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Further case for cohort studies of non-communicable diseases in sub-Saharan Africa

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***Letter to the Editor**:*

We applaud the authors of “Prevalence of metabolic syndrome in sub-Saharan Africa: a systematic review and meta-analysis” for their efforts in gathering and publishing this evidence. In this systematic and meta-analysis, Faijer-Westerink and colleagues sought to estimate the prevalence of metabolic syndrome (MetS) in sub-Saharan Africa (SSA), with further evaluation in subgroups of the population.[1] Based on a total of 65 studies, the overall pooled prevalence of MetS according to different diagnostic criteria ranged widely from 11.1 to 23.9%. In subgroup analysis, prevalence estimates seem to be highest in women, urban populations and Southern Africa. Based on their findings, the authors concluded that MetS was not rare in SSA and highlighted the need for public health intervention efforts to curb the burden of MetS. The strengths of this meta-analysis include the novelty, being the first attempt at summarising prevalence estimates of MetS across the SSA region; the comprehensive search strategy across major databases; and comprehensive analyses which included use of the Freeman-Tukey variance stabilising double arcsine transformation to account for data with low rates, detailed exploration of heterogeneity, assessing for small study effects, and several sensitivity analyses to test the robustness of the results. There are however some limitations which deserve discussion. Caution needs to be exercised in generalising the findings to the whole of the SSA region. Of the 48 SSA countries, the 65 eligible studies were based in only 14 (29%) of these countries, with the majority from West Africa (especially from Nigeria). Though the authors indicated that caution with generalisability is warranted, they also stated that the pooled prevalence estimate of MetS was fairly representable. The coverage of a few countries in some of the African regions cannot imply generalisability of the data. Second, there was substantial heterogeneity across studies in the majority of pooled combinations (I^2>90% for each), hence it is debatable if pooled estimates should have been presented given that the presence of excessive heterogeneity makes pooling of data somewhat controversial. We are aware that the authors made great efforts to identify the possible sources of heterogeneity. Finally, a detailed look at some of the articles showed that some of the country-specific

studies were conducted in the same area, hence there was the potential of overlapping participants and therefore the possibility of double-counting during pooling.

Nevertheless, despite the limitations, the findings of Faijer-Westerink and colleagues[1] are very relevant and timely. The authors should be commended for this fine addition to the existing evidence - providing more evidence on the changing pattern of non-communicable disease (NCD) occurrence in SSA. Though communicable diseases (such as HIV/AIDS and tuberculosis) are major sources of morbidity and mortality in SSA, it is projected that NCDs such as cardiovascular diseases (CVDs) and type 2 diabetes, will overtake infectious diseases with regards to morbidity and mortality by the year 2030.[2] CVDs are the number one cause of death globally and constitute a major public health burden.[3] Currently, developing countries (such as in SSA) contribute a greater share to the global burden of CVD than developed countries.[3] MetS characterized by a constellation of metabolic disorders, is a major risk factor for type 2 diabetes and CVD.[4] There is a wealth of cross-sectional data showing the prevalence of potential risk factors for CVD and other NCDs in SSA[5, 6] and which has led to better understanding of the distribution of NCDs and their known risk factors. However, there is a need for reliable data on how risk factors change over time and how they relate to NCD outcomes. Prospective cohort designs are the solution and they can be used to study complex disease outcomes and multiple risk factors and are very crucial in understanding disease aetiology, course and prognosis, and can inform the development of long-term prevention strategies.[2, 7] Given the large and growing disease burden due to NCDs, Holmes and colleagues have urgently called for the establishment of large well-designed longitudinal cohorts in SSA.[2] The current findings by Faijer-Westerink and colleagues[1] further highlight this need.

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Conflict of interest

None.

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