JACC: ADVANCES VOL. 3, NO. 12, 2024

EDITORIAL COMMENT

Advancing Understanding and Addressing Disparities in Cardiomyopathy Care in Southern Africa

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Cardiomyopathy, encompassing a wide range of heart muscle disorders, presents a global health challenge.[1] Despite remarkable strides in the diagnosis and treatment of cardiac conditions, significant disparities persist, particularly in regions often categorized as the Global South.[2,3] Southern Africa, among other areas, grapples with limited data on the prevalence and management of cardiomyopathy, exacerbating existing health care inequalities.[4] These disparities are multifaceted, arising from challenges such as restricted access to health care resources, poor screening programs, and an unequal distribution of treatment modalities.[5] Consequently, cardiomyopathy patients in these regions face worse health outcomes than those in more affluent countries, underscoring the urgent need for targeted interventions and equitable health care initiatives.[6]

The African Cardiomyopathy and Myocarditis Registry Program (IMHOTEP) addresses a critical gap in understanding cardiomyopathies' etiology and clinical phenotypes in the region.[4,7] The Kraus et al[7] study, published in *JACC: Advances*, provides valuable insights for regional health care and public health. The primary finding highlights the predominance of dilated cardiomyopathy (DCM) in Southern Africa, accounting for 72% of cases. This underscores the significant burden of DCM in the region and emphasizes the need for tailored interventions and management strategies specific to this subtype. Notable demographic patterns emerge, with DCM and restrictive cardiomyopathy showing a younger age of onset and higher frequency among women and individuals of African ancestry, indicating potential genetic and environmental factors contributing to the pathogenesis of cardiomyopathies. The study also reveals etiological diversity, including familial, nonfamilial/idiopathic, and secondary causes, with familial factors being significant in over a quarter of cases. This emphasizes the importance of comprehensive evaluation, genetic screening, and counseling initiatives for cardiomyopathy patients to guide management decisions.[6] Sex and ethnic disparities in cardiomyopathy, particularly evident in DCM, underscore the need for targeted approaches to prevention, diagnosis, and treatment that address the unique characteristics and needs of diverse patient populations. The findings have significant clinical implications for health care providers in Africa, emphasizing the importance of increased awareness and resources for accurate diagnosis and management of cardiomyopathies. This includes early detection, risk stratification, and personalized management strategies tailored to the specific subtype and demographic profile of cardiomyopathy patients. A schematic providing summary of key insights and implications from the perspective of understanding cardiomyopathy in Africa is provided in **Figure 1**.

Limited access to health care resources in the Global South often poses challenges to the early detection and diagnosis of cardiomyopathies.[8,9] Only 36% of African countries reported the availability of

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The author attests they are in compliance with human studies committees and animal welfare regulations of the author's institution and Food and Drug Administration guidelines, including patient consent where appropriate. For more information, visit the Author Center.

ISSN 2772-963X https://doi.org/10.1016/j.jacadv.2024.100957

FIGURE 1 Summary of Key Insights and Implications From Understanding Cardiomyopathy in Africa

essential medicines for noncommunicable diseases in public hospitals in a survey conducted by the World Health Organization.[10,11] Many low- and middle-income countries lack effective screening programs crucial for identifying at-risk individuals. Disparities in cardiovascular diagnostic services between high-income and low- and middle-income countries further impact timely diagnosis and management.[2,3]

This lack of screening exacerbates disparities by delaying diagnosis until the disease has advanced, resulting in less effective treatment and poorer outcomes. Additionally, the Global Burden of Disease Study 2019 data reveals lower access to cardiovascular surgical care in the Global South compared to high-income countries.[1] Advanced therapies such as implantable cardiac devices, cardiac transplantation, and novel pharmacological agents may be inaccessible due to cost or infrastructure constraints, leading to suboptimal care and higher rates of morbidity and mortality compared to wealthier nations.[9]

Furthermore, social determinants of health, including poverty, education, and access to preventive care, influence disparities in outcomes for cardiomyopathy patients in the Global South.[3,5] These factors often intersect with barriers to health care access, exacerbating health inequities. Socioeconomic factors significantly impact cardiovascular disease outcomes in Africa, reflecting the epidemiological transition.[3] Limited epidemiological data exist, with prevailing knowledge gaps in maternal, pediatric, and adult cardiovascular disease patterns. Patients from marginalized communities, including rural populations and ethnic minorities, face vulnerability to poor outcomes due to limited access to health care services and a higher prevalence of comorbidities.[6] In Africa, cerebrovascular disease, cardiomyopathies, and rheumatic heart disease are common, with HIV-related cardiovascular disease emerging as a new concern.[3] Conversely, affluent regions experience a higher prevalence of hypertensive heart disease and associated conditions, alongside emerging cases of coronary artery disease and atrial fibrillation.[5] African cardiovascular disease patients are often younger, predominantly female, and frequently come from disadvantaged communities.

Addressing disparities in cardiomyopathy care necessitates a comprehensive approach involving improved health care access, enhanced screening, and targeted interventions to address social determinants of health.[5] This includes investing in specialized cardiac centers, training programs, and cost-effective screening strategies, like community outreach and point-of-care diagnostics, to enable early detection in resource-limited settings.[3,6] Moving forward, efforts to enhance public awareness, promote healthy lifestyle interventions, and improve access to health care services are critical in mitigating the burden of cardiomyopathies in Southern Africa. Additionally, tackling social determinants such as poverty and education inequality is crucial. This requires policies to reduce income gaps, enhance education and job opportunities, and provide social support services. Collaborative efforts and robust infrastructure are essential for translating research into tangible improvements in population health.

While the IMHOTEP study represents a significant step forward in understanding cardiomyopathy in Africa, we must acknowledge several limitations.[7] Firstly, the study's focus on South Africa and Mozambique limits its generalizability to other regions across the continent. Other African countries may have differing cardiomyopathy profiles due to variations in genetic, environmental, and socioeconomic factors; thus, caution should be exercised when extrapolating findings. The true epidemiological landscape of cardiomyopathy may not be accurately reflected. However, the authors suggest that including additional African sites in future phases of the study may provide further insights into cardiomyopathy epidemiology in the region. Secondly, the sample size of 665 index patients, referring to the initial group of patients enrolled or analyzed in this report, may not fully capture the diverse spectrum of cardiomyopathy phenotypes and etiologies prevalent in Southern Africa and Africa as a whole. Moreover, recruiting patients from only 4 centers introduces potential selection bias, as these centers may not be representative of the entire population. This could skew the study's findings and limit the generalizability of its conclusions. Thirdly, while the study offers baseline characteristics of patients with cardiomyopathy, it lacks longitudinal data on disease progression and outcomes. Without such data, it is challenging to assess the natural history of cardiomyopathy in the African population and identify factors influencing disease progression, treatment response, and prognosis. Fourthly, the characterization of cardiomyopathy etiologies lacks specificity or granularity, which is crucial for delineating primary genetic causes, acquired factors, and secondary conditions, thus hindering our comprehension of disease mechanisms and the ability to tailor personalized treatment strategies. Additionally, reliance on family history reporting for the classification of familial disease may lead to underrepresentation, particularly among individuals of black African and mixed-race ethnicity, due to historical inequalities in health care access. Lastly, the study may not adequately account for potential confounders and unmeasured variables that could influence cardiomyopathy phenotypes and outcomes. Factors such as access to health care and environmental exposures, which are

known to impact cardiovascular health, may not have been comprehensively assessed in this study.

In conclusion, the IMHOTEP study marks a notable step in advancing our understanding of cardiomyopathy in Southern Africa, offering crucial insights into its prevalence, demographics, etiology, and clinical implications within the broader context of global health.[7] By uncovering these key aspects, the study lays the groundwork for future research and evidence-based interventions aimed at improving patient outcomes not only in Southern Africa but also in other regions facing similar health care challenges. Moreover, the study emphasizes the urgent need for continued collaborative efforts to address disparities in cardiomyopathy care, highlighting the importance of enhancing access to health care, implementing effective screening programs, and developing targeted interventions to address social determinants of health on a global scale.[3] While the findings of the IMHOTEP study are invaluable, future research endeavors must focus on overcoming limitations such as geographic representation and sample size to foster a more comprehensive understanding of cardiomyopathy epidemiology and facilitate the development of universally applicable clinical care strategies for patients worldwide.

FUNDING SUPPORT AND AUTHOR DISCLOSURES

Dr Bhaskar has received financial support from the Grant-in-Aid for Scientific Research (KAKENHI) (PI: SB) by the Japan Society for the Promotion of Science (JSPS) and the Japanese Ministry of Education, Culture, Sports, Science, and Technology (MEXT); extends gratitude for the JSPS International Fellowship, supported by MEXT and the Australian Academy of Science, awarded for the period 2023 to 2025; and has a leadership or fiduciary role in other board, society, committee, or advocacy group, paid or unpaid, with the Rotary District 9675 as Chair of Diversity, Equity, and Inclusion, and with Global Health Hub Germany (Berlin, Germany) as Founding Member, Chair, and Co-manager of the Global Health and Migration Hub Community, all outside the submitted work. The funding body has no role in the study design, data collection, analysis, interpretation of findings, and manuscript preparation. The content is solely the responsibility of the authors and does not necessarily represent the official views of the affiliated/funding organizations.

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KEY WORDS Africa, cardiomyopathy, epidemiology, global health, health care disparities, IMHOTEP study