

Perceptions of neighborhood environment and prevalent obesity – Insights from the Dallas heart study

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Abstract

Although psychosocial stress can result in adverse health outcomes, little is known about how perceptions of neighborhood conditions, a measure of environment-derived stress, may impact obesity. We examined the association between perceptions of neighborhood environment and obesity [body mass index (BMI) ≥ 30 kg/m²] among 5907 participants in the Dallas Heart Study, a multi-ethnic, probability-based sample of Dallas County residents. Participants were asked to respond to 18 questions about neighborhood perceptions. Using factor analysis, we identified three factors associated with neighborhood perceptions: neighborhood violence, physical environment, and social cohesion. Logistic regression analyses were performed to determine the relationship between each factor (higher quintile = more unfavorable perceptions) and the odds of obesity. Decreasing age, income, and education associated with unfavorable overall neighborhood perceptions and unfavorable perceptions about specific neighborhood factors (p trend <0.05 for all). Increasing BMI was associated with unfavorable perceptions about physical environment (p trend <0.05), but not violence or social cohesion. After adjustment for race, age, sex, income, education, and length of residence, physical environment perception score in the highest quintile remained associated with a 25% greater odds of obesity [OR 1.25,(95% CI 1.03-1.50)]. Predictors of obesity related to environmental perceptions included heavy traffic [OR 1.39,(1.17-1.64)], trash/litter in neighborhood[OR 1.27,(1.01-1.46)], lack of recreational areas[OR 1.21,(1.01-1.46)], and lack of sidewalks[OR 1.25,(95% CI 1.04-1.51)]. Thus, unfavorable perceptions of environmental physical conditions are related to prevalent obesity. Efforts to improve the physical characteristics of neighborhoods, or perceptions of those characteristics, may assist in the prevention of obesity in this community.

Biography

Tiffany M. Powell-Wiley is an assistant clinical investigator in the Applied Research Program of the National Cancer Institute and in the Cardiovascular and Pulmonary Branch of the National Heart, Lung, and Blood Institute at the National Institutes of Health. Her research focuses on defining and intervening on social determinants that promote obesity. Dr. Powell-Wiley graduated from University of Michigan, Duke University School of Medicine, and University of North Carolina School of Public Health. Prior to joining NIH, Dr. Powell-Wiley completed internal medicine residency at Brigham and Women's Hospital and cardiology fellowship at the University of Texas Southwestern Medical Center.