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ASSESSMENT OF NUTRITIONAL STATUS OF A GROUP OF HYPERTENSIVE PATIENTS ATTENDING TERTIARY HEALTHCARE FACILITIES IN NIGERIA

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ABSTRACT

Background: Hypertension is a growing concern in developing and developed countries. Most of the diagnosed cases are caused by dietary lifestyle.

Objective: To assess the prevalence of overweight and obesity among adult hypertensive in a selected tertiary health care in Nigeria.

Design: A cross sectional study.

Setting: Lagos State University Teaching Hospital Ikeja, Lagos and University College Hospital, Ibadan Nigeria.

Subjects: A total of 120 patients (40.8% males and 59.2% females), volunteered to participate in the study after informed consent. Patients were recruited by convenience sampling method.

Outcome measures: Weight, height, waist and hip circumference, Body Mass Index (BMI) and Waist-Hip Ratio (WHR).

Results: The results showed that high percentage (62.5%) of the respondents had no family history of hypertension while 57.5% had hypertension less than one year ago. Patients' lifestyle revealed that 15.0% were taking alcohol, 85% had history of smoking tobacco while 53.8% of the respondents engaged in regular physical exercise. The BMI showed that grade 2 obesity was higher (41.0%) among females compared with males (21%). The WHR assessment also confirmed incidence of obesity among females compared to males as the WHR was 1.82 ± 0.45 and 2.00 ± 0.00 for male and female respectively.

Conclusion: Nutrition screening of hypertension is necessary for early intervention against hypertension and obesity.

INTRODUCTION

All over the world including Nigeria, overweight and obesity are now becoming a public health concern and hypertensive condition has been associated with obesity and overweight (1-3). Studies have shown that obesity is associated with a number of chronic diseases including coronary heart diseases, hypertension, and type 2 diabetes (3-7). However, hypertension is associated with increased risks of heart attack, heart failure, stroke, and kidney disease. Worldwide prevalence of obesity and hypertension is increasing significantly (6,7) and Nigeria has started responding to the rise in the prevalence of obesity and obesity-related diseases (8). A recent community based study of rural and semi urban population in

Nigeria put the prevalence of hypertension in Nigeria at 32.8% (9).

Studies have shown that family history, race and age are predisposing factors of hypertension (10-12). Other risk factors identified are obesity, inactivity, cigarette smoking, excessive salt intake, and alcohol intake (13-18). Most medical scientists have advised that hypertensive patients who are overweight or obese should be counselled on lifestyle and behavioral modifications, plus weight loss goals which should be individualised. The benefits of choosing a healthy diet and increased physical activity have been established by various studies (13, 19, 20) to contribute significantly to the reduction of developing complications among hypertensive patients. On this premise it is essential for nutrition

scientists to identify the food habits of hypertensive patient within their environment so that they can be properly counselled to ensure maintenance of good health. However, in Nigeria the nutrition data base and dietary pattern of hypertensive patients in many teaching hospitals are yet to be published. Based on this background, information on nutritional status among hypertensive patients is an important means of reducing the prevalence of high blood pressure (BP) of many Nigerians.

MATERIALS AND METHODS

Study Area and Sampling Procedures: A cross-sectional survey was conducted in two university teaching hospitals located in the south western part of Nigeria. These are University College Hospital at Ibadan (UCH) and Lagos State University Teaching Hospital (LASUTH) located in Lagos a commercial hub in the south western part of the country. The target population was hypertensive patients in south-western zone of Nigeria. A sample size of 120 hypertensive patients was used. Respondents were recruited for the study by convenience sampling method. The eligibility criteria was that each patient was required to be from Yoruba ethnic group and must have registered at the medical clinic as a hypertensive patient for at least six months .

Data were collected using semi-structured, self administered questionnaires. Information on socio-demographic status, lifestyle and Medical history were collected.

Anthropometric measurement: Anthropometric measurements consisted of weight, height, waist and hip measurement of the subjects. In the morning, weight was measured to the nearest 0.1 kg using a platform model electronic weighing scale (Simple glass electronic body fat analysis scale B33, Salton China.). During the measurement, subjects wearing light clothing, were measured to nearest 0.1kg. Height was measured to the nearest 0.1cm using a

Harpenden stadiometer.

Ethical issues: This study was conducted according to the guidelines laid down in the Declaration of Helsinki and all procedures involving human subjects were approved by the Ethical Review Committee of the Department of Nutrition and Dietetics, Federal University of Agriculture and conformed to the international guidelines of the ethical review of epidemiological studies. Informed verbal consent was obtained from all subjects with witness and formally recorded.

RESULTS

Most of the patients 52 (43.3%) were above fifty five years of age while majority were females 71 (59%). Most respondents had tertiary education 48 (40%) while 92 (76.6%) were married Table 1. The medical history of the patients (Table 2) indicates that most subjects 69 (57.5%) had been diagnosed for hypertension within one year. Majority, 75 (62.5%) had no family history of hypertension, while 82 (68%) claimed to have had regular blood pressure checkup in the hospital. Most respondents 77 (64%) were diagnosed to be hypertensive with no other coexisting diseases.

About one third of the patients were diagnosed to have other diseases such as diabetes 36 (30%) and heart failure six (5%) co-existing with hypertension. Most patients 72 (60%) were diagnosed to be hypertensive during routine medical checkups.

The habit of salt intake is still common among patients (Table 3). While majority of the respondents (85%) reported that they were still in the habit of adding cooking salt to their foods, 40% claimed that they use very little quantity of salt on their food.

The anthropometric measurements showed that more female subjects were obese and none of the men was underweight. Only 26.7% of respondents were within normal range of BMI (18.5-24.9) Table 4.

Table 1
Sociodemographic characteristics of hypertensive patients

Variable	Frequency N = 120	Percentage
Age		
<25years	3	2.5
26-35	13	10.9
36-45	21	17.5
46-55	31	25.8
56-65	21	17.5
>75	31	25.8

Sex		
Male	49	40.8
Female	71	59.2
Marital status		
Single	11	9.2
Married	92	76.6
Widow	15	12.5
Divorced	2	1.7
Education		
No formal education	12	10
Primary education	22	18.3
Secondary education	38	31.7
Tertiary education	48	40
Religion		
Christianity	70	58.3
Islam	44	36.7
Others	6	5

Table 2
The Medical History of Respondents

Variable	Frequency N = 120	Percentage %
Family History Hypertension		
Yes	45	37.5
No	75	62.5
Duration of illness		
<1year	69	57.5
1-5 years	24	20.0
> 5-10 years	7	5.8
> 10 years	20	16.7
Regularly blood pressure check up		
Yes	82	68.0
No	38	32.0
Any Diagnosis apart from Hypertension		
Yes	43	36.0
No	77	64.0
Disease conditions after the hypertension		
Diabetes	36	30.0
Heart failure	6	5.0
None	78	65.0
First knowledge of hypertensive		
Before coming to clinic	12	10.0
During routing medical checkup	72	60.0
During treatment of a disease	36	30.0

Table 3
Salt intake of respondents

Variable	Frequency N = 120	Percentages %	Remarks
Still take salt:			
Yes	102	85.0	Need counseling
No	18	15.0	Good Practice
Quantity of salt intake:			
Moderate	36	30.0	
Little	36	30.0	
Very little	48	40.0	Good Practice
Use seasonings:			
Yes	114	95.0	Needs counseling
No	6	5.0	Good Practice

Table 4
The body mass index of respondents

Body Mass Index (BMI)	Male N = 49 (%)	Female N = 71(%)
< 18.5 (Under weight)	0 (0.0)	1 (2)
18.5-24.9 (Normal)	17 (35)	15 (20)
25-29.9 (Overweight)	19 (38)	25 (35)
30-40 (Obesity)	10 (21)	29 (41)
>40 (Morbidly adherent obesity)	3 (6)	1 (2)

DISCUSSIONS

Hypertension cannot be cured, but it can be controlled through lifestyle changes and prescriptive medications. While medications to treat hypertension are available, research has shown that modest lifestyle and dietary changes can help treat and often delay or prevent high blood pressure (18). This study has shown clearly a high prevalence of overweight and obesity among hypertensive patients who are of Yoruba ethnic group in south western part of Nigeria due to dietary lifestyle. Most respondents were between the ages of 36 and 65 years (60.8%). This is in consonance with similar studies in some other countries (19, 20). Contrary to the general opinion that the very elderly (>75 years) are more prone to hypertension, the very elderly in this study were 31 (25.8%) while those in the middle age group were more than half of the registered hypertensive patients. This is in agreement with a study done by Barer *et al.* (21) who reported that there was increased risk of

hypertension and obesity among 50% of the middle age Americans. Increase in prevalence of obesity among most females respondents in this study is in agreement with a study conducted by Venkatramana *et al.* (7, 22).

In a study conducted in a Chinese rural population by Zhang (10, 18) the prevalence of overweight (18.6%) and obesity (1.7 %) was significantly higher among women than men. This study also revealed that many of the hypertensive patients have no family history and could thus be inferred that Yoruba race of old in Nigeria was healthier than the present generation. This could be due to a better lifestyle of the older generation where smoking, moderate activity, salt and fat intake were not as common as what operates now. Increase BP correlates strongly with increasing BMI as reported in International Study of Salt and Blood Pressure. This is similar to what was found in the study because more than half of the hypertensive patients were either overweight or obese among males and females. Also in a study conducted by Kumar *et al* the prevalence

of hypertension was high among overweight patients (6). Other studies also found a significant increase in prevalence of hypertension with increasing BMI (6, 7, 10). This study had a good number of patients with BMI above normal; male 32 (26.7%) and female 55 (45.8%) among the entire respondents.

Health experts are aware of the fact that eating too much salt can contribute to high blood pressure, which is a major risk factor for heart disease and stroke (13). These disease conditions affect many people all over the world (13, 26). Salt (sodium) is essential to our bodies. Normally the kidneys control the level of salt intake in man. However, when our salt intake levels are very high, the kidneys cannot keep up and the salt ends up in our bloodstream. Salt attracts water and when there is too much salt in the blood, the sodium component that has high affinity for water draws more water into the blood (27). More water increases volume of blood which raises blood pressure. Studies have shown that if salt intake is reduced daily by 100 mmol/l or 1 teaspoon of salt/day, the systolic blood pressure would decrease by 2 to 3 mmHg especially among hypertensive patients with primary hypertension (27). This has the potential to reduce deaths due to coronary heart disease by 4 to 5%, stroke deaths by 6 to 8%, and total mortality by 3 to 4%. Cutting down on salt is a simple but effective way to help lower blood pressure along with overall nutritional care of hypertensive patient.

This study has shown that less than a third of the hypertensive patients have normal nutritional status in Nigeria. The other two third are either overweight or obese which have been proven to be a risk factor in the development of hypertension. The need for dietary education among hypertensive patients becomes urgent to control and prevent complications that could arise from hypertension.

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