

## Hypertension Knowledge among Non-Academic Employees of Niger Delta University, Bayelsa State, Nigeria

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**Abstract:** The impact of hypertension remains a profound public health problem yet adequate knowledge on its etiology, risk factors and prevention remains poor in most developing countries of the globe. The essence of this study is thus, aimed to assess hypertension knowledge among non-academic employees in a university community of Bayelsa state, Nigeria. A descriptive survey design was employed to assess the knowledge on etiology, risk factors and prevention of hypertension among non-academic employees of Niger Delta University Wilberforce island, Bayelsa state, Nigeria. A total of hundred participants who gave consent participated in the study. The participants were made up of (53%) females and 47% males with mean age of 38.4 years. Results reveals most of the employees (73%) taught etiology of hypertension to be caused by excessive thinking, worries or stress while 27% could not decipher this fact. The result also reveals, 59% of them were able to tell that hypertension could have a hereditary basis. High fat diet, smoking and alcohol were identified as risk factors by 80, 45 and 43% of the respondents, respectively showing poor knowledge on risk factor despite the ability of most of them (72%) to identify that high salt diet is a risk factor of hypertension. Result further revealed that 65% of the participants do not know that the management of hypertension is for life and further 30% do not know that hypertension cannot be cured once in a lifetime. About 80 and 75% of the participants showed adequate knowledge on BP measuring and monitoring and regular intake of drug whereas 80% did not know that weight lost strategies are essential in controlling high blood pressure. Based on this findings it could be concluded that hypertension knowledge among non academic employees is sub optima. Thus, strengthening the knowledge base on hypertension remains the panacea to adequate management and prevention of the health and the economic burden of hypertension.

**Key words:** Knowledge, hypertension, non-academic employees, etiology, risk factors, prevention

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### INTRODUCTION

Hypertension is a major public health problem yet the knowledge among non-academic employees or workers in a Nigeria university setting are poorly understood. A complex disorder, both environmental and genetic factors have been known to predispose individuals to hypertension. The main cause of death in adult populations worldwide and cardiovascular diseases such as ischemic heart disease and stroke (Nichols and Elliot, 1996; WHO, 2005).

Several community based investigations have emphasized that hypertension is rapidly emerging as a major public health problem in developing countries (Fuentes *et al.*, 2000; WHO, 2002; Kearney *et al.*, 2005). With a recent survey of prevalence of hypertension among market women in Nigeria put at 32.8% (Ulasi *et al.*, 2011). Reliable information on the knowledge of

hypertension is crucial in the development of health policies for prevention, control and early diagnosis of this condition. An indication from recent surveys reveals ever continuing deficiencies in the awareness, treatment and control of hypertension (Iyalomhe and Iyalomhe, 2010). Despite increase knowledge by researchers that hypertension is the commonest non-communicable diseases of most important treatable causes of mortality and morbidity if unchecked (HSG, 2001). In England, UK the National Health Services NHS-Choice information states that hypertension is common among 30% of the population which may be unaware about it. In the US, one of three adults has hypertension (Fields *et al.*, 2004) which rounds up to an estimated 76.4 million adults having hypertension in the US (Rogers *et al.*, 2011) for Heart Disease and Stroke Statistics-Updates 2011 writing group. Hypertension affects approximately 1 billion people worldwide (Chobanian *et al.*, 2003a, b) and

340 million of these in economically developing countries and this number is expected to increase to around 1.56 billion people by 2025 with about 7.1 individuals dying each year from hypertension (Chobanian *et al.*, 2003a, b). The prevalence rate of hypertension increases with age and higher in blacks with incidence rate in black individuals for hypertension than in white (Brown, 2006). More troublesome is the fact that 30% of people are still unaware that they have hypertension (Joint National Committee (JNC7), 2003). It is therefore, very important especially in the developing countries of Africa that people become knowledgeable of the disease and its control (Ajayi, 1997).

Until recently, hypertension was thought to be rare in rural Africa. In sub-Saharan Africa, hypertension affects >20 million people and remains the leading cause of hospitalization and mortality (<http://www.hypertension.ca/>). On the other hand, hypertension and its complications including stroke, heart failure and renal failure have been reported in blacks all over the world (Adedoyin *et al.*, 2008). It is important to keep blood pressure under 140/90 mm Hg. Blood pressure  $\geq$ 140/90 mm Hg is considered dangerous for those who fall into several risk categories (Chobanian *et al.*, 2003a, b).

It is a well-known fact that in the world over, hypertension is common among blacks and now regarded as a major public health problem. Similarly, issues of concern are now raised for employees from environmental sanitation unit if not the whole university as these employees of the university often fall ill on many occasions with many their diagnosed cases reported to be cardiovascular diseases in particular hypertensive conditions in Amassoma General Hospital and the numbers of prevalence are increasing each year the increase risk of hypertension may be connected with the chronic job strain (Landsberis *et al.*, 2003; Markovitz *et al.*, 2004) that contributes to hypertension in this group. A study in the Niger Delta region found the prevalence of hypertension to be 16 and 12% for males and females, respectively (Ofuya, 2007). As many of these employees of the university are indigenes there is therefore, the need to assess for the knowledge of hypertension among these vulnerable groups of non-teaching employees in the university community who are mostly elderly folks and whose work may be demanding. Presently, no concrete evidence exists on the knowledge of hypertension among non-academic employees or workers of this special group in the Niger Delta University. With this kind of unacceptable high level of burden, physical health problems may arise and may affect the man power and labor force as absenteeism

becomes more common among the group of workers without them being noticed. The aim of the present study was to estimate knowledge on etiology, risk factors and prevention of hypertension among non-academic employees of Niger Delta University, Bayelsa state, Nigeria.

## **MATERIALS AND METHODS**

This study is a cross-sectional survey was carried out to estimate the current knowledge of hypertension and its distribution among non-academic employees of Niger Delta University.

This study was carried out at the College of Health Sciences, Niger Delta University in Amassoma community. A university in the South-South geopolitical zones of Nigeria in the oil rich city of Bayelsa state of the Niger Delta region of Nigeria. Niger Delta University is a tertiary institution designed to secure excellent educational achievement. This educational institution provides education at graduate and post graduate level for >10,000 students. It also provides the employments for many of the indigenes of this community especially among the junior employees categories besides the academic staff and senior administrators with half of the employees of this university being junior workers in the two campuses namely the Glory Land campus and the College of Health Sciences campus.

All adult employees in the department/section of environmental sanitation in the College of Health Sciences were assessed for knowledge of hypertension.

Convenient sampling was got from the pool of employees in the Environmental Sanitation Department based on how they reported to duty and the type of job they carry out (Cleaners, sweepers, cutters of grasses, dirty empties and their supervisors) at the College of Health Sciences. They were selected based on availability and the willingness to participate in the study. Those who were absent at the time and could not speak English language were never included in the study. Total sample sizes of 100 employees were used for this study among 125 employees that are staff in the Department of Environmental Sanitation at the College of Health Sciences campus of the Niger Delta University.

A properly designed questionnaire for collection of data on demographic-characteristics of the participants among the non-academic employees of Niger Delta University that addressed the research questions of the study on knowledge of hypertension were used to collect data by interviews. This was achieved because a pilot study was carried out. To determine the reliability of the questionnaire a pilot study was carried out. This was

carried out among twelve workers in the cleaning department in the Glory Land campus using a test-retest method which was done within a week with reliability correlation coefficient obtained to be >0.750.

A period of about 3 months was used to collect the data (From February-April 2011) at the College of Health Sciences, Niger Delta University, Wilberforce-island, Bayelsa state, Nigeria. After explaining the purpose of the study to the subject they were interviewed: a structured questionnaire was used to collect basic socio demographic and socio economic data and to identify knowledge of hypertension.

Ethical approval was sought from by the institutional review board for research. Also letter of introduction was sought from the Faculty of Nursing, to enable the researchers meet the various sectional heads of the Department of Environmental Sanitation and also gain permission from the Department of Works and Special Duties of the university. All employees who gave their informed consent and agreed to sign their inform consent participated. Data collected were processed and analysed using simple percentages and tables for the non-academic employees of the Niger delta university.

**RESULTS AND DISCUSSION**

The results for this study are shown in Table 1-4. These are concerned with the descriptive statistics on socio-demographic data, knowledge on etiology of hypertension, knowledge on risk factors of hypertension and knowledge on prevention of hypertension among non-academic staff employees. Descriptive statistics for the study on socio-demographic variables are shown in Table 1.

**Table 1: Socio-demographic characteristics of participants (n = 100)**

Characteristics of participants	Percent (%)
<b>Age (Years)</b>	
20-30	23
31-40	35
41-50	27
51-76	15
<b>Sex</b>	
Male	47
Female	53
<b>Religion</b>	
Christianity	95
Islam and others	5
<b>Marital status</b>	
Single	15
Married	64
Divorced	15
Widowed	6
<b>Educational level</b>	
Primary	25
Secondary	63
Degree	0
No education	12

The participants who are non-teaching employees (N = 100) had an age range from 20-76 years with a mean of 38.4 years. About 53% of the study participants are females and >60 (64%) are married, 15% being single or divorced while 6% are widowed. Majority 95% are Christians while 5.0% made up of Islam and other religions. About 63% had a secondary education, 25% a primary education, 12% no form of education and none had a University degree.

Descriptive statistics for the variables of participants knowledge on etiology of hypertension are shown in Table 2. About 80% of the participants indicated yes to have had knowledge that hypertension is high blood pressure and 73% attributed knowledge of the etiology of hypertension to be caused by excessive-thinking, worries or stress. About 59% of the respondents indicated yes of knowledge of etiology of hypertension to be due to heredity whereas 60% attributed the etiology of hypertension to be due to demons: witches and wizards. The 43% of the participants responded that hypertension is caused by food poisoning and 30%, respectively attributed hypertension to be caused by juju (Black magic) or certain drug and condiments.

Table 3 shows that more than half of the population (55%) of the participants did not agree that smoking is a risk factor while 45% had knowledge that smoking is a risk factor to hypertension. Though, 43% of participants agreed alcoholism is a risk factor and 57% indicated it is not almost three-quarter of the non-academic employees (72%) indicated high salt diet predisposes one to hypertension. However, on the question of knowledge on fat intake shows those non-academic employees are erroneous in the impression on type of fat intake. A large number of participants 80 (80%) did not know high fat diet

**Table 2: Knowledge on etiology of hypertension (N = 100)**

Questions	Responses (%)
<b>Hypertension is high blood pressure</b>	
Yes	80
No	20
<b>Hypertension is caused by excessive thinking, worries or stress</b>	
Yes	73
No	27
<b>Hypertension is hereditary</b>	
Yes	59
No	41
<b>Hypertension is caused by witches and wizards (Demons)</b>	
Yes	60
No	40
<b>Hypertension is caused by food poisoning</b>	
Yes	43
No	57
<b>Hypertension is caused by juju (Black magic)</b>	
Yes	30
No	70
<b>Hypertension is caused by certain drugs/condiments</b>	
Yes	30
No	70

Table 3: Knowledge of risk factors of hypertension (N = 100)

Questions	Responses (%)
<b>Smoking is a risk factor to hypertension</b>	
Yes	45
No	55
<b>Alcoholism is a risk factor of hypertension</b>	
Yes	43
No	57
<b>High salt diet predispose to hypertension</b>	
Yes	72
No	28
<b>High fat diet predispose to hypertension</b>	
Yes	20
No	80
<b>Intake of low fat diet will help to prevent hypertension</b>	
Yes	68
No	32

Table 4: Knowledge on prevention of hypertension (N = 100)

Questions	Responses (%)
<b>Hypertension can be monitored or detected by BP measurements</b>	
Yes	80
No	20
<b>Hypertension can be cured once and for all</b>	
Yes	30
No	70
<b>Management or treatment of hypertension is for life</b>	
Yes	35
No	65
<b>Regular drug intake for help to prevent hypertension</b>	
Yes	75
No	25
<b>Intake of fruits and vegetables help to prevent hypertension</b>	
Yes	41
No	59
<b>Adherences to weight loss will help prevent hypertension</b>	
Yes	20
No	80

predispose to hypertension although, 68% indicated intake of low fat diet will help prevent hypertension. Table 4 shows participant's responses to some selected questions. Study participants of the non-academic employees had a good knowledge on the prevention of hypertension. A large number of the participants 80 (80%) agrees hypertension can be monitored or detected by BP measurements and 70 participants (70%) correctly identified that hypertension cannot be cured once and for all.

Knowledge of the study population on management or treatment shows that 65 participants (65%) agrees knowledge of management or treatment of hypertension is life time and regular drug intake among 75% of the participants helps prevent hypertension. There was erroneous impression about the prevention of hypertension among study participants of non-academic employees. A large number of participants 41 (41%) believed by intake of fruits and vegetables will helps to prevent hypertension. A small proportion of the study participants 20 (20%) indicated hypertension is preventable by adherence to weight loose.

Hypertension affects approximately 50 million people in the US and 1 billion individuals suffer from this condition worldwide (Chobanian *et al.*, 2003a, b). This accounts for why hypertension is a major public health problem of considerable note.

The result from this study revealed that the participants who are non-academic employees of the university had a mean age of 45.7 years with a peak range in the 3rd and 4th decades of life (Table 1). This may be due to the fact that non-academic employees of the university are mainly community dwelling adults that may have not had enough education and survive from other sources of livelihood. However, in demographically developed countries the average age of worker in this category of job may be different, majority may be below this age range and in many cases take up these jobs as cleaners and mowers on casuals basis. The age specific rates in this study were higher than in developed countries, suggesting that in developed economy younger people may not be employed for this type of job unlike Nigeria since, most young people will be engaged in academic or professional works.

The gender distribution and marital status in this study showed that 53% are male and mostly married employees (64%). This may be the reason why they took up this form of job because of employment difficulties and big size family commitment. Results also showed that majority of the participants were mainly those who have had primary school education, revealing why the bulk of this study participants form the lower cadre of unskilled employees of the university.

**Knowledge on etiology of hypertension by employees:** The study provides information that the knowledge on etiology of hypertension is fair among the participant employees of Niger Delta University, Nigeria. Findings from Table 2 show that 80% of the participants agreed that hypertension is high blood pressure with 20% not agreeing. This result reveals an increasing knowledge on hypertension among sub-urban dwellers and is in congruous with earlier research that indicates awareness or knowledge of hypertension has increased and people now receive treatment with control of hypertension (Pappas *et al.*, 1990; Wang and Vasan, 2005). The result also showed that 73% thought hypertension is caused by excessive thinking, worries or stress. This finding agrees with the statements from Clinic (2011) in the US which indicates that stress in all forms whether in work place or in modified conditions is related to hypertension as it plays a role in raising blood pressure. Total 59% of the participants were knowledgeable on etiology of hypertension indicating that hypertension is hereditary.

In a similar study by Abdullahi and Amzat (2011) in Nigeria only 28% believed that hypertension is hereditary. The 60% attributed the etiology as due to witches and wizards (The demons). This poor knowledge about etiology of hypertension can be explained to mean that these groups of people believe that hypertension do not show a clear warning sign thus referred to as silent killer as it has remain undetected for years. After all, they have found no family connection to this disease among their immediate family and therefore, it is a disease of the witches and wizards or caused by some form of demons in their beliefs. The 43% of the participants attributed the etiology of hypertension to food poisoning. This view can be supported by an interesting and certain suggestion that food allergy contributes to hypertension (Wagen, 2010) who reports that patients without poisons have lower blood pressure. In addition 30% responded that the etiology included jujù (Black magic). This view is in accordance with the studies of Benson and Britten as well as Iyalomhe and Iyalomhe (2010) who together observed that patients perception of illness may be influenced by their subjective beliefs. Consequently this may result in decreased reliance on medication and subsequent non-adherence as the patients may go on a wild goose chase searching for what is responsible for their dilemmas (Oliveria *et al.*, 2005). Another 30% further agreed that the etiology may be attributed to certain drugs/condiments.

As previously discussed the knowledge of hypertension has changed overtime. More patients are being treated of hypertension, contributing to the decrease in morbidity and mortality observed (Chobanian *et al.*, 2003a, b).

#### **Knowledge of risk factors of hypertension by employees:**

The results found that 45% of participants had knowledge of smoking as a risk factor of hypertension and 55% did not agree showing inadequate knowledge. This result is similar to a previous study with 35% agreeing that excess smoking can cause hypertension while 38% agreed but not strongly and 19% was not certain at all (Abdullahi and Amzat, 2011). This knowledge of the risk factor of hypertension may be explained by cultural influence as culture may have had substantial and a cumulative effect among the population studied. Race and ethnic background have been stated to place one at risk as well as one's social experiences or knowledge. Certain risk factors account for hypertension, one such factor is alcohol consumption. The result revealed 43% of participants had knowledge that alcoholism is a risk factor whereas 57% did not have this knowledge. Contrarily,

Jamatia reports most employees knew alcohol consumption could lead to hypertension 72.1% (Jamatia *et al.*, 2009). The difference in knowledge can be explained by the fact that most participants did not see alcohol as a risk factor because alcohol is locally brewed and consumed all the day as freely as you want in Bayelsa the setting of the study. Researchers observed as expected a high percentage 72% who knew high salt diet predisposes one to hypertension than the 28% who did not. Quite the contrary, a previous study from Cape Town, South Africa which showed that knowledge of risk factor on hypertension was poor as 78 (n = 100) participants did not know that the use of less dietary salt controls hypertension at baseline (Slinger and De Villiers, 2009). There is an indication of poor knowledge of risk factors of hypertension. This study results on knowledge of fat diet shows that only 20% (n = 100) of the participants were knowledgeable that fat diet predisposes to hypertension 80% did not know this. With 68% agreeing intake of low fat diet will help prevent hypertension. Equally well established is the fact of this result as previous research has repeatedly made statements to support this result example is the DASH study (Dietary Approach to Stop Hypertension) found risk of elevated blood pressure could be reduced with a low-fat eating plan rich in dairy, fruits and vegetables (Appel *et al.*, 1997; HSF, 2011).

#### **Knowledge on prevention of hypertension by employees:**

The Canadian Hypertension Society (<http://www.hypertension.ca/>) has suggested hypertension can be prevented if high blood pressure is well monitored or detected for its treatment and control. The result reveals that knowledge on prevention of hypertension by using blood pressure measurement kit was high. Total 80% of the participants recognized hypertension could be measured or detected by BP measurements and 20% did not. This result may be explained based on the fact that most participants must have visited a hospital medical practitioner for some other needs in the past that contributed to their knowledge base.

Most of the participants (70%) were knowledgeable enough to know that hypertension cannot be cured once and for all and 30% were not knowledgeable about this. This result is in concordance with earlier reports on hypertension not been curable but preventable (Wang and Vasan, 2005; NHFA, 2008). But contrarily, Schnitzer (2004) believes high blood pressure (Essential hypertension) is curable. Furthermore, the result of this study demonstrates that knowledge of management or treatment of hypertension to be poor as 35% (n = 100)

only knew knowledge of management or treatment of hypertension is for life and 65% of the participants never knew this. This result is supported by the statements of Williams *et al.* (2004) indicating the treatment of hypertension is continues till further notice-usually lifelong. This poor knowledge of management or treatment may necessitate lack of compliance to medication or the reason why there is poor adherence to life style modification in this pool of employees. However, 75% knew regular drug intake helps prevent hypertension as treatment by intake of drug when needed is usually considered at an earlier stage after trial to improve life style risk factors (JNC7) a non-drug modalities such as life style medicine strategies (ACLM, 2010). About >40% (41%) acknowledge intake of fruits and vegetables would help prevent hypertension. This result is congruous with diet recommendation from a population based study for management or treatment to prevent hypertension with suggestions that the DASH diet which includes lots of fruits and vegetables to be most appropriate. However, 59% of participants in this study population did not know this. While relatively very high proportion 80% of participants never knew adherences to weight loss would help prevent hypertension. This result concurs with earlier statements from NHLBI (2006) on adherence on weight loss for hypertension on African America women for adherence was found to be poor even in motivated patients. The JNC-VI have also recommended several life style modification as adjuvant therapy in especially medication-treated hypertensive with a view for patients to reduce their weight and eat a healthy diet (Miller *et al.*, 2002).

**Implication for nursing practice:** From the result of this study it is obvious that non-academic employees in Niger Delta University, College of Health Sciences lack a good knowledge of hypertension. Nurses should therefore, employ a means of educating this group of employees on safe measures to be taken on promoting their health, the control and prevention of hypertension, especially on the dangers of risk factors and adherence to lifestyle modification in hypertension.

Health education by nurses and the other health profession could be carried out in face to face manner in the university community in workshops and seminars. However, in trying to improve their hypertension knowledge, nurses as well as others in the health profession should put into consideration the behavior, culture and activities of the people in order to provide effective outcome.

## CONCLUSION

The findings of this study reveal hypertension knowledge to have increased among non academic employees on etiology, risk factors and prevention. However, there are still doubts if the study group has optimal hypertension knowledge. There is the need for massive education on these employees as well as other working populations to prevent an upward surge of cardiovascular diseases-heart diseases, stroke, renal failures and other serious chronic conditions.

## RECOMMENDATIONS

From the findings and observation of this study, the researcher came up with the following recommendations:

- Good primary health care facilities should be made available to the rural health care workers and should be cost effective
- All health care providers should always update themselves with current information and developments in the health profession regarding hypertension knowledge
- Enlightenment campaign should be carried out to educate/sensitize all employees on what is hypertension, its complications and risk/predisposing factors are all about?
- The health care team including nurses should plan individualized stop care to reduce cost, improve compliance, reduce adverse effects, lower blood pressure and prolong better quality of life

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