

## Some Risk factors among hypertensive Clients in an Outpatient Clinic of a Tertiary health centre, Southern Nigeria.

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### Abstract:

**Introduction:** Hypertension has risen to become a notable public health issue, consuming a reasonable amount of various countries' health budget. Despite increasing awareness of predisposing risk factors, there is surging increase in modifiable risk factors for hypertension and so also the disease among residents in Bayelsa state. The research therefore, highlights the prevailing risk factors among known hypertensive patients in Bayelsa state and determinants.

**Materials and Method:** A total of 172 hypertensive patients visiting a cardiology clinic in Federal Medical Center, Bayelsa Nigeria were recruited for the study, 93 males and 79 females. A short interview was carried out to assess risk for hypertension such as tobacco, salt consumption to already cooked food, exercise lifestyle and family history of hypertension. Total numbers recruited was determined using formulae for population sampling. Data was recorded and analyzed using SPSS.

**Results:** Greater than 55 percent of these clients visiting the clinics were 50 years and above, and more than 50 percent of had no educational status or of low educational status (primary level). At least a third proportion of the studied population either consume tobacco product, or add salt to already cooked food or practice exercise as lifestyle or had positive family history of hypertension. The determinants for these observations had arisen from socio-cultural background, educational status, and religious background.

**Conclusion:** Strategies for influencing some of the modifiable risk factors of hypertension (HTN) can only be more effective by directing public health effort to their cultural, religious and socioeconomic background.

**Keywords:** Hypertension, Tobacco, Exercise, Family History, salt intake

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### I. Introduction.

Hypertension in Nigeria is a widespread problem of immense social and economic importance because of its high prevalence and the severity of its complications. Hypertension has been acknowledged as the greatest and established risk factor for cardiovascular diseases.<sup>1</sup> According to the seventh joint National committee (JNC) on prevention, detection, evaluation and treatment of high blood pressure, the prevalence estimates for hypertension may be as much as 1 billion individuals and approximately 7.1 million deaths per year may be attributable to hypertension.<sup>2</sup> Attention was first drawn to the racial difference in hypertension between blacks and whites in 1932.<sup>3</sup> In a study involving 6000 blacks and 8000 whites in New Orleans, they found a higher level of elevated blood pressure among blacks. Since then, various large multi-center studies in the United States have shown that the prevalence of hypertension is much more common in blacks than in the whites<sup>4, 5</sup>. The world Health organization (WHO) estimates that Hypertension associated morbidity in sub-Saharan Africa may rise to 20% by the year 2020<sup>6</sup>. It is against this background that this descriptive study was to investigate the presence of various risk factors that lead to this increased prevalence of hypertension.

Essential hypertension has no definable cause, and over 95% of cases of the disease fall under this category.<sup>8</sup> Hypertension may be secondary to other diseases but 5% of patients have secondary hypertension which is of known origin. It is observed though that having a personal family history of hypertension increases the likelihood that an individual will develop hypertension, the disease is four times more common in black than in white people, accelerates more rapidly and is often more severe with higher mortality in black patients.<sup>9-12</sup>

Approximately one third of the essential hypertension population is responsive to increased sodium intake.<sup>13</sup>

Cigarette smoking is a known risk factor for cardiovascular diseases, it may also be a risk factor for the development of hypertension. Sedentary lifestyle and stress have also been associated with increased risk for hypertension. The aim was of this manuscript evaluates the prevalence of risk factors of hypertension which includes smoking, exercise lifestyle, positive family history, and salt intake among hypertensive subject.

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## II. Materials And Method

Bayelsa State is a state in southern Nigeria in the core of Niger Delta region, between Delta State and Rivers State.

The study centre was Federal medical centre(FMC) which is located in Yenagoa, the state capital, within the city centre, beside a small creek, in Yenagoa LGA of Bayelsa State and provide tertiary level health care. The study involved hypertensive patients who visited the cardiology unit of FMC.

A minimum sample size was calculated using the formula for cross sectional study and allowing 10% non-response. The statistical formula for sample size:

$$n = \frac{Z^2 PQ}{D^2}$$

Where  $n$  = minimum sample size

$Z$  = standard normal deviation set at 1.96 corresponding to 95% confidence level

$P$  = the prevalence of the attribute under study which is set at 32.3%

$Q = 1 - P = 0.677$

$D = 0.05$

Therefore substituting the above values into the formula;

$$n = \frac{1.96^2 \times 0.323 \times 0.677}{0.05^2}$$

$$n = 160.3 \approx 160.$$

Assuming an attrition/ non-response rate of 10%

$$n = 160 + 16 = 176.$$

The study was a descriptive cross-sectional study.

Ethical approval to conduct this study was obtained from the Ethics and Research Committee of the college of Health sciences and individual verbal informed consent was obtained from each participant before inclusion in the study. Additional assurances of confidentiality was given to all subjects.

Subjects includes all patients with Hypertension irrespective of duration of the disease.

Those that voluntarily decline consent or showed unwillingness to participate in the study after detailed explanation of the purpose of this research and the assurance of confidentiality were excluded and immediately replaced by others. The materials in this study series included ; pen, pencils, calculator, weight and height scale.

Brief interview was also taken to ascertain the presence of the other risk factors such as age, sex, practise of additional salt use already served food, tobacco and alcohol consumption and a family history. The study duration lasted for 12weeks.

The data was analysed using the SPSS software.

## III. Results

The studied population revealed that greater than 55 percent of the hypertensive clients surveyed from the clinic were 50 years and above, and about half of the population are of low-educational status(non or primary). More male were affected than females. Table 1

**Table 1; SOCIO-DEMOGRAPHIC CHARACTERISTICS OF THE PATIENTS**

	male	female	Total
<b>Age(years)</b>			
<30	14(8.1)	17(9.9)	31(18.0)
30-39	8(4.7)	5(2.9)	13(7.6)
40-49	14(8.1)	16(9.3)	30(17.4)
50-59	23(13.4)	13(7.6)	36(20.9)
60+	34(19.0)	28(16.3)	62(36.0)
<b>Educational status</b>			
No Formal education	21(12.2)	24(14.0)	45(26.2)
Primary	39(22.7)	32(18.6)	71(41.3)
Secondary	16(9.3)	11(6.4)	27(15.7)
Tertiary	17(9.9)	12(7.0)	29(16.9)

From the Table 2&3 above, More male consume tobacco product than their female counterpart. There is a significant relationship between Age of the hypertensive patients and their consumption of Tobacco. The consumption of tobacco is more prevalent in patient within the age category of 60years and above. The minimum period of cigarette consumption is 9year ago and the maximum period is 50years ago. The average period of cigarette consumption is approximately 20years .

**TABLE 2.0: GENDER USE OF TOBACCO**

	male	female	Total
	Frequency (%)	Frequency (%)	Frequency (%)
<b>Yes</b>	19(11.0)	13(7.6)	32(18.6)
<b>No</b>	74(43.0)	66(38.4)	140(81.4)
<b>Total</b>	93(54.1)	79(45.9)	172(100.0)

Chi-square= 0.446

P-value= 0.504

**TABLE 3: AGE Distribution for TOBACCO CONSUMPTION**

Age	Yes	No	Total
<30	0	31(18.0)	31(18.0)
30-39	3(1.7)	10(5.8)	13(7.6)
40-49	4(2.3)	26(15.1)	30(17.4)
50-59	4(2.3)	32(18.6)	36(20.9)
60+	21(12.2)	41(23.8)	62(36.0)
<b>Total</b>	32(18.6)	140(81.4)	172(100.0)

Chi-square = 18.685

P-value = 0.001(<0.005)

From the table 4, the percentage of patients who do exercises is 31.4% and those who do not do exercise is 68.6%. This shows that it is a few number of patient do exercise. There is no significant difference between male or female client in their exercise activities.

The percentage of patients who has family history of hypertension is 36.6% , see table 5. Those who have no family history of hypertension is 59.9% and those who have no idea of family history of hypertension is 3.5%.

**TABLE4 :EXERCISE ACTIVITY AMONG DIFFERENT Genders**

	male	Female	Total
	Frequency	Frequency	Frequency
<b>Yes</b>	29(16.9)	25(14.5)	54(31.4)
<b>No</b>	64(37.2)	54(31.4)	118(68.6)
<b>Total</b>	93(54.1)	79(45.9)	172(100.0)

Chi-square = 0.004

P-value= 0.948(>0.05)

**TABLE 5: PREVALENCE OF HYPETENSION DUE TO FAMILY HISTORY**

	male	female	Total
	Frequency	Frequency	Frequency
<b>Presence of Positive family History</b>	34(19.8)	29(16.9)	63(36.6)
<b>No family history</b>	57(33.1)	46(26.7)	103(59.9)
<b>No idea of family history</b>	2(1.2)	4(2.3)	6(3.5)
<b>Total</b>	93(54.1)	79(45.9)	172(100.0)

From the table 6 above, the percentage of respondents who add more salts to their food is 40.7% while those who do not add salt is 59.3%.

From table 7 greater than 90 percent of the studied population were diagnosed less than or 9 years ago . This reveals that majority of the hypertensive patients were diagnosed when their age have advanced, because greater than 55 percent of persons were more than 50 years.

**Table 6: SALT INTAKE practice to Served food on table**

	male	female	Total
	Frequency (%)	Frequency (%)	Frequency (%)
Yes	41(23.8)	29(16.9)	70(40.7)
No	52(30.2)	50(29.1)	102(59.3)
<b>Total</b>	93(54.1)	79(45.9)	172(100.0)

**Table 7: YEARS OF DIAGNOSIS**

Period of Diagnosis	Frequency	Percent
<1 year	16	9.3
1-9years	145	84.3
10-19years	6	3.5
>20years	5	2.9
<b>Total</b>	172	100

#### IV. Discussion

Hypertension becomes more prevalent after the 4<sup>th</sup> decade of life, increasing in the frequency of occurrence in the fifth decade and reaching a peak in the 60's. This was confirmed by our study where at least 55 percent of them were above 50 years of age. Most hypertensive patients are actually diagnosed in their fifties. The middle age group is a known risk factor for development of obesity and is highly associated with it<sup>14</sup>

In comparism with a study conducted in a rural community in India,<sup>15</sup> which identified the prevalence and risk factors for hypertension, results showed that with the exception of age, all the risk factors identified were potentially modifiable. In comparism another survey in South- East Nigeria,<sup>16</sup> which estimated the prevalence of major cardiovascular risk factors in both men and women aged 40–70 years, it showed that only the prevalence of hypertension and dysglycaemia was higher in men. Our study revealed more males than female.

This study shows that a total of 73.8% of the study population were a least formally educated at primary level, This implies that Hypertension is far more common among educated people as compared to persons without formal education, the disease is hardly reported among primitive people and is not common among the rural population.

However, in comparism to a Nigerian study,<sup>16</sup> showed that a high prevalence of Cerebrovascular disease(CVD) risk factors existed among apparently healthy adult Nigerians, despite the fact that over 50% of are subjects illiterate. This indicates that other factors (poor socioeconomic conditions, stress) found within an illiterate population that is absent or reduced in an educated population may be responsible for the increased prevalence seen such the Nigerian study.

Other studies<sup>17</sup> showed that the prevalence of HTN is comparable between rural populations who are predominantly illiterate as compared to urban populations who are mainly educated.

A study<sup>17</sup>, aimed to assess and compare the prevalence of hypertension and determinants of blood pressure in four sub saharan populations in rural Nigeria and Kenya, and urban Namibia and Tanzania, results revealed that the prevalence of Hypertension was comparable in both educated and illiterate populations, therefore there may not be significant difference by virtue of educational status only, but other factors tend to interplay leading to hypertension because most uneducated people aren't sedentary simply because their means of livelihood is

characterized by increased physical activity, such as farming, fishing, trading, and craftsmanship. But when they do develop hypertension, its most likely as a result of stress of life to make ends-meet. Educated people are exposed to more psychological and physical stress e.g pollution and social pressure to meet up societal demands and norms, they have reduced family social support. The educated persons are exposed to processed foods which have a high salt and fat content as well as red meat as compared to uneducated counterpart.

Most educated persons have better health seeking behaviour as compared to uneducated people, and are hence, more are like to go for a routine check-up.(most cases of HTN are diagnosed via routine check-up.)

A study<sup>18</sup>, in India, showed that males were found to be more likely to be hypertensive than females, the story may not be different with our study as well.

The study shows that 68.6 percent of patients do not practice exercising as a lifestyle. Advancing age also deter people from exercises, which may be a factor in the study as majority of the patients were already 50 years and above. In comparison, a study conducted in Zambia showed that a sedentary lifestyle is an independent factor associated with hypertension, comparing participants who spent less than 1.5 hours sitting or reclining on a typical day with those who spent 3.5 hours or more, where 21% more likely to have hypertension. Consequently strong recommendation for health education and structural interventions to promote healthier lifestyles should be encouraged taking into account that sedentary lifestyle is a modifiable risk factors. Another study<sup>19</sup> showed that not engaging in daily vigorous exercise, was one of five modifiable risk factors associated with incident hypertension in women, although a low risk factor.

The results of this study showed that the percentage of respondents who add salt to their already cooked food, was 40.7% which is a significant portion of the sampled population. The increased salt intake is a known modifiable risk factor of hypertension.

It is a cultural norm among the Ijaws for high taste for salt (who make up majority of the population) especially among those living in fresh water areas.

A study<sup>20</sup>, showed that increased salt intake raises blood pressure and this increase may initiate changes in arterioles and arteries that characterize hypertension. A comparison of the aforementioned study<sup>20</sup> with ours, showed that increased salt intake is associated with Hypertension.

The results for years of diagnosis showed that an overwhelming majority of the patients have been diagnosed with HTN between 1-9 years. This reveals that on the average, most patients were exposed to some modifiable risk factors prior to their diagnosis, e.g alcohol exposure on the average is 24 years, as well as increased salt intake. This study has shown that there is an association between certain risk factors and the exposure of subjects to these risk factors as seen in the number of years before diagnosis.

From the results, the percentage of patients who smoke tobacco is 18.6%. The shows that the prevalence of smoking is very low among the subjects and this may be due to; religious reasons, in Nigeria , and especially in Yenagoa most subjects are nominal Christians and smoking is a taboo in most Christian denominations, hence most people do not smoke, secondly, cultural reasons, smoking is frowned upon by the prevailing traditional systems and beliefs. Thirdly, for health reasons; the vast majority of people today are aware of the health risks associated with smoking largely due to effective public education and the mass media. The consumption of tobacco is more prevalent in patient within the age category of 60 years and above from the study. Another cultural practice which should be watched out for is the used of grounded dry tobacco dust already mixed with grounded potash stone that is sniffed by elderly in this region of Nigeria. This practice emanate from cultural background.

The percentage of patients who has family history of hypertension was 36.6%.It showed that majority of the patients have no family history, while nearly a third have a positive history. However, in comparison with another study<sup>21</sup>, the prevalence of a positive family history of HTN is far higher when compared to this study. The reason for the differences ,was that ,our study was done in a developing country, Nigeria, while the aforementioned study<sup>21</sup> was in Tirane, capital of Albania. Secondly, most of respondents in a developed country would be aware of the exact diseases affecting family members as well as cause of death, essential HTN predominant among blacks, therefore can occur independent of a positive family history and some respondents in this study were not aware of any family history.

## V. Conclusion

In this study series, risk factors prevailing among the hypertensive patients such as salt and tobacco consumption, poor exercise lifestyle, are determined by interwoven effects of culture, religion and educational, socio-economic status therefore could be modified through strategies involving the socio-cultural pattern of the people at risk for hypertension.

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