

Review Article,

Non-Communicable Diseases in Afghanistan and Ghana

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Abstract:

Non-communicable diseases are a challenge to public health worldwide. Decades ago, the consensus was that non-communicable diseases were the problem of developed and wealthy nations. However, recent studies indicate that developing countries are on the edge of emerging increases in non-communicable diseases due to various factors such as the consumption of unhealthy food, lack of physical activities, poor access to primary healthcare services, and loosened policies on tobacco use.

Non-communicable diseases cause increased mortality and have significant financial impact due to treatment costs. The conditions also decrease the capacity and productivity of the human workforce in the community who cannot adequately contribute when under treatment in the late stages of the disease. Multiple societal and economic factors contribute to poor outcomes from non-communicable diseases including increasing globalization and urbanization. The two countries reviewed, Afghanistan and Ghana, have worsened population health due to aforementioned factors. In low and middle-income countries such as Afghanistan and Ghana, the unparalleled progression of globalization and urbanization and lifestyle factors have contributed to fast track the prevalence and progression of non-communicable diseases.

This literature review aims to overview the impact of non-communicable diseases in Afghanistan and Ghana and suggest potential strategies to improve overall population health outcomes.

Keywords: non-communicable disease, burden, low income, strategy, Afghanistan, Ghana,

Introduction:

Overview of Non-communicable Diseases:

Worldwide, health care systems are all grappling with an extensive burden caused by non-communicable diseases (NCDs) that endangers the gradual growth of the human development indices, life expectancy, education, and financial incomes (Pervaiz & Ercantan, 2018).

NCDs are not infectious; they are common chronic conditions that can last for years or, in some cases, a lifetime.

Some examples of NCDs include cardiovascular disease, cancers, chronic respiratory disease, and type two diabetes. NCDs' causes and risk factors can be genetics or physiological in origin, environmental, and lifestyle behaviors (WHO, 2021a). NCDs rates are increasing in both developed and developing countries. Initially, NCDs were believed only to burden the health systems of rich countries. However, NCDs are surging in low and middle-income countries

(Hwang et al., 2012). Worldwide, 41 million people prematurely lose their lives due to NCDs, where 85 to 90% of these deaths occur in low and middle-income countries (Chestnov, 2013).

NCDs are impacting financial sustainability at a governmental and individual level. They can negatively impact the nation's economy because people become ill, cannot perform adequately in society, and die prematurely. Therefore, chronically ill individuals cannot fully contribute to strengthening their communities (Haque et al., 2020; McPhail, 2016). To fully appreciate the impact of NCDs on economies of developing countries, a discussion of risk factors and treatment of risk for low-income populations is needed

Non-communicable Disease Risk Factors Management:

The most predominant risk factors that can contribute to non-communicable diseases are

represented in

Table1. Besides curative measures for NCDs, we can use specific measures at the community and individual levels to prevent or decrease the

incidence of NCDs in society (Budreviciute et al., 2020). The recognition of both the effective interventions and potential barriers will assist in informing policymaking efforts to affect change.

Table 1

Environment	Sociodemographic	Lifestyle	Health Related Conditions
Air pollution	Age	Tobacco and alcohol use	Access to medication
	Gender	Lack of physical activity	Monitoring blood pressure lipids and glucose level
	Literacy level	Unhealthy diet	Obesity
	Financial resources		Stress

Non-communicable disease risk factors

Budreviciute, A., Damiani, S., Sabir, D. K., Onder, K., Schuller-Goetzburg, P., Plakys, G., Gediminas, P. Plakys G., Kateleviciule, A., Khoja, S., & Kodzius, R. (2020). Management and prevention strategies for non-communicable diseases (NCDs) and their risk factors. *Frontiers in public health*, 8, 788.

Barriers and Influences on Success of Health Promotion:

Numerous studies have illustrated that in terms of decreasing NCDs rates, merely depending on advanced and well-equipped facilities is not the answer. We must implement comprehensive strategies integrated with other sectors in the community to decrease NCDs in the community. For example, promoting a healthy lifestyle and improving health literacy are critically significant initiatives in preventing NCDs. Promoting these initiatives needs a multidisciplinary collaboration among different sectors. Only depending on health centers to propagate this important information to every family can be challenging and unsuccessful.

Impact of Environmental Factors at Community Level:

Environmental factors, especially air pollution, can also cause the risks of NCDs to increase. These factors have been undervalued in estimation of the Global Burden of Disease (Landrigan et al., 2018). Consistent exposure to fine particles of fossil fuel and biomass burning as a source of energy can impair vascular function that causes NCDs such as stroke, hypertension, and heart failure (Lelieved et al., 2015; Munzel et al., 2017). Air pollution is undervalued as a health risk factor. The Lancet Commission on pollution and health has indicated that outdoor air pollution has led to a 9 million deaths globally annually (Landrigan et al., 2018).

Impact of Health Literacy at Community Level:

Health literacy indicates that individuals have the cognitive and social skills to comprehend and appropriately use the information to promote and support the continuation of optimal health status in society (Nutbeam, 1998). Furthermore, health literacy can play an essential role in the prevention of NCDs. Studies indicate that ¼ of a worldwide premature death from NCD can be avoided through improving health literacy which enhances people's active engagement in the management and prevention of NCD (Tilahun et al., 2021). On the other hand, studies indicated that populations with a lower level of health literacy often have the early complication of NCDs (Pashaki et al., 2019), higher rates of comorbidity (Zhang et al., 2020), poor compliance to medication regimens (Berkman et al., 2011), frequent hospitalizations (Mitchell et al., 2012), and difficulties in comprehending the nature of the disease that can lead to doctor shopping (Koay et al., 2012). Doctor shopping is defined as people seeking treatments from numerous doctors during an episode of sickness (Sansone & Sansone, 2012).

Furthermore, studies have indicated that educating women on NCDs risk factors and prevention has been considered successful. Women often play an essential role in making decisions and changes within their families and communities. A study on the prevention of cardiovascular diseases

(CVD) indicated that women showed motivation to take steps toward preventing CVD (Mosca et al., 2006; Mosca et al., 2004).

Impact of Healthy Lifestyle Behaviors at Community Level:

Evidence-based lifestyle modifications that are maintained over time can improve quality of life and improve life expectancy. However, it is challenging to abide by these behaviors for a long time. Various strategies can be used to maintain a healthy lifestyle, such as cognitive-behavioral strategies, which contribute to an adequate adherence to lifestyle modifications (Arena et al., 2015; Lianov & Johnson 2010; Mosca et al., 2004).

Noncommunicable Diseases in Afghanistan:

The health system in Afghanistan has progressively improved in the last two decades, and access to healthcare coverage and services has been enhanced across the country. In 2018 approximately 3135 healthcare centers in different services were operating, providing healthcare services to approximately 87% of Afghans within two hours (WHO, 2021b).

Afghanistan has suffered primarily from a shortage of health care professionals due to the migration of Afghan cadres and healthcare professionals such as doctors, nurses, and midwives to other countries during wartime. In 2006, 7.26 doctors, nurses, and midwives delivered care per 10,000 population in Afghanistan, significantly below the threshold of 23 healthcare professionals to provide essential primary care per 10,000 people (WHO, 2016). Based on the available resources in the country, this number was predicted to increase to 9.12 providers and nurses and midwives per 10,000 population in five years (WHO, 2021c).

In Afghanistan, in recent decades, the scope of diseases has changed from primarily communicable diseases to now include NCDs, creating a double burden of care for healthcare systems. Currently, NCDs accounts for approximately 44% of premature mortality in Afghanistan, with 51% in men and 49% in women (Institute for Health Metrics and Evaluation, 2017).

In Afghanistan, NCDs are a significant cause of death and contributed to disability-adjusted life years which is defined by the World Health

Organization (2021) when an individual loses “the sum of years life due to premature mortality” (WHO, 2021d, para. 1). Other factors for the increase in NCDs in Afghanistan include socioeconomic factors, lifestyle, access to healthcare, and funding for public health campaigns.

Socioeconomic Factors in Community Health in Afghanistan:

Socioeconomic imbalance and inadequate availability and accessibility to preventive and primary health care are the core elements for the addition of NCD complications in developing countries like Afghanistan (Sommer et al., 2015). Furthermore, inadequate information on risk factors for NCD in Afghanistan has been a critical challenge that hinders policymakers from developing policies and regulations to intervene and prevent and decrease NCDs (Saeed et al., 2020).

A cross-sectional study in five significant provinces of Afghanistan indicated that 1/10 adults used tobacco in different forms, and the level of excessive physical activity was low (Saeed et al., 2020). In big cities, rapid urbanization has caused areas to be densely populated, and the government has paid no attention to make open areas for people to do aerobic exercises. Also, the study indicated that obesity was prevalent more in females than males (Saeed et al., 2020). In Afghan culture, females are more prone to obesity because culturally, it is not common for Afghan women to go outside to jog or do other exercises that can prevent obesity. In some areas, obesity is believed to be the sign of health and beauty that impedes women from losing weight. On the other hand, most Afghan families do not have access to healthy food such as fruits and vegetables due to socioeconomic status that can lead to NCDs (Saeed et al., 2020).

Non-Communicable Diseases in Ghana:

Like other developing countries, in Ghana, the incidence of NCDs and specifically respiratory illness has risen. The leading causes of death have changed from communicable diseases to non-communicable diseases—causes of death due to hypertension, diabetes, and stroke are predominant in the country (Owusu et al., 2021). Approximately 86,000 people die from NCDs annually in Ghana with 55% of the population less

than 70 years of age (Republic of Ghana, 2012). Ghana is a low-middle-income country in West Africa with 25 million residents (Drislane et al., 2014). Major medical diseases in Ghana are infection trauma and women's health issues (Drislane et al., 2014). Overall, access to medical care is challenging with limited resources in rural areas of Ghana.

Currently Ghana has approximately 1.8 providers and 42 nurses and midwives per 1000 population (Craig et al., 2020; WHO, 2020). Ghana has instituted more than 50 resolutions for preventing and managing chronic diseases since 1984, which comprises risk factors such as tobacco control, healthy diet, lack of physical activity, nutritional deficiency, and alcohol consumption (Bosu, 2012). Also, Ghana has implemented strategies to improve community-based primary health care, access to healthcare services, and increase the number of healthcare providers. Still rural populations in Ghana experience inequity in access to healthcare services that have negatively impacted health outcomes (Assembly, 2014).

Despite limited resources and infrastructure, Ghana's government has formed a proportionately well-organized and unique health insurance system that has made medical care more effective (Drislane et al., 2014). The demand for clinicians and healthcare facilities is higher in rural areas of Ghana than the big cities such as Accra. Ghana's rural areas are densely populated, and more challenging to retain healthcare providers (Drislane et al., 2014). Also, the uneven placement of the healthcare workforce between urban and rural areas and the lack of well-trained healthcare providers in rural areas has contributed to significant issues in delivering effective care to people (Willis-Shattuck et al., 2008). As the call for more providers in rural areas increases Ghana can apply the WHO's recommendations that are intended to motivate healthcare professionals by providing resources to increase their retention (Rourke, 2010).

Lifestyle and Other Factors in Ghana:

In Ghana, the unhealthy alteration in lifestyle and behaviors, old age, suboptimal health literacy, the unparalleled upsurge of disorganized urbanization, and failing health system infrastructures have contributed to the burden of NCDs, mortality and morbidity, and increasing risk factors (Agyei-Mensah & Aikins, 2010). A community-based

prevalence survey indicated that 70% of the Ghana population did not know that they have hypertension and diabetes (Bosu, 2012). Poor health literacy contributes to delays in seeking on-time care and causes early complications such as hypertension, with one of the major complications being stroke. In Ghana, the incidence of hypertension is 15%, with most cerebral vascular disease-related deaths occurring prematurely between the ages of 40 and 60 (Sanuade et al., 2014).

The Impact of Poverty on Non-communicable Diseases in Afghanistan and Ghana:

NCDs have a direct correlation with poverty. Higher incidences of NCD are projected to prevent and delay poverty depletion initiatives in low-income countries like Afghanistan and Ghana, primarily through increased expenses related to health care. Vulnerable populations more easily contract diseases with unhealthy lifestyles such as smoking, poor nutrition, and insufficient access to proper nutrition and appropriate healthcare services (WHO, 2021a).

Communities have moved away from traditional foods to consume processed dietary products with a higher concentration of fat, salt, and sugar (Hancock et al., 2011). According to Julia et al. (2018) the consumption of non-native, highly processed foods contribute to a significant increase in obesity in both Ghana and Afghanistan populations. Highly processed food weakens food systems and nutritious patterns based on less processed and freshly made food (Monteiro & Connon, 2012). The availability of processed food is directly correlated with increased globalization and urbanization in developing countries such as Afghanistan and Ghana. These factors outpace the government's ability to institute policies and legislation to prevent or decrease NCDs. Current resources and infrastructure are not enough to control the progression of NCDs (William et al., 2014).

General Management Principles and Strategies Individual Level Strategies:

It is critically significant to increase an individuals' awareness of the risk factors associated with poor dietary lifestyle and physical inactivity. Both are significant contributors to NCDs. Community health workers and other healthcare professionals can play a vital role in

increasing people's awareness of the risk of physical inactivity and unhealthy dietary lifestyles through workshops and community gatherings (Johnston et al., 2019). An unhealthy lifestyle risk factor that can lead to NCDs can be mitigated through strategies and programs, including smoking, hyperglycemia, dyslipidemia, obesity, poor nutrition, and lack of physical activity (McGorrian et al., 2011). In 2010, obesity and overweight caused approximately 3.4 million deaths globally (Ng et al., 2014). Furthermore, physical inactivity is the fourth leading cause of death in the world, and in 2008, it caused 5.3 million deaths (Kohl et al., 2012; Lee et al., 2012), and prevailing projections suggest that physical inactivity among low-income populations will critically increase (Ng & Pokin, 2012).

Strategies to mitigate these risk factors include management of risk factors to prevent NCDs. Metabolic and behavioral risk factors that cause NCDs are preventable by multiple available strategies, such as focusing on the role of individual responsibilities to self-manage behavioral risk factors (tobacco cessation, physical activity, weight, and healthy diet) (Johnston et al., 2019). Moreover, access to primary health care can play a critical role in diagnosing and managing NCDs at early stages (Curry et al., 2003).

A recent study by European Society of Cardiology (2014) indicated that of the low to middle-income countries of the members of the World Health Organization (WHO), merely 47% had strategies to cope with NCDs. It is crucially important to promote and prioritize the role of healthy lifestyles at an individual, family, and community level to make a substantial impact and change in the prevention and treatment of NCDs globally. It is essential to initiate healthy lifestyle programs under the auspices of healthcare settings (hospitals and clinics). A healthy lifestyle initiative requires a comprehensive approach among stakeholders. An “all hands-on deck” model will be an essential approach to promoting a healthy lifestyle campaign, identifying stakeholders and their roles, and promoting initiatives aimed at the prevention of NCDs (Arena et al., 2015). Models focusing on the management and prevention of NCDs and mitigation of risk factors can influence the rates of NCDs and decrease NCD-related deaths. Nearly 77% of all NCDs deaths occur in low- and

middle-income countries such as Afghanistan, Ghana, (WHO, 2021).

Collaboration of stakeholders is essential to amplify healthy lifestyle education efforts. The institution of health lifestyle campaigns that reach a broader audience must first start within the healthcare setting and spread using established population health and public health systems already in place. Thus, it is crucial for stakeholders to consistently communicate and collaborate to effectively implement healthy lifestyle initiatives, especially in low-income populations or developing countries such as Afghanistan and Ghana (Arena et al., 2015). The roles and examples of potential stakeholders are represented on **Table 2**.

Community Level Strategies:

The local government in Afghanistan and Ghana must prioritize the management of NCDs in their public health policies to decrease the incidence and the impact on local populations. Other sectors in the community must collaborate with Public Health to implement comprehensive and coordinated strategies to prevent and reduce NCDs. For example, when public health advises against indoor smoking, other local authorities should assist Public Health to improve compliance in their employees and customers or clients (Arora et al., 2011). Application of these policies and initiatives in Afghanistan in Ghana would be essential. For example, decreasing tobacco use rapidly reduces NCDs and expenses related to healthcare within one year (Fischteberg & Glants, 2000).

People living in poverty often cannot afford nutritious food, which is a risk factor for NCDs. Often after being diagnosed with one of those diseases, people living at or below the poverty level must spend more money on treatment and have even less money left over to put toward a healthy diet (Arora et al., 2011). With the assistance of stakeholder's organizations, the local governments in Afghanistan and Ghana ought to develop strategies to decrease poverty and increase programs of aid for access to healthy whole foods sources, health education related to proper nutrition, and services to provide financial assistance for the purchase of nutritious food items.

Table 2

Stakeholder	Fundamental Roles
Professional Sectors	Advocate, champion, and distribute evidence-based information and guidelines on healthy lifestyle
Educational Facility	Delivering information and increasing awareness on healthy lifestyle through part of curriculum at primary, secondary, and college level
Government	Creating evidence-based strategies, regulation, and implementing legislation that promote and assist healthy lifestyle initiatives
Healthcare Facility	Assimilating healthy lifestyle in medical and standard care
Social Media	Disseminating information through legitimate social media pages such as Facebook and Twitter
Employers	Providing workshops and adult training on healthy lifestyle initiatives
Individual and Families	Users of healthy lifestyle initiatives

Stakeholders' fundamental roles

Arena, R., Guazzi, M., Lianov, L., Whitsel, L., Berra, K., Lavie, C. J., Kaminsky, L., Williams, M., Hivert, M., Franklin, N. C., Myers, J., Dengel, D., Lloyd-Jones, D. M., Pinto, F. J., Cosentino, F., Halle, M., Gielen, S., Dendale, P., Niebauer, J., Shurney, D. (2015). Healthy lifestyle interventions to combat noncommunicable disease—a novel nonhierarchical connectivity model for key stakeholders: a policy statement from the American Heart Association, European Society of Cardiology, European Association for Cardiovascular Prevention and Rehabilitation, and American College of Preventive Medicine. *European heart journal*, 36(31), 2097-2109

Discussion:

Ghana has strategies to control and manage NCDs that focus on primary prevention, such as tobacco cessation, promoting a healthy diet, physical activity, and immunization (Bosu, 2012). Moreover, they have strategies to detect non-communicable diseases and provide primary healthcare services. These strategies include primary prevention and early detection guidelines targeting people who are currently non-symptomatic but who have risk factors for NCDs. In addition, Ghana has programs in place to address symptomatic individuals to provide healthcare to improve outcomes (Republic of Ghana, 2012). Furthermore, Ghana's health sector has strengthened its health system by increasing health workforce capacity, providing essential medication access, ensuring financial allocation for sustainability of programs, and supporting ongoing surveillance of non-communicable diseases and their risk factors (Republic of Ghana, 2012). By implementing these strategies, Ghana has been able to decrease NCDs deaths from 3 deaths per 1000 admissions in 2017 to 2.5 deaths per 1000 hospital admissions in 2018 (Owusu et al., 2021).

On the other hand, in Afghanistan, even though NCDs present a double burden, on economies,

health system, and general health, including a significant financial drain on local governments and donor organizations, NCDs are not on their priority list. Limited studies exist to demonstrate efforts of the Afghan public health system to prevent and decrease the burden of NCDs in the Afghan population. An example of this non-priority approach in Afghanistan reveals that local authorities have made insufficient progress on tobacco cessation since signing the *Framework Convention on Tobacco Control* in 2004, but surveillance of NCDs has been critically limited. In addition, the Afghan basic health package medication allotment does not include NCDs prevention or treatment drugs (World Bank, 2011). These insufficient strategies in Afghanistan have led to current mortality for NCDs approximately 44% of premature mortality, with 51% in men and 49% in women (Institute for Health Metrics and Evaluation, 2017) compared with the risk of premature mortality is 21% from NCDs in Ghana in 2016 (WHO, 2018).

Recommendations:

Both countries of Ghana and Afghanistan can utilize the WHO (2011) recommendations to assist in preventing and controlling NCDs. These include:

- Solidify nationwide political decisions to avoid and decrease NCD
- Strengthen multi-sectorial integrated, evidence-based strategies to prevent and decrease NCDs
- Expand financial and technical resources for non-communicable disease
- Provide prevention programs in collaboration with international humanitarian organizations and local authorities
- Implement multidisciplinary strategies on tobacco control
- Make high-quality primary care affordable and available
- Increase people's access to comprehensive primary healthcare services

Conclusion:

For low and middle-income countries such as Ghana and Afghanistan, management and control

of NCDs are essential to have a healthy population to contribute to economic development through improved productivity and longevity. Control and management of NCDs require a multi-disciplinary and comprehensive approach with the integration and collaboration of other sectors in the society to apply the strategies of public health at the individual and community levels. Strategies to modify lifestyle, smoking cessation, and early detection and management of NCDs via access to effective primary healthcare services, improved lifestyle, mitigation of globalization and urbanization impacts, and population education will improve longevity and quality of life in Afghanistan and Ghana.

Future studies of population health within these and other developing countries must include a comprehensive approach to early identification of risk factors for NCDs address environmental, socioeconomic, and lifestyle factors, and institute ongoing surveillance initiatives to evaluate the effectiveness of policies and programs.

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