High Blood Pressure in Sub-Saharan Africa: Why Prevention, Detection, and Control are Urgent and Important

Norm R.C. Campbell, MD;[1] Pascal Bovet, MD, MPH;[2] Aletta Elisabeth Schutte, PhD;[3,6] Daniel Lemogoum, MD, MPH, PhD, FESC;[4] Armand Seraphin Nkwescheu, MD, MPH, PhD (cand)[5]

From the Department of Medicine, University of Calgary, Calgary, AB, Canada;[1] IUMSP, Lausanne University Hospital, Lausanne, Switzerland;[2] Hypertension in Africa Research Team, North West University, Potchefstroom, South Africa;[3] Douala School of Medicine, University of Douala, Douala;[4] Cameroon Society of Epidemiology and Health Operations Research, Ministry of Public Health of Cameroon, Yaounde, Cameroon;[5] and MRC Research Unit on Hypertension and Cardiovascular Disease, North-West University, South Africa[6]

HIGH BLOOD PRESSURE (BP) IS THE LEADING RISK FOR DEATH AND DISABILITY GLOBALLY ACCORDING TO THE 2010 GLOBAL BURDEN OF DISEASE STUDY[2,3]

In 2010, hypertension in Sub-Saharan Africa was the leading risk for death, increasing by 67% since 1990. Hypertension was estimated to cause more than 500,000 deaths and 10 million years of life lost in 2010 in Sub-Saharan Africa. It was also the sixth leading risk for disability (contributing to more than 11 million disability-adjusted life years).[3] In Sub-Saharan Africa, stroke, the major clinical outcome of uncontrolled hypertension, has increased 46% since 1990 to become the fifth leading risk for death.

GLOBALLY, INCREASED BP IS ESTIMATED TO CAUSE:[4–10]

- 50% of heart disease, stroke, and heart failure.
- 13% of deaths overall and more than 40% of deaths in people with diabetes.
- Hypertension, which is a leading risk for dementia, renal failure, and fetal and maternal death in pregnancy.

HYPERTENSION IS A PUBLIC HEALTH EPIDEMIC[4,11–17]

- In contrast to many countries worldwide where the rates of high BP are slowly decreasing, the prevalence of hypertension is increasing in most countries in Sub-Saharan Africa. In 1990, <20% of the adult African population had hypertension while in 2010 more than 30% had hypertension. The prevalence rates of hypertension in some African countries are the world's highest.
- Globally, approximately four in 10 adults older than 25 years have hypertension, and in many countries another one in five have prehypertension.
- One half of BP-related disease occurs in people with increased but still normal BP (ie, "prehypertension").

[1]Adopted from Campbell and colleagues.

Address for correspondence: Norm R.C. Campbell, MD, Department of Medicine, Libin Cardiovascular Institute, University of Calgary, Calgary, AB T2N 4Z6, Canada
E-mail: ncampbel@ucalgary.ca

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MANAGEMENT OF BP AND BLOOD PRESSURE-RELATED DISEASES HAS A MAJOR IMPACT ON HEALTH CARE SPENDING[18]

- An estimated 7.3% of total health care spending is directly related to increased BP and its complications in Sub-Saharan Africa. In 2001, more than $2 billion USD were spent on hypertension-related diseases.

BEHAVIORAL CAUSES OF INCREASED BP ARE LARGELY KNOWN IN ECONOMICALLY DEVELOPED COUNTRIES[19–25]

- In economically developed countries:
  - About 30% of hypertension is attributable to increased salt consumption and about 20% is attributable to low dietary potassium (eg, low consumption of fruits and vegetables). High intake of alcohol and saturated fats and low dietary ratio of polyunsaturated fats to saturated fats is also associated with hypertension.
  - Obesity, which is largely related to excess caloric intake, accounts for about 30% of hypertension.
  - Physical inactivity is estimated to cause about 20% of hypertension.
- High dietary salt is especially important in Sub-Saharan Africa, as black populations are more salt-sensitive, ie, sensitive to the BP-increasing impact of sodium.
- Excess alcohol consumption also causes hypertension and is the fifth leading risk for death in Sub-Saharan Africa.
- Being tobacco free is especially important for people with hypertension, because tobacco use increases overall cardiovascular risk and is the eighth leading risk for death in Sub-Saharan Africa.
- Although more research to examine the behavioral causes of the epidemic of hypertension in Sub-Saharan Africa is required, unhealthy behaviors that cause hypertension are common in Sub-Saharan Africa.
- Although the estimated population average of dietary salt intake in Sub-Saharan Africa is, overall, among the lowest in the world at 3.8 to 8 g/d, more reliable and up-to-date information is needed.
- More research is also needed on how people perceive raised BP, as well as treatment for high BP, in different countries in Sub-Saharan Africa to better assess cultural barriers to hypertension treatment and, in particular, to equip physicians with appropriate

behavioral knowledge and skills when they advise hypertensive patients to adhere to treatment for hypertension

INVESTMENTS IN PREVENTION CAN BE COST-EFFECTIVE AND SOME INTERVENTIONS ARE ESTIMATED TO BE COST-SAVING[26–32]

- Policy interventions at the population level aimed at improving diet (eg, salt reduction through food reformulation) and physical activity can be cost-effective, and several interventions are estimated to be cost-saving and/or to generate revenue (eg, taxes on alcohol, tobacco, and sugar) and they help people make healthy dietary choices.
- The private sector and food industry also have an important role in ensuring that healthy foods are provided (eg, reformulation of processed foods) and that food is adequately labeled and/or otherwise identified as healthy in a way that is understandable for most consumers.
- Recommended polices to prevent or manage hypertension through improved diet and increased physical activity are outlined by the World Health Organization (WHO), particularly in the WHO Global Action Plan for the Prevention and Control of Noncommunicable Disease 2013–2020 and in the WHO Global Status Report on Noncommunicable Diseases 2014.

TREATMENT AND CONTROL OF HYPERTENSION ARE COST-EFFECTIVE IF TARGETED TO PERSONS AT HIGH RISK[5,14–17,19,33]

- Sub-Saharan Africa has some of the world's lowest rates of hypertension awareness, treatment, and control. A current review indicates that among those who have hypertension, 66% are not aware, 82% are not treated, and 93% not controlled. These values may be higher or lower in different populations.
- Most people with hypertension also have additional cardiovascular risk factors (eg, dyslipidemia and diabetes) and/or evidence of BP-related damage (heart disease, stroke, kidney damage) that all increase a person's total cardiovascular risk.
- Treating increased BP in all persons at high risk for stroke and cardiovascular disease is cost-effective and commendable in Sub-Saharan Africa, and, where at all possible, hypertension treatment should be incorporated into a multicomponent chronic disease management package (eg, the WHO Package of Essential Noncommunicable Disease [PEN] Interventions for Primary Health Care in Low-Resource Settings). Treatment of increased BP among persons at low or moderate risk is less cost-effective and recommendations in these circumstances would depend on a country's resources and existing health systems.
- It is important to treat individual risk factors using approaches that incorporate consideration of overall (eg, absolute) cardiovascular risk, because such risk-based approaches are more effective in terms of maximizing health benefits and minimizing costs. This is true in all countries, but particularly in low- to middle-income countries where resources available to health systems are limited and most patients pay out-of-pocket.
- All guidelines on hypertension advise that diagnosis of hypertension, in the absence of symptoms or signs of cardiovascular disease that may require immediate treatment, should be made based on multiple readings over several visits to avoid false-positive cases (considering that BP may be abnormally high at first visits and spontaneously decrease over subsequent visits). It is also important when measuring BP to use appropriately sized cuffs (eg, large cuffs for persons with large arms) to avoid overdiagnosis.

POLICY INERTIA

There are several critical gaps in the prevention and control of hypertension. In Sub-Saharan Africa, only South Africa has a national program to reduce dietary salt and most of the countries do not have reliable data on salt consumption levels. Globally, the processed food industry has an important role in adversely affecting cardiovascular risk through widespread social marketing and distribution of foods high in saturated and trans fats, simple sugars, and salt and low in fiber, complex carbohydrates, potassium, and calcium. It has been estimated that about 80% of hypertension cases are directly related to added salt, low ratio of polyunsaturated fats to saturated fats, and low potassium or through obesity. Excess alcohol is the fifth leading risk for death in Sub-Saharan Africa and is another important cause of hypertension. By essence, multinational food companies aim at maximizing profits and the expansion of markets of processed foods rich in salt, fat, and sugar in Africa, which has the potential to accelerate the epidemic of noncommunicable diseases (NCDs). Comprehensive policies to limit the impact of deliberate and intentional marketing of unhealthy foods, alcohol, and tobacco are therefore a priority to help prevent NCDs.

LIMITED HEALTH CARE CAPACITY[15,16]

In much of Africa, there is limited capacity of the health care system to screen, diagnose, treat, and control NCDs and their risk factors. Investment needs to be made to ensure that communities and health care facilities have adequate equipment (eg, automated BP devices) and screening programs, including the capacity to treat the detected hypertension cases over the long-term. Persons diagnosed with hypertension need to have their total cardiovascular risk assessed and those at high risk need to receive effective, ideally evidence-based, and affordable drug treatment. If resources allow,

patients at intermediate risk should be managed in the same way. Most importantly, a main barrier to the use of health care in Sub-Saharan Africa is the fact that most patients have to pay for medical care and medication out-of-pocket. Systems requiring direct payment at the point of care prevent millions of people from accessing health care services and this is an important barrier to adherence to long-term treatment (eg, for hypertension). It is therefore essential that inexpensive antihypertensive medications are used and that there are effective channels for procurement of low-cost generic medicines. More generally, universal health coverage will be a main step forward in ensuring that persons with hypertension and/or high cardiovascular risk have access to effective, affordable, and accessible care.

TRANSFORMATION AND REFOCUSING EFFORTS ON PREVENTION AND CONTROL ARE REQUIRED

RECOMMENDED STEPS TO BE CONSIDERED[34]

International Aid and Health Funding Bodies

- Realign funding with the emerging NCD health risks and diseases that the populations of Africa are experiencing.
- Provide funding to support civil society and health-related organizations to develop strategies and advocate for actions to prevent and control NCDs.
- Provide funding for forums to share best practices to prevent and control NCDs within Africa and to bring and update best practices to Africa. This fact sheet and call to action is supported by the organizations listed in the table (Table).

National Governments and WHO

- Prioritize efforts to prevent and control the hypertension-related disease burden within the framework of reducing NCDs along the current global agenda (particularly the WHO Global Plan of Action 2013–2020).
- Develop national multisectorial policies and plans that specifically address physical activity and nutrition, including dietary salt for the prevention of hypertension and NCDs.
- Develop multisectorial policies and plans that promote healthy environments to enable people to make healthy choices and therefore prevent hypertension and NCDs.
- Foster and support initiatives that promote healthy living and working conditions within communities, with a focus on social determinants of health.
- Include health education in school in order to provide knowledge and skills starting early in life to adopt healthy lifestyles and therefore prevent NCDs.
- Strengthen the health care system to increase its capacity to address hypertension and other NCDs and risk factors, including screening, diagnosis, treatment, and control.
- Develop innovative community resources for the prevention and control of hypertension, including reliance on and training of a variety of health care workers (task sharing or shifting) to strengthen the capacity of primary health care to manage the large number of persons with hypertension and/or cardiovascular risk.
- Ensure that there is adequate capacity to screen for hypertension, including skilled health workers and adequate equipment (eg, automated BP devices).
- Ensure that effective, evidence-based, and affordable antihypertensive drugs are available and accessible.
- Develop and update clinical guidelines suitable to the national circumstances that are simple and provide clear guidance for screening, diagnosing, and treating common NCDs and risk factors.
- Monitor the efforts to prevent and control NCDs, including through regular population surveys of BP using WHO STEPwise Approach to Surveillance.
- Monitor health care gaps (eg, through surveys on awareness and control of hypertension, knowledge, attitudes, and practices related to hypertension) to inform clinical and community interventions.

National Hypertension Organizations

- Foster multisectorial partnerships including a broad range of government, nongovernment, and other key players to develop and implement a comprehensive plan of action for the primary prevention of hypertension.
- Advocate for healthy public policies, including dietary salt reduction.
- Spearhead the development and regular update of hypertension management guidelines adapted to the country's circumstances and incorporate simple care algorithms.

TABLE. Supporting Organizations of the World Hypertension League-International Society of Hypertension Fact Sheet for Sub-Saharan Africa

Organization
African Epidemiological Federation
African Heart Network
African Population and Health Research Center
Cameroon Heart Foundation
Cameroon Society of Epidemiology (CaSE)
Cameroon Association of Public Health (ACASAP/CAMPHA)
Congolese Hypertension League (CoHL)
International Forum for Hypertension Control and Prevention in Africa (IFHA)
Southern African Hypertension Society
Kenya Epidemiology Association
Pan-African Society of Hypertension
Pan-African Society of Cardiology
Stroke and Investigative Research and Education Network (SIREN)
Sudanese Society of Hypertension

- Consider integrating hypertension management guidelines into comprehensive NCD guidelines as outlined by the WHO.
- Develop partnerships with all organizations and health care providers directly or indirectly involved with the diagnosis and management of hypertension when developing and implementing management guidelines and hypertension prevention and control programs.
- Conduct or collaborate with other organizations for the monitoring and evaluation of efforts to prevent and control hypertension.
- Support World Hypertension Day on May 17 each year and send outcomes of national activities during that day to the World Hypertension League (www.whleague.org)

Health Care Professionals

- Measure BP at all relevant clinical encounters.
- Diagnose new cases of hypertension based on a series of BP checks performed on several days or immediately in patients presenting with symptoms or signs of an acute condition related to hypertension (eg, stroke and heart attack).
- Use an adequate cuff size in relation to arm circumference (eg, a large cuff for large arms).
- Assess cardiovascular risk in patients diagnosed with hypertension and manage treatment accordingly.
- Treat persons at high total cardiovascular risk to controlled BP levels.
- Treat hypertensive persons at moderate total cardiovascular risk according to resources.
- Assess and manage hypertensive disorders in pregnancy.
- Advocate for healthy public policy and a comprehensive national program for hypertension prevention and control.
- Encourage and assist community BP screening programs, provided effective, evidence-based accessible and affordable treatment is available for long-term treatment in persons with hypertension.

Individuals

- Eat a healthy diet with lots of fruits, vegetables, grains, and water and little processed foods.
- Choose low-sodium options, limit salt when cooking foods, and do not add sodium/salt to food at the table.
- Prefer water (including tap water when water is safe) to sugar drinks and commercial fruit juices.
- Be physically active.
- Maintain a healthy body weight.
- Avoid all tobacco products and excess alcohol consumption.
- Get BP checked regularly, understand what it should be, and take treatment regularly when advised by a health professional.
- Advocate for healthy public policies.

KEY MESSAGES

- Hypertension is found in a large number of adults and remains a constant threat to the well-being of Africans.
- Hypertension can be prevented to a large extent. Therefore, effective policies to help people make healthy choices are important to reduce the incidence of hypertension in populations.
- Hypertension is easy to screen and can be effectively controlled through appropriate lifestyle and cost-effective treatment.
- Only about a third of African adults with hypertension are aware of their condition.
- Because of the large number of hypertensive patients in Sub-Saharan Africa, treatment must be implemented at the primary health care level.
- Health care strengthening needed to improve hypertension control will require a number of factors to be improved, including task sharing, trained health personnel, and affordable cost.
- A strategic approach to prevent and control hypertension is critically needed.

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