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ASSESSING THE PUBLIC HEALTH BURDEN OF NON-COMMUNICABLE DISEASES IN LOW- AND MIDDLE-INCOME COUNTRIES

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ABSTRACT

Health systems consist of individuals, organizations, and processes that need leadership, governance, and resources to address the needs of the populations they serve. Successful health policy and interventions need to be evidence-based with ongoing monitoring by surveillance. Mechanisms for policy implementation for non-communicable diseases (NCDs) are imperative. Over the past few decades, the increasing trend of NCDs and their implications in low- and middle-income countries have drawn attention. Nonetheless, the histories of high-income countries are different from those of low- and middle-income countries, and thus their experiences are informative of this rising trend. This review looks at inequalities in NCDs across high-income and low- and middle-income countries, setting the scene to comprehend the epidemic. Theories regarding the developmental and degenerative determinants of NCDs are considered to guide prevention initiatives. Finally, the improvement of primary care through health system reform is an essential strategy to curb mortality of the burgeoning NCD epidemic.

Keywords: *chronic diseases, developing countries, epidemiology, health transition, non-communicable diseases, population, public health, risk factors, urbanisation, world health.*

INTRODUCTION

Community engagement is essential to identify their health needs, mobilize resources, and enable them to sustain and improve their health [9]. With the increasing prevalence of chronic non-communicable diseases (NCDs), the role of communities as integral components of health systems becomes more important. NCDs, including cancer, diabetes, cardiovascular disease, and chronic respiratory diseases, are the leading causes of morbidity and mortality worldwide, surpassing all other causes combined. Alarmingly, approximately 80% of NCD-related deaths occur in low- and middle-income countries (LMICs), despite the global

increase in NCD prevalence [11]. There are various reasons for this gap. For one, most LMICs still have severe difficulties in controlling and preventing communicable diseases, which siphon off resources from NCD care [12]. This is exacerbated by the fact that many other development-related issues, like minimizing environmental harm, supporting gender equality, lowering poverty, increasing access to education, and creating infrastructure, clash with health. Second, in many LMICs, behaviours that enhance health are often not supported by the larger political, social, economic, and environmental settings. Third, the healthcare systems of low- and middle-income countries (LMICs) tend to be underfinanced and lack the capacity to address chronic diseases, leading to a huge economic burden on individuals, households, and communities. This further has long-term effects on the economy, as families and communities are unable to absorb the rising healthcare costs [10].

Such an approach is expected to enable the client-oriented parts of responsiveness in terms of the population's contacts with primary healthcare services, despite the challenges the authors admit about the sustainability of this intervention. Extending the intervention to rural and remote communities not only provides for equitable distribution of responsiveness but also for improving responsiveness elements like prompt attention and access to social support systems. Nonetheless, as a consequence of the program's massive scope and availability of limited resources, the use of non-medical providers to assist the population-level program might restrict the selection of provider.

Review of literature

80% of deaths in low- and middle-income nations are caused by chronic diseases, mostly because of the huge population base and the transition from infectious to chronic diseases at the epidemiological level (World Health Organization, 2005). This causes deaths during the most productive years, affecting society and the economy [21]. Cardiovascular disorders are the second most common reason for adult death in sub-Saharan Africa, precipitating extensive chronic illness and disablement (Baingana & Bos, 2006). Importantly, cardiovascular disease-related deaths occur largely among those who are 30-69 years old, one decade younger compared to more affluent parts of the world [13].

New projections show that non-communicable diseases now cause more than half of the disease burden in low- and middle-income countries, up 10% from 1990 (Lopez et al., 2006). The per capita disease burden increased in low- and middle-income countries in Europe, Central Asia, and sub-Saharan Africa from 1990 to 2001 [14]. The epidemiological transition that is taking place in low- and middle-income nations – a transition from infectious to chronic diseases – is happening faster than in high-income nations in the past (Omran, 1971). A significant amount of the solid data for the management and prevention of chronic illnesses comes from randomized clinical studies [15,20]. There is a tension between proof of concept and generalizability because these studies typically focus on highly selected groups of people, which could mean that the findings are not applicable to the larger community (Mark et al. 2007).

Whether the intervention will be cost-effective if successful or whether there is a possibility that it would be scaled up to cover a wide population are often overlooked in trials [16]. In South Africa, for example, a community program that sought to lower coronary risk factors was not tested on Asian or Black South Africans and surprisingly did not demonstrate the advantages of a customized intervention in high-risk individuals (Rossouw et al. 1993).

Non-communicable diseases include diabetes, heart disease, chronic respiratory conditions, cancer, mental disorders, and injuries [18]. Chronic diseases are used interchangeably with these names [17]. Since cardiovascular diseases account for 30% of all deaths globally in 2005, they are the main focus of our analysis from the viewpoint of low- and middle-income nations (Strong et al. 2005). Another aspect is that health behaviours that are significantly linked to non-communicable diseases exhibit distinct patterns beyond the biological risk factors of blood pressure and cholesterol profiles [19]. For instance, smoking

habits vary greatly among nations, which means that the population-attributable risk for non-communicable diseases and mortality varies among low- and middle-income nations (Ezzati & Lopez 2004).

Methods

The current scoping review uses a systematic search approach and analysis to gain an overview of the scope and diversity of literature. Scoping reviews, as opposed to systematic reviews, that need strict quality assessments to amalgamate evidence present an initial literature review, sketching out research that is presently available without checking its quality. Numerous study types and general topics, including as equity, NCDs, and OR, can be handled by this approach. Smoke-free zones and taxes on sugar-sweetened beverages are two examples of policies that alter significant risk factors for NCDs through non-healthcare means.

Health interventions for non-communicable diseases (NCDs) can be used in three primary manners: population screening to detect at-risk individuals and administer appropriate treatment, i.e., primary care diabetic screening and national cervical cancer screening programs; targeted healthcare provision to patient populations previously without access to similar care, i.e., dialysis to end-stage renal disease patients and surgery to cancer patients; and cost-effectiveness analysis of comparing different interventions, e.g., insulin-based treatments for diabetes and chemotherapy regimens for breast cancer, in order to enhance disease control and minimize cost.

This analysis evaluates the effect of different intervention outcomes on population subgroups, considering demographic, social, economic, geographic, and environmental determinants beyond personal control. These outcomes are being assessed: health indicators (e.g., life expectancy and disability-adjusted life years (DALY)), financial risk protection against the cost of NCD-related medical treatment, and provision of healthcare services. For a demographic group deemed socially disadvantaged, such as women, children and infants, the elderly, and those residing in rural areas, the intervention seeks to enhance health and/or offer access to healthcare.

Experimental analysis

expanding access to healthcare that is preventative. For instance, a new nationwide cancer screening program is compared against no screening, opportunistic screening at medical facilities, or various and assessed coverage levels. giving patients access to clinical care that they did not previously have. Only instances where public sector healthcare coverage has improved—that is, where the government bears at least some of the associated costs—are included.

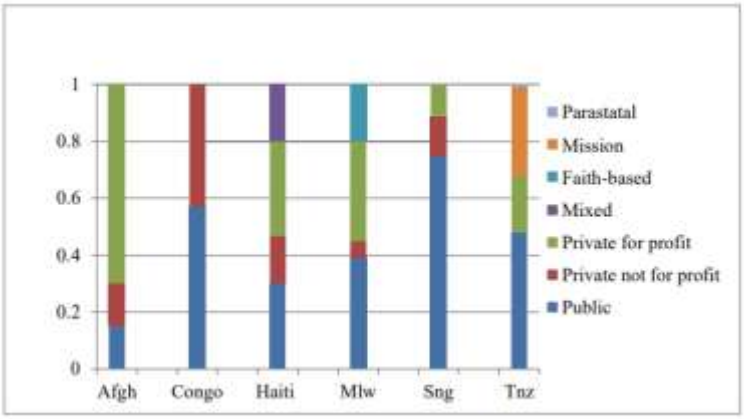

Figure 1: Health facilities with services coverage for diabetes

Operations Research (OR) techniques have been used in almost all non-communicable disease (NCD) categories, except for neurological disorders. This result is based on a comparison between the percentage of articles in the review and the percentage of NCD burden in low- and middle-income countries (LMICs), according to Global Burden of Disease data (figure 4).

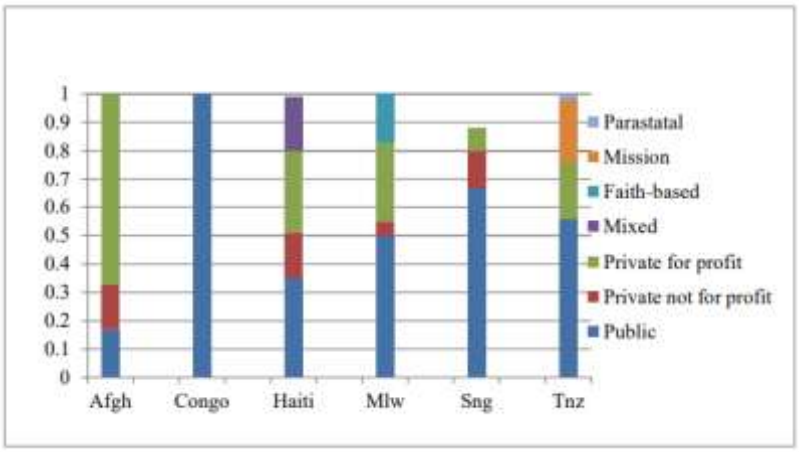

Figure 2: Health facilities with services coverage for cardiovascular diseases

The majority of the articles discuss neoplasms; these include several studies that compare cancer drugs A and B and several screening initiatives that mostly target cervical cancer. Numerous public health initiatives centered on alcohol and tobacco use are also overrepresented in the search results, along with diabetes, kidney illness, and substance use problems.

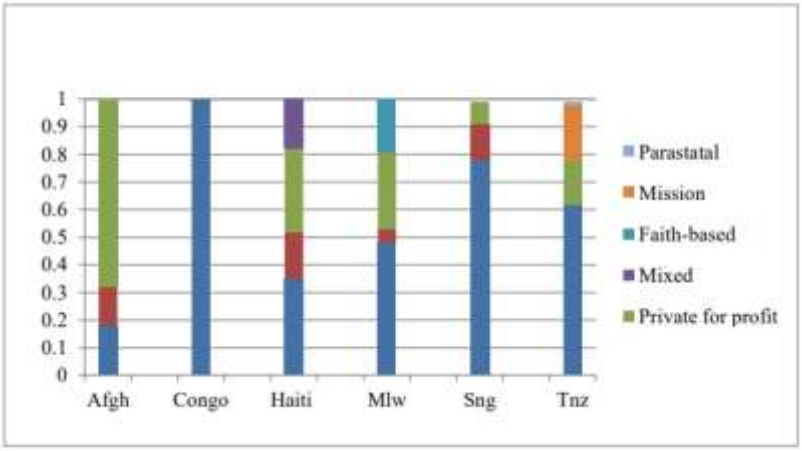

Figure 3: Health facilities with services coverage for respiratory diseases

As a result, public institutions account for the majority of providers for the three chronic conditions: diabetes, cardiovascular disease, and respiratory illnesses. According to facility management type, the

most recent wave of SPA data for Afghanistan includes three categories: public facilities, private facilities that are not for profit, and private facilities that are for profit. For diabetic services, private for-profit facilities perform better than public or government facilities (57% vs. 42%). Only 20% of the services for cardiovascular disorders are supplied by profit-driven facilities; the majority (80%) are provided by public facilities.

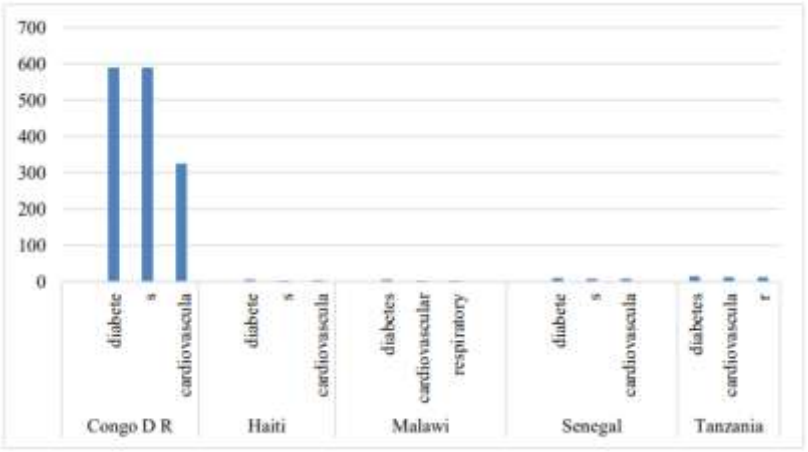

Figure 4: Average distance between the region/province with health insurance coverage to facilities with services coverage for diabetes cardiovascular and respiratory diseases across countries

The distance between health facilities that provide services for chronic respiratory disorders and clusters with health insurance coverage was determined by the regression model. Twelve kilometres is the average distance. At all levels, the regression distance is not statistically significant, although it does exhibit a negative connection with service coverage. As a result, the average distance is much greater, especially for cardiovascular and diabetes conditions. Nevertheless, the distance is not statistically significant at any level in any of these nations. This suggests that diabetes, cardiovascular, and respiratory illness services are not linked to health insurance coverage.

Conclusions

With non-communicable diseases (NCDs) steadily overwhelming low- and middle-income countries (LMICs), the ability of health services to adequately respond to the demands of their populations hangs in the balance. This collection contains articles by LMICs in Africa, Asia, and Southeast Asia discussing the complex nature of NCD burden and that of the ability of the health system to mitigate it in line with the surroundings of local society. The collection highlights the difficulties in sustaining universal coverage in the face of increasing NCDs and calls for community-level NCD interventions to be developed and implemented. The most significant advancements in fertility control, major infectious disease prevention and control, and child and maternal survival over the last half century have been brought about by concerted efforts by societies. Medical progress has resulted in an aging population and increased rates of non-communicable diseases. Sustaining these changes calls for the strengthening of healthcare systems to deliver integrated, family-based, and accessible care that is preventive, curative, and rehabilitative for both communicable and non-communicable diseases. Strengthening existing vertical programs (e.g., HIV/AIDS, TB, polio, and malaria) into modern, family-focused primary care models is necessary. Building new vertical programs to treat chronic conditions would continue an uncoordinated strategy that has undermined the success of health systems in most countries. Rather, the primary health care agenda begun in Alma Ata in 1978 and re-launched by the new World Health Organization framework is the foundation for facing non-communicable disease challenges in low- and middle-income nations.

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