant to build a body of knowledge related to health from which action to address the concerns of the community. This is the legacy from the action research tradition – information for action. But CBPR does not necessarily have to result in direct action, but agreement to further change efforts and generate knowledge that advances community improvement insures that the research is mutually beneficial.

CBPR emphasizes local relevance of public health problems and ecological perspectives that recognize and address multiple determinants of health and disease. In line with the goal of eliminating health disparities, CBPR address issues that contribute to disparities in that community health. The Community Health Governance (CHG) model defines community health broadly, “a positive concept, encompassing all of the environmental, social, and economic resources as well as

the emotional and physical capacities that enable people to realize their aspirations and satisfy their needs,” (Lasker and Weiss, 2003). This broad definition requires a holistic and contextual view of barriers to health. The solutions, too, reside within the social networks and environmental characteristics that affect people’s lives.

A cyclical and iterative process is critical to CBPR. Partnership development and maintenance, community assessment, problem definition, development of research methodology, data collection and analysis, interpretation of data, determination of action and policy implications, dissemination of results and determination of mechanisms of sustainability require interaction, information sharing, and review (Israel and Duran, 2003). Without the iterative and cyclical process, CBPR would not be participatory, but rather predetermined by one stakeholder. Barriers to the degree of the iterative goal include time and funding, institutional realities that shape research timelines (Nyden 2003).

CBPR disseminates findings and knowledge gained to all partners and involves all partners in the dissemination process. Making the minutes of the meetings and updates of activities available to all participants at the same time, so that the participants feel that the report is accurate and the decisions made have not been reinterpreted or reshaped in their absence (Lasker and Weiss, 2003). This dissemination principle also includes the involvement of partners as co-authors and reviewers of publications, and co-presenters at meeting and conferences (Israel and Duran 2003). Sharing timely and complete sharing of information facilitates trust, equality and participation between partners.

CBPR is a long-term process and requires a long-term commitment. In light of the previously discussed principles, it is clear that CBPR requires slow, deliberate process of iterative co-learning and trust building, especially when achieving the goal of including often silenced voices. Besides the discrepancy in skills and experiences between researchers and community members, some communities are very skeptical about research, especially health or medically

related research. For example, studies show that African Americans distrust public health and medical professionals and this might explain the detrimentally low participation in clinical trials and organ donation (Gamble, 1997). The history of early medical training and research, combined with the oral tradition of African American culture and the oppressive White American society makes this issue of institutional distrust a significant issue to be addressed when engaging in participatory research in African American communities. All participants need to feel that the players are committed to the process so that the effort is worth investing themselves in the research.

Figure 1: Community Based Participatory Research: Key Principles*

- 1) Recognizes community as a unit of identity
 - 2) Builds on strengths and resources within the community
 - 3) Facilitates collaborative, equitable partnerships in all phases of research
 - 4) Promotes co-learning and capacity building among all partners
 - 5) Integrates and achieves a balance between research and action for mutual benefit of all partners
 - 6) Emphasizes local relevance of public health problems and ecological perspective that recognize and attend to the multiple determinants of health and disease
 - 7) Involves systems development through a cyclical and iterative process
 - 8) Disseminates findings and knowledge gained to all partners and involves all partners in the dissemination process
 - 9) Involves a long-term process and commitment
- *Adapted from Israel BA et al, 2003.**

The following is a brief description of an example of CBPR application to a public health problem in Detroit. LA VIDA is a program established in southwest Detroit with the goal of reducing intimate partner violence (IPV) against Latina women (CDC Urban Health Centers 2001). In 1996 the Detroit Community Academic Urban Research Center met with two community based organizations to discuss the issue. The Community Health and Social Services Center, a part of the Urban Research Center project, took responsibility for coordination of the project. By 1998, LA VIDA mobilized partners representing community-based organizations, healthcare, social service agencies, law enforcement, religious institutions, academia and other groups to insure the availability, accessibility, and utilization of culturally appropriate (as advised by LA VIDA

partners) IPV prevention and support services. The goals of the partnership were to promote collaboration and coordination among diverse partners, expand the knowledge base of Latino families, and promote development, implementation, use and evaluation of locally relevant interventions. LA VIDA created a steering committee composed of community-based organization representatives, which met monthly. The steering committee oversaw sub-committees working on specific initiatives. The steering committee and the community generated these initiatives. LA VIDA found that the CBPR approach was particularly useful in addressing the needs of the Latino community. The project strove to bridge the cultural gaps between the diverse partners and improve the quality and validity of academic research, particularly during the early phases of research. This was accomplished through dynamic and egalitarian intervention development. Evaluation of this project has not been reported. LA VIDA was funded by the Centers for Disease control as part of their CDC's efforts to address health disparities.

The Baltimore Healthy Stores Project

The Baltimore Healthy Stores Project (BHS) was initiated in 2002, in collaboration with the Baltimore City Health Department and community organizations, to address the increasing burden of nutrition related chronic conditions in Baltimore. Death rates attributable to heart disease and diabetes increased dramatically during the 1990's (Baltimore City Health Department Mortality Statistics Tables, 1999). Clark et al found that obesity rates in West Baltimore were 31% and 61% of adults were overweight. In light of these symptoms, discovering the root of the problem and possible counter solutions is imperative.

The mission of BHS is to develop programs to improve the availability of healthy food option to all residents, promote these foods at the point of purchase, and work in collaboration with community agencies and the city of Baltimore. Its goals include the increase of healthy foods, teaching of healthy food preparation, collaborations with local merchants to offer healthy choices,

partnerships with local food stores and merchant and community organizations. The initial strategies are based on previous experiences of researchers in The Republic of the Marshall Islands, with the Native American populations in the United States and Canada and other health interventions in Baltimore City (Young et al, 2001; Gittelsohn et al, 2001; Yanek et al, 2001; Ensign et al, 1998). Possible promotion strategies for healthy food choices include logos, flyers, cooking demonstrations, taste test, inexpensive and convenient recipes, shopping lists, mass media advertising, and collaborations with stores to supply healthier alternatives. Baltimore's diverse, parochial, urban environment requires in-depth, collaborative research in order to design an effective, culturally and economically acceptable intervention. The following section will describe BHS understanding of Baltimore City's nutritional environment based on formative research.

Background

Baltimore is the twelfth largest city in the United States and has a diverse and prosperous history. Its location on the inner harbor the Chesapeake Bay made it an ideal shipping port. The city's economy was largely dependent on industries related to the shipping of raw materials, such as canning and steel. With the overall decline in manufacturing in the United States, Baltimore, which once was a magnet for during the migration of rural African Americans and white Americans as well as immigrants, suffered a major decline after the 1960's. The historical legacy of Baltimore City has endowed it with a wealth of ethnically and culturally diverse neighborhoods and communities.

According to the most recent census data, Baltimore City has 635,000 residents. As the state of Maryland increased its population by eleven percent, the Baltimore City's population declined by 11.5 percent from 1990 to 2000 (data available at www.baltimorecity.gov). 64% of residents are African American, 31% are white, and 1.5% are Asian. 8.5% of Maryland's population lives below the poverty line, where as 23% of Baltimore City residents live in poverty. Some areas in Baltimore, notably East and West Baltimore, have higher concentrations of the symptoms of

poverty, namely abandoned properties, single parent homes, and less ethnic diversity. For example East Baltimore population, where a large portion of the formative research was initiated, is 96% African American, and 57% of households are headed by single women. 21% of housing units are vacant, and three-quarters of the vacant units are currently not for sale or rent. (Baltimore Neighborhood Indicator Alliance, available at <http://www.bnia.org>).

Formative Research

Despite the interconnected nature of geographic, social, economic and cultural factors that affect nutritional practices, the description of Baltimore's nutritional environment will be divided into the physical environment, perceptions of food sources, and perceptions of barriers to access and consumption of healthy food. The characterization is based on formative research conducted by BHS in East and West Baltimore. The formative research involved in-depth interviews with storeowners and managers of large and small stores (n=17), in-depth interviews with community leaders (n=26), direct observations (n=5) in corner stores and other food markets, a consumer survey with a sample of Baltimore residents (n=50), 24-hour dietary recalls with East and West Baltimore residents (n=71) and an extensive food source survey in twelve randomly-selected census tracts.¹

Perceptions of the Nutritional Environment:

With the decline in urban population, Baltimore City is losing supermarkets and the Office of the Mayor found this problematic enough to charge the Baltimore Development Corporation with attracting supermarkets back to the city (www.baltimorecity.gov; Klein A, 2002). Residents depend on smaller grocery stores and corner stores, and carry-out for their food needs (Franceschini MC, 2003). In a survey of consumers, 94% reported shopping at a supermarket, 70% at corner stores,

¹ The consumer survey sample was 76% African American, 54% percent female, 22% reported receiving some government assistance, 16% were food insecure based on the USDA food security scale and 8% were food insecure with hunger. The 24-hour dietary recall sample was 96% African American, 85% female, and 51% reported receiving government food assistance. Storeowners and community leaders were interviewed as part of student projects and employed unstructured in-depth interviews with individuals serving East Baltimore.

76% at carryout restaurants, and 77% at fast food restaurants in the last month. The less affluent areas of Baltimore, East and West Baltimore, are dominated by corner stores that predominately sell soda, chips, cookies, and convenience items. The food source survey demonstrated a discrepancy in sources of low-fat milk, fruits and vegetables and the average price of milk. Census tracts in East and West Baltimore contain no sources of low-fat milk and do not have three or more options of fruits and vegetables. The average prices of milk in these areas were \$3.36 and \$3.19 as compared to \$2.96 found in a census tract in Federal Hill, a more affluent city neighborhood. One local chain supermarket has several stores located in East and West Baltimore. East Baltimore also has some single store supermarkets. New supermarkets are being constructed in the City, but they are located outside the impoverished areas that have experienced store closings over the last twenty years.

In-depth interview with corner store owners in East Baltimore revealed that soda, chips, candy, eggs, milk and cigarettes are the most commonly purchased items. They reported that the elderly residents purchase groceries and juices at the corner stores. Storeowners felt that they had little control over the items stocked in their stores.

Direct observations by researchers found the soda, candy and chips were the most frequently purchased items. The consumer survey found that 90% got whole milk. Pan-frying was the most commonly reported method of preparing chicken, pork, beef, liver, fish, eggs and potatoes. 24-hour dietary recall data determined that white bread (51%), soda (51%), potato chips (39%), cheese (37%) and sugar (30%) were the most commonly consumed foods. Only 30% reported consuming any fresh fruit, 14% canned vegetables, and 11% fresh or frozen vegetables the previous day. This data supports perception of community representatives that residents in East and West Baltimore are not consuming adequate fruits and vegetables and depend largely on carryout and convenience foods such as chicken boxes, fries, soda, subs. As previously stated, some larger supermarkets and grocery stores do exist in East and West Baltimore, but community representative found them to have poor quality, poor selection, and lack of cleanliness. High prices and location were also reported as barriers. The existing markets are seen as unclean, with spoiled products, wilted vegetables and poor quality fruits.

People saw that the larger supermarkets, located on the outskirts of the city, as having a wider selection of quality products. The perception is that the stores in East Baltimore only sell “junk foods” and “convenience stuff.” A community leader insinuated that one privately owned market sold merchandise that was about to turn, but people would buy it because that was what was on sale.

Both community representatives and residents stressed that price was a major factor in what food was bought. Also, most believed that healthy food choices were more expensive than poor nutritional quality food. An overall impression that stores took advantage of the economic cycle of residents receiving government assistance by raising prices at the beginning of the month when people could afford it existed. Representatives reported that people's inability to spend a lot of money at one time perpetuated the use of higher cost sources of food, rather than investing in a large supermarket-shopping trip.

Issues with transportation also contribute to the cost and inconvenience of shopping at stores that are perceived to have better quality and prices. Many people do not have private transportation and must depend on public transportation, taxicabs, or hacks (informal cab service). Transportation creates additional cost and the time needed to go shopping and many feel that this a significant barrier to persuading people to shop at larger stores with better quality. Compounding the transportation issues is the fact that many feel unsafe walking the streets to get to stores that are in walking distance.

The fear of crime and the perceptions of the environment as unsafe also affect the storeowners and the physical environment of the stores. Many corner stores install Plexiglas barriers with rotating windows for exchanges between customers. Customers cannot touch products or read labels. Some owners only let certain, trusted customer in their main store space to browse. This environment discourages people from choosing new things or using nutritional knowledge to choose a healthier product. Storeowners are not encouraged to stock produce or healthier items that people are unlikely to purchase.

The reality of the food sources and the physical environment of many neighborhoods in Baltimore provide little availability of healthy foods and residents suffer from additional barriers to access to what food is available (Figure 2). The good source of produce in East and West Baltimore are the public markets, Northeast Market and Pennsylvania Market. A wide variety of merchandise

and food is available ranging from seafood, poultry, and produce to prepared foods, such as fried chicken, pretzels, pizza and breakfast foods. 52% of consumers surveyed reported using a public market and residents reported enjoying outings to the public markets in their areas but also saw cost, time and transportation prohibitive.

Perceptions of the Community:

The recent lack of grocery stores that meet the community's needs is rooted in the complex process of urban deterioration and lack of community cohesiveness. This ethos is more difficult to understand; therefore, a critical part of the formative researchers was to glean why leaders in the community felt caused the lack of availability to healthy food and what might be done to increase access.

Community leaders felt the decline in economic opportunity initiated a cycle that increased mobility of residents and resources away from East Baltimore, discouraging further investments. The area has become less attractive to businesses and new residents because of crime and higher perceived start-up costs related to security. The only segment of the population that has grown by percentage is the elderly, who refuse to move because of personal attachment to the area or who cannot afford to move. Community representatives felt that the East Baltimore community, which once had been a prosperous community, had suffered in recent years for lack of cohesiveness. Reasons given for this was the changing racial mix of the community, namely the business owners were seen as outsiders that did not live in the community. An adversarial relationship rather than a cooperative relationship exists between some residents and retailers. Storeowners and community leaders reported racial tensions between Korean storeowners and African American residents as a source of conflict. Representatives also felt that community organizations were not working well together to solve problems and get needed resources from the city and this contributed to declining cohesiveness. Community leaders felt that the presence of many people who work in the community, but do not live in East Baltimore, created competing sets of needs that changed the face

of East Baltimore. For instance, the Northeast Market was renovated in the 1980's and more prepared and convenience foods were introduced. The communities understanding of this, was that the convenience food were introduced to meet the lunch needs of the university and hospital employees and students, disregarding the needs of the East Baltimore residents.

Many community leaders felt ignored and even abused by the "powers that be." The effect of this was seen as lack of enforcement of health codes, timely trash pick-up, and lack of responsiveness to issues of abandoned housing. The reported "powerlessness" that permeates people was associated with the appearance, lack of cohesion and the inability to resist changes that occur without the community's input.

Despite this, community leaders and representatives were hopeful about changing the environment in which they work and live. The leaders overwhelmingly expressed the need for the solutions to come from the community in order to be successful and sustainable. They identified the players in the community as residents, churches, schools, law enforcement, city services, Johns Hopkins University, and community organizations (Figure 3). Churches were emphasized as a centerpiece of African American culture in Baltimore who could serve as partners and resources. Community organizations, including advocacy and development organizations, were also seen as significant resources. The challenge for Baltimore Healthy Stores facilitate methods of harnessing this enthusiasm, generating ideas from the community, delegating responsibility to the community, and expanding change beyond the spheres of any single community organization may be important areas of focus.

Figure 2: Baltimore City’s Nutritional Environment

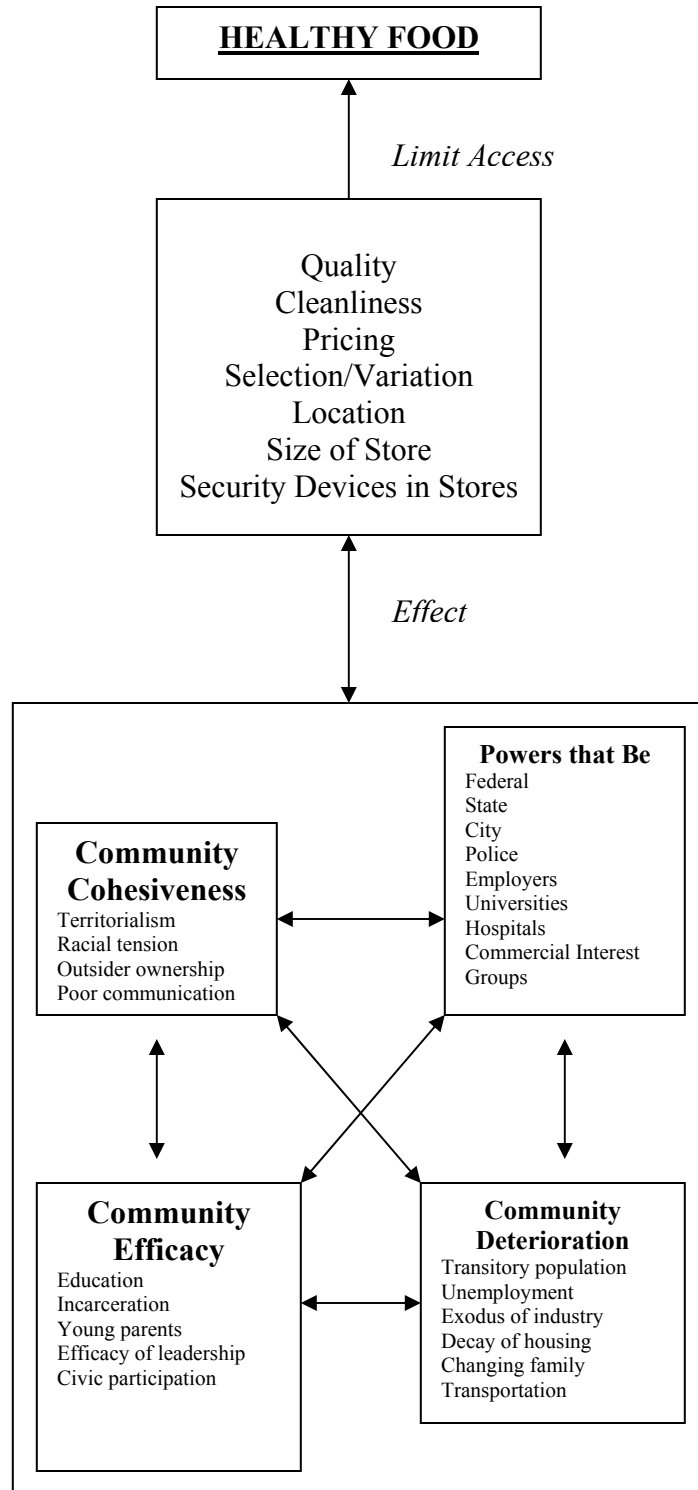
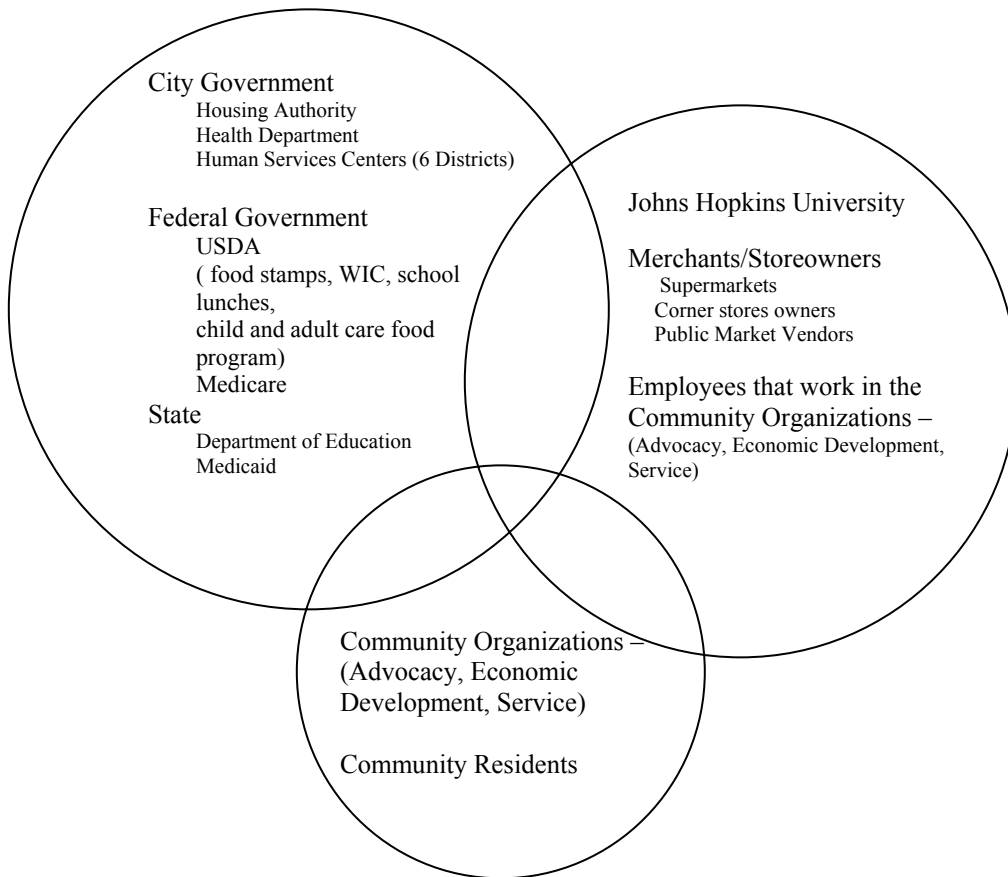


Figure 3: Baltimore City’s Nutritional Environment –Stakeholders



Community Based Participatory Research and Baltimore Healthy Stores

Recent research has demonstrated the connection between the environment, such as number of grocery stores in a given area and healthy nutrition practices (French et al, 1997; Cullen et al, 2000; Wechsler et al, 1998; Morland et al, 2002). The ecological nature of CBPR in conjunction with the focus on empowerment and community capacity building is ideally suited to nutrition research and intervention development (Sloane, 2003). As Israel suggests, CBPR should be customized to meet the needs of the environment within which the research is being conducted, as well as the timing and funding realities of the process, while maintaining the goals of democratic research.

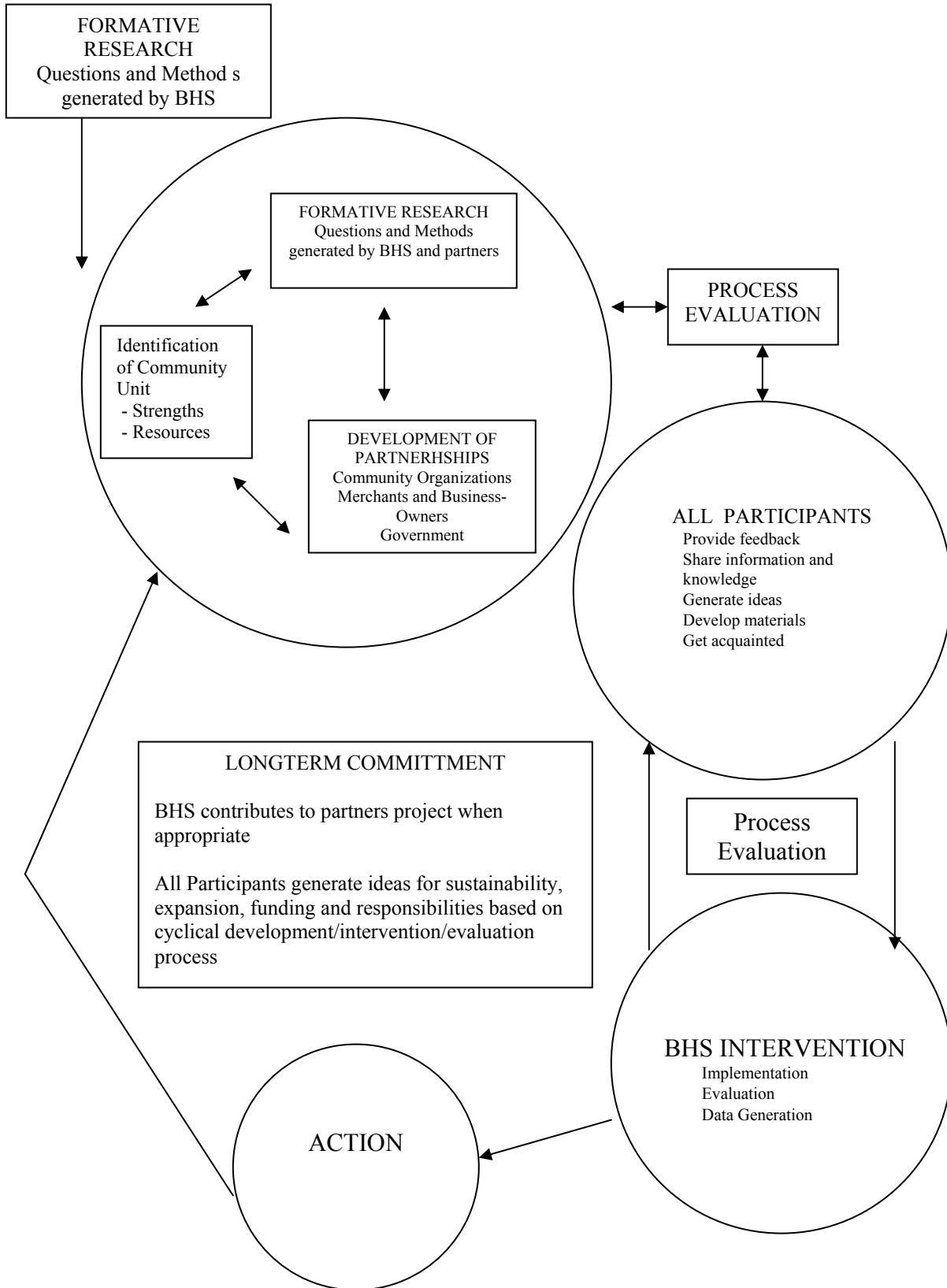
Figure 4 graphically depicts the modification of key principles of CBPR. The initial problem designation and research question generation was determined by researchers at Johns Hopkins Bloomberg School of Public Health based on observations and previous experiences implementing nutrition interventions in other environments suffering from chronic conditions (Gittelsohn et al, 2003; www.healthystores.org). In order to conduct formative research, initial contacts and collaborations with community residents, community organizations and merchants and storeowners were necessary to carryout that work. This provided an obvious opportunity to begin informing the community, gaining feedback on initial BHS intervention ideas and material development, building networks, and building collaborative relationships. BHS attempted to foster equality in the process by bringing the different partners together to share information, skills, and be exposed to other interests. Because of grant funding and institutional procedures of research protocol review and protection of research subjects, BHS will most likely retain responsibility for organizing the intervention. But the intervention itself and the players carrying out the intervention will stem from the collaborative process and the collaborative partners. Important to this specific effort in Baltimore, as well as CBPR practiced in other environments, rigorous process evaluation

needs to occur at all points in the participatory research. The outcomes used to evaluate the process also need to be generated from group deliberation to insure the measurement of endpoints, relevant to the community as well as researchers.

During this iterative process, discussions about sustainability and future action for social change need to be part of the group deliberations. Introducing these types of discussion serve to clarify expectations, address concerns, ensure the development of appropriate skills among key players in the action phase of participatory research. This should also facilitate trust and equality among partners and balance the needs of the community and researchers

Reports on previous CBPR efforts have not specifically addressed the use of student researchers in the process. Students participating in CBPR research are doing so to gain skills and competencies. The research process for student researchers has a short term, intrinsic goal. In the BHS project, thus far, two groups of student researchers have been a part of the BHS formative research as a result of the academic calendar. Students bring new energy and ideas, and, based on experience, carry less authority into the community than professors and therefore further the democratic notion of CBPR. The challenge is maintaining the continuity of relationship development with the community and proper transitioning. No literature has outlined the role of the student researcher in the CBPR process and Nyden addressed only the tension of academic teaching and research needs (2003). Teams of student researchers working with the BHS project will change regularly over the long-term project. Evaluation of the nature of dynamic student research teams in CBPR would be useful.

Figure 4: Baltimore City's Nutritional Environment



Since the Baltimore Healthy stores project is still in its initial phases there, there is still an opportunity to incorporate some of the aspects of CBPR. Looking from the perspective of each of the principles and establishing a goal to improve the participatory nature of this research may generate creative strategies for BHS.

Identifying the unit community that the BHS occurred in several phases and the unit of identity changed over time. First, BHS defined the community of focus (East Baltimore) by geographic barriers. The original formative research studied the whole of Baltimore City using census tract definitions. Initial interviews with corner stores were conducted in East Baltimore. Geographically, East Baltimore is a community situated between the harbor waterfront neighborhoods and the beginning of affluent residential neighborhoods south of the Baltimore County line, bordered by Guilford Avenue, Erdman Avenue, Sinclair Avenue and Pulaski Highway delineate East Baltimore. Community leaders were identified for interview by looking at the organizations and institutions that served this area. Some of the leaders had a much broader identity as leaders in the Baltimore City, residents of other areas of Baltimore or Maryland. Many had professional identities such as health and medical, educational, and government affiliations. For example, one informant who serves as the director of a social services provider in East Baltimore, grew up in East Baltimore, lives in another neighborhood of Baltimore City, and had been affiliated with Johns Hopkins as a clinical psychologist prior to taking over the directorship of the community organization. These interviews helped defined the players in the nutritional environment (Figure 3). Through interviews with these community leaders, we found that several communities exist within the geographic space of East Baltimore: (1) the residents of East Baltimore who are predominately low-income, African American people, (2) the medical and academic professionals that work at the University, and (3) the Baltimore City residents that come into East Baltimore to provide services and operate business that are patronized by residents and university affiliates. Overlap between these groups exists. In-depth interview with community leaders identified low-income, minority

residents of Baltimore City as the community most affected by food insecurity and poor nutrition and, therefore, the most appropriate community to engage.

From the initial relationships with these community informants, other players in the community were identified. Meetings with these organizations, which were not structured as in-depth interviews, but rather, invited informal feedback and comments on the BHS research and ideas, also generated information about the Baltimore City's diverse and overlapping communities. BHS's relationship with these organizations facilitated the collection of 24-hour recall and consumer survey data, from which the identification of low-income populations as a community in need was supported. Fitting with CBPR principles, the validation and refinement of the unit of community most in need was generated with community informants – informants that included the target population as well. For example, at a meeting with an established partner, her four of her staff also attended the conference and contributed their ideas about the BHS project.

BHS has engaged markets, merchants, organizations, government entities and nutrition education providers. A goal for BHS is to engage low-income, minority residents, of all ages directly to get a better sense of how they define themselves, what values and symbols resonate in their definition of community. Possible mechanisms for engaging residents would be to first publicize the efforts of BHS. This is being done through BHS's participation in the Baltimore City Human Services Division programs. In an effort to avoid "selling" the academic view of solutions to problems, being present and engaged in the community can encourage interest and uncensored feedback from residents. BHS has held two day long workshop with its current collaborators where research was present and target foods, behaviors and outreach channels were generated by all participants. One informant suggest holding a "chat and chew" to build rapport and solicit feedback. "Chat and chews" are dinners that bring people together to discuss ideas. This may be a less formal and therefore less intimidating and prone to domination by researchers. Current partners and

collaborators, continually emphasized that BHS needs to demonstrate that it is trying to understand the problems and solutions by learning the community's language and motivation.

Through in-depth interviews and collaboration building efforts, many resources in Baltimore city were identified. In keeping with the principles of CBPR, BHS has depended on this infrastructure to conduct formative research and interface with community representatives. For example, through a key informant, BHS gained an audience with the Baltimore City Human Services Centers. As part of the Baltimore City Housing Department, the Human Services Centers serve as local "advocates and agents working to eliminate poverty in Baltimore City." The centers promote self-sufficiency and provide information and opportunities for residents to receive help with heating, electricity and other government assistance. Six service centers are situated throughout the city. The 2nd district and the 4th district serve the East and West Baltimore neighborhoods.

By working with the Human Services Centers, BHS was able to learn about the community from the directors and staff, many of whom grew up in East and West Baltimore and have been serving the community for many years. BHS was also able to directly speak with residents in an environment that they felt comfortable in and saw as a place of assistance. BHS conducted 24-hour recalls in several in the 2nd and 4th district Human Services Centers. The Centers as well as other service providing community organizations have presented BHS with ways to improve their educational programs and services by adding a nutrition education component. For instance, the Men's Center in East Baltimore provides medical services and social counseling to men. It also serves as a food distribution site for the Maryland Food Bank. In the past the Maryland Cooperative Extension has had nutrition educators conduct cooking demonstrations at the center. The director of the Men's Center suggested that BHS could contribute to the effectiveness of the produce distribution by showing community recipients how to prepare the food they receive in a healthy manner. In this way BHS would be strengthening a resource that already exists.

BHS has also engaged a local artist to contribute his talents and his impressions to the materials that are being developed. The artist was referred to the BHS project through a key informant who has engaged in organizing artistic works in community spaces in East Baltimore. This is an example of BHS letting partners make suggestion and then following through on their suggestions using the resources the organizations suggest.

A goal for BHS is be to continue and follow through with ways to strengthen services that are already provided as BHS takes advantage of the opportunity to interface with the community through these organizations. BHS needs to solicit the organizations ideas of how BHS can best help them. At the closing to of the November community Workshop, organization representatives were invited to express ways to that BHS could further their organizational missions. This question needs to be asked again, one on one. Organizations might need more time to think about the best means of interactions and they may have not felt comfortable expressing those needs in front of other organizations.

To this point, BHS has operated as the cog in a wheel of partners, maintaining leadership and process control, which inherently shifts power towards BHS. Greater emphasis on moving the center of power away from the university environment and into the community should be a BHS goal. The first step that could be taken would be to move the site of the meeting off university property. Researchers from University of Michigan would travel into Detroit for meetings in an effort to remove themselves from their seat of power (Lantz et al, 2001). BHS has gone to meet with potential collaborators and interviewees on their grounds, but the workshop was held at Johns Hopkins Bloomberg School of Public Health. The next workshop, whether with community leaders or residents, should be hosted by a collaboration partner and perhaps run by one of the first workshop attendees.

Currently, the Baltimore Housing Authority is undertaking the Healthy Hearts in Housing project. Healthy Heart in Housing is targeted at decreasing the incidents of cardiovascular disease

among residents in city housing developments (www.hud.gov/local/md). The Housing Authority would like to include a store component to the project, but they have not initiated this piece of the project. BHS meet with the director of Healthy Hearts in Housing to discuss the possibility of BHS providing the store component. Instead of asking all collaborators to be part of the BHS vision, BHS would be collaborating under the structure of another public health effort with similar goals. In this way, energies could be combined and BHS would be able to demonstrate its willingness to participate in the projects of others, thus facilitating equality and power sharing.

Baltimore Healthy Stores has shared its research with the community and solicited feedback. BHS has learned from the community leaders and observed how organizations serve the community. BHS staff has been invited to become members of the advisory boards of the Human Services Centers, which would provide an excellent learning opportunity for the BHS researcher and demonstrate long-term commitment to the community. BHS should take future opportunities to convey knowledge and skills to community members to promote community capacity. The individuals that BHS is collaborating with currently, arguably, already possess knowledge and skills or else they would not be effective leaders and activists. In the Apache Healthy Stores project community members attended a workshop and will be integral in communicating the messages of the intervention. In the intervention stages of the Baltimore Healthy Stores project, integration of community members as intervention implementers and data collectors, in addition to material development will further co-learning and impart skills to the residents of Baltimore. It may also improve the reception of the intervention messages and increase the effectiveness of the project. This is an important principle to keep in mind during the development of the intervention strategy.

Balancing research and action is one of the more difficult tasks (O'Toole, 2000; Lanz et al. 2001; Slaone et al, 2003). In the BHS project the community liaison, charged with increasing awareness of the project and establishing partnerships, often encountered organizations enthusiastic about the project. It was encouraging the project supported, but it was a challenge to explain to the

organizations the limitations of the project and timeline for development. Because of BHS's data gathering needed to occur with a rigorous methodology, which did not always make sense to collaborators, it was difficult to share control of the process, while protecting BHS research interests. The nature of grant applications also requires that BHS collect certain types of information. Because of BHS's institutional limitation, which will not be eliminated during the time frame of the BHS project, the project needs to focus on how to make sure the data generated is useful to these organizations. Then the organizations can use the data to support action and receive funding for those actions this includes making sure data disseminated in a format that is useful for all players, retailers, health professions, and services providers, is incorporated into the intervention evaluation. Listening to the research needs of partners will facilitate achieving this goal. To insure that partners can express their research needs, effective and timely information sharing and multiple opportunities to express these needs, need to be built into the BHS project.

The strength of the Baltimore Healthy Stores project lies in its original emphasis of the local relevance of public health problems and ecological perspectives that recognize and address multiple determinants of health and disease. The current multi-level, multiphase approach acknowledges economic, cultural and social acceptability to the consumer as well as the economic needs of storeowners. Formative research with many players in the nutrition environment demonstrates that the project acknowledgement of multiple determinates of health. The challenge for BHS is to work with the community to identify what interventions will produce the most change while remaining acceptable to the players. This can be achieved by equitable, frequent collaboration with the community partners.

BHS is designed as cyclical and iterative process. For instance, during the collection of consumer survey and 24-hour recall data, BHS researchers gave participants incentives for their time. At first these incentives were bowls, picture frames and alarm clocks. While introducing the project to community organizations, researchers asked if they felt that these incentives were

appropriate. One leader thought that to give participants something that directly spoke to their needs would make the participants feel as if BHS understood what their lives were like. The informant stressed that they residents would probably participate anyway, but BHS could further trust building by making the incentives more appropriate. BHS proposed five-dollar supermarket gifts certificates to the closest market as an incentive. The informant approved of the incentive and researchers gained positive feedback from research participants. As materials development continues, this type iterative process and adjustment is crucial to creating a successful intervention. To make the BHS process more iterative, the BHS staff needs to develop a convenient and time efficient means of presenting materials and gaining feedback. Achieving this goal coincides with successful execution of the dissemination of findings.

The disseminations of findings have thus far been limited to presentations, face-to-face meetings, workshops, and the website. This is an effective means of doing this while building relationships, but in the face of competing time demands and expanding numbers of partners, BHS needs to develop another means of timely dissemination of information to all. A goal for BHS should be to develop several methods of communicating to BHS diverse partners on a regular basis. A periodic newsletter mail out is one way to update all participants, particularly participants without consistent Internet access. For those community leaders with Internet access, creating a link for partners on the Baltimore Healthy Stores website, which is updated often, and provides resources for partners may be another useful means of communicating (Fawcett et al, 2003).

BHS has begun this project with the aim of long-term commitment to the project. Convincing collaborators and community of the commitment is the challenge that faces the project. The fact that BHS has been working with the community on the development of this project for over a year with a timeline that extends several years into the future is one way to communicate BHS's commitment. Continuing visibility in the community at festivals and healthy events would also enhance perceptions of stability of the project. Having a community liaison that can be

responsible for frequent contact, formally and informally, with collaborators, facilitates the notion of a long-term relationship. For example, having staff attend parent meetings and school functions or volunteer to distribute food with an organization furthers the communications of the projects dedication to the health of the community, rather than conducting research *on* the community. Informants and collaborators have suggested many community events at which BHS should be present. The basic concept is that BHS really needs to become vested in the community to convince others to be vested in the healthy stores project.

Figure 5: CBPR Goals for Baltimore Healthy Stores

- 1)Continue to strengthen services that already exist in the community to improve food access and nutrition education
- 2)Move the center of power away from the university environment and into the community
- 3)Transmit knowledge and skill to community members to promote community capacity building
- 4)Develop convenient and time efficient means of presenting material and soliciting feedback from partners

Significance and Conclusion

Baltimore Healthy Stores aims to develop a culturally appropriate, acceptable and sustainable environmental nutrition intervention in Baltimore City. The principles of CBPR facilitate these goals by providing a framework for trust building, communications, and iterative feedback in materials development. CBPR also provides a way to think about action and social change while balancing research needs. Overall, this method helps BHS achieve project goals by highlighting area of relationship development between the community and the research university. Many informants expressed the strained relationship between the university and community. Better communication and attention to mutual collaboration between the community and the university

will improve the perception of the university and further research and action beyond the Baltimore Healthy Stores project.

As noted, the community based participatory research framework was modified to work within the realities of Baltimore Healthy Stores project while preserving the principles. BHS did begin with research questions and a general intervention approach that was not derived from the community's perceptions of the communities needs, even though the need has been confirmed through qualitative research methods. The inability for BHS to be truly participatory is largely an issue research demands and funding. The funding issue is a dilemma for all research that aims to be participatory (Nyden, 2003). A principle investigator must be able to articulate a research question, and intervention approach, and possible results of that intervention in order to gain funding. With that said, the National Institute of Environmental Health, National Institute of Health, undertook the funding of a sustained community participator research effort in 1995 (Green, 2003). This institute was under pressure to engage in participatory research because the public expressed great skepticism about the science of environmental health, largely as a result of the perception that government science allowed toxic dumping of industrial chemicals. But as the BHS evolves, new grants are submitted, the project has some room to change. BHS is an example of how the CBPR can be adapted to meet the needs of a specific environment without compromising the core principles of the methodology.

The complex power structure of the urban environment challenges true participatory research in terms of equitable power balance between all stakeholders. CBPR strives for democracy in researcher, meaning that all players have a voice. As social complexity has increased, the American legacy of town meeting driving problem solving has been replaced by issue-specific activism, which has focused on debate rather than deliberation (O'Connor et al, 2000). What is missed in this shift is the context from which the issue has arisen. Fragmentation and territorialism – played out geographically, ethnically, and intellectually, and religiously - impede the problem

solving and discourage many community members from even engaging in the discussion. This was seen in Baltimore most strikingly between advocacy organizations within the community and the city government. Many of these players have been debating with each other for over twenty years adding the memory of conflict to an already difficult collaboration process. BHS is in accord with the Healthy Communities initiatives that have broadly defined health in an effort to help communities see problems in a holistic way and dilute old notions of competition and special interest (O'Connor, 2000; Kenzer, 2000).

Understanding of the collaborative process is limited first because most of the research that has been done on community-based collaboration has not been comparative and existing research focuses on one aspect, such as leadership, empowerment or knowledge sharing, without determining what the entire process accomplished to result in the successful solution to the problem (Lasker and Weiss, 2003). It has been very difficult to document that broad participation and collaboration actually strengthen the ability of communities to improve the health and well being of their residents. Evaluations of community-based projects have focused more on the goals than the impact of the collaborative process in achieving those goals. The debate can be distilled to process verses impact indicators (Kenzer, 2001).

Generally speaking, collaborative processes are not scientifically designed interventions particularly because they stress the iterative, interactive process. Even successful collaborative problem solving does not exclude the possibility that the problem could have been solved using a different method, and therefore can be questioned. When communities are not successful in their problem solving, whether the issues resided in the collaborative approach or the process of the collaborative approached has not been teased apart because of deficiencies in process evaluation practices. It is not clear that the time and effort taken in the collaborative process is warranted. This is a serious limitation in the expansion and improvement of CBPR.

A comprehensive process of evaluation of New Mexico's Healthier Communities initiatives was conducted to describe the impact of the Healthy Communities process on the structure and system of community initiatives (Wallerstein, 2000). All projects were evaluated at baseline and three years using two questions with the underlying assumption that community infrastructure and collaboration would improve health social status: (1) how does a community express the characteristics and principles of a healthier community, and (2) what are the barriers to and facilitators of change. The method for determining measures was in-depth interviews with formal and informal leaders, observations of coalition meetings and health statistics. It is worth thinking about the result and implications of this evaluation because the themes have been expressed in other settings (Yassi et al, 2003; O'Toole, 2003; Minkler, 2000; Israel and Duran, 2003). Interviewees expressed pride in the vision for healthier communities, but inter and intra-coalition conflicts were also expressed.

The conflicts included the lack of awareness of the grant process and the mission that that grant process imposed, the abstractness of principles, lack of diversity in the face of the mission of diversity, caution in challenging the power structure, service driven culture versus community organizing demands, lack of policy maker involvement, need for economic development agenda, and skepticism and criticism of the state government. The most significant conflict expressed was between local communities and state agencies. Community leaders felt that they were left out of the "communication loop," and that they had little or no decision-making authority. Interestingly, some considered the evaluation process to be an unwanted burden.

Since evaluation is necessary in terms of generating broader acceptance of the CBPR method, less burdensome means of evaluating, or a greater understanding for the purpose of evaluating the process needs to be imparted. Success in translating CBPR into action has been seen (Adams, 2000). For example, California Smoke-Free Cities used the tools of CBPR and was successful in passing legislation to ban smoking in all workplaces and bars. In Vermont a group

organized around improving medical care, and thus health, discovered that 90% of what residents felt influenced health did not have anything to do with medical care. Instead, the organization became a resource for civil action. This measure of success might not meet the needs of researchers in search of generalizable knowledge and etiological understanding. Baltimore Healthy Stores has an opportunity to contribute to the evaluation literature by developing and implementing methods of evaluation that better meet the needs of the research community in understanding the process of participatory research.

Besides challenges in evaluation, many other disincentives for academic researchers to engage in CBPR exist. Reward structures for academics or community representatives are not well intergraded with the CBPR approach; academic reward structure emphasizes tenure, publication, grant awards whereas community representatives must produce services and resources for their constituents (Lanz et al, 2001). Traditional academic institutions are protective of their intellectual domain and property, and some feel research agendas should be determined by academic disciplines and not the community, that community participation biases or politicizes the research, and that the information gathered will only be useful to that environment (Nyden 2003). Academics have identified this as a challenge, but do not feel like it is insurmountable (Lanz et al, 2001).

The current incentives in the academic environment limit the extent to which they are involved in applying research to action and the extending partnership. Further work evaluating the process and the outcomes is needed to overcome the perceived barriers to community based participatory research and illuminate its benefits. Other researchers are willing to overlook, invest the time, and work with the limitations of CBPR in light of its strengths (Lanz et al, 2001; Sloane et al, 2003). Strengths have been identified are the engagement of community residents, building community coalitions and capacities, and gaining the unique perspective on the research problem and process.

The Baltimore Healthy Stores project is uniquely situated in an urban environment struggling to address economic and social barriers to healthy nutrition practices. The literature that specifically applies CBPR principle to nutrition interventions is limited (Sloane et al, 2001; Levine et al, 2003; Pelletier D et al, 2003; McCullum et al, 2002). BHS is also associated with a large, prestigious research institutions steeped in the traditional academic culture. The describing the strategies employed by Baltimore Health Stores, will provide an example to other researchers struggling to implement participatory research. BHS can make a valuable contribution to advancing the use of CBPR to address nutritional issues that contribute to health disparities. Thomas McKeown, a professor of social medicine at Birmingham University, found that factors that improving health in the in the 19th and 20th countries were not advances in medical care and technology but social, environment and economic changes, an increase in food supplies, and a healthier physical environment (Kenzer, 2000). The Baltimore Healthy Stores project can serve as a model for improving health through empowering the community to reform the nutrition environment in which people live.

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