Frequency of high blood pressure among the adult population in kebi state

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Abstract: This Article evaluated the prevalence of High Blood Pressure and its Associated Factors among the Adult in an outpatient clinics in Kebbi State Nigeria. Hypertension, the silent killer, remains a major global health challenge in this 21st century despite advancements in technology and increasingly available therapeutic options. According to a new report from the World Health Organization, Hypertension is now the number 1 risk factor for premature death worldwide. It is preventable, controllable, and treatable, yet, a major threat to human survival at the global level. It affects more than one billion people and acts as the most prevalent risk factor for global mortality, with the highest prevalence of 27% in the WHO African Region. Nigeria, the most populous country in this region, contributes enormously to this burden. The rate is surging high as people gain more access to fast foods and live more sedentary lifestyles.This exploratory study is therefore aimed at assessing the prevalence and determinants of hypertension among the adult population in Kebbi State. The state is in the northwest region, which has one of the highest natality and mortality rate in Nigeria. Knowing the prevalence of hypertension and its associated factors in this small unit of the country will inform the government on the development of an appropriate measure for its effective management. This cross-sectional study was carried out with 270 Hospital outpatient attendees in Kebbi State. Participants were selected by simple random sampling, and a structured interviewer-administered questionnaire was used to obtain data over a period of three (3) months. Standardized and calibrated instruments were also used to measure the systotic and diastolic blood pressure, and other anthropometric variables such as height, weight, Body Mass Index (BMI) and multiple body composition indices. Logistic regression analysis was conducted and statistical significance was declared at a p-value ≤0.05. Descriptive statistical techniques and correlation techniques that

include correlation analysis, ANOVA and regression analysis were used to analyse the information. Data analysis by Statistical Package for Social Science version 20.0 revealed a prevalence of 28.9%. This is a signal of a hidden epidemic that requires intense public enlightenment on healthy lifestyles, enhanced Community screening programs, early detection through regular checkups, and a review of current guidelines on the management of hypertension. Age, BMI, and level of education were the three factors identified in this study as having enough covariates to predict hypertension. Lifestyle modification in the form of a healthy lifestyle, regular exercise, and healthy eating habits would reduce hypertension and its consequent cardiovascular morbidity and mortality in Kebbi State, northwestern region of Nigeria.

Keywords: Frequency Of High Blood Pressure, Adult Population, Nigeria.

Introduction: High Blood Pressure (Hypertension) is a systemic disease that affects all races and countries of the world. It is the most common Non-Communicable Disease (NCD) with diverse grades of prevalence across the globe (Ibekwe, 2015).

Hypertension, which is elevated blood pressure (BP), has been identified globally as the major risk factor for cardiovascular diseases (CVD) (Hajjar et al., 2006). It is associated with lethal complications like coronary artery disease, cerebrovascular accidents, heart, and renal failure (Henok et al., 2017). Despite being a preventable illness condition, studies have linked it to increased morbidity and mortality among adults. Hypertension is now the number-one risk factor for death globally (Ayodele, 2018), and it is also one of the primary risk factors for heart disease and stroke (Arun et al., 2017).

Past studies on Hypertension revealed that it is responsible for about 50% of CVD worldwide, accounts for an estimated 45% of deaths due to heart disease, and 51% of deaths due to stroke (WHO, 2013, Chythra et al., 2013). The high death rate is estimated to be equivalent to about 12.8% (7.5 million) of the annual total deaths in the world (Zarin and Muhammed, 2016)

The burden of hypertension increases with increasing adult population and globalization. It has been found to be associated with an unhealthy lifestyle, which includes tobacco smoking, lack of physical activity, and alcohol consumption. It is currently ahead of tobacco, high cholesterol, unhealthy weight, unsafe sex, and other conditions as a risk factor for global mortality (Pengpid et al., 2019).

Hypertension is a public health challenge in many developing countries with a range of prevalence across regions and countries of the world (Van De Vijver - 2013, Singh - 2017).

The incidence is on the increase, mainly due to a rise in risk factors in low- and middle-income countries (WHO, 2019). It has been referred to as a disease of the African race because of its prevalence on the continent, which is over 46% among the adult population (Ibekwe, 2015; Hajjar et al., 2006; Hossain et al., 2011). Despite its high prevalence among the African population, many Nigerians are not aware of its associated risks and implications. A large percentage of the people areyet to come to terms with the need for regular blood pressure (BP) checkup, nor do they have access to education and services required to prevent and treat the disease. Hence, the prevalence of hypertension continues to rise in Nigeria despite global advancement in economic and healthcare system.

A recent survey in Nigeria has revealed that its prevalence has risen to 35% with its consequential high mortality rate (WHO, 2017). Unfortunately, most of these consequences, which are Cardiovascular and cerebrovascular in nature, are preventable through control of social determinants of health, which are responsible for 90% of our health conditions (Magnan, 2017).

Factors associated with the development of hypertension can be categorized into modifiable and non-modifiable risk factors. The modifiable risk factors comprise obesity, physical inactivity, high salt, and sugar diet, psychological stress, smoking, alcohol consumption, and others (WHO, 2013;Ibekwe, 2015). Non-modifiable factors comprise of age, sex, family history, and ethnic background (World Heart Foundation, 2017).All these associated factors are influenced by the wave of globalization, which is spreading across the World.

The alarming rate of sudden death has become a significant public health challenge in Nigeria. Research has revealed many potential causes of which hypertension is a kingpin. It has been described as the "silent killer" because of its asymptomatic appearance and immense harm to the body in the form of target organ damage (WHO, 2013). The burden of hypertension is high in Africa, and due to rapid population growth and aging, the exact burden on the continent is still far from being known. Hypertension prevalence is currently on the increase with the wave of globalization across Nigeria but many hypertensive individuals are not aware of their condition (Adeloye, Basquill 2014).

The "big three" infectious diseases- Malaria,

tuberculosis and HIV/AIDS coupled with childhood and maternal morbidity are still the prominent causes of mortality within Nigeria and Africa as a whole. However, the burden of hypertension and other non-communicable diseases (NCDs) is rapidly increasing to make Africa a continent of double calamity. The United Nations (alongside other major public health stakeholders) has declared NCDs a cause for global concern.

Recent research has shown that Hypertension is now a leading risk factor for poor health and is on the rise among men and women in both rural and urban areas of Nigeria. Many Nigerians are ignorantly falling victim to this non-communicable disease despite the fact that it can be prevented, controlled, and treated. This is due to lack of understanding of the associated factors. Assessment of these factors is thus essential in curtailing the menace of this significant public health problem.

Relevant past studies in many parts of the world revealed that it is influenced by the socio-cultural, gender, genetic and environmental factors as well as their interactions (Scriabine, 2007; Lydia and Jiang, 2007;WHO,2013). These associated factors vary across the world and have not been thoroughly assessed in Kebbi State, which is transiting from rural to urban figure in the Northwestern part of the Nigeria.

Earlier studies have categorised high blood pressure into the following four stages:

STAGE 1 or Prehypertension is 120/80 to 139/89

STAGE 2 or Mild Hypertension is 140/90 to 159/99

STAGE 3 or Moderate Hypertension is 160/100 to 179/109

STAGE 4 or Severe Hypertension is 180/110 or higher (Vascular Cures).

Hypertension is diagnosed if, when it is measured on two different days, the systolic blood pressure readings on both days is ≥140 mmHg and/or the diastolic blood pressure readings on both days is ≥90 mmHg. (WHO)

Normal Blood Pressure Range

Systolic pressure (mm Hg)	Diastolic pressure (mm Hg)	Pressure Range
130	85	High Normal Blood Pressure
120	80	Normal Blood Pressure
110	75	Low Normal Blood Pressure

Blood Pressure Chart: Low, Normal, High Reading by Age - Disabled.

Optimal Blood Pressure Level

An optimal blood pressure level is 120/80mmHg or lower, and high blood pressure is 140/90 mmHg or higher. Irrespective of age, the lower the blood pressure, the lower the risk of heart attack, heart failure, stroke, and kidney disease.

Optimal blood pressure is less than 120/80. In healthy people, low blood pressure without any symptoms is not usually a concern and does not need to be treated, but low blood pressure can be a sign of an underlying problem -- especially in the elderly -- where it may cause inadequate blood flow to the heart, brain, and other vital organs (Suzanne, 2017).

High Blood Pressure Guidelines

The new ACC/AHA guidelines were developed with nine other health professional organizations and were written by a panel of 21 scientists and health experts who reviewed more than 900 published studies. They are the successors to the Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JNC7), issued in 2003 and overseen by the National Heart, Lung, and Blood Institute (NHLBI). The new guidelines – the first comprehensive set since 2003 – lower the definition of high blood pressure to account for complications that can occur at lower numbers and to allow for earlier intervention. The new definition will result in nearly half of the U.S. adult population (46 percent) having high blood pressure, with the greatest impact expected among younger people.

Additionally, the prevalence of high blood pressure is expected to triple among men under age 45 and double among women fewer than 45. However, only a small

increase is expected in the number of adults requiring antihypertensive medication (Paul et al., 2017). High blood pressure should be treated earlier with lifestyle changes and in some patients with medication – at 130/80 mm Hg rather than 140/90 – based on new American College of Cardiology (ACC) and American Heart Association (AHA) guidelines for the detection, prevention, management and treatment of high blood pressure.

Blood pressure categories in the new guideline are:

Normal: Less than 120/80 mm Hg;

Elevated: Systolic between 120-129 and diastolic less than 80;

Stage 1: Systolic between 130-139or diastolic between 80-89;

Stage 2: Systolic at least 140 or diastolic at least 90 mm Hg;

1. Sexi. Male ii. Female

2. Age (years)

I 18-28 ii.29-38 iii. 39-48 iv. 49-58 v. 59-68 vi. 69-78 vii. >78

3. What tribe are you?

i. Hausaii. Fulani iii. Kabawa iv. Dakarkari v. Kambari vi. Specify

4. Marital status

i. Single ii. Married iii. Separated iv. Divorced v. Widowed

5. Current Employment / Engagement status.,

i. Employed ii. Student iii. Unemployed iv. Retired

6. If employed i. Civil servant ii. Business man/woman iii. Farmer iv Daily labourer v. Specify,,,

7. What is your level of education?

i. No formal education ii. Arabic education iii. Primary education iv. O-level education v. A-level education vi. Undergraduate education vii. Graduate education viii. Postgraduate education,

8. Average monthly income / Grade level i less than N50000 ii N50000 -N100000

iii more than N100000 , ,

Section II; Health Habits and Family History

9. Have you ever been diagnosed of Hypertension? i. No ii. Yes,

10. If yes when? i. <1 month ii. 1 month – 1year iii. >1 year ago,,

11. Were you given drugs by your physician? i. Yes ii. No, iii Not applicable

12. How often do you take your drugs?

i. Regularly ii. Occasionally iii. Whenever you feel your BP is high

iv. I never used the drugs,v. Not applicable

13 Do you have any close relative who was/is suffering from hypertension?

i. Yes ii. No iii. Not sure,

14. If the answer is yes, who among your relatives?

i. Father ii. Mother iii. Sibling iv. Father's sibling v. Mother's sibling Child vi. Father's parents vii. Mother's parents viii. Sibling's child

15. Have you ever smoked cigarette? i. Yes .ii. No Not applicable

16. If the answer is yes, please tell us at what age did you start smoking or snuffing

I.10-19 ii.20-39 iii. 40-49 iv. 50-59 v. >60

17. On average how many cigarettes do you smoke in a day?

i. 1-5 ii. 5-10 iii. 10-15 iv. >15

18. Do you take alcohol? i. Yes ii. No

19. If the answer is yes, how many bottles do you consume in a day?

i. 1-2 ii. 3-5 iii.>5,

20. Do you take/chew Kola nut /Chat? I. Yes ii. No

21. Do you have diabetes/ are you diabetic i. Yes i. No,

Section iii; Nutrition and Diet Information

22. How often do you take soft drink- coke, fanta, pepsi, Maltina,Kunnnu ,sobo etc

At least once daily ii Every other day iii weekly ……

23. How often do you take sugar containing food – Bread, buscuit snacks or any fast food

i. At least once daily ii Every other day iii weekly

24. How many maggi cube/sachet does your family include in a Pot of soup/stew?

i. 1 ii. 2 iii. 3 iv. 4 v. 5 vi. >5…………….,

25. Do you add raw magi or salt to your food? i. Yes ii. No

26. Do you normally add Yaji (pepper and salt) to your food? i. Yes ii.No.,,,,2,,,,,,,,

27. If yes, how often do you add Yaji (pepper and salt) to your food?

i. Always   ii. Sometimes   iii. Once in a while /Occasionally.,,

28.   How often do you consume fruits and vegetables? …fruits and vegetables,

i. <1time /day.   ii. 1 time/dayiii. 2 times/day   iv. >3times/day…

29. Do you take Attayi (stimulant) i. Yes iii .No,,,, iii, Not applicable,

 Section Iv; PHYSICAL ACTIVITY

30. Do you engage in any physical activity or sport (e. g Walking, Running, Skating)

Grinding ,pounding, sweeping, jugging

31. If yes, how many minutes of physical activities do you perform/ day?

i. less than 30 min / day ii 30 min / day iii. More than 30 min /day

32. How many hours do you spend daily sitting down at work or with TV programs, Video games or computer I <30 min ii30-59 min iii.60-89 min iii. >90min

33. For how many hours do you sleep/night

i.<6hrs/ day ii 6- 9hrs / day iii. >10hrs/night,

ANTHROPOMETRIC MEASURMENTS

Anthropometry				
No		Reading 1	Reading 2	Average
1	Height	_____	_____	
2	Weight	_____	_____	
3.	Waist circumference	_____	_____	
4.	Hip circumference	_____	_____	
5	Blood pressure	_____	_____	

 6. Body Mass Index –BMI

 7. Waist Hip Radio-WHR

CONCLUSIONS

This study recorded a high prevalence of hypertension (28.9%). The high prevalence outcome is consistent with the past literature but signals a hidden epidemic and is indicative of the high susceptibility of Kebbi people to many cardiovascular and other blood pressure-related diseases. If confirmed with more nationally representative studies, the finding calls for a systematic routine health screening and regular checkups as well as interventions promoting healthy lifestyles in Nigeria. Early discovery of hypertension will improve prospects and decrease cardiovascular risk and end organ damage as reported by Sadi (2013). Lifestyle modification such as regular exercise, healthy lifestyle and eating can reduce hypertension and its consequent cardiovascularmorbidity and mortality in Kebbi State, in the northwestern region of Nigeria.

Hypertension is a universal public health challengeand has an associationwith Age, gender, ethnicity, Family history, socioeconomic status, lifestyles, diabetes mellitus,frequency of fruits and vegetable intakes, high consumption of salt and sugar, low level of physical exercise, overweight and obesity

The confirmation of a positive relationship of hypertension with increasing age supports the fact that age is an independent risk factor for hypertension and appropriate measures of response are required to

ensure wellness in a growing population.

Identified disparity of prevalence among sex distribution points to the fact that sex-specific intervention is still relevant in combating non-communicable diseases of which hypertension is a leading challenge The observed increasing prevalence of hypertension with rising BMI depicts that overweight and obesity are good predictors of hypertension. The odds of developing hypertension was found to be 2 times more among those in the overweight/obese category.

The negative relationship of income and hypertension in this study calls for recongnition of income status as part of effective prevention strategies in the management of Hypertension in Kebbi State.

The influence of family history on hypertension is a reflection of the fact that blood relatives tend to have many of the same genes that can predispose a person to high blood pressure. Also, they tend to have exposure to similar social determinants as opined by Sadi (2013).

There is a clear relationship between routine sodium chloride intake and blood pressure levels as observed from the outcome of the study which indicated a linear relationship with raw salt intake and in Magi and Yaji.

About one-third of the respondents (28.9%) were hypertensive. The public health repercussion of this discovery is that one in every three adults in Birnin Kebbi is at-risk of cardiovascular ailment (s).

Hypertension is, therefore, a huge public health threat

to the population of Kebbi State. It is largely a concealed epidemic with a low rate of awareness, ineffective Primary, Secondary and Tertiary preventive measures.

The rate at which hypertension is rising in the public is not coordinated with an appropriate strategic response by the health system in Africa. Globally, hypertension and cardiovascular disease, in general, deserve improved attention from policymakers at local, national and international levels. Strategies to raise the awareness of the public on the magnitude of the situation and scale-up implementation of universal health care are of utmost importance to decrease the up-surging but avoidable consequences of elevated blood pressure.

The relatively low differential in prevalence among all categories of income earners is because Kebbi is a rural state with a low standard of living and so the effect of income disparity is not magnified. Income status determines the choice of lifestyles and exposure to social determinants such as stress. This study showed that the income distributions and hypertension were nonlinear like some past studies indicating that elevated levels in low income as well as in high-income groups (Sadi, 2013).Nevertheless, the relationship between socioeconomic status (SES) and hypertension has been reported by many researchers with conflicting results. (Lenget al 2015).

The prevalence of hypertension by self-report and physical measurement was 21.5% and 27.4%, respectively. Several-fold difference between the two measures indicates that a significant number of the population was not aware of their hypertension status which calls for appropriate and timely intervention.

Education plays a significant role in public health awareness. In this study, the level of education was found to be one of the variables that can significantly predict the occurrence of hypertension. Low awareness is expected in a population where about 78% did not complete tertiary education (Table 4.4).This calls for enhanced health literacy on prevention and control of hypertension.In the present study, being -female was more likely to be hypertensive. This finding isnot in line with most previous research reports

2.2% of those that have been previously diagnosed with hypertension were observed to be hypertensive despite using the anti-hypertensive drug. This shows their Hypertensive conditions were not under control and may be indicative of non-adherence or drug failure.

The relative correlation of Hypertension by diagnosis and response confirms the reliability of data and affirms the validity of the outcome.

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