The Relationship between Physical Activity and Environmental Factors among Patients at the Boston Center for Refugee Health & Human Rights

Tufts

Public Health Problem

Every year, millions of people around the globe escape persecution, violence, trauma and torture by fleeing to neighboring countries. For those who are able to resettle or be granted asylum in the United States, the adjustment to life is often harsh, and traumatic experiences before and during the resettlement process can get in the way of adjusting to life in a new country. Thus, it is crucial for refugees, especially those who are survivors of trauma and torture, to be able to access mental health and medical treatment and social services in the U.S. Although resettlement organizations, hospitals and volunteer agencies may provide these services, care is not always culturally appropriate or adequate for the patient. Thus, the high rates of PTSD, depression and anxiety combined with a lack of evaluated interventions that address the emotional and physical health needs among survivors of trauma and torture is a growing public health crisis in the United States.

Background

The Boston Center for Refugee Health and Human Rights (BCRHHR) is located within Boston Medical Center, and has worked with refugees and torture survivors in the greater Boston area since 1998. In the summer of 2014, the Center began implementing an intervention aimed at promoting physical activity for their patients by offering free memberships to any participating YMCA in Massachusetts for interested patients. Through my Applied Learning Experience in the Public Health Program at Tufts University, I carried out a quality assurance/quality improvement evaluation of this program. Spatially-oriented research questions included: What role does the built environment play for BCRHHR's clients in accessing the YMCA? What effects do walking distance, public transportation access and population density have on participants likelihood of using the YMCA?

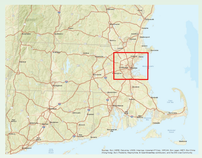
Methods

This project involved semi-structured in-depth interviews with BCRHHR clients relating to their experience with the YMCA program (N=13). GIS was used to examine environmental factors that may affect whether clients at BCRHHR participate in the YMCA program. Transportation was a relevant environmental factor addressed in the interviews; thus, buffer maps were made showing walking distance, subway and bus routes to local YMCA's with data obtained from MassGIS. A choropleth map was made to show population density in areas where YMCA's were accessed using data from the 2010 Census. YMCA locations in Massachusetts were geocoded with addresses from Reference USA and graduated symbology was used to show frequency by adding the total number of times a certain YMCA location was visited by clients.

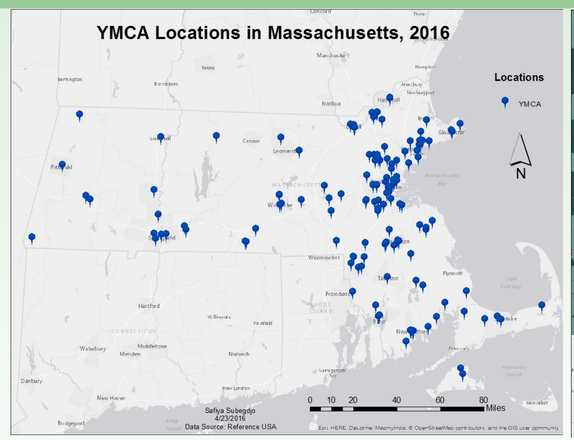
Results

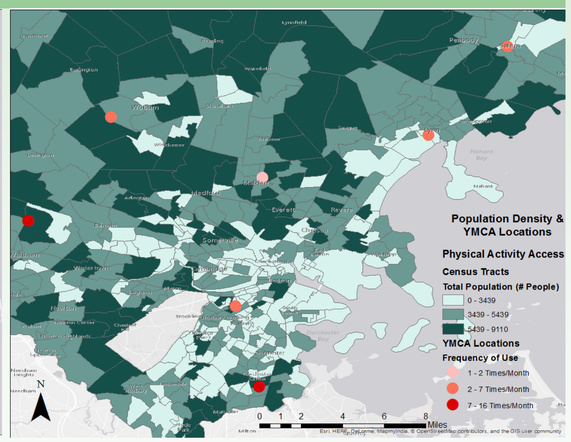
Table 1. Characteristics of in-depth interview participants, N=13

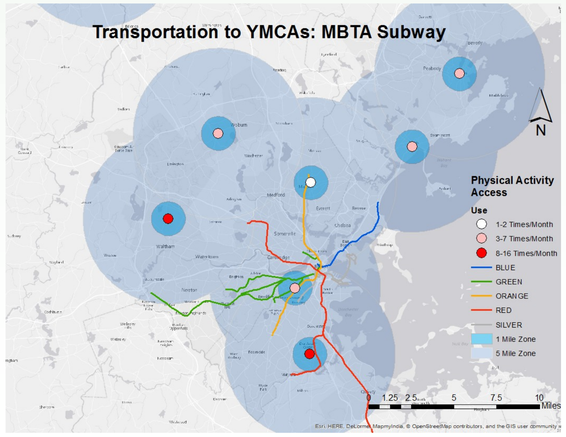
Characteristic	Percent of Participants
Male	85
Female	15
Active YMCA Members	77
Non-active YMCA Members	23
Country of Origin	
Uganda	54
Afghanistan	23
Other	23
Town of Residence	
Waltham	31
Dorchester	23
Other	46

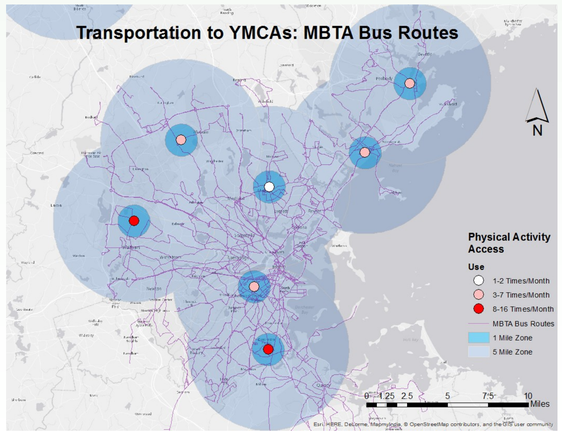


First, a distribution of YMCA locations in Massachusetts reveals a cluster of locations in the greater Boston area, where all participants of the evaluation reside. Few patients use the subway to get to the YMCA, and more depend on the bus system that runs through Boston. Participants are unlikely to walk anywhere outside of the first 1 mile buffer to access the YMCA (15-20 minutes). This is also dependent on weather patterns, and we would expect to see greater participation in warmer months. YMCA locations that are frequented more often are situated in areas with high population density (Dorchester and Waltham), and this confirms previous research showing that higher population density is associated with higher levels of physical activity.









Discussion & Conclusion

Over the course of four months, 13 participants were recruited and information was collected regarding the impact of a physical activity intervention for the trauma and torture survivor population within BCRHHR. Discussions with participants revealed an array of valuable feedback about the YMCA program and direction for improvement, which also led to the development of GIS maps of transportation access. Results from the GIS maps confirm previous studies' findings that transportation and walking distance are barriers to physical activity participation. Although many YMCA locations exist in MA, transportation and access to these sites vary among participants depending on subway and bus routes. The data show that not all clients have access to the subway system, as more participants are living farther from the city. Limitations of this evaluation include the small sample size of participants. Moreover, within the 1 mile buffer zone, walkability and ease of transportation is not shown with detail in the maps. Ultimately, efforts should be concentrated on transportation access outside of Boston, as most clients depend on the MBTA bus system and there is greater access to the bus system than the subway system. However, taking multiple busses to get to a YMCA is prohibitive. Physical activity and wellness interventions that BCRHHR develops should focus on addressing the barriers to accessing the YMCA program.

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Data Sources: MassGIS, Reference USA, 2010 U.S. Census