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Forum

Aging and the Rising Burden of Noncommunicable Diseases in Sub-Saharan Africa and other Low- and Middle-Income Countries: A Call for Holistic Action

Razak M. Gyasi, MPhil, PhD[1,*] and David R. Phillips, BScEcon, PhD[2]

[1]African Population and Health Research Center, Nairobi, Kenya. [2]Department of Sociology and Social Policy, Lingnan University, Tuen Mun, Hong Kong.

*Address correspondence to: Razak M. Gyasi, MPhil, PhD, Aging and Development Unit, African Population and Health Research Center, Manga Close, Off-Kirawa Road, P.O. Box 10787-00100, Nairobi, Kenya. E-mail: rgyasi@aphrc.org; rgyasi@LN.hk

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Abstract

Noncommunicable diseases (NCDs) are a prevalent and growing burden among older cohorts in sub-Saharan Africa and other low- and middle-income countries (LMICs) as in many wealthier parts of the world. This stems from the combined effects of factors such as demographic aging, behavioral transitions, and developmental origins of health and disease. A crucial characteristic of many NCDs is that their personal and family impacts and costs are not accurately reflected in mortality data. Their effects are often chronic and long-term and can cause morbidity, loss of work ability, and impaired quality of life over a prolonged period. Unless addressed seriously, the continuing increase of NCDs and their burden in sub-Saharan African countries and other LMICs will almost certainly undermine progress toward achieving the target of reducing by 25% premature mortality from NCDs in these countries by 2025 and also one-third reduction of NCDs target by 2030. To have any chance of meeting or even getting near to these targets, this article calls for action by national and regional governments to strengthen universal health coverage (UHC), economic empowerment of vulnerable groups, public–private partnerships, effective fiscal regulation, and public education on NCDs, their risk factors and impacts in sub-Saharan Africa in particular and most LMICs globally.

Keywords: Behavioral transitions, Chronic conditions, Long-term care, Public-private partnerships, Universal health coverage, Sustainable Development Goals

Although not inevitable, demographic aging is generally associated with increasing morbidity, loss of functionality, various levels of disability, and increasing avoidable premature mortality (Gyasi, 2018; McCracken & Phillips, 2017; WHO, 2018a). These are a consequence of many combined but often, to some extent, preventable and manageable chronic and degenerative conditions that are increasingly common in older populations (Subramanian et al., 2018; WHO, 2015). In 2015, world leaders endorsed the framework for the Sustainable Development Goals and so committed to reduce premature deaths from noncommunicable diseases (NCDs) by *one-third by 2030*. The WHO, at its 64th session of the Regional Committee for the Eastern Mediterranean, established a new high-level Commission on Non-communicable Diseases in October 2017. Although the Commission broadly aims to identify innovative ways to curb the world's biggest causes of death and to help extend life expectancy for millions of people, it prioritizes support for political efforts and engagement to achieve fast-track action on NCDs and to reduce suffering from various levels of mental disorders and the effects of violence and

injuries (Gyasi & Phillips, 2019; United Nations General Assembly Resolution, 2015).

More importantly, the new Commission is charged with helping to improve policy directions and coherence to prevent and/or control NCDs (Schmidt, Gostin, & Emanuel, 2015; WHO, 2017). These two important initiatives direct attention to the huge concerns about effectively tackling the increasing prevalence of NCDs and the potential concomitant consequences especially among older persons in low- and middle-income countries (LMICs; United Nations General Assembly Resolution, 2015). However, as things stand, most developing regions and countries, and particularly those in sub-Saharan Africa, have not made much progress toward achieving these global targets including a reduction of premature NCD-related deaths by 25% in 2025 (the 25 by 25 goal) and by a third by 2030 (Beaglehole et al., 2014; WHO, 2013). This slow progress highlights the urgent need for greater focus on and evidence-based approaches toward reducing NCDs in Africa and many other LMICs particularly among their aging populations.

The Sustainable Development Goals embody a "one-health strategy" for healthy people living on a habitable planet by freeing the human race from poor health and poverty (Baer, Bhushan, Taleb, Vasquez, & Thomas, 2016; Gostin & Friedman, 2015; United Nations General Assembly Resolution, 2015). Efforts to improve global public health outcomes include effective ways to address the impacts of NCDs particularly among populations in LMICs and have been carefully scrutinized in light of the current United Nations *2030 agenda for sustainable development* aspirations (Dye & Acharya, 2017; Schmidt et al., 2015). By encouraging action across different segments of society, the Sustainable Development Goals collectively should stimulate the discovery of ways to confront today's major challenges to health, including aging and disabilities, NCDs, and health security. In turn, these should mitigate poverty among the rapidly growing older populations in sub-Saharan Africa who disproportionately suffer a disease burden from poorer health.

The Trajectories and the Burden of NCDs

Well-recognized NCDs such as cardiovascular disease, cancers, diabetes, respiratory disease, and stroke are now the leading global cause of ill-health, disability, and death in later life and have slowly moved up the global health agenda. This is as a result of combined effects of demographic and epidemiological transitions and "modernization" over the past few decades (WHO, 2015; Yiengprugsawan, Healy, & Kendig, 2016; Yiengprugsawan & Kendig, 2015). The less readily acknowledged NCDs include mental illnesses, dementia, and the long-term physical and psychological effects of accidents and injuries. NCDs currently kill nearly 41 million people annually, accounting for over 71% of the 57 million deaths worldwide (Subramanian et al., 2018; WHO, 2017, 2018b), causing a severe "*moral panic*" among many populations and pressure in public health settings in many contemporary aging societies. Perhaps more important than mortality, estimates show that over one-half of disability-adjusted life years can directly be attributed solely to NCDs.

As in other populous LMICs such as China and India, the increasing burden of NCDs in sub-Saharan Africa is often driven by population aging and changing lifestyles. Older adults in these contexts are now going through a dietary transition, with an increasingly "Western diet" pattern and other health and social behaviors leading to increasing prevalence of obesity and hypertension (Gyasi, 2018; Xu, Byles, Hall, & Shi, 2016; Yiengprugsawan & Kendig, 2015). The prevalence of NCDs has been strongly correlated with aging and key lifestyles risk factors such as tobacco use, physical inactivity, excess alcohol intake, and unhealthy diets with obesity (WHO, 2018a). These circumstances are largely shaped by a wider set of social policies, economics (especially within the food industry) and political forces which appear to be particularly influential in many LMICs.

Economic impact data on this topic are notoriously difficult to judge, but the economic burden of NCDs globally has been projected to double from over US$6 trillion in 2010 to US$13 trillion by 2030 (Atun et al., 2013; WHO, 2014, 2018a). Moreover, by 2020, the proportion of mortality from chronic NCDs is likely to be about 75% higher than that of malnutrition and infectious diseases, and the highest proportion expected in LMICs (WHO, 2019a; Yiengprugsawan et al., 2016). Crucially, every 10% increase in NCDs is estimated to lower annual economic growth by 0.5% and, given the rapidity of demographic aging, the major future effects will be felt in sub-Saharan Africa (WHO, 2018a). Research indicates that LMICs including sub-Saharan Africa have more than 80% of all NCD-related deaths with a disproportionate share of these among older adults (WHO, 2018a).

Although NCDs are traditionally assumed to be "diseases of affluence," the resource-poor and vulnerable groups in sub-Saharan Africa and other LMICs bear a relatively greater burden of the impacts, a fact sometimes overlooked by many. Indeed, of the estimated 38 million deaths caused by NCDs annually, approximately 28 million, plus 82% of all absolute premature deaths, occur in developing settings (Horton, 2015; WHO, 2015; Table 1). Allen & colleagues (2017) have argued that this "82%" statistic is unsurprising given that over 75% of the world's people reside in LMICs. However, Figures 1 and 2 indicate that the difference in risk is still striking since individuals living in LMICs have about 1.5 higher odds of dying prematurely from NCDs compared with persons in richer countries, and there are also marked gender dimensions (Allen et al., 2017; WHO, 2019a). This reflects the recognition of a *social gradient* in health suggesting that the lower an individual's socioeconomic position, the worse their health (Dickey, 2005; WHO, 2019a). High-impact affordable and

acceptable prevention strategies and facilities to treat or address many NCDs conditions are likewise fewer in most LMICs, reflecting the long-recognized *inverse care law* in health and health care: those in greatest need get the least care (Tudor Hart, 1971). Indeed, sub-Saharan Africa is now a rapidly aging region relative to many others with established aging trends. Therefore, greater impacts of NCDs are to be expected in sub-Saharan Africa in the coming years, which will be exacerbated if effective preventive and management strategies are not implemented in these countries.

Many LMICs, especially those in sub-Saharan Africa, are faced with rapid changes accompanied by the "double burden of disease" of infectious conditions and NCDs (Gowshall & Taylor-Robinson, 2018; Subramanian et al., 2018). Like infectious conditions such as malaria, which have recognized economic impacts, the rising burden of NCDs also exacts serious economic costs, as people are less productive, work for fewer years, die prematurely, and many need intensive long-term care. Therefore, the rising prevalence of NCDs in rapidly aging countries will undermine their socioeconomic development as a result of the loss of productivity and associated increasing public and private health costs. Given the escalating costs of NCDs to health systems and the economies of almost all rapidly aging communities, interventions to reduce NCD risk factors should be prioritized in both health policy setting and the implementation of evidence-based research.

What to target? A growing number of chronic conditions are being identified (albeit with variations regionally within and between countries), but more than 80% of all deaths attributable to NCDs each year are attributed to four conditions: cardiovascular diseases (17.5 million), cancers (8.2 million), respiratory diseases (4 million), and diabetes (1.5 million; WHO, 2018a; Yiengprugsawan et al., 2016). These conditions have been specifically targeted by the WHO (Allen et al., 2017; Beaglehole et al., 2014). LMICs should, therefore, be alert because these four conditions constitute both a major public health and developmental challenges, emphasizing the combined impacts of aging. The WHO has also formally recognized dementia as a cause of death rather than just disability (WHO, 2015), so if older populations in LMICs experience dementia to the same extents as those in richer countries, dementia will add greatly to the impacts of NCDs.

Rapid increases in the prevalence of chronic conditions may not be fully explained by globalization and urbanization of societies and associated traditional risk factors of lifestyle behaviors such as harmful alcohol intake, tobacco smoking, sedentary behavior, and nutrition transitions/unhealthy dieting (WHO, 2009). The developmental origins of health and disease and demographic aging have been recognized as key drivers and long-term risk agents of NCDs in LMICs. As population profiles age due to decreasing fertility rates and increases in life expectancy, the prevalence of NCDs increases (Hu, 2011; McCracken & Phillips, 2017). These potential risk factors which were often socially patterned in richer countries have been

Table 1. Noncommunicable Disease Indicators by WHO Region

WHO region	Age-standardized, NCDs deaths per 100,000 population, 2016
World	513
Africa (AFR)	635
Americas (AMR)	429
South-East Asia (SEAR)	603
Europe (EUR)	454
Eastern Mediterranean (EMR)	680
Western Pacific (WPR)	478
Lower income (LIR)	632
Lower middle income (LMIR)	631
Upper middle income (UMIR)	533
High income (HIR)	347

Source: WHO (2018b).

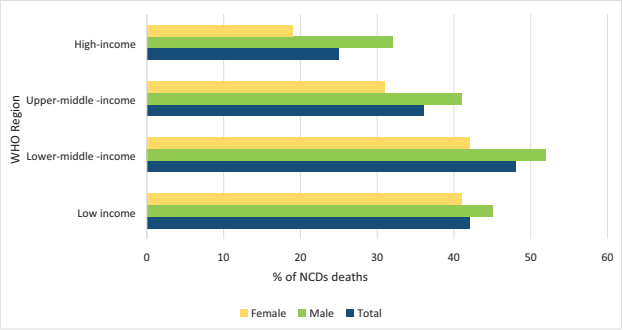

Figure 1. Proportion of noncommunicable disease (NCD) deaths occurring among middle and older people, by income group, 2016. *Source:* WHO (2018b).

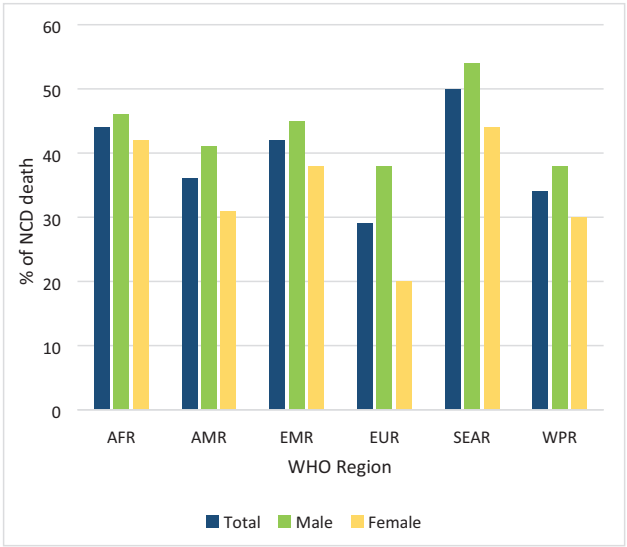

Figure 2. Proportion of noncommunicable disease (NCD) deaths occurring among middle-aged (45–59 years old) and older people (≥60 years old), by WHO region, 2016. *Source:* WHO (2018b).

increasingly noticeable in LMICs with rural/urban patterns over the past two decades.

There is little doubt that older persons of low socioeconomic status in poor countries are more likely to use tobacco and alcohol and may of necessity eat a less healthy diet, all of which are important antecedents of common NCDs (McCracken & Phillips, 2017; Stringhini & Bovet, 2017). Unhealthy behaviors, diets, and the associated burden have shifted NCDs toward the disadvantaged and poor socioeconomic status individuals and groups (Allen et al., 2017; WHO, 2014), but the complexities and direction of the associations can differ based on the analysis of risk factors, as well as different geographical locations and genders. Such people are also often very unlikely to receive the health checks that could show early signs of NCDs and risk factors. They may also lack access to health information, exacerbated by lower health literacy, and they are rarely in a position to implement changes to their lives. This explains why policies to encourage the promotion of preventive mechanisms and knowledge at all ages (especially among older cohorts) to reduce the impact and cost of NCDs are particularly important in LMICs.

Conclusions and Key Policy Interventions

Population aging is a great achievement, but with its associated NCDs burden, it can seem an ominous threat, to which there are few ways to respond in LMICs. But is this inevitable? If countries and localities target NCDs, there may well be a brighter future. At present, the rapidly aging populations and proportion of people in low-income countries suffering from NCDs and associated disabilities, functional limitations, and premature deaths mean the need for sustained NCD preventive measures is substantial. This remains a key model to positively address the achievement of the United Nations' ambitious Sustainable Development Goals by 2030 in sub-Saharan Africa and many other LMICs. Urgent regional and national action plans focusing on NCDs and their specific risk factors in these contexts will be essential and need the same visibility as campaigns in infectious conditions such as malaria and HIV. At the moment, much work in the context of dealing with the effects of chronic NCDs in LMICs is likely to be conducted in the context of the limited long-term intensive care systems that exist. In this regard, the Western Pacific and African Regions of the WHO, which have a number of LMICs, are stressing the importance of long-term care and NCDs in aging populations (WHO, 2017; WHO WPRO, 2017). The most desirable future solution will be to aim to enhance NCD prevention to at least reduce their rate of increase.

The WHO Global Action Plan for the Prevention and Control of NCDs 2013–2020 also recognizes palliative care as an explicit part of the comprehensive services required for the management of NCDs and their impacts among populations particularly in LMICs (WHO, 2019b). This is particularly crucial in LMICs where such care is often almost totally absent. The first global resolution on palliative care in 2014 called upon the WHO and Member States to improve access to palliative care as a core component of health systems, with an emphasis on primary health care and community/home-based care (WHO, 2019b). National governments in the LMICs should therefore acknowledge the need to improve access to palliative care services, effective self-management, and self-care behavior practices in their bid to control and mitigate the effects of NCDs, particularly in older age. Recognizing the implications for the role of health care professionals in NCD management, effective long-term care, and end-of-life care is crucial.

Very importantly, *local problems may be best solved locally*. In addition to the support from the WHO and other international bodies, it is the responsibility of national governments in LMICs to progressively develop and pursue NCDs control and prevention strategies including behavioral change. In this context, *persistent* public education on major risk factors and dangers of NCDs in rapidly aging populations is essential and should address local risks, behaviors, and cultural practices. Promoting optimal—or at least improved—lifestyle behaviors, including healthier diets and regular moderate-to-rigorous physical activity, is another valuable policy to promote (Gyasi, 2019; McCracken & Phillips, 2017; WHO, 2015). Sustained, frequent, informative, and understandable advertising via national electronic and print media as well as via *informal information sources* and social media are essential in this agenda. Various forms of legislation to ban, reduce, or monitor immediate exposure to NCD risk behaviors (such as heavy and harmful alcohol consumption; tobacco smoking; drunk-driving and road safety; exposure to indoor air pollution, etc.) and heavy taxes on production and distribution of NCD-causing products such as alcohol, tobacco, and sugary foods will be important. These may not only discourage unhealthy product use but also potentially generate revenue which could be ploughed back into NCDs prevention and treatment campaigns in LMICs.

The quest for universal health coverage (UHC) is unquestionably timely and fundamentally important (Frenk & de Ferranti, 2012; Gyasi, Phillips, & Buor, 2018; Vázquez & Ghebreyesus, 2017; WHO, World Bank, 2013). A focus on UHC can emphasize expansion of access to health care services over equitable improvement of health outcomes through action across all relevant sectors and public health interventions needed to effectively address NCDs (Schmidt et al., 2015). However, the UHC model, particularly for older population cohorts, is in effect a political choice and depends largely on the goodwill and priorities of national governments and their functionary departments (Gyasi et al., 2018; Vázquez & Ghebreyesus, 2017). UHC has the potential to improve access to both NCD-related preventive and therapeutic health services for vulnerable groups and indigent persons, who are noted for delaying and avoiding health care due to escalating costs of health care

and lack of availability of appropriate care as well as limited knowledge of the nature of many NCDs (Gyasi et al., 2018; McCracken & Phillips, 2017). Financial capability and economic empowerment of the poorer older cohorts through improved financial services inclusion strategies (Gyasi, Adam, & Phillips, 2019) may help ensure early detection, management, and access to NCDs care, particularly in sub-Saharan African countries. Research and development on knowledge and acceptable sources of information will play a critical role. Importantly, although NCDs are associated with aging, in many LMICs it is important to educate both the public and policymakers that NCDs are not an *inevitable* part of aging if risk factors can be reduced.

Very importantly, the debate and plans for policies and strategies to curb NCDs should not become purely political polemic. The usual politicization of matters of national interest and those that affect the well-being of vulnerable groups, which occurs in many sub-Saharan African countries, should be curtailed. Real, concrete, and progressive political action should follow the recognition of the effects of NCDs, and the fight against them in the achievement of Sustainable Development Goals 3 (ensuring healthy lives and promoting the well-being for all at all ages) by 2030. The pivotal role of national governments to provide the enabling environment and encouragement for private sector and civil society participation and also to ensure effective public–private partnerships in preventing and controlling NCDs is crucial in LMICs. All sectors of the economy and micro-level efforts should be motivated and harnessed in addressing the current and future burden of NCDs.

In conclusion, the impact of chronic conditions will be particularly important in LMICs where the underlying conditions for all types of diseases are still prevalent, which include poverty, malnutrition, poor sanitation, infections, and weak health and education systems. Regional and national efforts to ensure emotional and functional independence in old age and the subsequent achievement of *healthy aging paradigm* should carefully include and strategically target a fight against the risk factors of NCDs over the life course. We propose that studies urgently explore and exploit the roles of culture, family structure, and social cohesion within the ambit of social support in tackling the impacts of NCDs among older people in LMICs and sub-Saharan Africa in particular. Older persons may be the target of our call, but to fully address the challenge, NCDs demand *a life-course effort*, in which communities and families must all become fully engaged.

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Conflict of Interest

None reported.

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