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ABSUMSAJ

Research Article

PREVALENCE AND DETERMINANTS OF HIGH BLOOD PRESSURE AMONG SECONDARY SCHOOL TEACHERS IN OSISIOMA L.G.A IN ABIA STATE, NIGERIA

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ABSTRACT

Background: Hypertension is a chronic medical condition in which the blood pressure in the arteries is elevated. It is one of the most common diseases affecting individuals worldwide. It is a major risk factor for stroke, myocardial infarction, vascular disease and chronic kidney disease.

Aims and objectives: The aim of this study is to ascertain the prevalence and determinants of hypertension among secondary school teachers in Osisoma LGA, Aba, Abia State

Methods and materials: This is an analytical cross-sectional study on the prevalence and determinants of hypertension among secondary school teachers in Osisioma LGA, Aba, Abia State. It was conducted using self-administered questionnaires, anthropometric data was collected using a measuring tape, automated sphygmomanometer and weighing balance. Collated data was analyzed using statistical package for social science (SPSS) version 20.

Results: A sample size of 264 secondary school teachers was used for the study with a mean age of 41.5 ± 10.2 years and a male to female ratio of 1:1.8. There were more married teachers (68.9%) who were mostly Igbos (97%) and Christians (97.3%). Nearly all (94.7%) had attained a tertiary level of education. Their mean weight was 73.0±13.9kg, mean height was 1.65±0.1m and mean BMI was 26.9±4.9kg/m^2. In the blood pressure measurement, 23.3% fell into the category of Stage 1 & stage 2 Hypertension (according to JNC 8 Classification of hypertension). 31.8% were known hypertensive with half of them diagnosed over 6 months ago. Respondents who had a family member who was hypertensive and who did exercises showed a statistical significant association with being hypertensive (P=0.000; P=0.020).

Conclusion: According to the study, there is a moderate-to-high prevalence of hypertension among secondary school teachers and their attitude towards regular blood pressure checking in the management of hypertension is poor.

We therefore recommend that;

Health practitioners should emphasize and re-emphasize the importance of drug compliance and keeping to hospital appointments.

Health campaigns should be carried out by both governmental and non- governmental agencies on the complications of hypertension and the proper attitude to avoid these complications.

KEYWORDS: Prevalence, Determinants, Hypertension, Secondary School Teacher.

INTRODUCTION

Hypertension is the medical term for high blood pressure. It has been called a silent killer because it is asymptomatic. Hypertension is one of the non-communicable diseases (NCD)[1]. It can be defined as systolic blood pressure of 140mmHg or more, or a diastolic blood pressure of 90mmHg or more[2]. Hypertension is a cardiovascular disease of increasing global burden with prevalence in Nigeria ranging from 8% to 46.4%[3].

Hypertension can be Primary or essential when it develops gradually over many years with no identifiable cause,[4] or Secondary when there is presence of an underlying condition. Secondary hypertension tends to appear suddenly and causes higher blood pressure than primary hypertension[4].

According to **Joint National Committee (JNC) 8** classification, hypertension is classified as **normal;** when the systolic blood pressure is < 120 mmHg and a diastolic pressure of < 80mmHg, **prehypertension;** when the systolic blood pressure is 120-139 mmHg OR diastolic blood pressure of 80-89 mmHg, **Stage 1 hypertension; when the Systolic blood pressure is** 140-159mmH OR a diastolic blood pressure of 90-99mmHg and **stage 2 hypertension** when systolic blood pressure **is** >160mmHg or > 100mHg.[5]

Blood pressure is the force exerted by circulating blood against the walls of the arteries. It is influenced by cardiac output, total peripheral resistance and arterial stiffness. Blood pressure that is too low is called hypotension, pressure that is consistently high is called hypertension and normal level is called normotension.[6]

Hypertension is the major cause of premature deaths worldwide. An estimated 1.13billion people worldwide have hypertension, a greater percentage of these live in low and middle-income countries. In 2015, 1 in 4 men and 1 in 5 women had hypertension. One of the global target of NCD is to reduce the prevalence of hypertension by 25% by 2025 (baseline 2010).[7]

The risk factors for hypertension are the behavioral risk factors including consumption of food containing too much fat and salt, not eating enough fruits and vegetables, harmful levels of alcohol abuse, physical inactivity lack of exercise and Poor stress management.

The socioeconomic risk factors including globalization, urbanization, ageing, income education and housing. The metabolic risk factors include which includes obesity, diabetes and raised blood lipid levels. Other risk factors include genetic factors and malformation of blood vessels.

Hypertension is a serious medical condition that significantly increases the risk of heart, brain and

kidney diseases. Complications include stroke, aneurysm, heart failure, kidney failure, dementia etc. Hypertension although asymptomatic can be easily be detected and controlled.[8]

MATERIALS AND METHODS

This was a cross sectional analytical study carried out among 264 teachers in 17 selected secondary schools across Osisioma L.G.A., Aba, Abia State, Nigeria. Self-administered questionnaires were used in obtaining information from consenting teachers across the various classes and their height, blood pressure and weight checked concurrently in order to measure their BMI. Information was collected on the knowledge, attitude, prevalence, and risk factors of hypertension among secondary teachers.

The study population comprised of Secondary school teachers in seventeen secondary schools in Osisioma L.G.A. The schools studied includes; four (4) Government owned schools, THREE (3) Mission (Faith based) schools and ten (10) Private schools. Data was coded, entered into a computer and analyzed using the statistical package for social science (SPSS).

RESULTS

Table 1: Socio-demographic characteristics of the Teachers

Variable	Frequency	Percent (%)
Age group (in years)		
21-30	34	12.9
31-40	**103**	**39.0**
41-50	73	27.7
51-60	45	17.0
61-70	7	2.7
>70	2	0.8
Sex		
Male	94	35.6
Female	**170**	**64.4**
Marital status		
Single	71	26.9
Married	**182**	**68.9**
Widowed	9	3.4
Divorced/separated	2	0.8
Educational level		
None	3	1.1
Primary	3	1.1
Secondary	8	3.0
Tertiary	**250**	**94.7**

Mean age=41.5 ± 10.2 years

Table 1 above shows the socio-demographic characteristics of the respondents. 264 secondary school teachers participated in this study with a mean age of 41.5 ±10.2 years and a male to female ratio of 1:1.8. There were more married teachers (68.9%) who were mostly Igbos (97%) and Christians (97.3%). Nearly all (94.7%) had attained a tertiary level of education.

Table 2: Anthropometric and blood pressure measurements of respondents

Variables	Frequency	Percent (%)
Weight (in Kg)		
43-62	66	25.0
63-82	**137**	**51.9**
83-102	56	21.2
103+	5	1.9
Height (in metres)		
1.38-1.47	2	0.8
1.48-1.57	48	18.2
1.58-1.67	**116**	**43.9**
1.68-1.77	71	26.9
1.78-1.87	13	4.9
1.88+	14	5.3
Body mass index (in kg/m^2)		
Underweight (<18.5)	2	0.8
Normal (18.5-24.9)	103	39.0
Overweight (25-29.9)	92	34.8
Obese (30+)	67	25.4
Blood pressure (mmHg)		
Normal (<120/<80)	**115**	**43.6**
Prehypertension (120-139/80-89)	85	32.2
Stage 1 (140-159/90-99)	48	18.2
Stage 2 (>160/>100)	16	6.1

Mean weight=73.0 ±13.9kg; Mean height=1.65±0.1m; Mean BMI=26.9±4.9kg/m^2

Table 2 above shows the anthropometric and blood pressure measurements of the teachers. Their mean weight was 73.0±13.9kg, mean height was 1.65±0.1m and mean BMI was 26.9±4.9kg/m^2. 39% of the teachers fall within the normal body mass index, 34.8% were overweight while 25% were obese. In the blood pressure measurement, 23.3% fell into the category of Stage 1 & Stage 2 Hypertension (according to JNC 8 Classification of hypertension).

Table 3a: Prevalence of hypertension

Variable	Frequency	Percent (%)
Have you been diagnosed of HTN before?		
Yes	84	31.8
No	**180**	**68.2**
If Yes, how long ago?	**n=84**	
<1 month ago	16	19.0
2-6 months ago	26	31.0
>6 months ago	**42**	**50.0**
Are you currently on antihypertensives?		
Yes	**58**	**69.0**
No	26	31.0
How often do you take the medications?		
Daily	**20**	**33.9**
Alternate days	11	18.6
Weekly	4	6.8
When I feel BP is high	18	30.5
Whenever I remember	6	10.2
Do you keep hospital appointments?		
Yes	25	29.4
No	**60**	**70.6**
Have you ever had a stroke?	**n=232**	
Yes	8	3.4
Not at all	**224**	**96.6**
Do you smoke?	**n=264**	
Yes	10	3.8
No	**254**	**96.2**
If yes, how often?	**n=10**	
Daily	2	20.0
Weekly	2	20.0
Occasionally	**6**	**60.0**
Have you smoked at least 100 cigars in your lifetime?		
Yes	2	20.0
No	8	80.0

Table 3a shows the prevalence of hypertension among the respondents. 31.8% were known hypertensives with half of them diagnosed over 6 months ago. Out of these, 69% are on antihypertensives, 33.9% of them took them daily while about 31% did so when they felt the BP was high. Only 29% kept hospital appointments and 3.4% have ever had a stroke. Majority have never smoked; those that did, smoked occasionally (60%) with 20% of them having smoked at least 100 cigars in their lifetime.

Table 3 b: Prevalence of hypertension

Do you take alcohol?		
Yes	103	39.0
Not at all	161	61.0
If yes, how often?		
Daily	3	2.9
Weekly	10	9.7
Occasionally	90	87.4
Is any family member hypertensive?		
Yes	112	42.4
No	152	57.6
Are you diabetic?		
Yes	14	5.3
No	250	94.7
Do you exercise?		
Yes	219	83.0
No	45	17.0
If Yes, how often?	**n=219**	
Daily	96	43.8
Weekly	39	17.8
Monthly	84	38.4
Do you take fruits & vegetables?		
Yes	259	98.1
No	5	1.9
If Yes, how often?	**n=259**	
Daily	66	25.4
Alternate days	49	18.8
Weekly	49	18.8
When I feel like it	60	23.1
When I can afford it	35	13.9

Table 3b shows that 39% of the respondents took alcohol, 87.4% of them did so occasionally; 42.4% had a family member who was hypertensive while only 5% had been diagnosed with diabetes mellitus. Majority (83%) exercised, mostly daily (43.8%) and 38.4% exercised monthly. Nearly all (98%) took fruits daily (25.4%), when they felt like it (23%) and on alternate days (18.8%).

Table 4: Determinants of Hypertension

Variables	Hypertension (%)	No hypertension (%)	χ^2	P-value
BMI (in kg/m^2)				
Underweight	0(0.0)	2(100.0)		
Normal	24(23.3)	79(76.7)	6.976(FT)	0.057
Overweight	33(35.9)	59(64.1)		
Obese	27(40.3)	40(59.7)		
Do you smoke?				
Yes	3(30.0)	7(70.0)		
Not at all	81(31.9)	173(68.1)	0.016	1.000
Do you take alcohol?				
Yes	26(25.2)	77(74.8)		
Not at all	58(36.0)	103(64.0)	3.366	0.078
Hypertensive family member?				
Yes	50(44.6)	62(55.4)		
No	34(22.4)	118(77.6)	14.748	0.000*
Are you diabetic?				
Yes	5(35.7)	9(64.3)		
No	79(31.6)	171(68.4)	0.103	0.772
Do you exercise?				
Yes	63(28.6)	157(71.4)		
No	21(47.7)	23(52.3)	6.160	0.020*
Fruits & vegetables intake?				
Yes	83(32.0)	176(68.0)	0.328	1.000
No	1(20.0)	4(80.0)		

FT=Fisher's exact test *Statistical significance

Table 4 describes the determinants of hypertension among the respondents. The BMI, whether they smoked, took alcohol, were diabetic or took fruits and vegetables were associated with hypertension though there was no statistical significance. Respondents who had a family member who was hypertensive and who did exercises showed a statistical significant association with being hypertensive (P=0.000; P=0.020).

DISCUSSION

This study was done to assess the prevalence and determinants of high blood pressure (hypertension) among secondary school teachers in Osisioma local government Area in Abia State. The study shows that 31.8% of the respondents are hypertensive, this is comparable to a screening

programme carried out in 2017 where 36.2% of the respondents were hypertensive.[9] It is slightly higher compared to studies carried out in a population in Federal Capital Territory, Abuja (21.7%),[10] a population in Enugu (21.1%),[11] and a Federal University in South West Nigeria (21%)[12] respectively. However, a study carried out in Benue state in Nigeria, and Libya showed a much lower prevalence of 15.7% and 15.1% respectively[13,14] in contrast to this study and similar studies carried out in Sri Lanka and Addis Ababa with reported prevalence of 21.9% and 21.8% respectively[15,16]

In the survey for knowledge on determinants, the BMI, whether they smoked, took alcohol, were diabetic or took fruits and vegetables were associated with hypertension though there was no statistical significance. Respondents who had a family member who was hypertensive and who did exercises showed a statistical significant association with being hypertensive. A similar study carried out in a market population in Awka, Nigeria, established a significant association between hypertension and BMI, educational status, diabetes mellitus, economic status, marital status, age and number of persons living in the same apartment. Association between hypertension and alcohol use was not found to be significant[17].

CONCLUSION

Hypertension is asymptomatic with high mortality and morbidity rate. The prevalence amongst secondary school teachers is high and determinants such as exercise and familial occurrence of hypertension are significantly associated with hypertension. We therefore recommend that continuous awareness on the risk factors and determinants of hypertension should be carried out among teachers in the secondary schools.

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interests regarding the publication of this paper.

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