Walkable Neighborhoods and Obesity: Evaluating Effects with a Propensity Score Approach

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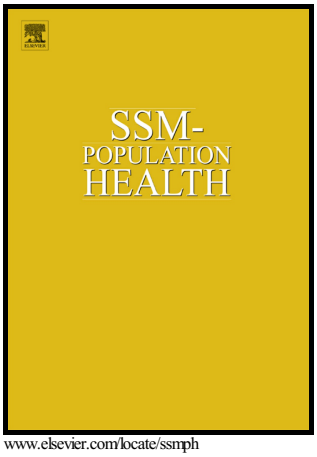

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Abstract

Background

Research investigating the connection between neighborhood walkability and obesity often overlooks the issue of nonrandom residential selection.

Methods

We use propensity score methods to adjust for the nonrandom selection into residential neighborhoods in this cross-sectional, observational study. The sample includes 103,912 women residing in Salt Lake County, Utah age 20 or older. We measured percentage living in neighborhoods with more walkability, area level measures of neighborhood characteristics, and obesity (body mass index (BMI) > 30).

Results

Our findings confirm previous work that observes an association between living in more walkable neighborhoods and lower obesity. After adjusting for nonrandom selection, the odds of being obese when living in a less walkable neighborhood increase. Specifically, the odds ratio for being obese without the propensity score correction is 1.12. After adjusting for nonrandom selection, the odds ratio for being obese is 1.19, an increase of six percent.

Conclusion

Results demonstrate that residential selection bias inherent in cross-sectional analysis slightly attenuates the true association between neighborhood walkability and obesity. Results lend support to the growing body of research suggesting that more walkable neighborhoods have residents with a lower prevalence of obesity. Absent propensity score controls, the causal relationship between environment and obesity would be underestimated by 6%. Our analysis suggests there is an association between neighborhood walkability and obesity.

Keywords: obesity, neighborhood walkability, propensity score matching, non-random selection bias, built environment