Moving Into the Neighborhood
Thinking Beyond Individuals to Improve Cardiovascular Health
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Improving national cardiovascular health (CVH) is the American Heart Association’s 2020 Strategic Impact Goal. To achieve this ambitious goal, there is an appropriate strong focus on counseling and educating our patients about hypertension, diabetes mellitus, and healthy behaviors. However, there is an additional opportunity that may ultimately be critical to our success. Too often neglected, contextual factors also have a strong influence on cardiovascular risk. By contextual variables, we mean the environment in which we live, to include the structural or built environment (eg, buildings, sidewalks, parks, recreational facilities) and the social environment (ie, the trust and bonds between community members). Emerging research is showing that these factors may influence risk through their effect on health behaviors and risk factors, as well as through other pathways. Importantly, these factors may be essential in efforts to shift the risks and improve the health of populations.

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In this issue of Circulation: Cardiovascular Quality and Outcomes, we have an example of the emerging literature directing our attention toward contextual factors associated with cardiovascular health. Unger et al report the association of a range of neighborhood characteristics with a global measure of cardiovascular health using data from the Multi-Ethnic Study of Atherosclerosis (MESA). The MESA is well designed to examine the environmental context on health because it includes a cohort of both sexes and 4 race/ethnic groups without clinical cardiovascular disease at the time of enrollment from 6 communities in different regions of the United States and captures information about the participants’ cardiovascular risk and perception of their neighborhood along with current and prior addresses that can be used to identify elements of the neighboring structural environment. Although initial studies from MESA focused mainly on methods to identify subclinical cardiovascular disease, more recent studies from this group report the relationship between the environment and cardiovascular disease. Although previous MESA studies mostly addressed the relationship between the structural and economic environment and specific disease or risk factors, such as hypertension, obesity, coronary disease, or physical activity, Unger et al advance the research further by examining the association between the American Heart Association’s comprehensive construct of cardiovascular health and multiple facets of a neighborhood, including the built, social, and economic environments. Their cross-sectional analysis revealed that density of stores selling healthy foods, density of recreational facilities, perceived walkability, and neighborhood socioeconomic status were associated with cardiovascular health, independent of individual sociodemographic characteristics.

These findings may help explain why the National Research Council and the Institute of Medicine report that despite spending more on health care and developing more pharmaceuticals and biotechnology than any other nation, the United States lags behind its peer high-income democratic countries in many health measures, including rates of heart disease, obesity, diabetes mellitus, and average life expectancy. This healthcare paradox may result from the fact that the typical American community is less health promoting than those of other countries. Although for decades the United States has made major advances in developing new cardiovascular drugs such as statins and angiotensin-converting enzyme inhibitors and devices such as drug-eluting stents with the aim of curbing cardiovascular disease mortality, we have largely neglected the profound effects the evolution of our community structure and sociocultural environment have had on cardiovascular health.

In their study, Unger et al found interesting sex differences in the associations between neighborhood characteristics and ideal cardiovascular health. Women’s ideal cardiovascular health was associated with neighborhood socioeconomic status, perceived safety, and walking environment. It may be that women are more likely than men to change their behavior in response to the surrounding environment. Women may not only reduce their outdoor physical activity in response to feeling unsafe but also harbor greater chronic stress from living in these environments, contributing to worse cardiovascular health. Another sex difference found was that women’s ideal cardiovascular health was positively associated with perceived access to healthy food availability, whereas men’s ideal cardiovascular health was correlated with actual density of favorable food stores within 1 mile of their residence. These sex differences suggest that it will be important to capture information about the perceived environment in addition to

The opinions expressed in this article are not necessarily those of the editors or of the American Heart Association.

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(Circ Cardiovasc Qual Outcomes. 2014;7:505-507.)

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Circ Cardiovasc Qual Outcomes is available at http://circoutcomes.ahajournals.org
DOI: 10.1161/CIRCOUTCOMES.114.001188
geospatial information as we further examine the relationship between our environment and CVH and keep both factors in mind when designing health-promoting communities.

Beyond the structural environment, the neighborhood sociocultural context is additionally related to CVH, making the community greater than the sum of its parts. However, although prior studies have shown that the social cohesion and collective efficacy of a community can positively influence cardiovascular health in direct and indirect ways,13,14 Unger et al6 did not find an association between social cohesion and ideal CVH. This may be for several reasons. MESA included only 4 of 5 items, 2 of which were inversely worded, from the original social cohesion component of Sampson’s collective efficacy scale.10 Although this 4-item measure has been reported to have adequate internal consistency among MESA participants, reliability was poor, and both psychometric properties for the 4-item measure were reported to be lower than the original 5-item scale.11,12 In addition, alteration of the original scale may have changed the inherent meaning of the scale. Finally, because participants’ responses were grouped by census tract and not by community-defined neighborhoods, aggregate social cohesion scores are less meaningful. Cooper et al13 report a walkable distance of less than half a mile to be correlated with social cohesion. Together, these factors may have undermined the ability of the study to find an association between social cohesion and CVH.

Although all Americans are affected negatively by current community structures and sociocultural norms, minority and low-income groups continue to bear a substantially greater burden of cardiovascular disease. Factors such as access to medical care and individual health behaviors do not fully explain this gap. Rather, the neighborhoods to which most minority groups and individuals of low socioeconomic status are segregated harbor a disproportionate share of disease-promoting factors.14,15 These neighborhoods are less likely to have access to healthy and affordable food stores, to be well-lit and safe for outdoor activity, to have access to high-quality schools, and to engender a sense of community in which neighbors trust and support each other. To achieve American Heart Association’s 2020 Strategic Impact Goal—and answer the Institute of Medicine’s call to eliminate cardiovascular health dispari-
ties—the community greater than the sum of its parts. However, although prior studies have shown that the social cohesion and collective efficacy of a community can positively influence cardiovascular health in direct and indirect ways,13 Unger et al6 did not find an association between social cohesion and ideal CVH. This may be for several reasons. MESA included only 4 of 5 items, 2 of which were inversely worded, from the original social cohesion component of Sampson’s collective efficacy scale.10 Although this 4-item measure has been reported to have adequate internal consistency among MESA participants, reliability was poor, and both psychometric properties for the 4-item measure were reported to be lower than the original 5-item scale.11,12 In addition, alteration of the original scale may have changed the inherent meaning of the scale. Finally, because participants’ responses were grouped by census tract and not by community-defined neighborhoods, aggregate social cohesion scores are less meaningful. Cooper et al13 report a walkable distance of less than half a mile to be correlated with social cohesion. Together, these factors may have undermined the ability of the study to find an association between social cohesion and CVH.

This requires a paradigm shift in what we consider health-relevant investments and advancements. To this end, we must produce, publish, and leverage more high-quality studies of the community elements with the strongest impact on CVH and the mechanism by which these elements influence CVH. With this knowledge, people in communities, public health officials, and urban planners can work together to strategically design and conscientiously shape cultural norms to promote cardiovascular health. We currently have a dearth of information capturing specific, potent community-level factors that influence our patients’ health. Recognizing that this needs to change, the Institute of Medicine recently convened a task force to define specific social factors to be included in the electronic health record.16 This intention signals an effort to collect data that may help individual patients, inform systematic redesign of communities, and advance research on the societal impact of health.

To improve our nation’s cardiovascular health, we must re-examine how we are investing our healthcare dollars and resources. We need to think beyond the walls of the clinic, hospital, and cardiac catheterization laboratory. We must assess the makeup of our neighborhoods. Beyond efforts to counsel individual patients on healthy nutrition, activity levels, and smoking habits, physicians and health systems should work with policymakers and urban planners to proactively create health-promoting environments where the healthy choice is the easy and routine choice. Rather than aligning with pharmaceutical and medical device companies, physicians and health systems should partner with public health, the food industry, educators, media, economists, and community members to create accountable care communities. Continuing to focus on individual patient cardiovascular risk and behaviors without concurrently acknowledging the influence of contextual factors makes it unlikely that we will be able to achieve the American Heart Association’s 2020 Strategic Impact Goal to attain ideal cardiovascular health of the US population. Only with a fundamental realignment of our financial, intellectual, and creative resources to address our sociocultural, economic, and structural environment will we be able to make widespread impact in improving our nation’s health.

Disclosures

None.

References


**Key Words:** Editorials • risk factors • social determinants of health
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_Circ Cardiovasc Qual Outcomes_. 2014;7:505-507; originally published online July 8, 2014; doi: 10.1161/CIRCOUTCOMES.114.001188

_Circulation: Cardiovascular Quality and Outcomes_ is published by the American Heart Association, 7272 Greenville Avenue, Dallas, TX 75231
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Print ISSN: 1941-7705. Online ISSN: 1941-7713

The online version of this article, along with updated information and services, is located on the World Wide Web at:
http://circoutcomes.ahajournals.org/content/7/4/505

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