Tanzania Country Report

PASCAR and WHF Cardiovascular Diseases Scorecard project

Robert Mvungi, Jean M Fourie, Oana Scarlatescu, George Nel, Wihan Scholtz

Abstract

Data collected for the World Heart Federation Scorecard project regarding the current state of cardiovascular disease prevention, control and management, along with related non-communicable diseases in Tanzania are presented. Furthermore, the strengths, threats, weaknesses and priorities identified from these data are highlighted in concurrence with related sections in the attached infographic. Information was collected using open-source datasets from the World Bank, the World Health Organization, Institute for Health Metrics and Evaluation, the International Diabetes Federation and relevant government publications.

On behalf of the World Heart Federation (WHF), the Pan-African Society of Cardiology (PASCAR) co-ordinated data collection and reporting for the country-level Cardiovascular Diseases Scorecard to be used in Africa.[1,2] Tanzania was included as one of the countries and the Tanzania Cardiac Society (non-WHF member) assisted with collating and verifying the data. In this report, we summarise Tanzania's strengths, threats, weaknesses and priorities identified from the collected data, along with needs to be considered in conjunction with the associated sections in the accompanying infographic. Datasets that were used included open-source data from the World Bank, World Health Organization (WHO), Institute for Health Metrics and Evaluation, the International Diabetes Federation and government publications.

Part A: Demographics

According to the World Bank (2018), Tanzania is a low-income country with 66% of its people living in rural areas.[3]

Tanzania Cardiac Society (TCS), Dar es Salaam, Tanzania
Robert Mvungi

Pan-African Society of Cardiology (PASCAR), Cape Town, South Africa
Jean M Fourie
George Nel
Wihan Scholtz, wihan@medsoc.co.za

World Heart Federation (WHF), Geneva, Switzerland
Oana Scarlatescu

In 2011, 49.1% of the population were living below the US$1.9-a-day ratio. Life expectancy at birth in 2018 was 63 years for men and 67 years for women. The general government health expenditure was about 1.58% of the gross domestic product (GDP) in 2017, while the country GDP per capita was US$1061 in 2018.[3]

Part B: National Cardiovascular Disease Epidemic

The national burden of cardiovascular disease (CVD) and non-communicable diseases (NCD) risk factors

Tanzania's premature deaths attributable to CVD (age 30–70 years) matched those of Kenya and Mozambique at 8% in 2012.[4] In 2017, the age-standardised total CVD death rate was almost 13%, which is higher than most of the other African countries in our study. The percentage of disability-adjusted life years (DALYs) resulting from CVD for men was 5.07% and 4.63% for women. The prevalence of atrial fibrillation (AF) and atrial flutter was 0.13%, while that of rheumatic heart disease (RHD) was around 1%. The total RHD mortality rate was 0.14% of all deaths (Table 1).[5]

Tobacco and alcohol

The prevalence of tobacco use in adult men and women (15 years and older) was 27.5 and 3.8%, respectively (Table 1).[6] No data were available for the young population (13–15-year-olds). However, in a representative sample of school-going adolescents (≤ 12–≥ 18 years old), 8.2% were using tobacco in 2014.[7] Most of these adolescents fell in the 13–17-year age group.[7] For 2018, the estimated annual direct cost of tobacco use was also not available,[6] while the premature CVD mortality rate attributable to tobacco was 3% of the total deaths.[8] The average recorded alcohol consumption per capita (≥ 15 years old) for three years (2016–18) was 7.3 litres (Table 1).[9]

Raised blood pressure and cholesterol

The percentage of men and women with raised blood pressure (BP) (systolic BP ≥ 140 mmHg or diastolic BP ≥ 90 mmHg) in 2015 was 26.6 and 27.7%, respectively.[9] The percentage of DALYs lost because of hypertension was 3.23%, whereas mortality caused by hypertensive heart disease was 1.43% in 2017 (Table 1).[5] Country data available for those with raised total cholesterol (TC, ≥ 5.0 mmol/l; age-standardised estimate) was 23.7% in 2008.[9]

Physical activity

In 2016, the percentage of adolescents aged 11–17 years old who were insufficiently active [< 60 minutes of moderate- to vigorous-intensity physical activity (PA) daily] was 82.1%.[10] The age-standardised estimate for adults who were insufficiently active (< 150 minutes of moderate-intensity PA per week, or < 75 minutes of vigorous-intensity PA per week) was 6.5% in 2016 (Table 1).[9]

Overweight and obesity

The prevalence of overweight [body mass index (BMI) ≥ 25–<30 kg/m²] and obesity (BMI ≥ 30 kg/m²) in adults 25 years and older was 27.7 and 8.4%, respectively in 2016 (Table 1).[9] Compared to neighbouring country Uganda (19.1, 4.6%), Tanzania's population is far more overweight and obese. More women (35.5%) than men (19.6%) were overweight and similarly, far more women (12.7%) were found to be obese than the men (4%).[9]

Diabetes

In 2014, the percentage of the defined population with a fasting blood glucose level ≥ 7.0 mmol/l or on medication for raised blood glucose (age-standardised) was 6% for men and 6.1% for women.[9] The prevalence of age-adjusted (20–79 years) diabetes in 2019 was 5.7%, which is lower than the global estimate of 9.3% (Table 1).[11]

Part C: Clinical practice and guidelines

Health system capacity

The country had an average of 0.14 physicians and 5.84 nurses per 10 000 of the population in 2016 and 2017, respectively, and seven hospital beds per 10 000 people in 2010.[9]

Locally-relevant clinical tools along with recent clinical guidelines for preventing CVD were adapted using the WHO CVD risk-assessment tool and to some extent atherosclerotic cardiovascular disease (ASCVD) risk estimation and the

Indicators	Male	Female	Total	Year
Status of national the CVD epidemic				
Premature CVD mortality (30–70 years old) (% deaths)	-	-	8	2012
Total CVD mortality (% of deaths)	12.5	13.3	12.9 (31.8)*	2017
Total RHD mortality (% of deaths)	0.1	0.2	0.1 (.5)*	2017
DALYs attributable to CVD (%)	5.1	4.6	4.9 (14.7)*	2017
AF and atrial flutter (%)	0.2	0.1	0.1 (.5)*	2017
Prevalence of RHD (%)	0.9	1.1	1.0 (.5)*	2017
Tobacco and alcohol				
Prevalence of adult tobacco use (≥ 15 years old (%)	27.5 (36.1)**	3.8 (6.8)**	-	2015
Prevalence of youth (≤ 12–≥ 18 years old) tobacco use (%)#	8.7	7.7	8.2	2014
Estimated direct (healthcare-related) cost of tobacco use in your population (current US$)			-	2018
Proportion of premature CVD mortality attributable to tobacco (%)	-	-	3 (10)*	2004
Recorded alcohol consumption per capita (≥ 15 years old) (litres of pure alcohol) (three-year average)			7.3	2016–18
Raised blood pressure and cholesterol				
Population with raised BP (SBP ≥ 140 mmHg or DBP ≥ 90 mmHg) (%)	26.7 (24.1)**	27.7 (20.1)**	-	2018
Population with raised TC (≥ 5.0 mmol/l) (%)	21.6	25.5	23.7 (38.9)**	2008
DALYs attributable to hypertension (%)	3.4	3	3.2 (8.7)*	2017
Mortality caused by hypertensive heart disease (% of deaths)	0.8	2.2	1.4 (1.7)*	2017
Physical activity				
Adolescents (11–17 years old) who are insufficiently active (< 60 minutes of moderate- to vigorous-intensity PA daily) (%)	78.2	86.0	82.1 (80.7)*	2016
Adults (age-standardised estimate) who are insufficiently active (< 150 minutes of moderate-intensity PA per week, or < 75 minutes of vigorous-intensity PA per week) (%)	5.8	7.1	6.5 (27.5)*	2016
Overweight and obesity				
Adults who are overweight (BMI ≥ 25–< 30 kg/m²) (%)	19.6	35.5	27.7 (38.9)**	2016
Prevalence of obesity (BMI ≥ 30 kg/m²) (%)	4.0	12.7	8.4 (13.1)**	2016
Diabetes				
Defined population with fasting glucose ≥ 126 mg/dl (7.0 mmol/l) or on medication for raised blood glucose (age-standardised) (%)	6.0 (9)**	6.1 (8)**	-	2014
Prevalence of diabetes (20–79 years old) (%)	-	-	5.7 (9.3)##	2019

CVD, cardiovascular disease; RHD, rheumatic heart disease; DALYs, disability-adjusted life years; AF, Atrial fibrillation; SBP, systolic blood pressure; DBP, diastolic blood pressure; TC, total cholesterol; BMI, body mass index.
*IHME global data exchange[5]
**WHO global data[9]
#Shayo FK. BMC Public Health[7]
##IDF *Diabetes Atlas*.[11]

American College of Cardiology guidelines.[12,13] No national guidelines for the treatment of tobacco dependence have been adopted,[6] although guidelines for the detection and management of AF are available.[14]

Locally relevant clinical guidelines for the management of pharyngitis, acute rheumatic fever and RHD have been incorporated into the Standard Treatment Guidelines (STG) and National Essential Medicine List (NEMLIT).[14] No data were found regarding clinical registers of people with a history of rheumatic fever and RHD or a system to measure the quality of care provided to people who have suffered acute cardiac events.

Guidelines for managing diabetes in Tanzania were also incorporated into the STG and NEMLIT in 2017.[14] In 2012, Mayige *et al.*[15] called for an urgent need to strengthen diabetes services through the National Diabetes Project that would also benefit other NCD in the country. These researchers also suggested the need for secondary prevention measures for those at high risk of developing NCD, including CVD.[15]

Essential medicines and interventions

Angiotensin converting enzyme (ACE) inhibitors, aspirin, β-blockers, metformin and insulin are included in the list of essential medicines at primary care facilities in the public health sector.[14] However, statins, warfarin and clopidogrel, although listed, are not available at healthcare centres.[14]

The measurement of TC is generally available at the primary healthcare level. However, CVD risk stratification or the provision of secondary prevention of rheumatic fever and RHD is not available in public health facilities.[9]

Secondary prevention and management

No information is available regarding the percentage of patients with AF on treatment or those with a history of CVD receiving medication. In an article by Edwards *et al.*, 10% of patients with hypertension were receiving medical treatment.[16]

Part D: Cardiovascular disease governance

A national strategy or plan addressing CVD, and specifically their risk factors, has been developed.[17] Although there is no dedicated budget, a unit in the national ministry of health (MoH) is responsible for its implementation.[9] A national strategy and action plan that addresses NCD, including CVD and their risk factors, has been formulated,[17,18] but not for RHD prevention and control as a priority. A national surveillance system, including CVD and their risk factors, has been employed.[19,20]

Unfortunately no national tobacco control plan exists, but there is a multi-sectoral co-ordination mechanism for tobacco control.[6] While no data on collaborative projects between the MoH and non-health ministries for CVD interventions are available, more than 100 stakeholders from government and other organisations participated in a collaborative multi-sectoral initiative leading to the launch of a national NCD programme.[20] The percentage of the total annual government expenditure on cardiovascular healthcare is not yet known. In an article published in 2017, the economic and health benefits of CVD prevention were shown to have been modelled.[21]

Assessment of policy response

No legislation mandating health financing for CVD/NCD has been developed or implemented. However, a policy exists that suggests all medicines in the National Essential Medicines List have generic names as these are available at affordable prices.[22] Furthermore, no judicial orders protecting patients' rights and mandating improved CVD interventions, facilities, health system procedures or resources have been implemented.

Regarding tobacco control, legislation on the following is functional:
- banning of smoking in indoor workplaces, public transport, indoor public places and other public places[6]
- clear and visible warnings on at least half of the principal display areas of tobacco packs[23]
- banning all forms of tobacco advertising, promotion and sponsorship.[21]

In contrast, measures to protect tobacco control policies from tobacco industry interference are absent.[6] No data are available on policies that ensure equitable nationwide access to healthcare professionals and facilities, screening of individuals at high risk of CVD or sustainable funding for CVD.

According to the WHO Global Health Observatory, taxes on unhealthy foods or sugar-sweetened beverages have existed since 2019, though the percentage of the excise tax is unknown.[9] The percentage of excise tax of the final consumer price of tobacco products is 36.7% and well below the WHO recommendation of 70%, while that of the final consumer price of alcohol products was 30% for beer.[24,25]

Legislation mandating clear and visible warnings on foods that are high in calories, sugar or saturated fats are in place but not for banning the marketing of unhealthy foods to minors.[17] Policy interventions that promote a diet to reduce CVD risk or that facilitate PA have also not been realised.

Stakeholder action

Non-governmental organisation advocacy for CVD policies and programmes has been adopted,[26] as has the involvement of the Tanzania Tobacco Control Forum (TTCF) in the development and implementation of a national tobacco control plan.[6] Civil society involvement in the development and implementation of a national CVD prevention and control plan and the national multi-sectoral co-ordination mechanism for NCD/CVD have been established.[27] However, no active involvement of patients' organisations in the advocacy for CVD/NCD prevention and management or group engagement for RHD exists.

No data are available on specific activities aimed at a 25% reduction in premature CVD mortality by 2025 by cardiology professional associations. However, in a pilot study, hypertension screening by businesses at workplaces was recommended to be feasible.[28]

As part of the data collected for Tanzania, the following strengths, weaknesses, threats and priorities are summarised.

Strengths

The Strategic Plan and Action Plan for the Prevention and Control of NCD in Tanzania 2016–2020, was developed in

response to a growing problem of NCD in the country.[17] The purpose of the plan is to help achieve preventative national goals and establish collaboration with ministries, other relevant governmental and non-governmental agencies, interested partners and the public at large.

Results from the STEPS survey were incorporated into the national NCD strategic plan, along with various guidelines and policy documents that were developed. Examples are the WHO global action plan, the Health Sector Strategic Plan IV of 2015–2020, and Global Sustainable Goals to curb the growing NCD problem.[12] In 2012, the STEPS survey on NCD risk factors revealed that the burden of diabetes and CVD was high, with the prevalence of hypertension estimated to be around 26%. Hyperglycaemic disorders (pre-diabetes and diabetes) were high at all ages, with an estimated total prevalence of around 20%.[19] Locally relevant (national or sub-national) clinical guidelines for the detection and management of AF and atrial flutter are incorporated in the integrated standard guidelines.[14]

Non-governmental organisations such as the Heart Foundation of Tanzania (HFT) play a very active role in advocacy for CVD policies and programmes. The involvement of civil society, such as the TTCF,[6] assisted in the development and implementation of a national tobacco control plan. Legislation regarding tobacco control is also in effect about banning smoking in indoor workplaces, public transport, indoor public places and other public places.

A law mandating clear and visible warnings on foods that are high in calories, sugar and saturated fats has also been implemented. Since 2019 Tanzania has introduced taxes on sugar-sweetened beverages. Other civil society involvement includes the development and implementation of a national CVD prevention and control plan as well as the national multi-sectoral co-ordination mechanism for NCD/CVD through the Tanzania NCD alliance,[26] HFT and Tanzania Diabetes Association.

Threats

The WHO STEPS survey, which was carried out in the country in 2012, showed that the levels of NCD risk factors are high.[19] These risk factors included the prevalence of diabetes, hypertension, obesity, and alcohol consumption. Low levels of PA and eating less than five servings of fruit and/or vegetables were also reported.[19]

Although the global data reflecting the total percentage of deaths caused by CVD is 31.8%, Tanzania's was almost 13% in 2017.[5] Mortality caused by hypertensive heart disease was 1.43%, which was slightly lower compared to the 1.65% of the global data (infographic).

Weaknesses

Although surveillance and monitoring of NCD in East Africa, which includes Tanzania, have been implemented, NCD are still not sufficiently integrated into national health information and management systems.[27] There is also a limited capacity of health personnel for surveillance and data collection on NCD.[27]

The Standard Treatment Guidelines and National

Essential Medicines List are available, but these have not yet been implemented. In 2017, CVD essential medicines were not available at the public health level.[14] Aspirin, metformin and insulin were available at the dispensary level, while ACE inhibitors and β-blockers were the only drugs available at a primary healthcare level. Of the eight CVD essential drugs, simvastatin, warfarin and clopidogrel were available only at the hospital level.[14]

No data are available on policies that ensure equitable nationwide access to healthcare professionals and facilities or which ensure screening of individuals at high risk of CVD.

According to the executive director of the TTCF, Ms Kagaruki, Tanzania is behind other African countries in its progress towards implementing the WHO framework convention on tobacco control. Yet more than 10 years have elapsed since approval, with no legislation passed to replace the outdated 2003 Act.[29]

Legislation banning the marketing of unhealthy foods to minors and policy interventions that promote a diet that reduces cardiovascular risk or facilitate PA are not yet in place.

Priorities

The objectives of the national NCD programme launched on 14 November 2019 include training physicians, nurses and community health workers and rolling out an NCD screening programme. Furthermore, they include reviewing and amending existing health policies in the country, establishing patient record systems, and awareness-raising and mobilisation at the community level.

NCD burden

To reduce the burden of NCD through health promotion, and reduction, prevention, treatment and monitoring of their risk factors, particular attention should be given to interventions and surveillance to address this problem.[30]

Diabetes

Tanzania introduced strategic interventions to reduce modifiable NCD and their risk factors by 2020.[17] One of the goals was to ensure a 10% relative reduction in the prevalence of diabetes from baseline, along with a 20% reduction in the overall mortality rate from diabetes. Actions to enable these reductions are:
- community sensitisation on a healthy diet and PA
- early detection and appropriate management of diabetes at all levels
- early detection and management of acute and chronic complications (foot, diabetic ketoacidosis, infections).[17]

Cardiovascular disease

Goals for reducing CVD to be met by 2020 were also introduced.[17] These are a 25% relative reduction in the prevalence of raised BP from baseline, 10% reduction from baseline of TC, and 20% reduction in the overall mortality from CVD (hypertension, heart failure, stroke, rheumatic fever, RHD).

Actions to be taken are:
- community sensitisation on a healthy diet and PA
- early detection and appropriate management of CVD
- preventive treatment for stroke and myocardial infarction (aspirin, statins)
- preventive treatment for rheumatic fever (penicillin).[17]

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