

MAP-IT in Action: Developing a Plan to Improve the Food Systems Frequented by Bangladeshi Americans Living in Hamtramck, Michigan

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DOI: 10.29322/IJSRP.9.09.2019.p9345

<http://dx.doi.org/10.29322/IJSRP.9.09.2019.p9345>

Abstract-

Background: Bangladeshi Americans are one of the fastest growing Asian minority groups in the United States, including in the state of Michigan. Bangladeshi Americans have a high prevalence of cardiovascular disease. An inverse relationship between the consumption of fruits and vegetables and the risk of CVD among Bangladeshi Americans was found.

Method & Design: MAP-IT Framework was utilized as a strategic plan to create a sustainable healthy environment equipped with improved access to food systems frequented by Bangladeshi Americans living in Hamtramck, Michigan. This initiative is part of the collaborative agreement with the CDC Racial and Ethnic Approaches to Community Health (REACH) to improve the health of Asian Americans in Michigan. A windshield survey using observational data, Geographic Informational System (GIS) mapping, and quantitative and qualitative surveys will be conducted.

Discussion: Foods eaten at home are dependent upon the availability of nutritious foods sold at grocery stores, smaller convenience stores, and/or retail stores. Food systems are complex and dynamic.

Index Terms – MAP-IT Framework, healthy food options, Bangladeshi Americans, Hamtramck

I. INTRODUCTION

Americans do not partake in a healthy diet¹. The so-called “standard” American diet consists of meat, dairy, sugar, and processed foods². In addition, Americans exceed the recommended dietary guidelines on intake of sugar, sodium, and saturated fat¹. Data also shows that only 25% of Americans have a healthy eating pattern of vegetables, fruits, dairy and oils¹. This unhealthy eating pattern has been linked to the increasing rates of obesity in the United States (U.S.), which is associated with major negative health conditions including type 2 diabetes, stroke, some forms of cancer, and cardiovascular disease (CVD)^{1,3}. Similarly, there is evidence linking a high prevalence of obesity with lower income and minority groups in America; in some part due to limited access to healthy food items, and high density of fast food and convenience stores where they live^{1,4}. Among these minority groups in the U.S. with increasing rates of income inequality and obesity-related health conditions, such as CVD, are Asian Americans.

Asian Americans are the fastest growing minority group in the U.S. The U.S. Asian population increased from 11.9 million in 2000 to 20.5 million in 2015, a 72% growth in 15 years⁵. South Asians in particular, which include those from countries such as Bangladesh, had an increase of 224% in the U.S⁶. This minority group has displaced African Americans as the most economically divided group in the U.S., as income inequality among all Asians groups has increased significantly from 1976 to 2016⁷. Additionally, findings from the Mediators of Atherosclerosis in South Asians Living in America (MASALA) showed that South Asians account for 60% of heart disease worldwide⁸. This high of incidence along with increasing income inequality makes this population an important minority group to focus on about health promotion.

Research regarding the South Asian group of Bangladeshis and CVD were primarily from those living in Bangladesh. Most studies on Bangladeshi Americans were clustered with other South Asians. Previous studies have reported moderate prevalence of CVD among Bangladeshi people⁹. However, a recent systematic review of the literature by Chowdhury et al.(2018) showed an upward trend in prevalence of CVD among Bangladeshi adults¹⁰. The few U. S. studies on Bangladeshi Americans were primarily from the New York region. A needs assessment of Bangladeshi Americans from the Bronx, New York found high prevalence of CVD risk factors, however this assessment did not include diet¹¹. Another study of Bangladeshi Americans living in Queens, New York showed lower awareness of CV risk factors, particularly with physical activity and smoking¹². A 2014 study by Islam et al., called the DREAM Project, reported low consumption of fruits and vegetables by the Bangladeshi community¹³. Interestingly, in a large study of Bangladeshi Americans, an inverse relationship between the consumption of fruits and vegetables and the risk of CVD was

found¹⁴. To date, there is a gap in initiatives and research to address health disparities among Bangladeshi Americans in relation to CVD.

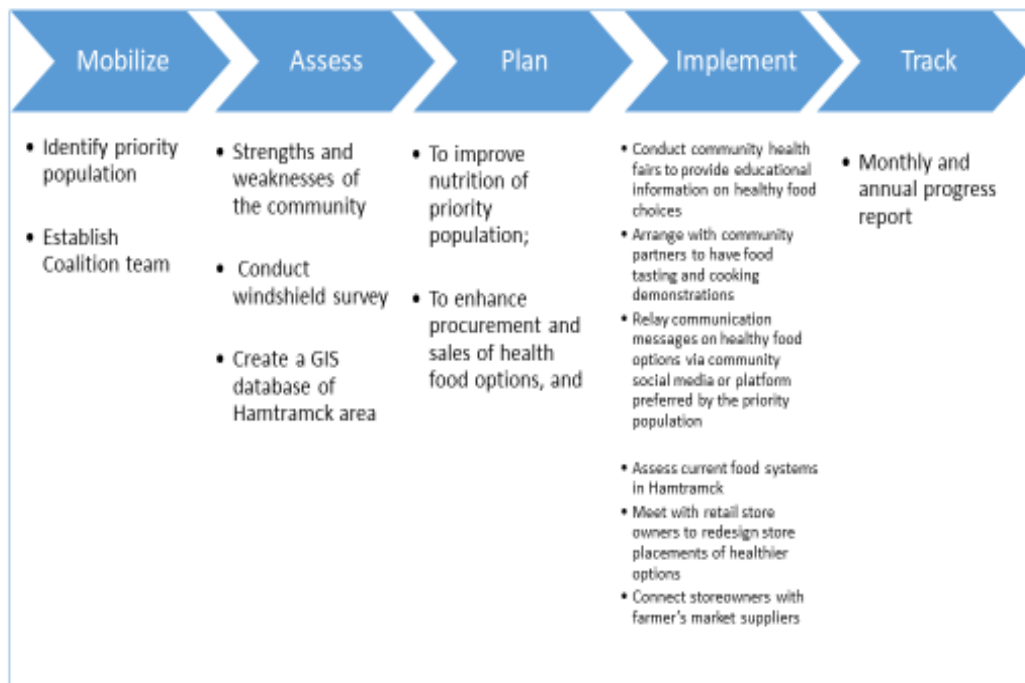
II. PURPOSE

The purpose of this paper is to present a strategic plan, utilizing the MAP-IT Framework, to create a sustainable healthy environment equipped with improved access to food systems frequented by Bangladeshi Americans living in Hamtramck, Michigan. This project is one of the domains of the collaborative agreement between Eastern Michigan University’s (EMU) Center for Health Disparities Innovation and Studies, and the Centers for Disease Control and Prevention’s Racial and Ethnic Approaches to Community Health (CDC-REACH). The culminating goal of this project is to increase availability or accessibility of healthy food options for Bangladeshi Americans from this community.

III. THEORETICAL FRAMEWORK

MAP-IT is a program-planning tool adapted from Healthy People used as a framework to create a healthy community¹⁵. MAP-IT is an acronym that stands for mobilize, assess, plan, implement, and track. The framework has five steps – 1) Mobilizing individuals and communities to form a coalition; 2) Assessing the needs, as well as the assets and strengths of the community; 3) Planning strategies to achieve vision or goals; 4) Implementing plan using action steps; and 5) Tracking progress over time¹⁵. Figure 1 presents the flow diagram of how MAP-IT was used for this project.

Figure. 1. Flow diagram of MAP-IT for this project



IV. IDENTIFICATION OF PRIORITY POPULATION

Bangladeshi Americans are one of the fastest growing Asian minority groups in the U.S. There are approximately 185,000 Bangladeshi people in the U.S., an increase of over 100,000 since 2007¹⁶. Michigan is one of the states experiencing a 39% growth in Asian immigrants in the U.S., including Bangladeshi Americans⁶. The majority of the Bangladeshi Michiganders live in Hamtramck, Detroit, and southern Macomb County areas⁶. In 2017, there were an estimated 2,779 Bangladeshi Americans living in Michigan, the majority in Hamtramck, an area north of Detroit¹⁷. The population of Bangladeshi Americans living in Hamtramck is of such significance that the City of Detroit, among other stakeholders, have begun a neighborhood rehabilitation project branding the area “Banglatown”¹⁸. Pew Research Center, however, reported that in 2015 approximately 24.2% of Bangladeshi Americans live in poverty¹⁹. Despite the large influx of Bangladeshi immigrants in the U.S., this population is poorly studied. With the lack of research specific to the Bangladeshi-American population, the exact health disparities faced by this population is difficult to discern.

V. MAP IT IN ACTION

Mobilize

After identifying the priority population, the initial step begins with building a coalition. In order to build healthier communities or cities, community engagement is an important component of any initiative. Getting the local people involved in activities is obligatory. In forming a coalition, one of the major steps is to identify key individuals who should sit at the table to provide input. These individuals may include, but are not limited to, community representatives or leaders from the priority population, legislators, clinicians, and the priority population. Support from these community leaders is critical for the success of any project. For the EMU CDC-REACH initiative, the Bangladeshi American Political Action Committee (BAPAC) is identified as the partner needed moving forward. BAPAC is a community-based organization in Hamtramck that has strong social and political affiliations aimed at ensuring the concerns and needs of the Bangladeshi American community are addressed, and that the community has enough access to resources for social and economic empowerment²⁰. The organization will guide the EMU CDC-REACH group of the best possible way to identify community problems, conduct needs assessment, and develop strategies to address problems. In addition, stakeholders from the local health department, legislators, and priority population will be invited into all of the discussions.

Assess

The next step is to assess the strengths and weaknesses of the community to identify what the needs of the community are to develop a realistic plan. Hamtramck is a city in Wayne County, which is surrounded by the city of Detroit¹⁸. The total city area is 2.09 square miles, and is about 5 miles from the center of Detroit. The area in Hamtramck where the Bangladeshi American community resides is urban, with a mix of residential, school, commercial, and industrial buildings. In 2017, it was reported that heart disease was the leading cause of death in Hamtramck²¹. The assessment focus of this part of the CDC-REACH initiative will be on nutrition standards and the food systems, which may positively influence the rate of heart disease.

Assessment of community resources includes performing an electronic search of public records, conducting a windshield survey of Hamtramck, creating a Geographic Information System (GIS) map, and conducting quantitative and qualitative surveys of the convenience and retail stores in the area. The EMU CDC-REACH geospatial data analytical team will create a health thematic map of the area of Hamtramck using GIS. This GIS map will identify locations of various infrastructures such as the number of convenience, retail and grocery stores, fast food restaurants, food pantries, and farmers markets. In addition, spatial accessibility analysis will be conducted to examine factors associated with higher accessibility. GIS mapping for this project will focus on the area where the Bangladeshi American reside, in a proximity region along the local main road, Conant Street. GIS mapping and spatial analysis is an innovative way to organize, visualize and assess the environmental factors of community and provide useful insight for action plans.

Plan

The third step is to develop strategic plans to improve nutrition of the priority population. The five-year strategic plans are part of the collaborative agreement with the CDC-REACH initiative. Strategic plans specific for this proposed project include: 1) to improve nutrition of priority population and 2) to enhance procurement and sales of health food options. Through this agreement with the CDC-REACH, the overall goals are to increase the number of places in Hamtramck selling fruits and vegetables, and to improve/increase access for Bangladeshi Americans living in Hamtramck to healthier food options. Table 1 presents the workplan relating to the strategies.

Table 1. Workplan on how to implement strategic plans

Strategic Plan 1: Improve nutrition of priority population		
Indicator	Action Steps	Measurement
Improve/increase consumption of healthier food options for Bangladeshi Americans	<ol style="list-style-type: none"> 1. Conduct community health fairs to provide educational information on healthy food choices 2. Arrange with community partners to have food tasting and cooking demonstrations 3. Relay communication messages on healthy food options via community social media or platform preferred by the priority population 	Quantitative – 1) survey on knowledge, beliefs, behaviors, and attitudes about food choices; 2) risk factor survey of Bangladeshi Americans living in Hamtramck. 3) audience survey on food choices
Strategic Plan 2: Enhance procurement and sales of healthy food options by working with food vendors, distributors and producers		
Indicator	Action Steps	Measurement
2.1 Assessment of food system	<ol style="list-style-type: none"> 1. Assess current food systems or retail stores in Hamtramck 2. Identify challenges encountered with procurement and sales of healthier food options. 3. Assess willingness of food retail storeowners 	Quantitative – 1) Nutrition Environment Measures Survey-Convenience Stores (NEMS-CS); GIS mapping of different convenience or retail stores locations in Hamtramck, and

	<p>to make changes in the store to accommodate healthy food options.</p> <p>4. Assess the availability of suppliers of fruits, vegetables and health foods for local food retail storeowners.</p>	<p>transportation routes to these stores; long-term survey on storeowners' procurement and sales of healthier food options.</p> <p>2) windshield survey of Hamtramck food environment,</p> <p>Qualitative - interview of storeowners</p>
<p>2.2 Increase the number of retail stores who will procure and sell healthy food options</p>	<p>1. Meet with retail store owners to redesign store placements of healthier options</p> <p>2. Connect store owners with farmers markets</p> <p>3. Relay communication messages to retail storeowners on healthy food choices.</p>	<p>Quantitative – survey on the amount of health food options procured and sold</p>

Implement

Implementation stage is the action plan. Table 1 includes action steps for this initiative. Additional activities will include developing a communication plan for the priority population and coalition partners, and developing monitoring process to evaluate progress. The EMU CDC-REACH team has partnered with state-wide Asian Americans Coalition toward Innovative Visionary Environment (ACTIVE) Coalition to gather input from the target community and promote program activities.

Track

Tracking progress is the last phase of the framework. Tracking progress involves analyzing the data and reporting on the progress. The EMU and CDC-REACH teams will review monthly and annual progress reports of the project. In addition, data collected from the windshield surveys, and quantitative and qualitative data, which include the GIS map will be evaluated and analyzed. Tracking progress will also include evaluation of the coalition partners on their involvement of assessing community needs, developing and implementing intervention strategies.

VI. DISCUSSION

The aim of this project is to increase availability and accessibility of healthier food options for Bangladeshi Americans living in Hamtramck, Michigan. Targeting the food system may be an unconventional path to addressing health disparities related to CVD in this population. Food systems are complex and dynamic. Food systems are defined as, *an interconnected web of activities, resources and people that extends across all domains involved in providing human nourishment and sustaining health, including production, processing, packaging, distribution, marketing, consumption, and disposal of food. The organization of food system reflects and responds to social, cultural, political, economic, health and environmental conditions and can be identified at multiple scales, from household kitchen to a city, county, state or nation*²².

The American Heart Association had identified a healthy food system and a sustainable food system. A healthy food system is one that promotes health individually and across various cultures using a diet that is nutrient-dense; whereas a sustainable food system is described as a food system that meets the current population needs without compromising the needs of future generations²³. Food systems extend from production, distribution, and processing of food, of which it connects food to the health of the people and the environment²⁴. A report presented by the World Health Federation showed how food systems contribute to diet patterns that increase risk of illness of the population²⁵.

There are different hierarchies in the food system²⁵. Individuals, household, and local and regional food systems are the focus of this project. Food consumption is an individual choice²⁵. An individual interacts several ways with food systems. It could be from the type of foods purchased for their own consumption. For example, the 5% vegetarians and 3% vegan in the U.S.²⁶ are more likely to patronize stores that sell vegetarian or vegan products. For Bangladeshi Americans, dal is one of their staple foods, which can be purchased in stores that sell this culturally specific food item. Next, a person's decision about food can be aggregated at the household level, which may provide an understanding on how families interact with the food system²⁴. Foods eaten at home are not only dependent upon the availability of nutritious or quality foods sold at stores²⁷, but also on household financial resources. Food insecurity is a condition in which there is a lack of financial resources for food at the household level²⁸. In 2016, an estimated 40 million Americans, which include 12 million children, were food insecure²⁸. Food insecurity and poverty are closely related. Household wages and expenses can predict food insecurity in families²⁸. Understanding the household hierarchy may be useful in capturing the picture of the local or regional food systems. A local food system is described as the distance between consumers and food products; whereas a regional food system are in place-based²⁸. In this project, Hamtramck is the area where the regional food systems will be located, whereas Conant Street is where the local food systems are located, which is the closest to where most Bangladeshi Americans reside.

The inconsistency in the current dietary patterns among Americans may be due to the food system that is in place, which precludes healthy foods as the default choice²³. This means that people may not have a choice on the types of food to buy because of the lack of healthier food options sold in the stores where they purchase food. There is evidence that showed how food environment or the availability of stores in the neighborhood and the products they carry have substantial influence in diet quality for low-income households²⁷. There are fewer chain stores in urban areas, however smaller convenience or retail stores are prevalent. Convenience or retail stores commonly carry a relatively high amount of processed food and generally of lower quality, and far more expensive than the supermarkets. Low income, minority groups who have proximity to fast food restaurants and small food stores tend to consume fewer fruits and vegetables²⁷. In addition, residents living closest to stores with no vegetable shelf space have the lowest amount of vegetable consumption. It is however, suggested that when it comes to staple foods, devoted shelf space has less influence on sales than specialty shelf space²⁷.

Unhealthy dietary patterns have been identified as risk factors to several leading causes of morbidity and mortality. The food systems in the U.S. may be a contributing factor to some diet-related health problems, including obesity, diabetes, and CVD. This was confirmed in a systematic review of the literature by Malambo et al. that showed the relationship between neighborhood environment attributes and CVD risk factors²⁹. Food systems analysis may be a helpful approach towards identifying and promoting activities beneficial towards the desired outcome of the project. Using the MAP IT Framework guides researchers on how to approach the food systems analysis of Hamtramck. It also provides detailed and specific activities on how to address issues related to unhealthy dietary patterns within the priority population.

VII. CONCLUSION

This paper presents the proposal to discuss a strategic plan using MAP-IT Framework to increase availability and accessibility of fruits and vegetables for the large Bangladeshi American community in Hamtramck. The overarching collaborative agreement with the CDC-REACH will have a significant impact for the Bangladeshi American community in such as this may have the potential to decrease their risk factor to CVD. It is imperative to address risk factors and provide strategies for health promotion and disease prevention to improve health outcomes of this underserved population.

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