RACIAL RESIDENTIAL SEGREGATION AND STROKE MORTALITY IN ATLANTA

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Objective: To assess the association between neighborhood-level racial residential segregation and stroke mortality using a spatially derived segregation index.

Design: Cross-sectional study

Setting: Atlanta Metropolitan Statistical Area

Methods: The study population consisted of non-Hispanic Black and White residents of the Atlanta Metropolitan Statistical Area during the time period Jan 1, 2000 to December 31, 2006. Census tract-level stroke death rates for Blacks and Whites were modeled as a function of the segregation index while controlling for two neighborhood-level chronic stressors (poverty, low education).

Results: Racial segregation was positively associated with stroke mortality for both Blacks and Whites aged 35–64 years. Among Blacks and Whites aged 65 or older, segregation was negatively associated with stroke mortality after controlling for the two stressors, suggesting that they were pathways between segregation and stroke death rates.

Conclusion: Future studies are needed to identify additional pathways between residential segregation and other health outcomes, and to collect data that support a life course approach to understanding the impact of residential segregation on health. (Ethn Dis. 2011;21(4):437-443)

Key Words: Residential Segregation, Stroke, Mortality, Neighborhood Environment

INTRODUCTION

Racial residential segregation is increasingly recognized as a fundamental risk factor for many undesirable health outcomes. While the majority of studies on residential segregation have focused on associations with infant mortality or all-cause mortality, only one has examined the association with stroke. And yet, stroke mortality is an important health outcome to study in this context: many of the chronic stressors associated with residential segregation are also associated with risk factors for stroke, and stroke ranks fourth among the leading causes of mortality in the United States.

Racial residential segregation has been defined as the spatial separation of two or more racial/ethnic groups that stems from historical laws, residential mortgage lending practices, and the unintended consequences of federal housing policies. Such segregation often results in Blacks living in less desirable areas that have limited social, economic, and health care opportunities for residents of color as well as exposure to high levels of chronic stressors. The chronic stress of living in socially and economically deprived neighborhoods has been associated with many risk factors for stroke, including a higher prevalence of hypertension, cigarette smoking, and depression. Therefore, it is important to examine such chronic stressors as potential pathways between racial residential segregation and stroke mortality.

Because racial residential segregation is an inherently spatial phenomenon, it is important to have a measure of segregation that accounts for the characteristics of neighboring communities as well as the neighborhood of interest. Fortunately, the field of spatial statistics has advanced significantly in recent years, such that enhanced spatial measures of racial segregation that take into account the degree of segregation in these adjacent communities are now available. These new measures substantially increase the accuracy of capturing neighborhood-level residential segregation by race.

In this study, we use a spatially indexed measure of racial isolation to examine the association between racial residential segregation and stroke death rates for Blacks and Whites, aged 35 years or older, living in the metropolitan statistical area (MSA) of Atlanta, Georgia, which has been identified as having substantial neighborhood-level variation in the distribution of both race and mortality. We examine the role of two chronic stressors (poverty and low educational profile) as potential pathways between residential segregation and stroke death rates.

METHODS

Mortality data and population

The Georgia Department of Community Health, Office of Vital Records, we examine the role of two chronic stressors (poverty and low educational profile) as potential pathways between residential segregation and stroke death rates.