

PERSPECTIVES IN HYPERTENSION

Hypertension in sub-Saharan Africa: the current profile, recent advances, gaps, and priorities

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The African continent continues to be a hot topic when it comes to the global burden of hypertension and its subsequent impact on cardiovascular morbidity and mortality. This is justifiable as the unmet need for adequate care for hypertension and diabetes threatens to reverse the 10-year gain in healthy life expectancy in the African region between 2000 and 2019.¹ Almost all papers calling for action to address hypertension in sub-Saharan Africa (SSA) underline the rising blood pressure (BP) levels, poor detection, and sub-optimal treatment and control rates. Recent roadmaps and major manuscripts led by teams of global experts in the field of hypertension have repeatedly called for urgent contextualised interventions throughout the African continent to reduce the health and economic consequences of raised high BP.

Similar to other work done before by our group in 2017², we tried in our recent review³ to present a comprehensive state of hypertension in SSA. We discussed both public health matters and biomarker investigations that should be prioritised for research and innovation targeting hypertension risk factors, and the provision of care for all people living with hypertension in the region. Based on our review of studies published between 2017 and 2023, nationwide representative studies and multi-national studies employing standardised methods remain scarce, given the population sizes of SSA countries. This is especially the case for large-scale observational and prospective studies led by local researchers, which is essential for context and sustainability. Indeed, we cannot

deny the invaluable impact of global initiatives as seen with the May Measure Month (MMM) global screening campaign, which remains the main source of recent data as we highlighted in our review paper.

The main risk factors for the publication period were unhealthy diet, sedentary lifestyle, increased adiposity and underweight, ageing, level of education, and/or income as well as psychosocial factors, while the role of smoking and alcohol use remained unclear. Socioeconomic inequality was a major driver for risk factors not only in adults but also in children, affecting the development and detection of hypertension in children. Therefore, significant health and economic benefits can be derived by addressing social determinants of health during the early stages of life. This is clear when looking at the pathway of exposure to risk factors in utero, infancy and childhood to early adulthood, leading to poorer cardiovascular health (**Figure 1**).

Hypertension phenotypes in populations of African ancestry remain relevant for primary prevention and therapeutic interventions. Advances to understand the mechanistic aspects of hypertension development such as the renin angiotensin aldosterone system, salt handling, particularly the growing interest in the role of dietary potassium and endothelial function using prospective studies and across the lifespan is limited to certain regions in SSA. Although these new data are relevant in improving the understanding of hypertension development,

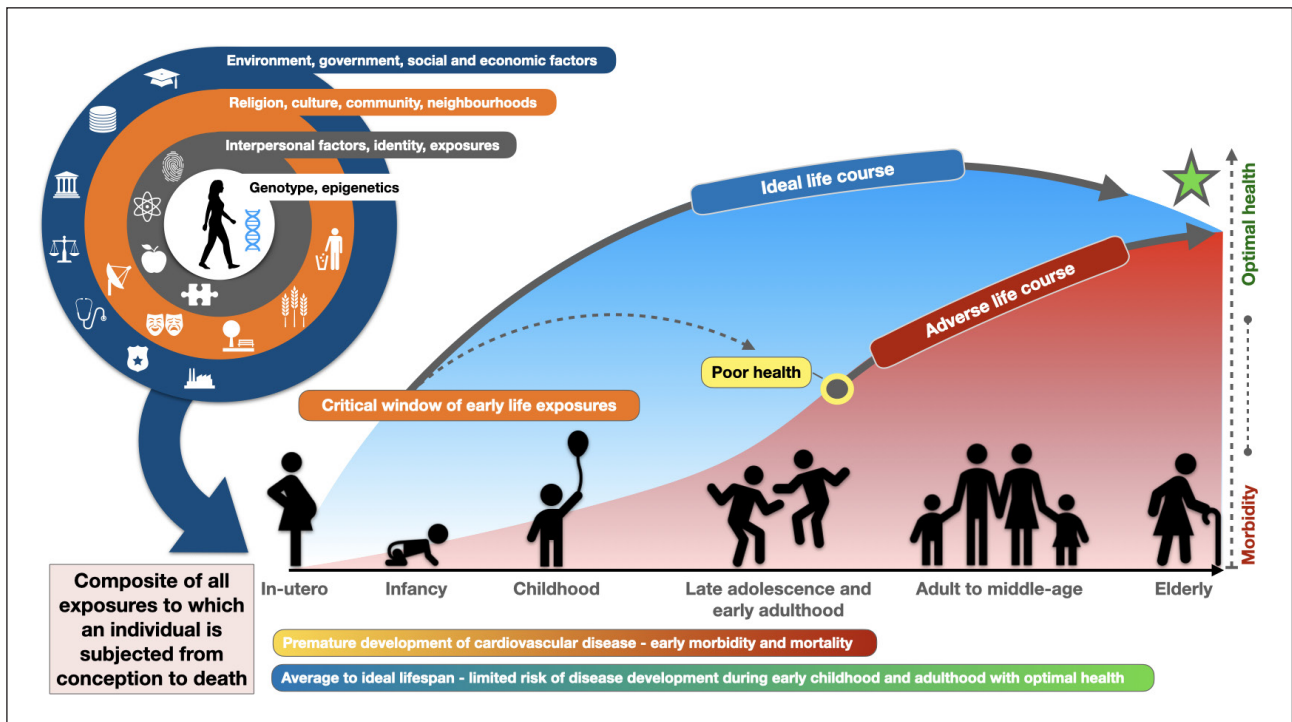


Figure 1: Risk factors exposome of hypertension across the lifespan.

the rate at which knowledge is translated into tangible solutions in clinical practice and public health is concerning. On the other hand, HIV/AIDS remains a major public health concern in SSA. Despite lower BP levels and lower odds of having hypertension in people living with HIV as compared to those without HIV,^{4,6} the association between HIV, antiretroviral therapy, and cardiovascular disease drives the continued need to monitor hypertension risk factors, prevalence, and management in individuals living with HIV.

Other than funding challenges due to competing health priorities (communicable versus noncommunicable diseases), perhaps one of the most important aspects of tackling hypertension in SSA, is the vast diversity in social determinants of health, between and within countries. These factors which include education level, rural versus urban dwellings, rates of employment as well as cultural and religious beliefs not only impact risk and prevalence, but also management of hypertension. When comparing, for example, interventions for the management of hypertension in South Africa and other sites within the same study, socioeconomic and demographic factors such as residing in a rural area, low education, and literacy levels in patients, and the high unemployment rate

as well as health system-related barriers are some of the factors determining the failure or success of interventions.⁷

To conclude, even though the burden of hypertension in SSA is on a crisis trajectory, collaborative efforts and improved stakeholder engagement (patient populations, governments and traditional leaders) show promise. It is without doubt that targeting modifiable risk factors has the greatest potential to prevent hypertension in SSA. There are several initiatives including multi-country strategies,⁸ and randomised control trials, some ongoing and others in the formative phase. The expectation, perhaps too ambitious, is for the manuscripts in the next decade to present the tangible impact current actions have had on mitigating hypertension risk factors and reducing hypertension-mediated target organ damage through improved detection, treatment and control. In addition to global efforts, more collaboration is needed between local researchers to develop regional initiatives and improve working relationships with government despite the known challenges to ensure equitable, culturally acceptable, and sustainable interventions.

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