

Health, Housing, and the Heart Cardiovascular Disparities in Homeless People

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The interaction between housing and health is intimate and complex, yet little evidence exists with regard to the healthcare outcomes for people struggling to survive without housing. The study in this issue by Lee and colleagues¹ not only exposes a resounding need for community-wide interventions to improve the cardiovascular health of homeless adults but also underscores the vexing challenges confronting researchers investigating the health disparities attendant to homelessness.

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Mortality rates of homeless adults in the United States and Canada have been shown to be 3 to 5 times higher than those of the general population.^{2,3} Homeless women in Toronto have a 10-fold risk of death when compared with housed women in that city.⁴ In our ongoing observational study of a cohort of 119 chronically homeless people living on the streets of Boston, almost one third died during a 5-year period from 2000 through 2004. Heart disease is a leading cause of death in older homeless people 45 to 64 years old, and despite other common causes of death in younger homeless people 25 to 44 years old, heart disease is 3 times more common in this group than in the age-matched general population.⁵

Risk factors for cardiovascular (CV) disease are potentially treatable targets in the prevention of morbidity and premature death in this high-risk subpopulation. The study by Lee et al shows, however, that CV risk factors and CV disease itself in homeless adults in Toronto are grossly undertreated. The authors report the prevalence and treatment of major CV risk factors in adults living in emergency shelters and compare these to the general population. Most striking are the high prevalence of heavy smoking and the high rates of poorly controlled diabetes and undiagnosed and undertreated hypertension and hypercholesterolemia. These health disparities occur in the setting of universal health insurance, suggesting that such coverage is necessary but not sufficient to overcome the barriers to high-quality health care for this vulnerable population.

In an effort to estimate the risk of myocardial infarction or coronary death in homeless patients without known CV disease, the authors use Framingham multiple risk factors equations. These equations are limited and use only traditional, major, independent risk factors for CV disease. The authors' estimate of an absolute 10-year risk of myocardial infarction or coronary death in the homeless cohort of 5% should be considered with caution. Relatively small numbers of homeless individuals in each age group with resultant wide confidence intervals render this estimate not significantly different from that observed in men from the Framingham population. This conclusion is inconsistent with earlier evidence that heart disease is more common in homeless populations.

The risk of CV disease in homeless people may not be entirely the result of traditional major risk factors. Recent cocaine and alcohol use are highly prevalent in the homeless cohort. The use of these substances is a known risk factor for CV disease,^{6,7} although it is not taken into account in the Framingham equations. Psychosocial issues, including stress, anger, and depression, are other possible novel CV risk factors not considered in the Framingham equations. The risk of CV outcomes in the homeless cohort may well be underestimated. Research is needed to establish CV risk estimation equations that include variables that are more common in homeless people, such as heavy smoking, cocaine abuse, alcohol abuse, and stress.

The investigation of homeless populations poses special challenges to researchers. It is questionable whether a particular homeless sample can be representative of all people who experience homelessness because people existing in various possible living environments (eg, sleeping outside, hidden in a car, doubled up with friends, dwelling in shelters) fall into the category of homeless. In addition, the causal relationship of biological risk factors to disease becomes more complicated when a social condition such as homelessness is factored into the equation because this social condition itself may have independent or reciprocal relationships to either risk or disease.

This important study raises several public health issues: Why are CV risk factors and disease in homeless people difficult to treat, even in a society with universal health insurance? How can the prevention, detection, and treatment of CV risk factors and disease be improved in a peripartetic population without stable housing?

The medical care of homeless people poses difficult challenges to our traditional healthcare delivery models. The relentless immediacy of the daily struggle for food, a safe place to sleep, clothes, and jobs renders health needs a distant priority. Hypertension and hyperlipidemia usually are asymp-

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omatic and frequently neglected. Illnesses progress and injuries fester, leaving homeless people to seek care in expensive emergency departments or clinics. The usual standards of care often fail in the treatment of homeless people for want of a safe place to heal, recover, and store medications. Continuity of care is difficult; transportation is a barrier; and feelings of frustration, hopelessness, and isolation can develop in healthcare providers who care for patients on the fringe of society. For all of these reasons, the care of chronic conditions in patients without a stable living environment is complex and often substandard.

Healthcare delivery systems must adapt to improve disparities in CV health and overall mortality in this population. Medical schools, teaching hospitals, and clinician-educators can incorporate formal instruction on homeless health care into curricula. Researchers must commit to examining the medical implications of homelessness and viable treatment options for illness in this setting. Clinicians should embrace a process of decision making that is patient centered and places illness in the context of larger competing priorities. Barriers can be overcome by delivering care directly in shelters or on streets. Creative and flexible treatment options must be considered with input from patients.

Adapting to the needs of this population also necessitates advocacy. Clinicians can advocate for individual patients, for example, by helping them to navigate daunting hospital and pharmacy systems, assisting with paperwork for appropriate public benefits, or communicating to shelter staff the need for extra provisions during an illness. On a community level, clinicians can offer an important and powerful voice to local philanthropic groups, municipalities, and policymakers. This physician "consultation" may include developing tobacco-cessation programs, devising healthier menus at shelters or

soup kitchens, or designing local respite centers that provide a warm environment during recovery from illness.

Ultimately, larger change in the approaches of our communities to homelessness is needed to improve CV health. Primary and secondary prevention of coronary artery disease requires lifestyle changes and often medication; however, these are not effective treatment strategies in patients without stable, permanent, and supportive living environments. The close link between housing and health must be recognized, and housing should be considered a critical medical priority. A community-wide effort, led by clinicians, educators, researchers, advocacy groups, and legislators, is needed to uncover housing solutions and improve the health of homeless people.

References

1. Lee TC, Hanlon JG, Ben-David J, Booth GL, Cantor WJ, Connelly PW, Hwang SW. Risk factors for cardiovascular disease in homeless adults. *Circulation*. 2005;111:2629–2635.
2. Hibbs JR, Benner L, Klugman L, Spencer R, Macchia I, Mellinger AK, Fife D. Mortality in a cohort of homeless adults in Philadelphia. *N Engl J Med*. 1994;331:304–309.
3. Hwang SW. Mortality among men using homeless shelters in Toronto, Ontario. *JAMA*. 2000;283:2152–2157.
4. Cheung AM, Hwang SW. Risk of death among homeless women: a cohort study and review of the literature. *Can Med Assoc J*. 2004;170:1243–1247.
5. Hwang SW, Orav EJ, O'Connell JJ, Lebow JM, Brennan TA. Causes of death in homeless adults in Boston. *Ann Intern Med*. 1997;126:625–628.
6. Rehm J, Sempos CT, Trevisan M. Alcohol and cardiovascular disease—more than one paradox to consider: average volume of alcohol consumption, patterns of drinking and risk of coronary artery disease—a review. *J Cardiovasc Risk*. 2003;10:15–20.
7. Lange RA, Hillis LD. Medical progress: cardiovascular complications of cocaine use. *N Engl J Med*. 2001;345:351–358.

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