INTRODUCTION

Stroke is the fourth leading cause of mortality in the United States and a leading cause of long-term disability.\(^1\) In 2013, it was estimated that every year 610,000 individuals experience their first stroke, which costs the United States $36.5 billion in direct and indirect costs.\(^1\) Stroke incidence is higher among minority populations in the United States, including Mexican Americans (MAs).\(^2\)

Previous research has shown that known behavioral and biological risk factors have a similar effect on the risk of stroke in MAs as compared to non-Hispanic whites (NHWs).\(^3\) However, several stroke risk factors are more prevalent among MAs. Specifically, MAs have a higher prevalence of diabetes, lower socioeconomic status, and limited access to health care services compared to NHWs.\(^4\)--\(^8\) In contrast, hypertension prevalence is similar between MAs and NHWs, and atrial fibrillation is more prevalent in NHWs.\(^1\) Currently identified biological and behavioral risk factors likely only partially explain disparities in stroke risk between NHWs and MAs.\(^3\)

Recently, researchers have focused on how neighborhoods shape health because of a growing sense that individual-based explanations of poor health fail to capture underlying disease mechanisms that may contribute to health disparities.\(^9\)--\(^10\) Studies have shown that even after controlling for individual-level socioeconomic status, neighborhood characteristics are associated with exposure to risk factors and a range of health outcomes.\(^10\)--\(^11\) Specifically, residing in disadvantaged neighborhoods has been associated with increased coronary heart disease incidence, cardiovascular disease mortality, and ischemic stroke risk.\(^12\)--\(^14\) These findings raise the hypothesis that characteristics of neighborhoods influence health, including stroke, beyond the characteristics of the individual. Several mechanisms by which neighborhoods may affect health have been proposed.

Residential racial-ethnic segregation is the degree to which two or more groups live separately from one another in the urban environment.\(^15\) Housing discrimination, limited social and economic capital, and preference to live in neighborhoods with a similar ethnic group, or avoid another ethnic group all play a role in neighborhood selection.\(^9\)--\(^16\) These sorting mechanisms have produced segregated neighborhoods composed of predominantly racial-ethnic minorities across the United States that are often disadvantaged; with a detrimental physical and social environment that may negatively impact health.\(^9\)

Measures of residential racial-ethnic segregation, usually measured at the census tract or metropolitan level, may provide information about living conditions associated with stroke risk not captured by individual-level variables.\(^17\) For example, higher rates of violence and crime, lack of opportunity or upward mobility, social disorganization, low neighborhood trust and habitual illness are forms of chronic stress associated with segregated neighborhoods.\(^9\)--\(^18\)--\(^23\) These biological and psychosocial chronic neighborhood stressors likely propagate the atherosclerosis process by inducing hypertension or other inflammatory processes, leading to a higher risk of stroke.\(^24\)--\(^26\) Residential racial-ethnic segregation may also affect