# Prevalence and Determinants of Hypertension among the Adult Population in Kebbi State, Nigeria

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## ABSTRACT

Hypertension, a major global health challenge, remains the leading risk factor for premature death despite advancements in medical technology. This study assesses the prevalence and determinants of hypertension among the adult population in Kebbi State, Nigeria. A cross sectional survey was conducted with 270 outpatient attendees at Sir Yahaya Memorial Hospital, using a structured questionnaire and standardized instruments to measure blood pressure and other anthropometric variables. The study found a hypertension prevalence of 28.9%, indicating a hidden epidemic. Logistic regression identified age, BMI, and education level as significant predictors. The study calls for intensified public health initiatives, including community screening and lifestyle modifications, to curb the rising trend of hypertension in Kebbi State.

## INTRODUCTION

Hypertension, commonly known as high blood pressure, is recognized as the most prevalent non-communicable disease globally, affecting over one billion people. It is a leading risk factor for cardiovascular diseases, including coronary artery disease, stroke, and heart failure, contributing to a significant proportion of global mortality (Hajjar et al., 2006; WHO, 2013). Despite being preventable and treatable, hypertension remains poorly controlled in many parts of the world, particularly in low- and middle-income countries, where awareness and access to healthcare services are limited (Ibekwe, 2015).

In Nigeria, the prevalence of hypertension has risen dramatically, with recent estimates indicating that approximately 35% of the adult population is affected (WHO, 2017). Kebbi State, located in the northwestern region of Nigeria, is experiencing rapid urbanization and lifestyle changes, which are contributing to the increasing burden of hypertension. However, data on hypertension prevalence and its associated factors in this region are scarce, making it difficult to develop targeted public health interventions.

This study aims to fill this gap by assessing the prevalence and associated factors of hypertension among adults in Kebbi State. The findings of this study will inform public health policies and strategies aimed at reducing the burden of hypertension and improving cardiovascular health in Kebbi State.

## METHODS

### Study Design and Setting

This study employed a cross-sectional design conducted at Sir Yahaya Memorial Hospital, Birnin Kebbi, Kebbi State, Nigeria. The hospital, serving as the only state referral hospital, caters to a population of over 5 million people. The study population comprised adult outpatients attending the hospital, selected through simple random sampling over a period of three months.

### Participants

A total of 270 adult participants, aged 18 years and above, were recruited for the study. Eligibility criteria included being a resident of Kebbi State and willing to provide informed consent. Participants with pre-existing chronic illnesses, other than hypertension, were excluded to minimize confounding factors.

**Data Collection**

Approval was given by the authorities of Sir Yahaya Memorial Hospital, for the conduct of the exercise and each participant gave consent for participation. Data were collected using a structured interviewer-administered questionnaire adapted from the WHO Stepwise approach to surveillance of non-communicable diseases. The questionnaire covered socio-demographic characteristics, health habits, nutrition, physical activity, and history of hypertension. The blood pressure readings were recorded with participants at rest, without any preceding physical exertion that could have influenced the results."

**Blood Pressure and Anthropometric Measurements**

Blood pressure was measured using a standardized and calibrated sphygmomanometer. The average of 3 readings taken for each participant was recorded. Hypertension was defined as systolic blood pressure ≥140 mmHg or diastolic blood pressure ≥90 mmHg, or self-reported use of antihypertensive medication.

Age, gender, and anthropometric measurements, including height, weight, and Body Mass Index (BMI), were recorded. BMI was calculated as weight in kilograms divided by the square of height in meters  (kg/m²). Participants were classified as underweight, normal weight, overweight, or obese based on WHO guidelines.

**Statistical Analysis**

Data were analyzed using the Statistical Package for Social Sciences (SPSS) version 20.0.  Descriptive statistics were used to summarize the data. Logistic regression analysis was conducted to identify the factors associated with hypertension, with statistical significance set at $p \leq 0.05$. Correlation techniques, including ANOVA and regression analysis, were also

employed to examine the relationships between hypertension and various socio-demographic  and lifestyle factors.

# RESULTS

### Prevalence of Hypertension

The overall prevalence of hypertension among the study population was found to be 28.9%.  This indicates a substantial burden of hypertension in Kebbi State, underscoring the need for  urgent public health interventions.

### Socio-Demographic Factors

Age, BMI, and level of education were identified as significant predictors of hypertension. Older  age groups, particularly those above 45 years, exhibited a higher prevalence of hypertension. A  higher BMI was strongly associated with increased blood pressure, with obese participants  showing a significantly higher risk of hypertension compared to those with normal BMI.  Additionally, lower levels of education were linked to a higher prevalence of hypertension,  suggesting a potential gap in health literacy.

### Lifestyle and Behavioral Factors

The study also explored the relationship between hypertension and lifestyle factors, including diet, physical activity, and smoking. A sedentary lifestyle and unhealthy dietary habits, such as  high salt intake and low consumption of fruits and vegetables, were significantly associated with  increased blood pressure. Smoking was also identified as a risk factor, although its prevalence  was relatively low in the study population due to cultural practices in the region.

# DISCUSSION

The findings of this study reveal a significant prevalence of hypertension (28.9%) among the  adult population

in Kebbi State, Nigeria, aligning with the growing burden of hypertension observed in other regions of the country. This rate is consistent with previous reports from the World Health Organization, which highlight the increasing prevalence of hypertension in sub Saharan Africa, driven by rapid urbanization, lifestyle changes, and inadequate public health interventions (WHO, 2017).

One of the critical insights from this study is the identification of age, BMI, and education level as significant predictors of hypertension. The positive correlation between age and hypertension is well-documented, as vascular resistance and arterial stiffness tend to increase with age, contributing to elevated blood pressure (Franklin et al., 2019). The strong association between higher BMI and hypertension underscores the impact of obesity on cardiovascular health, a trend that is particularly alarming given the rising obesity rates in Nigeria (Adeloye et al., 2015).

The study also highlights the role of education in influencing health outcomes. Participants with lower levels of education were more likely to be hypertensive, which may reflect a lack of awareness about healthy lifestyle practices and limited access to healthcare resources. This finding emphasizes the need for targeted health education programs to improve awareness and control of hypertension, particularly in less educated populations.

Lifestyle factors such as diet, physical inactivity, and smoking were also found to be associated with hypertension. The low intake of fruits and vegetables, coupled with high salt consumption, reflects dietary patterns that contribute to the development of hypertension. Similarly, physical inactivity, which is prevalent in urbanizing regions, further exacerbates the risk of hypertension. Although smoking was less common among participants, it remains a critical risk factor for cardiovascular diseases and warrants continued public health efforts to reduce tobacco use.

The study's findings call for comprehensive public health strategies to address the burden of hypertension in Kebbi State. These strategies should include community-based screening programs, promotion of healthy lifestyles, and the development of policies that encourage physical activity and healthy eating. Additionally, improving access to healthcare services and enhancing health literacy through education will be essential in reducing the prevalence of hypertension and its associated complications.

## CONCLUSION

This study provides valuable insights into the prevalence and determinants of hypertension among adults in Kebbi State, Nigeria. The findings underscore the urgent need for public health interventions to address the growing burden of hypertension in the region. Age, BMI, and education level were identified as significant predictors of hypertension, highlighting the importance of targeted health education and lifestyle modification programs.

To effectively combat hypertension, public health policies must prioritize regular screening, early detection, and management of hypertension, particularly among high-risk populations. By promoting healthier lifestyles and improving access to healthcare services, it is possible to reduce the prevalence of hypertension and enhance the overall cardiovascular health of the population in Kebbi State and beyond.

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