



From Genes to Policy: Strategies for Tackling Hereditary Hypertension in Nigeria

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Dear Editor,

Globally, an estimated 1.28 billion individuals between the ages of 30 and 79 suffer from hypertension, with the majority (two-thirds) residing in low- and middle-income nations. The highest prevalence (27%) of hypertension is found in the World Health Organization (WHO) African Region (1). Hypertension affects one in every three adults worldwide. This frequent and fatal illness causes stroke, heart attack, heart failure, kidney damage, and a variety of other health issues. Between 1990 and 2019, the number of persons with hypertension (blood pressure of 140/90 mmHg or higher, or those using hypertension medication) doubled, from 650 million to 1.3 billion. Nearly half of hypertensive patients worldwide are at present ignorant of their illness. More than 75% of adults with hypertension live in low- and middle-income nations (2). The most populous nation on the continent, Nigeria, is also much accountable for the rising prevalence of hypertension in Africa. The projected age-adjusted prevalence of hypertension rose from 8.5% to 32.5% between 1995 and 2020 (3). A similar prevalence of 38% was reported from a nationwide survey by a recent study (4). The most significant risk factor for individuals with CVD diagnoses in Nigeria has been shown to be hypertension, which affects one in three people. In urban hospitals, up to 25% of emergency admissions are due to complications connected to hypertension. This emphasizes how strongly hypertension affects the

growing trend of non-communicable diseases, which account for 27% of Nigeria's total death rate (5).

The chance of developing hypertension is increased by several factors including age, family history and genetics, sedentary lifestyle, excess alcohol or caffeine consumption, poor sleep quality, smoking, medications, medical conditions, and race or ethnicity (6). High blood pressure (hypertension) is often associated with sedentary lifestyles or growing older. However, high blood pressure can be a genetic disorder that affects otherwise healthy people. A person who has a parent with high blood pressure can inherit a gene, increasing their likelihood of developing hypertension in the future. Familial hypertension can also be caused by a family lifestyle that includes high blood pressure risk factors like smoking or eating an unhealthy diet (7). Individuals with a family history of hypertension are at a higher risk of developing the illness, probably due to shared environmental and genetic factors. Hypertension can run in families due to similar genetic makeup, upbringing, and lifestyle choices. If a person with a genetic predisposition to hypertension also leads an unhealthy lifestyle, the risk increases even further. However, genes alone do not entirely account for hereditary hypertension. Living in similar environments can also contribute to the same unhealthy diet and habits among residents, such as heavy drinking or smoking. These factors raise the risk of developing hypertension in addition to heredity (8).

Given that people cannot choose the family they are born into, genetics is an unmodifiable risk factor. Therefore, efforts must be focused on tackling other risk factors that interact with genes to contribute to the development of hypertension. Targeted as well as population-based interventions can be used to prevent and control hypertension. A well-established tactic in clinical practice for lowering high blood pressure in patients is the targeted approach. The population-based approach technique is founded on mass environmental control experiences in public health that do not target any single population subset (9). Most people agree that population-based methods have a higher potential to reduce cardiovascular diseases than targeted ones (9, 10). This is predicated on the idea that a large number of individuals with a low risk of cardiovascular disease might result in more cases than a small number of individuals with a variety of risks (9). Nonetheless, as the two approaches are complementary and reinforce one another, they might employ the same interventions (11).

It is crucial to broaden public awareness about the causes, risk factors, treatment, and prevention of hypertension. Campaigns should focus on motivating people to lead healthy lifestyles, including limiting alcohol intake, quitting smoking, and, if attainable, banning public smoking. Other essential aspects include adequately managing underlying medical issues, exercising, maintaining a healthy weight, and following a nutritious diet. Health promotion activities are essential for controlling hypertension in patients and the at-risk population (11). Individuals can make significant changes by adopting positive behaviors that reduce the risk of hypertension. These can be achieved through the consistent implementation of lifestyle adjustments that decrease the associated risk. Adopting healthy habits on an individual basis can significantly reduce the risk of hypertension. Achieving these goals requires a consistent approach to lifestyle adjustments and implementing health promotion interventions that ensure long-term control (11, 12).

For the benefit of the underprivileged population, there is also a need to improve access to healthcare, particularly in rural areas with traditionally limited access to medical services. The screening and treatment of hypertension should be delegated to Primary Health Care, the first tier of the Nigerian healthcare system, and its personnel should be adequately trained to handle this responsibility. Hypertension prevention, early detection, and efficient management are some of the most cost-effective healthcare measures, and governments should prioritize them as part of their national health benefit package at the primary health

care level. The economic advantages of enhanced hypertension treatment plans exceed the expenditures by around 18 to 1 (2). Health care facilities should be well-equipped with personnel, instruments, and medications, as well as a simplified treatment protocol, especially at the primary health care level.

In conclusion, complex polygenic disorders like hypertension are influenced by a number of interrelated genetic, environmental, socioeconomic, and demographic factors (13). For the prevention and management of hypertension, combining efforts to address these determinants and healthcare concerns will be essential. It is feasible to lower the prevalence and morbidity from hypertension with coordinated efforts and focused interventions.

Footnotes

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