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Strategies for Reducing Non-Communicable Diseases in Africa

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Non-Communicable diseases (NCDs) refer to a group of medical disorders that are not transmissible including cardiovascular diseases (of which stroke and acute coronary syndrome are leading causes of death globally), diabetes mellitus, chronic obstructive pulmonary disease, cancers, injuries and mental illnesses [1];[2].

In Africa, until the Global Burden of Disease (GBD) report, 2019, NCDs were never viewed as leading causes of deaths, even though there had been projections that these diseases would be the leading causes of deaths by 2030 [3]. Therefore, all efforts at reducing mortality and the disability-adjusted life years (DALYs) had hitherto been towards the control of communicable diseases [4]. The prevention of childhood deaths has increased the number of people reaching the age of development of some of these non-communicable diseases. Here we are; it has caught up with us extempore [5]; 10 years before the expected time.

Most countries in Africa are among the poorest in the world with a low per capita gross domestic product (GDP) [1], where expenditure on health is as low as 2% with a larger proportion committed to the control of communicable diseases such as HIV/AIDS, tuberculosis, and malaria, thereby leaving the escalating increase in the disease burden from NCDs unchecked. It is high time we expedited actions to combat these preventable diseases to reduce the burden on the already stretched meagre resources available to curb the yet-to-conquer communicable diseases. To tackle these, there is a need to have a good knowledge of the risk factors involved and explore pragmatic strategies to make implementable, the action plans and policies scientifically proven to suit the various regional, socio-economic and cultural contexts in Africa.

Epidemiology: According to the Global Burden of Disease studies, in four sub-Saharan Africa (SSA) countries (Nigeria, Ethiopia, the Democratic Republic of the Congo and South Africa), the age-standardized death rates from NCDs are higher than in high-income countries [6]. In low- and middle-income countries (LMICs), around 30% of NCD deaths affect people younger than 60 years, while this number is reduced to only 13% in high-income countries [7].

Risk factors: The interplay between the genetic risk factors for NCDs and the environmental influences on them, in addition to poverty and socioeconomic inequality already underlies high rates of NCDs in Africa. Chronic communicable diseases, such as rheumatic fever, hepatitis B virus infection, human papillomavirus and *Helicobacter pylori* [8], prevalent in Africa, have also been found to be risk factors for NCDs. In addition to these, alcohol consumption, cigarette smoking, sedentary lifestyle/ obesity, high salt intake/ hypertension and consumption of unhealthy diets, drive a double burden of disease in Africa [9]. Malnutrition, low birth weight and prematurity which abound in the poorest countries of Africa have been linked to later in

life accelerated growth and eventual development of chronic kidney diseases and systemic arterial hypertension [10].

Pathogenesis: The relationships between different direct and indirect risk factors with disease outcomes are complex and include chains of risks, clustering of risk factors, and the effect of one risk factor (environmental or genetic) on another risk factor. It is now established that atherosclerosis starts to develop in childhood [11], and poor living conditions and social deprivation are associated with NCD development [12]. Rapid urbanisation and globalisation with demographic and lifestyle changes are recognised pathogenetic mechanisms underpinning the development of NCDs [13].

Proposed solutions: Weak health systems have been estimated to account for half of the annual 28 million NCDs death in LMICs [14]. Pragmatic solutions with clear evidence of cost-effectiveness, feasibility both at individual and societal levels, culture specificity and contextual relevance are needed. Effective prevention of NCDs on a large scale would require an understanding of the complex causal pathways of risk factors operating in countries, communities, families and individuals in Africa. It is also important to improve maternal and child health which will help to address issues related to the developmental hypothesis of NCDs development along the life course.

It is crucial to create awareness through sensitization. Improvement in mobile-health technologies will facilitate the treatment of cardiovascular risk factors and reduce individuals' susceptibility to non-communicable diseases. Indeed, we should start to avoid the division between communicable and NCDs and explore more integrated models that place the patient, and all the comorbidities and risk factors, at the centre of disease control priorities. Above all, teams of trans-disciplinary researchers have to develop pragmatic translatable interventions that would address the peculiar NCDs risk factors in Africa.

This will help to achieve by 2030 the United Nations' Sustainable Development Goal 3.4 of “a one-third reduction in premature deaths between 30 and 70 years of age from the four major NCDs - cancer, cardiovascular disease, chronic respiratory disease, and diabetes”. Adaptation, updating and implementation of the action plans by the “Global Action Plan for the Prevention and Control of NCDs 2013-2020” by the WHO which include reduction of physical inactivity, and average consumption of sodium/salt will be of immense benefit [15].

Conclusion: Currently, in Africa, health services for NCDs are fragmented and organisationally ineffective. World Health Organization's proposals for NCDs requesting to improve recognition of disease's burden in terms of disability, premature death, and economic impacts, by applying the knowledge we already have acquired from developed countries has now helped to detect NCDs as the leading causes of deaths in Africa. Therefore, there is a

need to adapt and implement cost-effective interventions being used in developed countries and at the same time leverage the pragmatic health system interventions that have successfully been used in the control of communicable diseases in Africa. Although it might be easy to control NCDs at the community level, in Africa, the cost of individual care such as out-of-pocket treatment of hypertension to prevent stroke or heart failure is a great challenge.

Overall, premium should be placed on the active engagement of all stakeholders, primary prevention and life-course approach to accelerate the progress towards reducing the burden of NCDs in Africa.

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