Neighborhood disadvantage and access to mental healthcare in Rhode Island and Massachusetts

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[Introduction]

Neighborhood context matters in health outcomes

Individuals living in socioeconomically disadvantaged neighborhoods have been demonstrated to have a **higher risk of heart disease**[1], **alcoholism, substance use**[2] and myriad other health problems. Members of such disadvantaged neighborhoods tend to **lack the ability to self-advocate** for important resources[3]. The **strong ties between race and disadvantage** mean that there are especially strong health implications for minorities living in disadvantaged neighborhoods, which is compounded by further race-associated disadvantages and cultural attitudes towards healthcare[4]. There are **even larger disparities** when looking specifically at mental health care.

16% of white adults receive necessary mental healthcare, compared to 8% for black adults[5]

The goal of this study was to understand the **effect of neighborhood disadvantage on access to mental healthcare**, and how those two factors relate to individual mental health outcomes (specifically major depressive disorder and generalized anxiety disorder) in Massachusetts and Rhode Island.

[Methods]

Data on the location of mental healthcare providers came from information on the addresses of psychiatry practices from the Massachusetts Board of Registration in Medicine and the Rhode Island Department of Health. Data on demographic information was obtained from MapUSA, and data for individual health outcomes came from the New England Family Study. Census tracts were used as a proxy for neighborhoods.

A factor analysis determined strong loadings on neighborhood disadvantage for percent of population in poverty, unemployment rate, and percent of population working in manufacturing. Using these variables, a score for neighborhood disadvantage was created for each census tract.

A floating catchment area model was used to determine access to mental healthcare. 30-minute driving time catchment areas were generated around each provider location, and a provider-to-population ratio was created by dividing by the population contained in each catchment area. Next, 30-minute catchment areas were created around the centroid of each census tract. The provider-to-population ratios of each provider contained within those catchment areas were summed. Higher provider-to-population ratio sums represent greater accessibility for the census tract.

A linear regression was run to determine the relationship between neighborhood disadvantage and mental healthcare access, controlling for racial composition of the neighborhood. A multilevel binomial regression was run to assess the effect of disadvantage and access on individual outcomes for depression and anxiety, controlling for neighborhood racial composition, individual race, and individual age.

[Works Cited]

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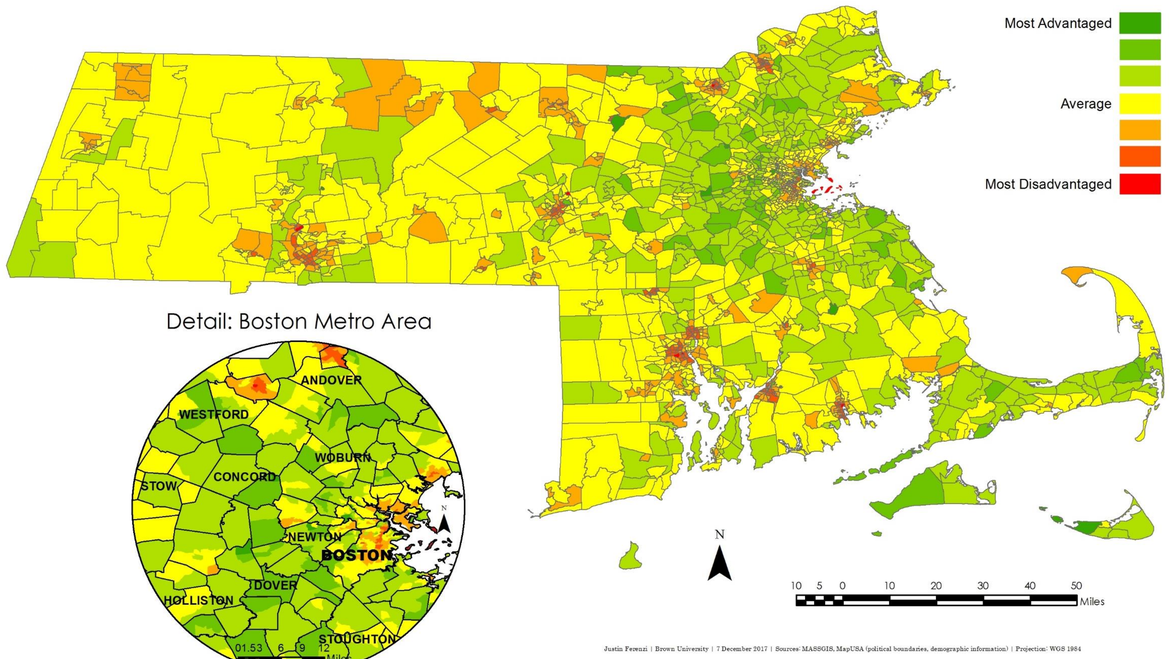
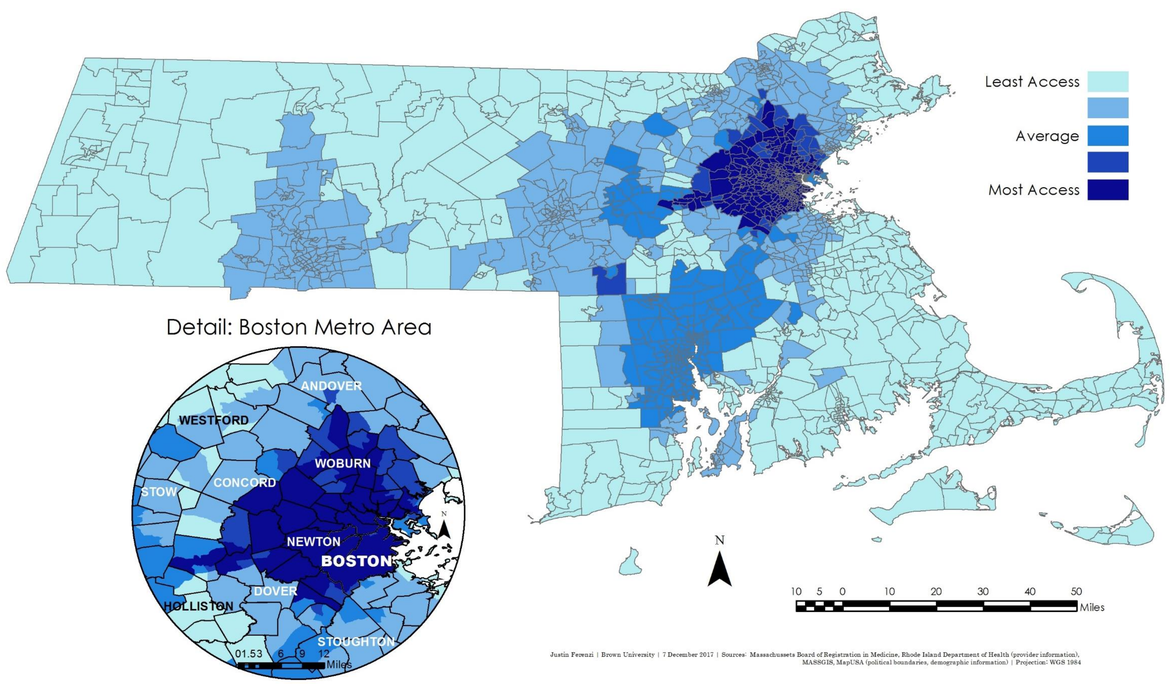
Socioeconomic disadvantage by census tract



Access to mental healthcare by census tract



[Results]

More disadvantaged neighborhoods have less access to mental healthcare

A simple linear regression with neighborhood disadvantage as the explanatory variable and access to mental healthcare as the response revealed a significant negative association between the two variables ($p < 0.0001$). Higher rates of **unemployment** and **poverty**, and a greater **white population** were all associated with lower access to mental healthcare in MA and RI.

Neither neighborhood disadvantage nor access to mental healthcare is associated with lifetime diagnosis of affective disorders

A multilevel regression failed to reveal an effect of neighborhood disadvantage or access to mental healthcare on diagnoses for anxiety and depression ($p > 0.10$), controlling for individuals' race and socioeconomic status.

Neighborhoods with greater access to mental healthcare tend to cluster around larger cities such as Providence, RI, and Boston, MA

[Conclusions]

There are socioeconomic, racial, and urban/rural disparities in mental healthcare access among RI and MA neighborhoods

Poorer, whiter, non-urban communities in MA and RI have less access to mental healthcare than other communities, although the effect of race may be tied to the fact that is there is a much greater white population outside of major cities than within them. There is a need for policymakers, mental healthcare professionals, and community activists to focus efforts on increasing the number of mental healthcare providers in disadvantaged communities, especially those located in areas outside of metropolitan areas. Although disadvantage and access are not associated with a *lifetime* diagnosis of depression or anxiety, further research may reveal associations between these disparities and other mental health outcomes. Patients may not have always lived in a disadvantaged neighborhood, or may suffer from other mental health outcomes such as **substance use disorders**. There is much work to be done to ensure **equity in access to mental healthcare for all communities**.

[Acknowledgements]

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