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# Prevalence of hypertension among adults aged 30- 69 years who used Imo state specialist hospital, Owerri, Nigeria from 2009-2013

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### Abstract

This research work was carried out to investigate the prevalence of hypertension among adults aged 30-69 years who used Imo State Specialist Hospital, Owerri (IMSSHO), from 2009-2013. The study was designed to ascertain the frequency distribution of hypertension and the associated mortality among these adults who used IMSSHO from 2009-2013. Four specific objectives were formulated for the study. In line with the objectives of the study, four research questions and four research hypotheses were formulated. The study adopted the Ex-Post Facto Design to ascertain the prevalence of hypertension in the population of study. The target and accessible population consisted of all adult hypertensive victims aged 30-69 years who used IMSSHO from 2009 -2013. There was no sample and sampling technique. The instrument for data collection was Self-Developed Data Collection Schedule Sheet and the hospital's Medical Records. The validity and reliability of the instrument were ensured. The data collection schedule sheet was approved by the thesis supervisor and validated by three lecturers. The Medical Director (MD) in-charge of IMSSHO signed the data collection schedule sheet and the thesis supervisor confirmed the suitability. The researcher practically visited IMSSHO and retrieved data from the Medical Records. Facts collected were tallied and recorded in the data collection schedule sheet in figures and were analyzed using descriptive statistics of frequency table and percentage and inferential statistics like chi-square ( $\chi^2$ ) at 0.05 level of significance. The results of the analyses revealed that there were 556 adults aged 30-69 years living with hypertension from 2009-2013. It revealed that age and gender influenced prevalence of hypertension among these adults. The prevalence of hypertension was highest among ages 60-64 years-150 (26.98%) and lowest among ages 30-34 years- 8 (1.44%); and by gender, it was higher among women-306 (55.04%) than men-250 (44.96%). It also revealed that there were 33 deaths due to hypertension, out of which, 12 (36.6%) were men and 21 (63.66%) were women. It further revealed that both age and gender did not significantly influence the prevalence of hypertension mortality among these adults. In view of the results, some recommendations were made which included provision of hypertension centers for free blood pressure checking and

multi-sectional approaches among others to ensure early detection and diagnosis, prompt treatment, prevention and control of hypertension.

**Keywords:** Prevalence, Hypertension, Adults aged 30- 69 years, Imo State Specialist Hospital, Owerri, 2009-2013

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## Introduction

Hypertension is among the several non-communicable deadly diseases that plague society. It has become a devastating public health problem both in developed and developing countries of the world. Onuzulike (2006) described hypertension as the constant elevation of blood pressure above normal for a particular age range. This means that a blood pressure of 170/90mmHg might be regarded as 'normal' for adult of 70 years but would certainly constitute a high blood pressure for someone aged 20 years. Klaus (2007) held that hypertension is a chronic medical condition in which the blood pressure in the arteries is elevated. Barbara (2005) defined hypertension as persistently high blood pressure and went further to explain that in adults, it is generally agreed that a blood pressure is abnormally high when the resting supine arterial systolic pressure is equal to or greater than 140mmHg and the diastolic pressure is equal to or greater than 90mmHg.

Barbara (2005) observed that hypertension is very common and usually symptomless but may cause headache and visual disturbances when severe. According to Guyton (2004) there are many symptoms associated with high blood pressure but the most common one is severe headache which often is not relieved with medication. And that other symptoms include dizziness, fatigue, blurred vision, nervousness, paroxysmal pain in the heart or retrosternal pains that radiate to the left arm and heart failure. Hypertension manifestation is insidious and obscure and this earned high blood pressure the name, "silent killer". John & Focops (2006) agreed that hypertension is a silent killer because in most cases it usually occurs without symptoms. It seems that often, what presents as the signs and symptoms of high blood pressure are actually the presence of an underlying organ disease or complication of hypertension itself.

There are two types of hypertension. The authors, Stanler (2008), Bloom, & Bloom (2006), Onuzulike (2006) and Bovet *et al.* (2003) classified hypertension into primary (essential) hypertension and Secondary (Malignant) hypertension. That Stress, lack of exercise, high intake of salt, excessive consumption of alcohol, contraceptive pills, smoking, tobacco use, consumption of saturated fats, certain medications, obesity and hereditary have been implicated as risk factors or predisposing factors to essential hypertension. Berman *et al.* (2008) agreed with this when they explained that the contributory factors of hypertension include smoking, a high sodium diet, biological inheritance, obesity and high stress level. Klaus (2007) collaborated this when he stated that although there is no direct cause of high blood pressure, there may be predisposing factors such as sedentary lifestyle, stress, visceral obesity, potassium deficiency, salt sensitivity, alcohol intake as well as obesity to essential hypertension. And Onuzulike (2006) added that it may be caused by hereditary factor, stress, marital discord and financial constraints. The author further explained that secondary hypertension is caused by identifiable cause such as underlying disease in another organ or known internal factor like kidney disease, endocrine or hormonal dysfunction.

Castelli (2004) opined that prevalence of hypertension is on the increase in developing countries where adoption of western lifestyle and stress of urbanization are expected to increase the morbidity associated with unhealthy lifestyle are not on the decline. Stanler (2008) agreed that high blood pressure is more prevalent in the black population and tends to be more aggressive in course. Berman *et al.* (2008) noted that hypertension is a major problem for young

African, American adults particularly men. Direct outcome include development of chronic heart disease or stroke -cardiovascular accident (CVA). Macleod (2008) explained that the effects of hypertension generally involves the kidneys, the heart, the retina and the central nervous system with devastating adverse effects that may cause death. It also affects the social, psychological and economic wellbeing of the victims and the society. It as well has path physiological and public health effects.

In our society, mature adults irrespective of gender are expected to take proper care of themselves and their families/relatives (the older you become the more responsibilities you are expected to assume) and this puts stress on the adult. Also, richness is often associated with age and it is stressful climbing the tree of success. Little wonder old rich people are assumed to have chances of being hypertensive due to stressful conditions and type of risks they indulge in. The people of Owerri, Imo State metamorphosed from rural community to capital city with the stress of urbanization. People from neighbouring towns/states especially the reproductive and the productive group come to Owerri in search of greener pastures/education and are affected by the stress of urbanization with its associated health issues. Most of these habitants of Owerri, use Imo State Specialist Hospital, Owerri for their health care needs. Against this background of health continuum, the researcher desires to ascertain the prevalence of hypertension among adults aged 30-69 years who used Imo State Specialist Hospital, Owerri from 2009-2013. This work will find out the prevalence of annual hypertension morbidity (the relative incidence of hypertension) by age and gender as well as prevalence of hypertension mortality (relative incidence of death caused by hypertension) among adults aged 30-69 years who used Imo State Specialist Hospital, Owerri, from 2009-2013.

## **Aim**

This study was designed to ascertain the prevalence of hypertension among adults aged 30-69 years who used Imo State Specialist Hospital, Owerri, from 2009-2013.

## **Methodology**

### **Research design**

This study adopted the Ex- Post Facto Design to ascertain the prevalence of hypertension among adults aged 30-69 years who used Imo State Specialist Hospital, Owerri. Collins (2006) defined Ex-Post Facto as having retrospective effect. Devin (2004) explained that ex- post facto design, also called Quasi Experimental Research is an experimental study that examine how an independent variable, present prior to the study, affects a dependent variable. It went further to reveal that ex- post facto design simply means that participants are not randomly assigned as in true experiment, rather the researcher is looking for a prior variable present in the participant - purposefully putting people in a particular group based on some prior things they have.

### **Area of study**

This research thesis was conducted at Imo State Specialist Hospital, Owerri (IMSSHO), located at Umuguma in Owerri West Local Government Area, off Owerri -Port Harcourt Road, after Federal Secretariat, Owerri, Imo State (right from Owerri to Port-Harcourt).

### **Population of study**

The target population of the study consists of all the five hundred and fifty six (556) male and female adults aged 30-69 years who used Imo State Specialist Hospital, Owerri. The accessible population comprises of all the two hundred and fifty (250) male and three hundred and six (306) female hypertensive patients aged 30-69 years recorded in the Medical Records of Imo State Specialist Hospital Owerri, from 2009-2013. Sample and

### **Sampling technique**

The sample of this study consists of the entire population of five hundred and fifty six (556) male and female adults aged 30-69 years who reported and were diagnosed and treated of hypertension as both out patients and inpatients in

Imo State Specialist, Owerri from 2009-2013. The total number of 556 patients with high blood pressure were used because it was the data available, in the Medical Records. There were no sample and sampling technique. The researcher practically visited Imo State Specialist Hospital, Owerri and collected the data from the Medical Records of the hospital from January 2009-December 2013, and tallied them. Out of the 556 hypertensive patients 33 died and 523 were discharged alive.

### **Instrument for data collection**

The instrument used for the collection of data is a self - Developed Data Collection Schedule Sheet and Medical Records available at Imo State Specialist Hospital, Owerri. This was possible through the assistance of the medical record's officer in-charge of the Hospital Medical Records. The data were collected based on age and gender of the adult patients aged 30-69 years. This was ascertained by the project supervisor.

### **Method of data collection**

To gain access to Imo Specialist Hospital, Owerri, the investigator obtained a letter of introduction from the Head of Department of Public Health, to the Medical Director in-charge of the hospital. The health personnel handling the medical

records were of immense assistance in the execution and success of collecting this data by providing records. The researcher solely examined every record retrieved from the medical records scrupulously taking note of the variables for investigation. With the help of the medical record's officer in-charge, the various records from 2009-2013 of adult male and female patients aged 30-69 years who used Imo Specialist Hospital, Owerri were examined. Relevant facts collected were tallied and recorded in the data collection schedule sheet. Method of data analysis.

The tallied data were represented in figures and analyzed using descriptive statistics of frequency table and percentage. The inferential statistic such as chi-square ( $\chi^2$ ) was also used to determine the factors that influence the prevalence of hypertension in relation to the occurrence and mortality.

$$(O - E)^2$$

where  $\chi^2 = \frac{(O - E)^2}{E}$   
O = Observed  
E = Expected

The level of significance was set at 0.05 level of significance and appropriate degree of freedom was worked out based on the contingency table.

## Results

**Table 1: Annual frequency distribution of hypertension among adults aged 30-69 years who used Imo State Specialist Hospital, Owerri, from 2009-2013.**

Month	2009	%	2010	%	2011	%	2012	%	2013	%	Total	O/o
Jan.	10	.80%	10	1.80%	10	1.80%	14	2.52%	2	0.36%	46	8.27%
Feb.	6	1.08%	2	0.36%	0	0.00%	10	1.80%	2	0.36%	20	3.60%
Mar.	10	1.08%	6	1.08%	0	0.00%	6	1.08%	12	2.16%	34	6.12%
Apr.	6	1.08%	6	1.08%	0	0.00%	24	4.32%	8	1.44%	44	7.91%
May	12	>1.6%	6	1.08%	6	1.08%	16	2.88%	8	1.44%	48	8.63%
June	12	1.16%	22	3.96%	12	2.16%	14	2.52%	6	1.08%	66	11.87%
July	18	3.24%	18	3.24%	18	3.24%	16	2.88%	6	1.08%	76	13.67%
Aug.	6	1.08%	18	3.24%	0	0.00%	4	0.72%	8	1.44%	36	6.47%
Sept.	4	.72%	18	3.24%	12	2.16%	12	2.16%	12	2.16%	58	10.43%
Oct.	10	1.08%	26	4.68%	8	1.44%	0	0.00%	0	0.00%	44	7.91%
Nov.	4	.72%	20	3.60%	20	3.60%	4	0.72%	2	0.36%	50	8.99%
Dec.	6	1.08%	6	1.08%	18	3.24%	4	0.72%	0	0.00%	34	6.12%
Total	104	18.71%	158	28.42%	104	18.71%	124	22.30%	66	11.87%	556	100.00%

Table 1 above revealed the monthly prevalence of hypertension with stated figures among adults aged 30-69 years who used Imo State Specialist, Owerri, from 2009-2013. The total number of people diagnosed with high blood pressure were 556 distributed as follows: 2009(104) representing 18.71%, 2010(158) representing 28.42%, 2011(104) representing 18.71%, 2012(124) representing 22.30% and 2013(66) representing

11.87%. The mean values for each year recorded as follows: 2009: 8.67 (1.56%), 2010: 13.17 (2.37%), 2011: 8.67 (1.56%), 2012: 10.33 (1.86%), 2013: 5.5 (0.99%). The month of July had the highest recorded incidence of hypertension (76), representing 13.67% and the lowest prevalence of hypertension (34) was recorded in both months of March and December representing 6.12% respectively.

**Table 2: Annual frequency distribution of hypertension mortality among adults aged 30-69years who used Imo State Specialist Hospital. Owerri, from 2009-2013.**

Month	2009	%	2010	%	2011	%	2012	%	2013	%	Total	%
Jan.	0	.00%	0	0.00%	1	3.03%	1	3.03%	0	.00%	2	D.06%
Feb.	1	.03%	0	0.00%	0	0.00%	1	3.03%	0	.00%	2	5.06%
Mar.	1	3.03%	0	0.00%	0	0.00%	0	0.00%	0	.00%	1	3.03%
Apr.	1	3.03%	0	0.00%	0	0.00%	1	3.03%	1	.03%	3	3.09%
May	1	3.03%	0	0.00%	0	0.00%	0	0.00%	0	.00%	1	3.03%
June	0	3.00%	0	0.00%	1	0.00%	1	3.03%	0	.00%	1	3.03%
July	0	.00%	1	3.03%	2	6.06%	0	0.00%	0	.00%	3	3.09%
Aug.	0	1.00%	2	6.06%	0	0.00%	0	0.00%	0	.00%	2	j.06%
Sept.	1	5.03%	1	3.03%	0	0.00%	2	5.06%	0	.00%	4	12.12%
Oct.	1	5.03%	4	12.12%	0	0.00%	0	0.00%	0	.00%	5	15.15%
Nov.	0	.00%	2	6.06%	1	3.03%	0	0.00%	1	.03%	4	12.12%
Dec.	2	i.06%	0	0.00%	1	3.03%	2	5.06%	0	.00%	5	L5.15%
Total	8	!4.24%	10	30.30%	5	15.15%	8	24.24%	2	.06%	33	LOO.00%

Table 2 above revealed death incidence resulting from hypertension with stated figures. Among adults aged 30-69 years who used Imo State Specialist Hospital, Owerri, from 2009 - 2013. Total number of deaths due to high blood pressure were 33 distributed as follows-8 (24.24%) in 2009, 10 (30.30%) in 2010, 5(15.15%) in 2011, 8 (24.24%) in 2012 and 2(6.06%) in 2013. The mean value for each year

include:-2009: 0.67 (2.02%); 2010: 0.83 (2.23%); 2011: 0.42 (1.26%); 2012: (0.67%);and 2013: 0.17(0.51%).The months October and December had the highest frequency distribution of hypertension mortality (5) each representing 15.15% respectively. The lowest incidence (1) representing 3.03% occurred in the months of March, May and June respectively.



**Table 3: Frequency distribution of hypertension by age of adults aged 30-69 years who used Imo Staten Specialist Hospital, Owerri, from 2009-2013.**

Age	2009	%	2010	%	2011	%	2012	%	2013	%	Tptal	%
30-34	0	0.00%	6	1.08%	2	0.36%	0	0.00%	0	0.00%	8	1.44%
35-39	2	0.36%	6	1.08%	4	0.72%	4	0.72%	2	0.36%	18	3.24%
40-44	0	0.00%	12	2.16%	2	0.36%	12	2.16%	2	0.36%	28	5.04%
45-49	14	2.52%	26	4.58%	12	2.16%	10	1.80%	4	0.72%	66	11.87%
50-54	12	2.16%	18	3.24%	14	2.52%	18	3.24%	10	1.80%	72	12.95%
55-59	8	1.44%	22	3.96%	24	4.32%	20	3.60%	14	2.52%	88	15.83%
60-64	44	7.91%	38	6.83%	20	3.60%	38	6.83%	10	1.80%	150	26.98%
65-69	24	4.32%	30	5.40%	26	4.68%	22	3.96%	24	4.32%	126	22.66%
Total	104	18.71%	158	28.42%	104	18.71%	124	22.30%	66	11.87%	556	100.00%

Table 3 above revealed the incidence of high blood pressure among adults aged 30-69 years who used Imo Specialist Hospital, Owerri from 2009 -2013.It revealed that there were 556 hypertensive victims within the period in-view. The distribution is spread as follows:-104 (18.71%) in 2009; 158(28.42%) in 2010; 104(18.71%)in 2011; 124(22.30%) in2012 and 66(11.87%) in 2013.The mean value for the years

in view recorded as follows:-2009: 13 (2.34%); 2010: 19.75 (3.55%); 2011: 15 (2.34%);2012: 15.5 (2.79%) and 2013:8.25 (1.48%). The highest frequency distribution of hypertension mortality by age (150) representing 26.98% occurred among the age range 60-64 years and the lowest incidence of death due to high blood pressure(8) representing 1.44% occurred among adults aged 30-34 years within the period in view.

**Table 4: Frequency distribution of hypertension mortality among adults aged 30-69 years who used Imo State Specialist Hospital, Owerri, from 2009-2013.**

Age	2009		2010		2011		2012		2013		Total	
30-34	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
35-39	1	3.03%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	1	3.03%
40-44	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
45-49	0	0.00%	0	0.00%	1	3.03%	1	3.03%	0	0.00%	2	6.06%
50-54	1	3.03%	2	6.06%	0	0.00%	1	3.03%	1	3.03%	5	15.15%
55-59	1	3.03%	1	3.03%	0	0.00%	0	0.00%	1	3.03%	3	9.09%
60-64	4	12.12%	2	6.06%	2	6.06%	4	12.12%	0	0.00%	12	36.36%
65-69	1	3.03%	5	15.15%	2	6.06%	2	6.06%	0	0.00%	10	30.30%
Total	8	24.24%	10	30.30%	5	15.15%	8	24.24%	2	6.06%	33	100.00%

Table 4 above revealed as stated the distribution of hypertension mortality by age among adults aged 30-69 years who used Imo State Specialist Hospital, Owerri, from 2009-2013. Total number of recorded deaths were 33, distributed as follows:-2009 (8) representing 24.24%; 2010 (10) representing 30.30%; 2011 (5) representing 15.15%; 2012 (8) representing 24.24%; 2013 (2)

representing 6.06%. The mean value for the years 2009-2013 were:-2009:1 (3.03%); 2010: 0.13 (0.388%); 2011: 0.63 (1.89%); 2012: 1 (3.03%) and 2013: 0.25 (0.76%). The highest number of deaths (12) representing 36.36% occurred in ages 60-64 years and lowest incidence (1) representing 3.03% occurred in ages 35-39 years.

**Table 5: Frequency distribution of hypertension by gender among adults aged 30-69 years who used Imo State Specialist Hospital, Owerri, from 2009-2013.**

Sender	2009		2010		2011		2012		2013		Total	
Male	66	11.87%	78	14.03%	38	6.83%	48	8.63%	20	3.60%	250	44.96%
Female	38	6.83%	80	14.39%	66	11.87%	76	13.67%	46	8.27%	306	55.04%
Total	104	18.71%	158	28.42%	104	18.71%	124	22.30%	66	11.87%	556	100.00%

Table 5 above revealed as stated the incidence of high blood pressure by gender of adults aged 30-69 years who used Imo State Specialist Hospital, Owerri, from 2009-2013. The table shows that in 2009, hypertension affected more men than women but in subsequent years, the trend was reversed, more women than men suffered hypertension. Total number of adults aged 30-69 who had high blood pressure were 556, of which 250 were men representing 44.96%,

while women were 306 representing 55.04%. The year 2010 recorded the highest frequency distribution of hypertension by gender (158) representing 28.42%, while the lowest incidence (66) representing 11.87% occurred in 2013. The mean value for the five years in view include as follows:-2009: 52 (9.35%); 2010: 79 (14.20%); 2011: 52 (9.35%); 2012: 62 (11.15%) and 2013: 33 (5.94%).

**Table 6: Frequency distribution of hypertension mortality by gender among adults aged 30-69 years who used Imo State Specialist Hospital, Owerri from 2009-2013.**

Gender	2009		2010		2011		2012		2013		Total	
Male	2	6.06%	3	9.09%	3	9.09%	4	12.12%	0	0.00%	12	36.36%
female	6	18.18%	7	21.21%	2	6.06%	4	12.12%	2	6.06%	21	63.64%
Total	8	24.24%	10	30.30%	5	15.15%	8	24.24%	2	6.06%	33	100.00%

Table 6 above revealed as stated the distribution of hypertension mortality- by gender among adults aged 30-69 years who used Imo Specialist Hospital, Owerri, from 2009 -2013. The table reveals that more women than men died from high blood pressure across the years from 2009 to 2013. Total number of death incidence due to high blood pressure within the period in view were 33, of which 12 were men and 21 were women representing 36.36% and 63.64% respectively.

The year 2009 and 2012 had the highest frequency distribution of hypertension mortality (8) representing 24.24% while the lowest incidence of mortality due to high blood pressure (2) representing 6.06% occurred in the year 2009. The mean value for the years in view recorded as follows:-2009: 4 (12.12%); 2010: 5 (15.15%); 2011: 2.5 (7.58%); 2012: 4 (12.12%) and 2013: 1 (3.03%).



## Discussion

Table 1 above reveals the annual prevalence of hypertension among adults aged 30-69 years who used Imo State Specialist Hospital, Owerri. For the five years in view, month of July had the highest number of hypertensive patients (76) representing 13.67%. The month June had higher frequency distribution of hypertension (66) representing 11.87% followed by frequency of 58 in September representing 10.42%. The incidence of hypertension was high in January (46), May (48) and November (50) representing 8.27%, 8.63% 8.99% respectively. The lowest incidence of hypertension occurred in February (20) representing 3.60%. The months March, December and August recorded lower hypertension distribution as follows 34(6.12%), 34(6.12 & 36(6.43%) respectively while both April and October had low incidence of high blood pressure (44) each representing 7.91%. Total number of incidence was 556 distributed among the years as follows- 2009 (104) representing 18.71%, 2010 (158) representing 28.42%, 2011(104) representing 18.71%, 2012(124) representing 22.30% and 2013(66) representing 11.87%. The finding further revealed that the incidence of hypertension was on the increase annually but suddenly dropped in the year 2013 - hospital authority revealed there were series of strikes in 2013 and this must have contributed to the low incidence of high blood pressure in that year. Considering the above presentation, hypertension is prevalent among attendees of Imo State Specialist Hospital, Owerri, among adults aged 30-69 years from 2009-2013. Mayo (2008) noted that blood pressure is estimated to be present in one fourth of adult population. Table 3 above revealed the incidence of hypertension among adults aged 30-69 years as well as shows that frequency distribution of hypertension among them from 2009-2013 increased as the individual gets older though the ages 60-64 had the highest incidence (150) representing 26.48% of the total population in view, as against the age 65-69% which recorded 126 representing 22.66% of the same population. Hypertension onset was proportionally marked at age range 40-44 years and increase as the adult's age increased. The age

range 55-59, 50-54 years, and 45-49 had high incidence of hypertension-88, 72 and 66 respectively, representing- 15.83%, 12.95% and 11.87% respectively. The ages 40-44 years had low distribution of hypertension (28) representing 5.04% and 35-39 years age range had lower incidence of hypertensive (18) representing 3.14%. The age range 30-34 years had the lowest frequency distribution of high blood pressure (8) representing 1.44%. This analysis shows that age had influence on the distribution of hypertension among attendees of Imo State Specialist Hospital, Owerri, aged 30-69 years between the year 2009 and 2013. Benjamin (2010) noted that the older a person is the greater the likelihood that he or she will develop high blood pressure, especially elevated systolic which he attributed to largely due to arteriosclerosis (hardening of the arteries). Lewington *et al.* (2013) explained that as at 2000, nearly one billion or 26% of the population of the world had hypertension. That prevalence is increasing in USA and reached 29% in 2004 and that in Europe, it occurs in about 30-45% of the people as at 2013. In this study, the highest incidence of hypertension was among adults aged 60-64 years (26.4%) and the lowest was among adult age group 30-34 years (1.44%). It was concluded that the prevalence of hypertension among adults aged 30-69 years who used Imo State Specialist Hospital, Owerri, from 2009-2013 vary significantly by age. ( $P > 0.05$ ). Though the prevalence of hypertension vary significantly by age, and more in the elderly, it is important to note the observation of Onuzulike (2006) that high blood pressure is no respecter of age and can occur at infancy, in children, adolescents and young adults. This calls for a serious hypertension awareness campaign to enlighten the public on preventive/control strategies for high blood pressure.

Table 4 above reveals the distribution of hypertension, mortality by age among adults aged 30-69 years who used Imo State Specialist Hospital, Owerri, from 2009-2013. There were 33 recorded incidence of deaths due to high blood pressure from 2009-2013 in Imo State Specialist Hospital, Owerri among adults aged 30-69 years. There was no incidence of death record for the age 30-34 years and 40-44 years respectively. The

age range 60-64 had the highest incidence of recorded death (12) representing 36%. The age range 50-54 had high incidence (5) representing 15.15% and ages 65-69 years had higher distribution of hypertension mortality (10) representing 30.30%. The lowest incidence of mortality due to high blood pressure was 1 recorded against 35-39 years age group representing 3.03%. Ages 55-59 years had low incidence (3) representing 9.09% and ages 45-49 had lower incidence (2) representing 6.06%.

This presentation reveals that although hypertension is a risk factor for death among adults aged 30-69 years who used Imo State Specialist Hospital, Owerri, there is no significant influence of age on mortality due to high blood pressure. Lewington *et al.* (2013) observed that treating moderate to severe hypertension decreases death rate and cardiovascular morbidity and mortality in people aged 60 and older. That recent studies revealed that anti-hypertensive treatment reduce cardiovascular deaths and disease but did not significantly reduce total death rates. It was concluded that there is no significant influence of age on hypertension mortality among adults aged 30-69 years who used Imo State Specialist Hospital, Owerri from 2009-2013 ( $P < 0.05$ ).

Table 5 above revealed the total distribution of high blood pressure by gender among attendees of Imo State Specialist Hospital, Owerri from 2009-2013 as 556. The table further revealed that within the period in view, more female than male had hypertension except in the year 2009 where more men (66) than women (38) had high blood pressure, representing 11.87% and 6.03% respectively. The incidence of hypertension among men were 250 representing 44.96% of the population reviewed and among females were 306 representing 55.04% of the same population within the period in view. In 2010, incidence of hypertension was 78 for men and 80 for women representing 14.08% and 14.39% respectively; 201 incidence of hypertension for males were 38 representing 6.88% and 66 for females representing 11.87%; for 2012, 48 males and 76 females had high blood pressure representing 8.63% and 13.67% respectively and in 2013, the

frequency distribution of hypertension was for males 20 representing 3.60% and 46 for females representing 8.27%. This analysis shows that there is insignificant influence of gender on the prevalence of hypertension among adults aged 30-69 years who used Imo State Specialist Hospital, Owerri, from 2009-2013. Again, Lewington *et al.* (2013) commenting on the influence of gender on hypertension, noted that rates vary markedly in different regions among sexes but explained that rates as low as 3.4% (men) and 6.8% (women) has been observed in rural India and as high as 68.9% (men) and 72.5% (women) in Poland. But in a study, Benjamin (2010) observed that men have a greater likelihood of developing high blood pressure than women. In this study, more women (55.4%) than men (44.96%) had high blood pressure among the attendees of Imo State Specialist Hospital, Owerri, from 2009-2013. The reason for women being more affected by high blood pressure than men may not be for fetched considering the fact that women are no longer contented as housewives and babysitters but now pursue professional careers with the zeal of men-<sup>1</sup> "what a man can do, a woman can do, it even better," is now a common societal adage. This and more exposes women to the stress of civilization and urbanization in the society they live as they strive to make ends meet. And added to this is the stress of their natural function by marriage. Parental dependence and trust on the family daughters which has become the norm and must be fulfilled if the woman wants to remain relevant and wanted, put extra stress on some women. Some men tend to go into relationship these days with ready-made women, yet careless how the women measure up with their careers, home functions and pleasure. And work stress, family stress, urbanization and civilization among others are implicated as the predisposing factors of hypertension.

Table 6 above revealed the total distribution of male and female attendees of Imo State Specialist Hospital, Owerri, from 2009-2013 who died of hypertension. In 2009, incidence of hypertension mortality for men was 2, representing 6.06% and 6 for women representing 18.18%. In 2010, hypertension mortality incidence were 3 (men) and 7 (women) representing 9.09% and 21.21%

respectively. Both sexes were equally affected in 2012- 4each representing 12.12% and in 2013, no incidence of death was recorded for male but incidence for female were 2, representing 6.06%. The total number of death recorded for the period in view were 33, out of which 12 were males and 21 were females representing 36.36% and 63.64% respectively.

## Conclusion

The researchers made the following conclusions based on the findings. High blood pressure is prevalent among adults aged 30-69 years who used Imo State Specialist Hospital, Owerri, in which 556 incidence of hypertension were recorded between the year 2009 and 2013. The prevalence of hypertension among adults aged 30-69 years who used Imo State Specialist Hospital, Owerri, vary significantly by age from 2009-2013. Hypertension is a risk factor for mortality among adult attendees of Imp State Specialist Hospital, Owerri, aged 30-69 years from 2009-2013. There were incidence of mortality due to high blood pressure in which 33 deaths were recorded between the year 2009 and 2013. Gender had influence on the distribution of hypertension among adults aged 30-69 years who used Imo State Specialist Hospital, Owerri from 2009-2013. More women than men are predisposed to having hypertension. There were 306 women representing 55.04% of the total population reviewed from 2009-2013 as against 250 men representing 44.96% of the same population who had high blood pressure within the period in view. Although more women than men are predisposed to hypertension, there is no significant influence of gender on mortality due to high blood pressure. Certain factors influence the prevalence of hypertension among adults aged 30-69 years who used Imo State Specialist Hospital, Owerri which include age and gender with ages above 40 years being more predisposed to high blood pressure. Age has no significant influence on the distribution of hypertension mortality among adults aged 30-69 years who used Imo State Specialist Hospital, Owerri between the year 2009 and 2013.

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