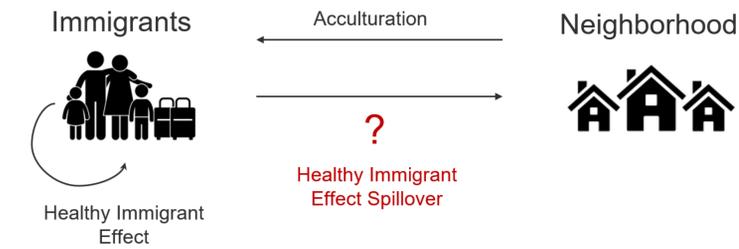


Introduction

Purpose of Study

This study aims to investigate the association between immigrant density with the health of neighborhoods and the health behaviors of both foreign-born and U.S.-born populations.



The Immigrant population...

- Currently makes up 14.5% of the total United States population.
- By 2050, it is projected that 1 in 5 Americans will be an immigrant, the highest proportion in American history.

Previous studies have been done on...

- **Healthy Immigrant Effect:** Although immigrants generally demonstrate lower socioeconomic status than non-immigrants, they have lower age-related disease prevalence and mortality compared to non-immigrants.
- **Acculturation:** The longer the immigrants reside in the U.S., their health outcomes decrease.

There has been very little research on...

- **Potential Healthy Immigrant Effect Spillover:** The influence of immigrants on their neighborhoods in which the health behaviors of the immigrants' countries of origin begin to influence the health of the neighborhoods in which they choose to settle.

We hypothesize that...

- Immigrants not only enjoy personal health advantages, but may also enrich the communities in which they live and enhance community markers of health and resilience by positively altering neighborhood physical, cultural, culinary, and social characteristics.

Methods

Study Design: Retrospective, cross-sectional ecological study

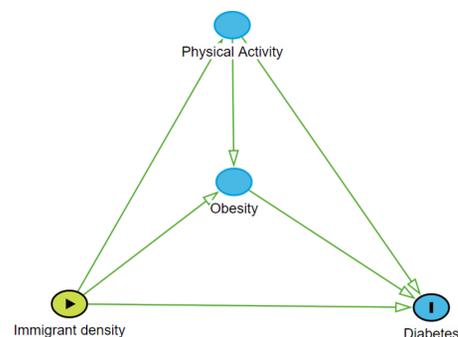
Sample: 32,409 out of 41,692 ZIP codes

Exposure: Immigrant density within ZCTA (ACS 2019)

Outcome: Diabetes, Obesity, and Physical Activity (CDC BRFSS 2018)

Analysis: Linear regression, age and sex-adjustments (incomplete)

Predictive model



Immigrant density is a protective factor of Diabetes in American neighborhoods.

The Association Between Immigrant Density and Health Outcomes in American Neighborhoods

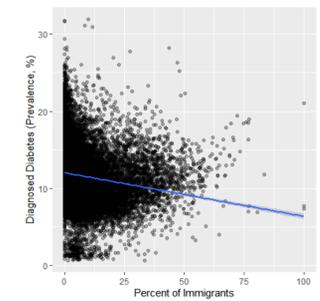
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References

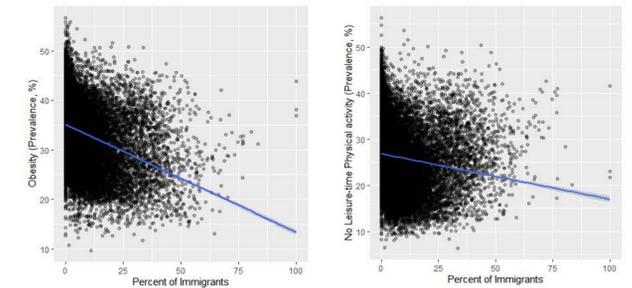


As Immigrant density increases...

Prevalence of Diabetes decreases



Prevalence of Obesity and Lower Physical activity decrease respectively



Prevalence of Diabetes still decreases after adjusting for Obesity and Physical activity

Multiple Regression Model	Beta Estimate	R-Squared
Immigrant percent	-0.056657	0.02709
Immigrant percent + Obesity	0.038646	0.5356
Immigrant percent + Physical activity	-0.014093	0.7097
Immigrant percent + Obesity + Physical activity	-0.001015	0.7168

All p-values <2.2e-16

Discussion

Higher Immigrant density in a neighborhood is associated with lower Prevalence of Diabetes, and the relationship is mediated by Prevalence of Obesity and Physical activity.

The effects may differ depending on the racial/ethnic composition of the neighborhood. A previous study has shown that living in communities with a high Hispanic concentration ($\geq 25\%$) was associated with an increase in body mass index (BMI), defined as weight in kilograms divided by the square of height in meters) and higher odds for obesity for Hispanics and non-Hispanic Whites, respectively. In contrast, living in a community with a high Asian concentration was associated with a decrease in BMI and lower odds for obesity for non-Hispanic Whites. For the next steps, we will start contextualizing the results with socioeconomic data, race being one of the most important variables. We will also explore other possible mediators, for instance, age, sex, and diet.

Main limitations

The lack of individual-level data means that we cannot account for effects of the zipcode. For example, we cannot isolate the effect of immigrant density on the US-born population, we can only study that effect on the entire neighborhood.

The BRFSS questionnaire is only conducted in English and Spanish, therefore immigrants who only speak a different language are excluded from data collection.

There are different levels of uncertainty in the data due to ACS' data collection method, which is a very common yet largely ignored issue in the past ecological studies. Therefore, we plan to expand this project beyond this specific topic and develop a formal methodological framework for this problem.

