

NCD Risk Factors on the Rise in Ethiopia: A call for Action!

Abebe Bekele¹, Mussie G/Michael², Fassil Shiferaw³, Ebba Abate¹, Tsigereda Kifle¹, Solomon Teferra^{4,5}

Non-Communicable Diseases (NCDs) were responsible for 38 million (68%) of the world's 56 million deaths in 2012 and it's becoming the leading cause of death globally. More than 40% (16 million) were premature deaths under age 70 years. Almost three quarters of all NCD deaths (28 million), and the majority of premature deaths (82%) occur in low- and middle-income countries (1). The prevalence of NCDs is actually rising rapidly and is projected to cause almost three-quarters as many deaths as communicable, maternal, neonatal, and nutritional diseases by 2020. It is estimated to exceed as the most common causes of death by 2030 (2). The human, social and economic consequences of NCDs are felt by all countries but are particularly devastating in poor and vulnerable populations. Reducing the global burden of NCDs is an overriding priority and a necessary condition for sustainable development.

Current studies have shown that NCDs epidemic can be reduced by preventing and controlling the four behavioural risk factors for NCDs: tobacco use, insufficient physical activity, harmful use of alcohol, and consumption of unhealthy diet. In Ethiopia, *khat* or *chat* (*Catha edulis*), a psycho-stimulant plant, was reported to be associated with raised blood pressure, cerebrovascular accident, psychosocial dysfunction, and has catalytic effect in associated use of other risk factors; hence, being considered as an additional risk factor for NCDs in Ethiopia (3, 4).

Limited epidemiologic studies indicate that non-communicable diseases are emerging as a major disease burden in Africa. As a result, countries in Africa are challenged with a double burden of disease from pre-existing

communicable diseases and the emerging silent NCD epidemic (5, 6). In 2015 alone, 3.1 million deaths in the African region were caused by the four major NCDs: cardiovascular diseases, cancer, chronic respiratory diseases and diabetes (7).

In Ethiopia, existing small-scale studies on NCDs and their risk factors showed that these health problems are increasing at an alarming rate. According to recent reports, NCDs account for 42% of total deaths in Ethiopia, and is projected to contribute to 70% of the country's disease burden by 2040 (8). One of the challenges for the proper implementation of NCD intervention was the lack of nationally representative data to inform policy and planning. A recent situation analysis on NCD in the country demonstrated that data collection through routine health management information system (HMIS) was incomplete and inaccurate. Consequently, the routine HMIS cannot be used to reliably describe the magnitude, pattern or trend of chronic diseases. Despite the limitations in the HMIS, chronic diseases such as hypertension and diabetes mellitus appeared on the list of leading causes of morbidity and mortality at hospitals and regional health bureaus across the country (9). As the trend of NCD burden is increasing across Ethiopia, the need to conduct comprehensive survey was prioritized by the Federal Ministry of Health (FMoH). Data on prevalence of NCD risk factors will inform policy makers to design evidence-based public health interventions to prevent and control the epidemic of NCDs. With this notion, the NCD STEPS survey was conducted in the country in 2015 using the WHO STEPS survey instrument with some additional items of locally relevant issues such as *khat* use (10).

¹Health System and Reproductive Health Research Directorate, Ethiopian Public Health Institute, E-mail AB: abebe1277belay@gmail.com, Addis Ababa, Ethiopia;

²Disease Prevention & Control Directorate, Non-communicable Diseases Case Team, Ministry of Health, E-mail: MGM: mosess2005623@gmail.com Addis Ababa, Ethiopia;

³World Health Organization, E-mail: FS: shiferawf@who.int Addis Ababa, Ethiopia;

⁴Department of Psychiatry, School of Medicine, College of Health Sciences, Addis Ababa University, E-mail: ST: solomon.teferra@gmail.com Addis Ababa, Ethiopia;

⁵Harvard T.H. Chan School of Public Health, Harvard University, E-mail: ST: solomon.teferra@gmail.com USA

The NCD STEPS survey was a community-based survey involving 9,801 participants between the ages of 15 - 69 years measuring behavioural and metabolic risk factors. Four percent of the participants were current smokers (men 7.3%, women 0.4%). There is an urgent action to halt the increasing tobacco smoking trend especially in the target group between 15-29 years of age. Ethiopia ratified the WHO FCTC convention in 2014, and started to implement strategies on enforcing bans on tobacco advertising, promotion and sponsorship, protecting people from second hand smoke, warning about its dangers, monitoring its use through conducting Global Adult Tobacco Survey (GATS), and offering help for those who want to quit smoking through cessation program --- which all need to be strengthened at national level.

The NCD STEPS survey also showed that nearly 41% had consumed alcohol during the past 30 days prior to the survey. Heavy episodic drinking was reported by 12.4% of the participants (20.5% males and 2.7% females). Alcohol abuse predisposes to NCDs, and additionally contributes for the road traffic accidents in the country. Hence, there is a need to call a development of alcohol prevention strategy in the country. Another commonly seen substance abuse behavior in Ethiopia is *khat* chewing: the survey showed around 16% of respondents were current *khat* chewers (21.1% males and 9.4% females). *Khat* chewing predisposes users to other risk factors such as tobacco smoking, soda consumption, physical inactivity, and excessive use of alcohol to reverse a sleep disorder. Even though *khat* has economic value in creating jobs and bringing foreign exchange revenue, its use has to be regulated in the country.

The survey also examined fruit and vegetable consumption which was reported to be only 0.9 and 1.5 days per week, respectively. More than 98% of the population did not meet the WHO recommendation of taking five servings or 400 gm of fruit and vegetables daily. This would suggest that the agricultural sector needs to design a strategy to encourage farmers to grow more fruits and vegetables and avail storage mechanisms.

Around 6% of the study population did not meet WHO recommendations on physical activity for health. Rural residents were found

to be more physically active than urban residents. This calls for promoting healthy lifestyle in the country.

The burden of NCDs is further compounded by the rise in road traffic injuries (RTI). Globally the total number of road traffic deaths has plateaued at 1.25 million per year, with the highest road traffic fatality rates in low-income countries especially in Africa where the highest RTI death rate per population is recorded --- it is the leading cause of premature death after HIV/AIDS among young men (11, 12). In Ethiopia, 3% of individuals reported being involved in RTIs as a passenger, driver, or pedestrian and the majority of RTIs occurred as passengers (66.7%). On the other hand, a smaller percentage of RTIs occurred as cyclists (8.6%) and pedestrians (8.9%). This figure may be underestimation as it did not include children under 15 years old who sustained road traffic accidents.

The survey has also examined biological risk factors and found the prevalence of elevated blood pressure (systolic blood pressure > 140 and/or diastolic blood pressure > 90 mmHg) was 15.6%, with no difference by sex. Six percent of study participants had elevated blood glucose and diabetes which is three times higher than a decade ago. Mean body mass index (BMI) was 20.4 (20.1 for men and 20.7 for women), 6.3% were overweight or obese, with a higher prevalence of overweight in urban residents. The survey revealed that only 2.65% of women, age 30-49 years had ever undergone cervical cancer screening test.

In this nationally representative survey, 95% of the study participants were found to have one to two NCD risk factors. Most of the behavioural risk factors, such as tobacco use, excessive alcohol consumption, and *khat* chewing were more prevalent among men. On the other hand, the biological risk factors, such as obesity, impaired fasting glucose, and raised total cholesterol were more prevalent among women. The overall prevalence of undiagnosed elevated blood pressure and blood glucose was found to be very high. There is also regional variation in prevalence of NCD risk factors which needs to be contextualized.

The adverse impact of NCDs is multifaceted as it affects the health, economic and social development of the nation. Urgent attention is

needed to work towards multi-sectoral coordination to mitigate the problem by 1: Instituting population-based risk factors reduction interventions, 2: One of the strategies in mitigating NCD burden is to work on individual risk factors at primary health care level by early screening and early treatment to avoid the catastrophic expenditure, as well as poor health outcomes following NCD complications. Additionally, capacity building for health professionals and institutions at primary health care level have to be part of health system strengthening effort. We recommend developing appropriate policies, strategies and standards, and monitoring and evaluation of interventions. Sustained multi-sectoral approaches to promote healthy behaviors are also needed. Furthermore, mechanisms of surveillance system for risk factors need to be established to monitor and measure changes in NCDs burden over time as well as to evaluate the effectiveness of interventions.

References

1. WHO, "Global status report on non communicable diseases "Attaining the nine global non communicable diseases targets; a shared responsibility"," World Health Organization, Geneva, 2014.
2. WHO, "The Global Strategy for the Prevention and Control of Non-communicable Diseases," World Health Organization, Geneva, 2008.
3. Tesfaye F., Byass P., Berhane Y., Bonita R. and Wall A. S. "Association of smoking and khat (*catha edulis* forsk) use with high blood pressure among adults in Addis Ababa, Ethiopia," *Prev. Chronic Dis.*, 2008;5(3).
4. A. Al-Motarreb, M. Al-Habori and K. Broadley. "Khat chewing, cardiovascular disease and other internal medical problems: The current situations and directions for future research," *Journal of Ethiopian Pharmacology*, 2010;132:540-548.
5. World population, "World population prospects – the 2008 revision." United Nations Population Division, New York, NY, 2009.
6. National Central Registry, "Prevalence of Non-communicable Diseases in Zimbabwe: Results from analysis of data from the National Central Registry and Urban Survey, Ethnicity & Disease," Zimbabwe, 2006.
7. WHO, "Global Health Estimates," 18 June 2015. [Online]. Available: 2017.
8. UN Task Force on NCDs, "The Government of Ethiopia is working jointly with the UN System to strengthen the national NCD response." 2017. [Online].
9. FMOH/WHO, "Situation analysis on chronic diseases and their risk factors in Ethiopia," FMOH, Addis Ababa, 2008.
10. WHO, "World Health Organization STEPS Survey Manual," [Online].
11. WHO, "Global status report on road safety," World Health Organization, Geneva, 2015.
12. World Bank, "The challenge of Non-communicable diseases and road traffic injuries in Sub Saharan Africa," The World Bank, 2013.