

Cameroon Country Report

PASCAR and WHF Cardiovascular Diseases Scorecard project

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Abstract

Data collected by PASCAR for the World Heart Federation's Cardiovascular Diseases Scorecard project in Africa are presented. We summarise the strengths, threats, weaknesses and priorities identified from the collected data, which need to be considered in conjunction with the associated sections in the accompanying infographic. Data sets that were used include open-source data from the World Bank, World Health Organization and government publications.

Cardiovasc J Afr 2020; 31: 103–110

DOI: 10-5830-CVJA-2020-015

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 (CVD) Scorecard to be used in Africa.¹ The objective of the scorecard is to create a clear picture of the current state of CVD prevention, control and management, along with related non-communicable diseases (NCD) in 12 African countries. The Cameroon Cardiac Society, a member of PASCAR and the WHF, along with Professors Dzudie (scientific secretary) and Kingue (president), assisted in collating and verifying these data.

Part A: Demographics

According to the World Bank (2018), Cameroon is a lower-middle-income country with 44% of its people living in rural areas. In 2014, 23.8% of the population were living below the US\$1.9-a-day ratio.² Life expectancy at birth in 2018 was 58 and 60 years for men and women, respectively. The general

government health expenditure was 0.6% of the gross domestic product (GDP) in 2017, while the country GDP per capita was US\$1 533.7 in 2018.²

Part B: National cardiovascular disease epidemic National response to CVD and NCD

In 2012, Cameroon's premature death rate attributable to CVD (age 30–70 years) was similar to its neighbouring country, Nigeria, at 12%.³ In 2017, the age-standardised total CVD death rate was high at 11.85%, although much lower than the 31.8% for the global burden of disease (GBD) data.⁴ The percentage of disability-adjusted life years (DALYs) resulting from CVD for men and women was 5.0 and 5.03%, respectively, which is lower than the GBD at 14.66% for both genders. The prevalence of atrial fibrillation (AF) and atrial flutter was 0.13%, while that of rheumatic heart disease (RHD) was 0.78%, which is higher when compared to the GBD RHD prevalence of 0.53%. The total RHD mortality rate was 0.02% of all deaths, which is lower than the GBD data (0.51%) (Table 1).⁴

Tobacco and alcohol

The prevalence of tobacco use in adult men and women (15+ years old) was 43.8 and 0.9%, respectively.⁵ Comparative Global Health Observatory (GHO) data are 36.1% for men and 6.8% for women.⁵ No data are available for adolescent tobacco use (13–15 years old) and the estimated annual direct cost of tobacco use is also not known. The premature CVD mortality rate attributable to tobacco is 2% of the total mortality rate, which is much lower than that of the global 10%.⁶ The three-year (2015–17) average recorded alcohol consumption per capita (15+ years) was 6.5 litres (Table 1).⁵

Raised blood pressure and cholesterol

In 2015, 31.3% of men and 30.8% of women had raised blood pressure (BP) levels (systolic BP \geq 140 mmHg or diastolic BP \geq 90 mmHg), which is higher than the GHO level of 24.1 and 20.1% for men and women, respectively, and Africa's 27.4% for both.⁵ In a screening study, only 31.7% of participants were found to be aware of their hypertension status, 59.9% of them were on treatment and of these, 24.6% had controlled BP levels.⁷ In another study, Kingue *et al.* found a prevalence of 29.7%, with 14.1% awareness.⁸ The percentage of individuals with raised total cholesterol levels (\geq 5.0 mmol/l or currently being on medication for raised cholesterol) was 26% compared to GHO data (38.9%).⁵

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In 2017, the percentage of DALYs lost because of hypertension was 3.14%, whereas the mortality rate caused by hypertensive heart disease (0.64%) was lower than the 1.65% for global data (Table 1).⁴

Physical activity

No data were available for 11–17-year-old adolescents who were insufficiently active (< 60 minutes of moderate- to vigorous-intensity physical activity daily). However, the age-standardised estimate for adults who were insufficiently active (< 150 minutes of moderate-intensity physical activity per week, or < 75 minutes of vigorous-intensity physical activity per week) was 28.5%, which is higher than GHO data at 27.5% (Table 1).⁵

Overweight and obesity

In 2017, the prevalence of overweight [body mass index (BMI) \geq 25 to < 30 kg/m²] in adult men 25 years and older was 15.3% and in women 19.4% (May measurement month 2017 unpublished, permission granted). For obesity (BMI \geq 30 kg/m²), the prevalence was 7.7 and 18%, for men and women, respectively (May measurement month 2017 unpublished, permission granted). Cameroon's obesity prevalence for adults is lower (12.9%) compared to the global prevalence of 13.1%, as is that for the prevalence of overweight at 17.3 versus 38.9% globally (Table 1).⁵

Diabetes

The percentage of the population (adults 18 years and older) defined with fasting glucose \geq 7.0 mmol/l or on medication for raised blood glucose levels (age-standardised) in 2014 was 6.5% for men and 6.9% for women.⁵ In 2019, the prevalence of age-adjusted (20–79 years) diabetes was 6.0%, which is higher than that of Africa (3.9%) but lower than the global level of 9.3% (Table 1).⁹

Part C: Clinical practice and guidelines

Health system capacity

The country had 0.9 physicians and 0.058 nurses per 10 000 of the population in 2011 and 2013, respectively, while there were 13 hospital beds for every 10 000 people in 2010.¹⁰

No data for locally relevant clinical tools to assess CVD risk or national guidelines for the treatment of tobacco dependence were available by 2018.¹¹ However, locally relevant clinical guidelines for the management of acute rheumatic fever (ARF) and RHD are available.^{12,13} Cameroon is involved in the INVICTUS (Investigation of Rheumatic Atrial Fibrillation Treatment using Vitamin K Antagonist, Rivaroxaban or Aspirin Studies) clinical trial, a comprehensive evaluation of RHD, including a multi-centre hospital-based registry.¹⁴ Cameroon was one of 12 sub-Saharan countries that participated in the VALVAFRIC study, a multi-centre international hospital-based

Table 1. Cardiovascular disease indicators for Cameroon

Indicators	Male	Female	Total	Year
Status of the national CVD epidemic				
Premature CVD mortality (age 30–70 years) (% of deaths)	–	–	12	2012
Total CVD mortality (% of deaths)	10.79	13.08	11.85 (31.8)*	2017
DALYs attributable to CVD (%)	5.0	5.03	5.02 (14.66)*	2017
Total RHD mortality (% of deaths)	0.2	0.21	0.2 (0.51)*	2017
AF and atrial flutter (%)	0.14	0.11	0.13 (0.5)*	2017
Prevalence of RHD (%)	0.69	0.86	0.78 (0.53)*	2017
Tobacco and alcohol				
Prevalence of adult tobacco use (15+ years old) (%)	43.8 (36.1)*	0.9 (6.8)*	–	2015
Prevalence of youth (13–15-year-olds) tobacco use (%)	–	–	–	–
Estimated direct (healthcare-related) cost of tobacco use in your population (in current US\$)	–	–	–	–
Proportion of premature CVD mortality attributable to tobacco (%)	–	–	2 (10)*	2004
Recorded alcohol consumption per capita (15+ years) (in litres of pure alcohol) (3-year average)	–	–	6.5	2015–17
Raised blood pressure and cholesterol				
Population with raised blood pressure (SBP \geq 140 mmHg or DBP \geq 90 mmHg) (%)	31.3 (24.1)*	30.8 (20.1)*	–	2018
Population with raised total cholesterol (\geq 5.0 mmol/l) (%)	29.5	22.3	26.0 (38.9)*	2018
DALYs attributable to hypertension (%)	3.23	3.02	3.14 (8.7)*	2017
Mortality caused by hypertensive heart disease (% of deaths)	0.42	0.91	0.64 (1.65)*	2017
Physical activity				
Adolescents (ages 11–17) who are insufficiently active (< 60 minutes of moderate- to vigorous-intensity physical activity daily) (%)	–	–	–	–
Adults (age-standardised estimate) who are insufficiently active (< 150 minutes of moderate-intensity physical activity per week, or < 75 minutes of vigorous-intensity physical activity per week) (%)	21.8	35.2	28.5 (27.5)*	2016
Overweight and obesity				
Adults who are overweight (BMI \geq 25–< 30 kg/m ²) (%)	15.3	19.4	17.3 (38.9)*	2017
Prevalence of obesity (BMI \geq 30 kg/m ²) (%)	7.7	18.0	12.9 (13.1)*	2017
Diabetes				
Defined population with fasting glucose \geq 126 mg/dl (7.0 mmol/l) or on medication for raised blood glucose (age-standardised) (%)	6.5 (9)*	6.9 (8)*	–	2014
Prevalence of diabetes (ages 20–79) (%)	–	–	6.0 (9.3)**	2019

CVD, cardiovascular disease; DALYs, disability adjusted life years; RHD, rheumatic heart disease; AF, atrial fibrillation; SBP, systolic blood pressure; DBP, diastolic blood pressure; BMI, body mass index.
 *WHO global data.⁵
 **IDF Diabetes Atlas.⁹



Cardiovascular Disease Scorecards – Africa

CAMEROON – APRIL 2020

Status of Cardiovascular Disease (CVD) and Non-communicable diseases (NCD)

Country Demographics

World Bank Classification
Lower-middle income

44%
of population living in rural areas
60% (Sub-Saharan Africa)



0.2%
of total mortality caused by **RHD**
Global data: 0.51%

0.78%
Prevalence of **rheumatic heart disease (RHD)**
Global data: 0.53%

2%
of premature CVD mortality attributable to **tobacco**
Global data: 10%

43.8% MALE **0.9%** FEMALE
Prevalence of **tobacco use age ≥15**
Global data: 36.1% (male) 6.8% (female)

0.64%
of deaths caused by **hypertensive heart disease**
Global data: 1.65%

31.3% MALE **30.8%** FEMALE
of population with raised **blood pressure** (SBP ≥140 or DBP ≥90)
Global data: 24.1% (male) 20.1% (female)

12.9%
Prevalence of **obese adults** (BMI of ≥30 kg/m²)
Global data: 13.1%

11.85%
of **deaths** caused by **CVD**
Global data: 31.8%

26%
of population with raised **total cholesterol** (≥5.0 mmol/L)
Global data: 38.9%

6%
Prevalence of **diabetes (ages 20-79)**
3.9% (Africa)



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CAMEROON

Health System Capacity

0.9
 Number of physicians
 (per 10,000 population)

0.058
 Number of nurses
 (per 10,000 population)

13
 Number of hospital beds
 (per 10,000 population)

KEY: No data Not in place In process/ partially implemented In place

Clinical Practice and Guidelines

Locally-relevant (national or subnational level):

Clinical tool to assess CVD risk

Guidelines for treatment of tobacco dependence

Clinical Guidelines for:

The detection and management of atrial fibrillation

The detection and management of acute rheumatic fever

The detection and management of rheumatic heart disease

The detection and management of diabetes

CVD prevention (within the last 5 years)

A system to measure the quality of care provided to people who have suffered acute cardiac events

CAMEROON

Cardiovascular Disease Governance

A national strategy or plan that addresses:

CVDs and their specific risk factors

NCD and their risk factors

Rheumatic heart disease prevention and control as a priority

A national surveillance system that includes CVDs and their risk factors

Stakeholder action

Non-governmental organizations' advocacy for CVD policies and programmes

Civil society involved in developing and implementing of national CVD prevention and control plan

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Source References: Global Health Data Exchange; WHO Global Health Observatory data repository; WHO NCD Document repository; Country specific publications.

retrospective registry of hospitalised RHD patients with valvular lesions.¹⁵ International guidelines are followed regarding the detection and management of AF and pharyngitis.¹² Cameroon does have national guidelines on diabetes mellitus management or treatment.¹⁶

Essential medicines and interventions

The availability and affordability of essential CVD medicines were investigated in a study by Jingi *et al.*¹⁸ Availability was higher in the urban informal sector, with 63.6% of these medicines available. Aspirin was the most affordable medicine and available at 70% of the study sites.¹⁷ Metformin and insulin are not generally available in the public health sector.¹⁸ Warfarin, clopidogrel, ACE inhibitors, beta-blockers and statins, which are mostly unaffordable, were not available. No data were available for CVD risk stratification in primary healthcare facilities, total cholesterol measurement at the primary healthcare level, and secondary prevention of ARF and RHD in public sector health facilities.⁵

Secondary prevention and management

Of the hypertensive persons, 11.5% is receiving medical treatment,¹⁹ while oral anticoagulants are prescribed in 34.2% of high-risk patients with AF.¹² The percentage of people with a history of CVD taking aspirin, statins and at least one antihypertensive agent is unknown.

Part D: Cardiovascular disease governance

The National Integrated and Multi-sector Strategic Plan for the Control of Chronic NCD (NIMSPC-CNCD) of 2011–2015 included CVD and risk factors, such as hypertension, diabetes, tobacco use, unhealthy diets, physical inactivity and the harmful use of alcohol.²⁰ Although a unit for NCD is in place in the Ministry of Health,²¹ no dedicated budget is available to ensure implementation. Preventing and controlling RHD as a priority in Cameroon was also included in the NIMSPC-CNCD, but this plan was never published or distributed.^{21,22}

Ten-year NCD/CVD surveillance programmes have been reported, based on the STEPS approach and others.^{20,23,24} However, a more comprehensive surveillance system for NCD was suggested.²³ Cameroon follows the World Health Organization (WHO) best-buy policies regarding tobacco use and has formulated a national tobacco control plan and multi-sectoral co-ordination mechanism for tobacco control.²⁰

Developing the National Health Development Plan (NHDP) 2016–2020 was a collaborative project between the Ministry of Health and non-health ministries, which included NCD, of which CVD are prominent.²⁵ The health system is severely underfunded with NCD not prioritised and therefore affecting dedicated CVD funding, which has to rely on privately funded donors and out-of-pocket payments.²⁰ Cameroon was part of the WHO-CHOICE project, which incorporated a cost-effectiveness modelling tool that gathers national data to be used for developing the most effective interventions for leading causes of disease burden. The model can be adjusted according to the specific needs of the country and assist policymakers in planning and prioritising services at a national level.²⁶

Assessment of policy response

Legislation that mandates health financing for CVD/NCD is lacking, as is that of essential CVD medicines at affordable prices.²⁰ Jingi *et al.*¹⁷ noted aspirin was the most affordable CVD medicine with 70% availability and suggested improving access to affordable medicines through policy options, which include cost containment and promoting generics. No judicial orders protecting patients' rights and mandating improved CVD interventions, facilities, health-system procedures or resources have been implemented, although a few policies address individual interventions, such as tobacco and alcohol use, and physical activity.²⁰

According to Cameroon's Framework Convention on Tobacco Control (FCTC) report, tobacco policy addressed the creation of smoke-free zones, warnings on tobacco products, a ban on advertising, and tax increases.^{11,20} There were no measures to protect tobacco control policies from tobacco industry interference.¹¹

The country does not have policies that ensure equitable nationwide access to healthcare professionals and facilities or screening of high-risk CVD individuals. However, the public sector provides most of the healthcare, which is burdened by a lack of funding.²⁰ Sustainable funding is also not available for CVD from taxation of tobacco and/or other 'sin' products. There are no taxes on unhealthy foods or sugar-sweetened beverages.²⁷ The percentage of the excise tax of the final consumer price of tobacco products in Cameroon was 19%, while that of the final consumer price of alcohol products was rated 25% in 2015.^{11,20}

No legislation exists on banning the marketing of unhealthy foods to minors or mandating clear and visible warnings on foods that are high in calories/sugar/saturated fats. Cameroon developed a food and nutrition policy to improve food and nutrition, as well as one that addressed physical inactivity through mass media awareness.²⁰

Stakeholder action

In Cameroon, non-governmental organisation (NGO) advocacy for CVD policies and programmes as such has not been demonstrated. However, NGO involvement in NCD policies has been reported, for example the multi-sectoral expert group on tobacco.²⁸ Clinical Research Education, Networking and Consultancy (CRENC) is the most active cardiovascular research organisation in the country.²⁹ Its primary goal is to educate young researchers, linking them and translating research findings into practice to improve healthcare programmes and improve the well-being of people.²⁹ The Cameroon Heart Foundation and the Fondation Coeur et Vie also play an active role in Cameroon.¹⁹

No involvement of patients' organisations in the advocacy for CVD/NCD prevention and management has been reported, and no evidence was found regarding advocacy champions and/or patient engagement for RHD groups.

Involvement of civil society organisations (CSO), such as the National Multi-sectoral Committee for Tobacco Control,²⁸ in the development and implementation of a national tobacco control plan was mentioned in the FCTC report.¹¹ Cameroon contributed to the Mapping of NCD Civil Society Organisations in Francophone sub-Saharan Africa, initiated by the NCD alliance with a focus on NCD, more specifically diabetes and CVD.³¹

CSO involvement in the national multi-sectoral co-ordination mechanism for NCD/CVD was documented by Juma *et al.*^{30,32} An example is the Cameroon Civil Society NCD Alliance that

empowers CSO through capacity building, unified action and stakeholder consultations, along with promoting evidence-based advocacy in preventing and controlling NCD.³³ No specific activities by cardiology professional associations were reported that aim at a 25% reduction in premature CVD mortality rate by 2025, although Cameroon was represented at the 65th World Health Assembly in 2019.³⁴ BP screening by businesses has proved to be an effective strategy in early detection and monitoring of hypertension.¹⁹ However, in Cameroon BP screening has not yet been addressed.

Based on the data collected for Cameroon, the following strengths, threats, weaknesses and priorities are summarised.

Strengths

Cameroon ratified the WHO FCTC in 2006, which motivated the development of policies to curb tobacco use and control NCD.²⁰ Taxation of cigarettes also emerged from the FCTC. Policies that address WHO best-buy interventions include those on the prevention of tobacco and alcohol use as well as physical inactivity and inadequate nutrition.²⁰ Promoting physical activity through mass media and public education and awareness has been reported.²⁸

The CAMBoD (Cameroon Burden of Diabetes) survey provided data for implementing a programme on diabetes and hypertension as these risk factors had emerged as public health problems.³⁵

May measurement month (MMM), an initiative started by the International Society of Hypertension, is a cross-sectional BP survey of volunteer adults age ≥ 18 years. Screening at public locations, including sponsorship from business entities, requesting their corporate responsibility, is promoted.³⁰ Organisations co-ordinating the MMM in Cameroon are the Cameroon Cardiac Society (CCS), CRENC, a non-profit research organisation, and the Fondation Coeur et Vie.³⁰

Upgrading of the Shisong Cardiac Centre at St Elizabeth Catholic General Hospital ensured improved treatment of patients with heart diseases.³⁵ Total CVD death rates were lower than other West African countries, Mauritania (16.6%) and Senegal (16.9%), but higher than that of bordering Nigeria (7.7%) (Table 1).

Threats

Cameroon with its high mortality rate attributable to infectious diseases, inadequate health system characterised by absence of health insurance, and lack of healthcare professionals, is also burdened by an increase in NCD and specifically CVD.³⁵ Increased risk factors are obesity, hypertension and hyperglycaemia, with heart failure (HF) being the most significant form of CVD impacting on young, economically active individuals.³⁵

In urban Cameroon, the hypertension prevalence is high, with a very low awareness, which is attributed to the rapid urbanisation along with high obesity, physical inactivity and diabetes rates, increased salt consumption and tobacco use.⁸ In hypertensive patients, HF is common and often associated with co-morbidities.³⁶ Hypertension accounted for 43.9 and 54.49% of HF in sub-Saharan Africa (SSA) and Cameroon, respectively.³⁷ In a hospital study, HF was the reason for 5.77% of all admissions

at the turn of the century, with a prevalence of 30% and overall mortality rate of 9.03%.³⁸ RHD also remains a significant cause of HF in SSA and is the third most common cause of HF after hypertension and cardiomyopathies.³⁷ Recent data from another hospital-based study confirmed hypertension (54.79%) to be the foremost risk factor associated with HF, along with diabetes (17.12%) and smoking (15.75%), as the most common co-morbidities.³⁹ As elsewhere in Africa, HF carries a poor prognosis with one out of five patients with HF in Cameroon dying, and one out of four hospitalised within one year.^{40,41}

The rising burden of hypertension among people living with HIV/AIDS is another threat, with at least 20% of HIV-infected individuals found to be hypertensive. As in the general population, awareness, detection, treatment and control of hypertension are inadequate in these people.⁴²

Weaknesses

Although the NIMSPC-CNCD was developed as a reference document for preventing and controlling NCD, it was never implemented as a comprehensive, preventative intervention strategy.²⁰ In the early 2000s, national programmes were introduced with a focus on controlling hypertension, CVD, diabetes and other NCD.²⁰ Discrepancies among the various tobacco control policies regarding implementation also exist, possibly because of the absence of a comprehensive tobacco-prevention control programme.⁴³

As in most sub-Saharan countries, funding for health is insufficient, and no national strategy is available to secure funds.⁴⁴ Only in the 2016–2027 health sector strategy paper were funds allocated for NCD prevention and control, and optimal management of these resources could be sacrificed as there is no national multi-sectoral committee on NCD.²⁰ The NCD prevention policy is hampered by the absence of effective monitoring and evaluation plans, causing a risk of neglect.²⁰ No autonomous system exists for regulation of the pharmaceutical sector, allowing quality medical products at affordable prices.⁴⁴

Although policies have been developed and the government showed interest in establishing an NCD unit in the Ministry of Public Health, no implementation is seen regarding regulations intended for alcohol, physical activity and diet.²⁰

According to recent data, no community screening of RHD has been done in Cameroon.⁴⁵ Therefore, the true prevalence of RHD is possibly higher than recorded because patients are more likely to seek medical attention only when symptoms present.⁴⁵

Priorities

Comprehensive interventions or programmes are needed to address nutrition, physical inactivity and obesity among adults and children, as has been done for tobacco control.²⁰ The high prevalence of hypertension highlights an urgent need to implement an up-to-date national programme targeting risk factors and community awareness of NCD, specifically CVD.³⁵ An adaptation and implementation of the PASCAR roadmap,⁴⁶ which identified practical and effective solutions to improve detection, treatment and control of hypertension on the continent, are among the best ways forward. Cost-effective strategies to prevent hypertension and improve awareness, treatment and control were also suggested.⁴⁷

Guidelines to improve AF and HF treatment and prognosis include, among other things, improving access to cardiologists, training of staff, developing primary-prevention programmes, and providing cheaper medication and information to the general public.¹²

Shortages in human and financial resources need to be addressed mainly because of other competing health priorities. The fifth strategic priority of the WHO country co-operation strategy asks for the 'improvement of measures for the monitoring of the management of programmes, logistics, equipment and different materials, ICT (information and communication technologies) and finances'. As such, Cameroon is committed to focus on these and the other priority areas. These priority areas include, among other things, supporting the fight against NCD, improving health indicators and health security, promoting safe behaviour, and strengthening the health system.⁴⁴

This publication was reviewed by the PASCAR governing council and approved by the president of the Cameroon Cardiac Society.

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