EDITORIAL COMMENT

Neighborhood Archetypes and Cardiovascular Health

Where You Live Matters*

Arnethea L. Sutton, PhD, MS,[a,b] Nickolas Stabellini, BS,[c,d,e] Avirup Guha, MD, MPH[e,f]

I n the field of cardio-oncology, particularly in breast cancer survivorship, it is well established that racial disparities exist; Black survivors are more likely to develop and 32% more likely to die from cardiovascular disease (CVD) compared to White survivors.[1,2] Social drivers of health (SDOH) have been identified as major predictors of racial disparities in CVD. Per the World Health Organization, SDOH are "the non-medical factors that influence health outcomes. They are conditions in which people are born, grow, work, live, and age, and the wider set of forces and systems shaping the conditions of daily life."[3]

Factors that fall within the context of neighborhood and built environment, such as increased traffic, limited availability of nearby supermarkets, and insufficient green spaces, have emerged as contributors to CVD and racial disparities in CVD.[4-6] For example, a recent longitudinal retrospective study of 4,309 breast cancer survivors reported that among 4 of the 5 SDOH domains (ie, economic stability, education access and quality, neighborhood and built environment, and social and community context), neighborhood and built environment was the strongest predictor of major adverse cardiovascular events, and it attenuated the racial disparity therein.[5] Findings such as this highlight a need to further investigate nuances of neighborhoods, particularly among groups who are most frequently impacted by the systemic racism that has contributed to the overall structure of neighborhoods in the first place.

In this issue of *JACC: CardioOncology*, Sánchez-Dias et al[7] delve deeper into neighborhood and built environment by identifying neighborhood archetypes and investigating their association with cardiovascular health (CVH) in Black breast cancer survivors from the Women's Circle of Health Follow-up Study. The investigators conducted latent class analysis models based on 16 tract-level social and built environment characteristics (eg, green space and neighborhood food environment) to identify neighborhood archetypes. As such, 4 archetypes were identified: 1) Mostly Culturally Black and Hispanic/Mixed Land Use; 2) Culturally Diverse/Mixed Land Use; 3) Mostly Culturally Black and Hispanic/Green-Centric; and 4) Culturally Diverse/Green-Centric. CVH was ascertained via self-reported measures, medical records, and direct observation (eg, blood pressure). A total CVH score was then determined using the American Heart Association definitions for ideal health.

Of the 713 survivors included in this study, most resided in the Mostly Culturally Black and Hispanic/Mixed Land Use archetype (42%). Survivors who resided in this archetype had the lowest CVH scores compared to survivors in other archetypes. Conversely, survivors who resided in the Culturally Diverse/Mixed Land Use land use had the best CVH scores. When compared with the other archetypes, the latter archetype had high neighborhood

socioeconomic status (nSES), high densities of food stores, physical activity facilities, and walkable destinations.

This study is a step in the right direction to address health equity. Yes, there is still a need to investigate racial differences in outcomes, but in the context of CVH in breast cancer survivors, understanding intraracial differences among Black women will uncover women who are at greatest risk for the poorest CVH. Additionally, studies such as this highlight what some of us know and many have yet to learn—that living in areas of high socioeconomic status may not benefit all individuals equally. In this study, there were differences in CVH health between 2 groups of Black women who resided in the archetypes with the highest nSES. What is the difference between these 2 mixed land use archetypes? It is racial makeup. Women in the mostly Black and Hispanic archetype fared worse than women in the culturally diverse area. This finding points to the fact that regardless of the nSES of a neighborhood, resources are not distributed equally, likely also a result of historical redlining.[8-10] This unequal distribution may contribute to the unequal CV burden.

What is interesting about the study's findings is that unlike in other studies,[11] green-centric neighborhoods did not emerge as the archetypes with the most favorable CVH outcomes. This certainly deserves additional validation and attention given the data that show the direct correlation between green spaces and physical activity.[12]

There are numerous strengths to note in this study. The study population consisted of a diverse group of Black breast cancer survivors, particularly with regard to residential location. The authors also leveraged a rich data set of objective and self-reported measures of CVH. The authors noted the most poignant limitations in their study, specifically that the most health-conscious women may have selected neighborhoods with health resources.

Sanchez-Diaz et al[7] beautifully summed up their study by focusing on the need to better understand neighborhood archetypes to provide actionable data that can contribute to changes in policy and interventions focused on achieving equity in CVH. For example, partnering with local governments to assess how zoning and land use contribute to CVD and access to guideline-concordant cardiovascular care in breast cancer survivors is important. Efforts such as this could provide rich data to set the stage for future pragmatic trials.

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ADDRESS FOR CORRESPONDENCE: Dr Arnethea L. Sutton, Virginia Commonwealth University School of Medicine, Department of Kinesiology and Health Sciences, PO Box 843021, Richmond, Virginia 23284, USA. E-mail: abrahamal@vcu.edu.

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