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ATTRIBUTION OF CAUSES OF HIGH BLOOD PRESSURE AMONG MARRIED ADULTS IN OGBOMOSO, OYO STATE

ALWAJUD-ADEWUSI M.B. [1]
aliwajudmariam@yahoo.com

ODEBODE A.A. [1]
adeolaodebode@ymail.com

MUSTAPHA M.L.A. [1]

ADEGBOYEGA L.O. [1]
adegboyegalateef@gmail.com

[1]Dept of Counsellor Education, University of Ilorin.

Abstract
High blood pressure is a health problem with devastating consequences. This study aimed to investigate the attributed causes of high blood pressure among married adults in Ogbomoso. The descriptive research design was employed for the study. The simple random and proportionate sampling techniques were employed in selecting samples from selected local government areas. The t-test and Analysis of Variance (ANOVA) were used to analyse the data generated. The hypotheses were tested at 0.05 level of significance. The results showed that there was no significant difference in the attributed causes of high blood pressure on the basis of gender. However, there were significant differences on the bases of age and educational level. It was recommended that healthy lifestyle habits such as regular exercise, less salt consumption, adequate intake of fruits and vegetables, reduction of alcohol intake and smoking should be encouraged to reduce the incidence of high blood pressure.

Key words: High blood pressure, Attribution, Ogbomoso

Introduction
Blood is the medium by which nutrients and oxygen are sent to all parts of the body. Blood provides the body with oxygen and nutrients and also performs the function of removing the

metabolic wastes. The heart is the organ of the body that performs the pumping of the blood to all parts of the body. The heart is a muscular organ in humans which pumps blood through the blood vessels of the circulatory system.

High blood pressure (HBP) also known as hypertension is an indication that the heart is working hard to pump blood round the body (Blood Pressure Association, 2008). High blood pressure forces the heart to work than necessary in order to pump blood to the rest of the body. This occurrence makes the heart becomes thicker, stiffer and less able to perform its job; thus endangers the heart and can result into sudden cardiac death. HBP puts extra strain on the blood vessels, which can impair the functions of the brain, kidneys and other organs in the body. High blood pressure (hypertension) is generally a chronic condition that is often associated with few or no symptoms. Individual can be living with HBP for years without knowing and is causing a serious damage to the organs of the body. Sometimes, symptoms occur when the blood pressure spikes extremely to be considered as a medical emergency.

Blood pressure reflects the amount of blood discharged from the left or right ventricle per minute, the quality of the arteries, the blood volume and blood viscosity. Blood pressure is the force that needs to be exerted to enable blood circulates to all parts of the human body (Onwubere, 2013). It is measured in millimeters of mercury (mmHg). Blood pressure readings are taken with an instrument called sphygmomanometer. According to American Heart Association (2014), blood pressure is usually measured in two parts namely: systolic blood pressure (the upper number) and the diastolic blood pressure (the lower number). This is demonstrated whenever blood pressure reading is taken, it is usually recorded as X/Y where X is the systolic blood pressure while Y represents the diastolic blood pressure.

Classification of Blood Pressure

Blood Pressure Category	Systolic mmHg (upper reading)	Diastolic mmHg (Lower reading)
Normal	Less than 120	Less than 80
Prehypertension	120-139	80-89
High Blood Pressure (hypertension) stage 1	140-159	90-99
High blood pressure (hypertension) stage 2	160 or higher	100 or higher
Hypertensive crisis (emergency care needed)	Higher than 180	Higher than 110

Source: American Heart Association, (2014).

A healthy blood pressure is under 120/80mmHg. A blood pressure reading of 120-139 systolic and 80-89 diastolic is defined as prehypertension. This indicates that the blood pressure is not high enough to be called high blood pressure (hypertension), but it is higher than normal. However, if the systolic blood pressure (upper reading) is 140 or greater and the diastolic blood pressure is 90 or greater, then the condition is termed high blood pressure also known as hypertension (American Heart Association, 2014).

According to Diwe, Enwere, Uwakwe, Duru and Chineke (2015), hypertension is prevalent among Nigerians and is associated with high level of morbidity and mortality. Iyalomhe and Iyalomhe (2010); Onyekwere, Ezebuiro, and Samuel (2013) reported that hypertension is the commonest non-communicable disease with over 4.3million Nigerians above the age of 15 years classified as being hypertensive. In a study carried out by Obinna and Cletus (2011), it was revealed that the prevalence of hypertension in Nigeria is high. The prevalence of hypertension in the United States of America ranges from 4% in those that are 18-29 years old to 65% in 80 years and above (Ilyas, 2009). The prevalence of hypertension in Nigeria varies extensively between studies; it was reported by Diwe, Enwere, Uwakwe, Duru and Chineke (2015) that the prevalence of hypertension in Nigeria ranges from 8 to 64% while Obinna and Cletus (2011) reported that the prevalence of hypertension ranges from a minimum of 12.4% to a maximum of 34.8%.

The complications of high blood pressure are enormous. The National Institutes of Health NIH (2015) reported some of these complications: artery damage and narrowing which damage the cells of the arteries inner lining, thus blocking blood flow to the heart and results into heart attack. Enlarged heart is another complication of hypertension which causes thickness of the ventricle and thereby limits the ability of the ventricles to pump blood to the body. High blood pressure also causes blood clots to form in the arteries leading to the brain which blocks the flow of blood to the brain and leads to the death of the brain cells which results into stroke. Aneurysm is a condition in which constant pressure of blood moving through a weakened artery causes a section of its wall to enlarge and form a bulge. An aneurysm can eventually leads to a life-threatening internal bleeding.

There are several factors that predispose individuals to high blood pressure (hypertension). Some of these factors are: Family History; individuals born in a family with history of hypertension is likely to develop hypertension. This suggests that there is a genetic basis for some cases of high blood pressure. However, this does not mean that if one or both parents have HBP, the offspring will always develop HBP (Marvin Moser, 1992). Onyekwere, Ezebuiro and Samuel (2013) opined that excessive salt in the diet and being overweight are factors that can increase the risk of hypertension. Diwe, Enwere, Uwakwe, Duru, and Chineke (2015) stated that inadequate physical activities (sedentary lifestyle), increasing age contribute to the development of high blood pressure. In addition, Blood Pressure

Association (2008) remarked that obstructive sleep, obesity, inadequate fruits and vegetables, lack of physical exercise, too much alcohol intake, caffeine-based drinks and smoking are factors that can cause high blood pressure.

Research Questions

The following research questions were raised to guide the study.

1. What are the attributed causes of high blood pressure among married adults in Ogbomoso, Oyo state?
2. Is there any difference in the attributed causes of high blood pressure among married adults in Ogbomoso based on gender?
3. Is there any difference in the attributed causes of high blood pressure among married adults in Ogbomoso based on age?
4. Is there any difference in the attributed causes of high blood pressure among married adults in Ogbomoso based on highest educational qualification?

Research Hypotheses

1. There is no significant difference in the attributed causes of high blood pressure among married adults in Ogbomoso based on gender.
2. There is no significant difference in the attributed causes of high blood pressure among married adults in Ogbomoso based on age.
3. There is no significant difference in the attributed causes of high blood pressure among married adults in Ogbomoso based on highest educational qualification.

Methodology

The research design adopted for this study was a descriptive survey. The population for the study consists of all married adults in Ogbomoso while the target population comprised married adults in three selected local government areas. The local government areas located in Ogbomoso are Ogbomoso North, Ogbomoso South, Surulere, Orire and Ogo Oluwa. Simple random sampling technique was used to select three (3) out of the five (5) local government areas and these three are: Ogbomoso North, Orire and Ogo Oluwa local government areas.

According to the National Population Commission (2006), the total population of married adults in the aforementioned local government areas are: 43 661; 24 023; 33 303; 38 886 and 15 990 respectively. Proportionate sampling technique was then used to select 89 respondents from Ogbomoso North, 79 participants from Orire Local government while 32 married adults was selected from Ogo Oluwa local government areas making a total number of 200 respondents that participated in the study. The respondents from Ogo Oluwa local government (32) were this small in size because they have the least population (15, 990)

among the respondents from all the local government areas. The proportionate sampling was employed to arrive at the 200 sample size because the number of married adults in each local government is not evenly distributed.

The instrument used to collect the data for this study was titled "Attribution of Causes of High Blood Pressure Questionnaire (ACHBPQ). The instrument was designed by the researchers. The questionnaire was made up of two sections; the first section was designed to elicit information on the demographic data of the respondents such as gender, age and educational level while the second section of the questionnaire comprised 20 items that seek information on the attributed causes of hypertension. The validity of the instrument was established while the test-retest method was used to establish its reliability.

Results
This section presents the analysis of data; the data collected were analyzed using the descriptive statistics of mean and rank order and inferential statistics. The t-test and Analysis of Variance (ANOVA) statistical tools were employed to analyze the hypotheses at 0.05 level of significance.

Table 1: Mean and rank order of attributed causes of hypertension

Item No	In my own opinion, the attributed causes of hypertension are:	Mean	Rank
3	lack of physical exercises	3.17	1st
2	being overweight	3.15	2nd
12	getting depressed from emotional disturbances	3.08	3rd
7	old age	2.03	4th
18	too much salt in the diet	3.02	5th
1	regular intake of alcohol	2.99	6th
13	family history of high blood pressure	2.97	7th
5	excessive intake of hard drugs	2.96	8th
17	excessive shock or anxiety	2.94	9th
15	complications of other diseases	2.93	10th
20	resulting impact from certain medications	2.91	11th
8	difficulty with breathing during sleeping	2.90	12th
10	accumulated fatigue and stress	2.89	13th
9	chronic kidney disease	2.86	14th
19	certain defect in blood vessels	2.80	15th
6	ingestion of poisonous substance	2.78	16th
11	engaging in high level of thinking	2.77	17th
14	regular poor diet	2.63	18th
4	consistent use of oral contraceptives	2.58	19th
16	adrenal and thyroid disorders	2.48	20th

Hypotheses Testing

Three null hypotheses were generated and as well tested for this study. The hypotheses were tested using t-test and ANOVA statistical methods at 0.05% level of significance.

Hypothesis One:

There is no significant difference in the attributed causes of hypertension among married adults in Ogbomoso based on gender.

Table 2: t-test result showing difference in respondents' attributed causes of hypertension based on gender

Gender	N	Mean	SD	df	Cal. t-value	Crit. t-value	p-value
Male	98	57.81	14.84				
				198	.02	1.96	.98
Female	102	57.85	14.47				

Table 2 shows that the calculated t-value of .02 is less than the critical t-value of 1.96, while the p-value of .98 is greater at 0.05 level of significance. This indicates no significant difference, thus, the hypothesis is accepted. Therefore, there is no significant difference in the attributed causes of hypertension among married adults in Ogbomosho based on gender.

Hypothesis Two:

There is no significant difference in the attributed causes of hypertension among married adults in Ogbomosho based on age.

Table 3: ANOVA result showing difference in respondents' attributed causes of hypertension based on age

Source	SS	df	MS	Cal. F-value	Crit. F-value	p-value
BG	1911.385	3	637.128	3.08	2.60	.03
WG	40614.835	196	207.219			
Total	42526.220	199				

Table 3 shows that the calculated F-value of 3.08 is greater than the critical F-value of 2.60, while the calculated p-value of .03 is lesser at 0.05 level of significance. This indicates a significant difference; hence, the hypothesis is rejected. Therefore, there is a significant difference in the attributed causes of hypertension among married adults in Ogbomoso based on age. A further analysis of Duncan Multiple Range Test (DMRT) is then carried out to find out which of the age bracket contribute to the difference noted in table 3.

Table 4: DMRT showing which age group of respondents' responsible for the difference in their attributed causes of hypertension

Duncan grouping	N	Mean	Group	Age
A	77	56.08	1	40-49 years
B	33	56.21	1	50 years & above
C	52	56.81	1	30-39 years
D	38	64.18	2	20-29 years

Table 4 shows that the mean scores (56.08, 56.21 and 56.81) of group 1 slightly different from one another. That is the difference in these mean scores is less than 1, while the mean score of group 2 (64.18) is greater than that of group 1. This indicates that the respondents within the age bracket 20-29 years old contribute to the difference noted in table 4. This might be due to the fact that they are still within the youthful age and may not have had the experience of being hypertensive.

Hypothesis Three:
There is no significant difference in the attributed causes of hypertension among married adults in Ogbomoso based on highest educational level.

Table 5: ANOVA result showing difference in respondents' attributed causes of hypertension based on highest educational level

Source	SS	df	MS	Cal. F-value	Crit. F-value	p-value
BG	1608.266	2	804.133	3.87	3.00	.02
WG	40917.954	197	207.705			
Total	42526.220	199				

Table 5 shows that the calculated F-value of 3.87 is greater than the critical F-value of 3.00, while the calculated p-value of .02 is lesser at 0.05 level of significance. This indicates a significant difference; hence, the hypothesis is rejected. Therefore, there is a significant difference in the attributed causes of hypertension among married adults in Ogbomoso based on highest educational level. A further analysis of Duncan Multiple Range Test (DMRT) is then carried out to find out which educational level contributes to the difference noted in table 5.

Table 6: DMRT showing which educational level of respondents' responsible for the difference in their attributed causes of hypertension

Duncan grouping	N	Mean	Group	HEL
A	7	43.71	1	Primary
B	131	57.71	2	Tertiary
C	62	59.68	3	Secondary

Table 6 shows that groups 1 (with mean score of 43.71), 2 (with mean score of 57.71) and 3 (with mean score of 59.68) are largely different from one another. However, the mean score (59.68) of group 3 is greater than that of group 1 and 2. This indicates that the respondents with secondary school certificate contribute to the difference noted in table 6. The explanation for this group of respondents could be that the level of education is neither too low nor too high to have attributed to the causes of hypertension noted factors.

Discussion

Table 1 shows that 19 out of the 20 items on the attributed causes of hypertension have mean scores of 2.50 and above. This indicates that all those factors are attributed causes of hypertension. However, items 3 (with mean score of 3.17), 2 (with mean score of 3.15) and 12 (with mean score of 3.08) took precedence over others, hence, were ranked 1st, 2nd and 3rd respectively. The items stated that the attributed causes of hypertension are "lack of physical exercises", "being overweight or obese" and "getting depressed from emotional disturbances". It could be stated therefore that, married adults in Ogbomoso attributed the causes of hypertension to lack of physical exercises, being overweight or obese and depression from emotional disturbances. Moreover, item 14 ranked 18th with a mean score of 2.63, item 4 ranked 19th with a mean score of 2.58 and item 16 ranked 20th with mean score of 2.48. The items stated that the attributed causes of hypertension are "regular poor diet", "consistent use of oral contraceptives", and "adrenal and thyroid disorders" respectively. Hence, this table answers research question 1 which indicates that all the items in the questionnaire are the attributed causes of high blood pressure among married adults in Ogbomoso.

Hypothesis one showed that there was no significant difference in the attributed causes of high blood pressure among married adults in Ogbomoso on the basis of gender. This indicates that the views of the respondents are similar irrespective of whether they are male or female. This finding is in line with the finding of Onyekwere, Ezebuiro, and Samuel (2013) in which the outcome of the finding showed that adults (whether male or female) possessed high level of knowledge regarding the concept of hypertension and the risk factors of hypertension. The reason for the outcome might be due to the fact that married adults could have been attending and listening to issues related to the causes of hypertension.

The second hypothesis indicated that there was significant difference in the attributed causes of high blood pressure among married adults in Ogbomoso on the basis of age. This shows that the age of the respondents contributed to their opinion on the attributed causes of high blood pressure. This finding supports the finding of Faronbi, Oladepo, Faronbi and Olaogun (2014) in which the outcome of the finding showed that there is a relationship between knowledge of risk factors associated with high blood pressure and age. This implies that an elderly person is expected to have adequate understanding of the causes of

high blood pressure and those in the youthful age might not yet be exposed to the factors that can cause high blood pressure.

Hypothesis three showed that there was significant difference in the attributed causes of high blood pressure among married adults in Ogbomoso based on educational level. This shows that the differences in the level of education of the respondents accounted for the disparity in their responses to the items of the questionnaire. This outcome of this finding contradicts the finding of Onyekwere, Ezebuiro, and Samuel (2013) in which the finding showed that adults with tertiary education have high knowledge regarding the risk factors of hypertension.

Recommendations
Based on the findings of this study, the following recommendations were made:

- Counsellors, social workers and health promotion practitioners should organize seminars, workshops and conferences for people in the community to be acquainted with the silent killer disease (HBP) and the attributed causes.
- Healthy lifestyle habits such as regular exercise, less salt consumption, adequate intake of fruits and vegetables, reduction of alcohol and smoking should be encouraged to reduce the incidence and consequences of high blood pressure.
- Nutritionist and dietetist should educate people on the appropriate diet that could be taken in order to guide against the problem of overweight which could lead to high blood pressure.
- People should be encouraged to frequently check their blood pressure to know the status.