

Life Style as a Mutable Risk Factor of Hypertension Morbidity among Trained Nurses in Imo State, Nigeria

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ABSTRACT

Hypertension is a major public health problem which is prevalent all over the world. This study was a descriptive and correlational study carried out to investigate life style as a mutable risk factor of hypertension morbidity among trained nurses in Imo State, Nigeria. A well-structured questionnaire was used to interview the subjects and obtain data for the study. All subjects gave an informed consent to be part of the study. A total of 388 nurses participated in the study, out of which 248 (63.9%) were found to be non-hypertensive while 140 (36.1%) were hypertensive. Some of the lifestyle factors such as not sleeping very well at night, consumption of dairy products such as ice cream, consumption of alcohol and gaining weight due to lifestyle recorded scores with only slight differences for 'most of the times' for the nurses having and not having hypertension. Those who consume dairy products 'most of the times' were 39.9% for non-hypertensive and 45.0% for hypertensive, and those who consume alcohol 'most of the times' comprised of 82.3% of the non-hypertensive and 75.0% for non-hypertensive. In terms of physical exercise, 10.9% non-hypertensive and 16.4% hypertensive indicated that they do not take part in physical exercise 'most of the times'. Data analysis using SPSS version 23 showed that the relationship between hypertension and lifestyle for the bivariate (unadjusted) discriminant analysis was found to be significant among nurses in Imo state, Nigeria ($P < 0.0001$). Routine

health examination and proper training and retraining of nurses were recommended.

Keywords: Hypertension, Life style, Nurses, Exercise, Alcohol consumption.

INTRODUCTION

Hypertension is one of the major public health problems and it is prevalent all over the world. According to Deepa et al. [1], hypertension is the fourth contributor to premature death in developed countries and the seventh in developing countries. Predominantly, hypertension is an asymptomatic cardiovascular condition and the diagnosis is usually made at routine medical examinations or when there are any complications. Nurses as health workers ironically take it for granted that they are staff without minding to check their blood pressure periodically, since the silent killer is said to be asymptomatic. Maclead [2] classified hypertension as essential, primary or secondary. Essential hypertension indicates that specific medical cause cannot be found to explain a patient's condition. Secondary hypertension indicates that the high blood pressure is as a result of another condition such as kidney disease or tumors. Persistent hypertension is one of the risk factors for strokes, heart attacks, heart failure and arterial aneurysm and is a leading cause of chronic renal failure.

Moderate elevation of arterial blood pressure can lead to shortened life expectancy. According to Bruno et al. [3], hypertension is a condition recognized by medical experts when the blood pressure is above the accepted range of normal, for example i.e. 120mmHg systolic and 80 mmHg diastolic. He further explained that this level of normality varies with age. Many people living around the world including nurses and other professionals live with hypertension also known as silent killer. A good number of people only find out that they have hypertension when they have other health problems and on getting to the hospital, during investigation, they, find out that they have hypertension. Yoder [4] summarized blood pressure measurement by two parameters; these are the systolic & diastolic. Systolic indicates when the heart pumps and exerts pressure on the arterial walls while the diastolic is when the heart is relaxed or at rest between beats. Therefore the blood pressure can be measured using the systolic & diastolic pressures to equate the maximum and minimum pressures respectively.

Blood pressure of 120/80 mmHg to 139/89 mmHg is known as pre-hypertension while any blood pressure that is 140/90 mmHg and above is known as hypertension. [5] Richard [6] opined that many other things can influence the key factors and affect the blood pressure; example, stress, smoking, lifestyle, and alcohol. Essential or primary hypertension, the world's leading risk factor for global disease burden, is expected to cause more than half of the estimated 17 million deaths per year resulting from cardiovascular disease (CVD) worldwide. Defined as an elevation of blood pressure (BP) beyond 140/90 mm Hg, hypertension is strongly correlated with adverse outcomes such as stroke, ischemic heart disease, heart failure, and end stage renal disease. [6] The challenges of managing hypertension and preventing the development of these latter outcomes are unlikely to relent; the global burden of hypertension is projected to increase by 60% to affect approximately 1.6

billion adults worldwide by 2025. [5] The challenges highlighted are pertinent to many populations. Many low- and middle-income countries, most of which are in the midst of the epidemiological transition, face rapidly increasing prevalence of hypertension in the context of limited healthcare resources. In these countries, diagnosis and appropriate management of hypertension remains disconcertingly low.

Around 7.5 million deaths or 12.8% of the total of all annual deaths worldwide occur due to high blood pressure. [7] Hypertension occurs in approximately 8-10% of pregnancies. [8] High blood pressure in pregnancy can occur in three forms namely the pre-existing hypertension, gestational hypertension, or pre-eclampsia. Pre-eclampsia is a serious condition of the second half of pregnancy and following delivery characterized by increased blood pressure and the presence of protein in the urine. It occurs in about 5% of pregnancies and is responsible for approximately 16% of all maternal deaths globally. [8] Pre-eclampsia occurrence in pregnant women multiplies the risk of death for the baby at birth by two folds. There are no symptoms in pre-eclampsia although it can be detected during routine screening. The most common symptoms of pre-eclampsia are headache, visual disturbance (often "flashing lights"), vomiting, and pain over the stomach, and swelling. If unchecked, pre-eclampsia can progress to a life-threatening condition called eclampsia, which is a hypertensive emergency and has several serious complications including vision loss, brain swelling, seizures, kidney failure, pulmonary edema, and disseminated intravascular coagulation (a blood clotting disorder). [9]

The burden of hypertension is more among the elderly probably as a result of its higher prevalence rate and associated morbidity and mortality among the elderly group. [10] Age factor has shown positive association with systolic blood pressure and diastolic blood pressure (SBP/DBP) as well as in some other heart related diseases such

as, stroke and ischaemic heart disease on the other hand. [11] The correlation between age and high blood pressure is such that an increase in age is likely to attract a progressive rise in risk of vascular mortality with a 20 mmHg rise in SBP above 125 mmHg or 10 mmHg above DBP of 75 mmHg, and this observed risk is common among the elderly population. [12] Despite the high burden of hypertension, most affected persons are not aware of its presence, thus increasing the occurrence of associated complications, particularly among elderly populations. [13] Awareness of the diagnosis of hypertension is an important determinant of treatment and medication adherence. Awareness of hypertension is high in developed countries compared to developing nations. Optimal control of hypertension has been shown to reduce the risk of cardiovascular complications, particularly that of SBP which is more prevalent among the elderly population. [14] The knowledge and awareness of the diagnosis as well as of the risk associated with uncontrolled hypertension tend to enhance patients' adherence to lifestyle modifications and to medications. [15] With a growing elderly population in sub-Saharan Africa, adequate knowledge about the awareness, control and treatment of hypertension was required to guide the development of policies designed to reduce the burden of hypertension in the population. The objective of this study was to investigate life style as a mutable risk factor of hypertension morbidity among trained nurses in Imo State, South eastern Nigeria.

MATERIALS AND METHODS

This study was a descriptive and correlational study to investigate life style as a mutable risk factor of hypertension morbidity among trained nurses in Imo State, Nigeria. A well-structured questionnaire was used to interview the subjects and obtain data for the study. All subjects used for this study gave an informed consent to be part of the study.

Data analysis was performed using Microsoft Office Excel 2010 and IBM-SPSS Statistics version 23. Bivariate (unadjusted) discriminant analysis method was used to assess the correlation of hypertension with life style.

RESULTS

A total of 388 nurses participated in the study, out of which 248 (63.9%) were found to be non-hypertensive while 140 (36.1%) were hypertensive (Figure 1). In Tables 1 and 2, some of the lifestyle factors such as not sleeping very well at night, consumption of dairy products such as ice cream, consumption of alcohol and gaining weight due to my lifestyle recorded scores with only slight differences for most of the times for the nurses having and not having hypertension. There were 48% non-hypertensive and 62.1% hypertensive who most of the times do not sleep very well at night. Both the groups of nurses recorded high mean score of not sleeping very well at night but it was slightly higher for the hypertensive with 3.4 against 3.2 in non-hypertensive. Those who consume dairy products most of the times were 39.9% for non-hypertensive and 45.0% for hypertensive, and those who consume alcohol most of the times comprised of 82.3% of the non-hypertensive and 75.0% for non-hypertensive. In terms of physical exercise, 10.9% non-hypertensive and 16.4% hypertensive indicated that they do not take part in physical exercise most of the times. The mean scores did not differ in dairy products consumption (2.4 each) and in and physical exercise (2.4 each) among the two groups. Only 19.4% of the non-hypertensive group (mean score=2.8) responded that they do most of the times take any other substances apart from alcohol, compared to 38.6% in the hypertensive (mean score=3.0). The proportion of those who said their job was stressful were almost the same but with little different for non-hypertensive (10.5%) and hypertensive (10.7%). Similar mean scores were obtained on the consumption of pasty

food (non-hypertensive = 3.2, hypertensive= 3.0), while variations were observed in mean score relating relation to consumption of sugary foods (non-hypertensive = 3.0, hypertensive= 2.8), use of any type of vegetable oil to cook (non-hypertensive = 3.0, hypertensive= 2.8) and perception in relation to gaining weight due to my lifestyle, lowest score was obtained in leisure indicating that most of the nurses studied do not have time for leisure. The summary statistics of these factors are classified by their hypertension status on Table 3. The average lifestyle issues among the non-hypertensive nurses are slightly higher than those of the hypertensive ones.

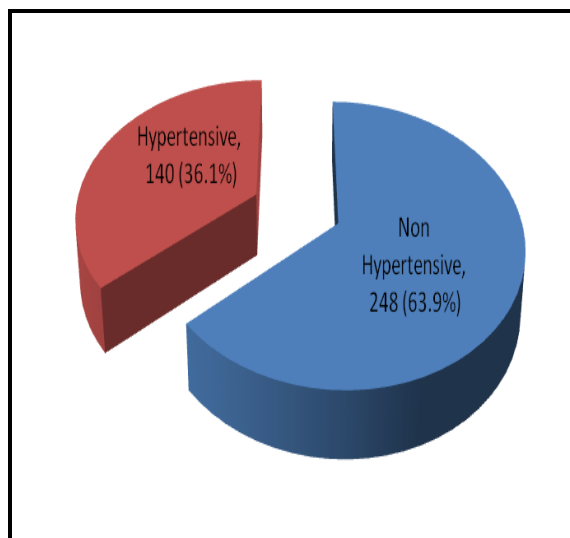


Figure 1: Distribution of hypertensive and non-hypertensive nurses

Table 1: Lifestyle and Non-Hypertension Status among Nurses in Imo State, Nigeria

Item	Non-Hypertensive				
	MT (pt=4) n (%)	OT (pt=3) n (%)	ST (pt=2) n (%)	R (pt=1) n (%)	Mean (Std. dev)
I don't sleep very well at night	119 (48.0)	67 (27.0)	50 (20.2)	12 (4.8)	3.2 (0.81)
I consume dairy products eg (ice cream)	99 (39.9)	122 (49.2)	16 (6.5)	11 (4.4)	3.2 (0.84)
I drink alcohol	204 (82.3)	42 (16.9)	1 (0.4)	1 (0.4)	3.8 (1.58)
I don't take part in physical exercise	27 (10.9)	63 (25.4)	134 (54.0)	24 (9.7)	2.4 (0.42)
I take any other substances apart from alcohol	48 (19.4)	140 (56.5)	31 (12.5)	29 (11.7)	2.8 (0.58)
I think my job is stressful	26 (10.5)	127 (51.2)	57 (23.0)	38 (15.3)	2.6 (0.61)
I use butter	190 (76.6)	51 (20.6)	4 (1.6)	3 (1.2)	3.7 (0.14)
I take pastry foods (e.g. doughnut)	90 (36.3)	123 (49.6)	28 (11.3)	7 (2.8)	3.2 (0.78)
I make use of any type of vegetable oil to cook	89 (35.9)	107 (43.1)	24 (9.7)	28 (11.3)	3.0 (0.70)
I think I am gaining weight due to my lifestyle	68 (27.4)	116 (48.6)	49 (19.8)	15 (6.0)	3.0 (0.62)
I find time for leisure	13 (5.2)	47 (19.0)	110 (44.4)	78 (31.5)	2.0 (0.30)
My appetite for food increased overtime	67 (27.0)	113 (45.6)	49 (19.8)	19 (7.7)	2.9 (0.60)
I enjoy sugary products	71 (29.0)	131 (52.8)	28 (11.3)	17 (6.9)	3.0 (0.73)
I take alcohol just to feel relaxed	212 (85.5)	27 (10.9)	7 (2.8)	2 (0.8)	3.8 (1.65)

MT= Most of the times, OT = Often times, ST = Sometimes, R = Rarely

Table 2: Lifestyle and Hypertension Status among Nurses in Imo State, Nigeria

Item	Hypertensive				
	MT (pt=4) n (%)	OT (pt=3) n (%)	ST (pt=2) n (%)	R (pt=1) n (%)	Mean (Std. dev)
I don't sleep very well at night	87 (62.1)	26 (18.6)	18 (12.9)	9 (6.4)	3.4 (1.12)
I consume dairy products eg (ice cream)	63 (45.0)	49 (35.0)	18 (12.9)	10 (7.1)	3.2 (0.79)
I drink alcohol	105 (75.0)	32 (22.9)	1 (0.7)	2 (1.4)	3.7 (1.42)
I don't take part in physical exercise	23 (16.4)	23 (16.4)	74 (52.9)	20 (14.3)	2.4 (0.38)
I take any other substances apart from alcohol	54 (38.6)	44 (31.4)	23 (16.4)	19 (13.6)	3.0 (0.64)
I think my job is stressful	15 (10.7)	68 (48.6)	29 (20.7)	28 (20.0)	2.5 (0.56)
I use butter	94 (67.1)	34 (24.3)	6 (4.3)	6 (4.3)	3.5 (0.65)
I take pastry foods (e.g. doughnut)	52 (37.1)	51 (36.4)	21 (15.0)	16 (11.4)	3.0 (1.24)
I make use of any type of vegetable oil to cook	55 (39.3)	34 (24.3)	25 (17.9)	26 (18.6)	2.8 (0.65)
I think I am gaining weight due to my lifestyle	56 (40.0)	44 (31.4)	25 (17.9)	15 (10.7)	3.0 (0.62)
I find time for leisure	12 (8.6)	18 (12.9)	60 (42.9)	50 (35.7)	1.9 (0.25)
My appetite for food increased overtime	25 (17.9)	74 (52.9)	21 (15.0)	20 (14.3)	2.7 (0.65)
I enjoy sugary products	46 (32.9)	47 (33.6)	22 (15.7)	25 (17.9)	2.8 (0.55)
I take alcohol just to feel relaxed	113 (80.7)	18 (12.9)	7 (5.0)	2 (1.4)	3.7 (1.54)

MT= Most of the times, OT = Often times, ST = Sometimes, R = Rarely

Table 3: Summary of Lifestyle Issues for the Hypertensive and Non-Hypertensive Nurses in Imo State, Nigeria

Predictor Variables	Non-Hypertensive		Hypertensive		Total	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Lifestyle issues	1.871	0.297	2.037	0.377	1.944	0.335

Table 4: Mutable Risk factors of Hypertension among Trained Nurses Studied (Bi-variate Discriminant Analysis)

Predictor Variables	Wilks' Lambda	F	df1	df2	P value
Lifestyle problems	0.943	23.482	1	385	0.0001

Table 4 represents the relationship between hypertension and lifestyle for the bivariate (unadjusted) discriminant analysis. The test result indicate that significant mutable risk factors of hypertension among nurses in Imo state, Nigeria was found as lifestyle issues ($P < 0.0001$). The probability values for tests of equality of means are less than 0.05 at lifestyle issues. The test result helps to identify the significant determinants of blood pressure (BP) status using the predictor variables. Hence lifestyle was evidently found as an important discriminant factor of hypertension.

DISCUSSION

The association of hypertension with lifestyle factors such as not taking part in physical exercise, excess consumption of dairy products such as ice cream, consumption of alcohol and gaining weight due to lifestyle recorded scores with only slight differences for 'most of the times', both for the nurses having and not having hypertension. In terms of association between hypertension and lifestyle, the findings in this study are consistent with findings of Addo et al. [16] where lifestyle was found as a significant risk factor of hypertension among trained nurses. Although some studies have shown that lifestyle is a significant risk factor to hypertension, this study is of the view that the significance may be due to merely affiance and family size. While rich parents especially those with small sized families tend to spoil their children with dairy products not minding the consequences, the poor parents with large families agonize to feed their own children. A sedentary lifestyle leads to overweight and obesity. Similarly, lack of exercise causes the body to increase in weight and the person stands the risk of heart attack due to high blood pressure caused by cholesterol build up in the body system. Onuzulike [17] opined that myocardial infarction is associated with

alcohol in-take and can occur when the arteries supplying blood to the heart muscle becomes clotted and stop the free flow of blood, this is referred to as heart attack. Thus alcohol consumption is associated with an increased risk of high blood pressure. Alcohol consumption raises systolic pressure more than diastolic. Lack of exercise among people who are inactive tend to have higher heart rates. The higher your rate, the harder your heart works with each contraction and the stronger the force of your arteries leading to hypertension. [17] Dietary patterns among workers who tend to leave work early often demands that some workers leave for work without having breakfast. Some married ones however, may be fortunate to carry food to work, courtesy of their spouse who may have helped with the preparation. [18] On the other hand, the singles, having probably been too tired to prepare any meal on return from work, step out in the morning without food and end up working for hours before eating for the day. This feeding habit is bad and affects the blood pressure negatively. [19] Proper adaptation to a healthy diet is another pattern for high blood pressure risk minimization. In addition, food such as vegetables, fruits, low-fat dairy products and soluble fiber are usually recommended to hypertension patients.

CONCLUSION

In conclusion, there is a strong association of hypertension with lifestyle among nurses in Imo state, Nigeria. Nurses are in the front line when providing adequate healthcare to the entire population, therefore any adverse health condition experienced due to exposure to work hazard would be of public health concern. Routine health examination and proper training and retraining of nurses were recommended.

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