Cardiovascular Issues Among Homeless People: An Issue that Needs Attention

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Muhammad Haisum Maqsood[1], Omer Kamal[2] and David Charytan[3]

[1]Research Fellow, Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, MA, USA. [2]Postdoctoral Research Fellow, Brigham and Women's Hospital, Harvard Medical School, Boston, MA, USA. [3]Chief, Nephrology Division, NYU Langone Medical Center, New York, NY, USA.

ABSTRACT: Cardiovascular disease is one of the most common causes of death with social factors increasingly recognized as determinants of cardiovascular prognosis. Homelessness, transient or chronic, may be one of the factors which predict treatment access and eventual outcomes as socially and economically disadvantaged group has high prevalence of cardiovascular risk factors such as smoking, and delayed diagnosis and poor control of other risk factors such as diabetes and hypertension. This perspective article aims to discuss the issues associated with cardiovascular disease treatment, outcomes and future directions for homeless patients.

KEYWORDS: Homeless, cardiovascular diseases, mortality

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CORRESPONDING AUTHOR: David Charytan, Chief, Nephrology Division, NYU Langone Medical Center, 462 1st Avenue C & D 689, New York, NY 10010, USA. Email: David.charytan@nyulangone.org

Perspective

Cardiovascular disease is the most common cause of death in advanced age patients (>65 years).[1] Social factors are increasingly recognized as determinants of cardiovascular prognosis.[2] Homelessness, transient or chronic, may be one of the factors which predict treatment access and eventual outcomes. The abovementioned socially and economically disadvantaged group has high prevalence of cardiovascular risk factors such as smoking, and delayed diagnosis and poor control of other risk factors such as diabetes and hypertension.[3] Further, fewer homeless individuals take daily medications and necessary follow up for cardiovascular disease management.[3] Mortality, overall, for homeless population remained high from 1980s to now. According to Annual Homeless Assessment Report to Congress 2019, homelessness increases by 3% from 2018 to 2019.[4,5] Due to increase in homeless population, this issue needs attention.[6]

Outcomes of cardiovascular diseases in homeless is not widely studied in US. Baggett TP et al. in a retrospective study reported that cardiovascular issues were one of the 3 major causes of all-cause mortality among homeless adults in Boston.[6] The data from Boston Health Care for the Homeless Program included homeless adults in Boston from 1 January 2003 to 31 December 2008 and compared the mortality rates with homeless adults from 1988 to 1993 concluded that death due to cardiovascular issues was 2 to 3 times higher than in the general population.[6] The age, race, and sex-standardized mortality rate among older adults was consistently high and non-significantly different (relative risk 1.07, 95% confidence interval [0.96-1.18]) between 2 time periods.[6]

Wadhera RK et al also reported marginal differences in mortality between homeless and nonhomeless adult patients with cardiovascular issues.[7] This retrospective cross-sectional study included data on individuals from 3 states (Florida, Massachusetts, and New York) between 1 January 2010 to 30 September 2015 and concluded that a lower proportion of life-saving procedures were performed among homeless than among non-homeless patients.[7] This state inpatient data analysis among patients hospitalized with acute myocardial infarction, fewer homeless patients underwent coronary angiography (39.5 vs. 70.9; $P < .001$) than non-homeless patients and similar trends were observed on stratification into ST-elevation MI (55.8% vs. 85.9%; $P < .001$) and non-ST-elevation MI (35.7% vs. 66.1%; $P < 0.001$).[7] In addition, similar therapeutic and diagnostic procedural trends were seen among homeless patients hospitalized for stroke and cardiac arrest.[7] Risk standardized mortality was higher for homeless persons with ST-elevation MI (8.3% vs. 6.2%; $P = .04$), stroke (8.9% vs. 6.3%; $P < .001$) and cardiac arrest (76.1% vs. 57.4%; $P < .001$).[7] However, in-hospital mortality for non-ST-elevation MI and heart failure was non-significant between homeless and non-homeless patients.[7] This state inpatient database concluded that high mortality also accompanied lesser tendency of life-saving procedures among ST-elevation myocardial infarction, stroke and cardiac arrest patients.[7]

The issue of high cardiovascular mortality could be ignored by the common perception that homeless patients have financial issues and they present late to emergency care facilities. If this is the case, then the questions arise why are there fewer life-saving procedures done among the homeless patients compared to non-homeless patients? Is it due to a lack to focus on this population by health care facilities, hospitals or physicians? Patient Protection and Affordable Care Act increased funding for Medicaid outpatient health centers.[7,8] Homeless individuals are more likely to receive health

insurance in many states relative to time period prior to the aforementioned act.[8] It would be interesting to see the health outcomes of homeless individuals with adequate funds in future studies. Finally, it is equally important to study evidence of prejudice, negative stereotyping or active discrimination against a group commonly perceived as undeserving.

We need some programs for homeless people like housing first model in 5 cities of Canada.[9] This model is a feasible strategy to improve health outcomes in homeless adults by decreasing housing insecurity.[9] Future studies should aim at finding ways to improve cardiovascular outcomes in this high risk population.

Now is the time to act and focus on homeless patients with cardiovascular issues. Although high mortality rates among homeless population is unlikely to be fully eliminated but it could be brought down much closer to the level in the general population. New policies and proper implementation are required to address this issue as we have to see it from a different perspective.

Author Contributions

D.C. supervised this manuscript. M.H.M and O.K. were involved in manuscript writing.

ORCID iD

Muhammad Haisum Maqsood https://orcid.org/0000-0003-3907-4448

REFERENCES

1. FastStats [Internet]. 2020. Accessed May 22, 2020. https://www.cdc.gov/nchs/fastats/older-american-health.htm
2. Havranek EP, Mujahid MS, Barr DA, et al. Social determinants of risk and outcomes for cardiovascular disease: a scientific statement from the American Heart Association. *Circulation*. 2015;132:873-898.
3. Lee TC, Hanlon JG, Ben-David J, et al. Risk factors for cardiovascular disease in homeless adults. *Circulation*. 2005;111:2629-2635.
4. HUD Releases 2019 Annual Homeless Assessment Report to Congress [Internet]. National Low Income Housing Coalition. Accessed August 7, 2020. https://nlihc.org/resource/hud-releases-2019-annual-homeless-assessment-report-congress
5. The 2019 Annual Homeless Assessment Report (AHAR) to Congress, Part 1: Point-in-Time Estimates of Homelessness:104. 2020. Accessed August 7, 2020. https://www.huduser.gov/portal/sites/default/files/pdf/2019-AHAR-Part-1.pdf
6. Baggett TP, Hwang SW, O'Connell JJ, et al. Mortality among homeless adults in Boston: shifts in causes of death over a 15-year period. *JAMA Intern Med*. 2013;173:189-1895.
7. Wadhera RK, Khatana SAM, Choi E, et al. Disparities in care and mortality among homeless adults hospitalized for cardiovascular conditions. *JAMA Intern Med* 2020;180:357-366.
8. Five Ways Medicaid Expansion Is Helping Homeless Populations Ten Years After The ACA Became Law | Health Affairs [Internet]. Accessed October 13, 2020. https://www.healthaffairs.org/do/10.1377/hblog20200225.434660/full/
9. Gozdzik A, Salehi R, O'Campo P, Stergiopoulos V, Hwang SW. Cardiovascular risk factors and 30-year cardiovascular risk in homeless adults with mental illness. *BMC Public Health*. 2015;15:165.