

Knowledge and Practice of Lifestyle Modification among Hypertensive Patients in a General Hospital Lagos

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Abstract:

Background: One of most common chronic disease in both developed and developing countries is hypertension. Hypertension is a life-threatening condition with a global public health challenge that affects economic development of nations. Management of hypertension aimed at organ damage prevention, including stroke and heart failure, which recommend initial treatment with lifestyle modification and its inclusion irrespective of pharmacological treatment. Hence, knowledge and practice of lifestyle modification plays a significant role in the management of hypertension. Therefore the study aimed at assessing the knowledge and practice of lifestyle modification among hypertensive patients.

Materials and Method: it is a descriptive study using Purposive sampling technique to select sample size of 38 participants. Researcher developed questionnaire and modified Hypertension Self-Care Activity Level Effects by Warren-Findlow and Seymour (2011) were used to collect data. Data were processed using SPSS version 21. Two research questions were answered using descriptive statistics of frequency tables, mean and standard deviation.

Result: the study revealed a mean knowledge score of 1.18(±0.393) among the participants while the mean practice score of lifestyle modification among the participants was 1.74(±0.446). The study also revealed poor knowledge of lifestyle modification among the participants (81.6%) while practice of lifestyle modification was also poor among the participants (52.6%).

Conclusion: the study revealed that most hypertensive patients do not have adequate knowledge about lifestyle modification which also affects the practice. It is recommended that detail and specific information should be given to hypertensive patients to improve their knowledge and consequently affects the practice.

Keywords: Hypertension, Knowledge, Practice, lifestyle modification, Nigeria

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I. Introduction

Hypertension is a significant risk factor for coronary artery disease and stroke, a leading cause of death and disability worldwide, and a major risk for dementia, chronic kidney disease, coronary artery disease, and heart failure. In terms of economic burden, morbidity and mortality, poorly controlled blood pressure is a considerable important public health concern among older adult in the world. The National Health and Nutrition Examination Surveys (NHANES) data from 2011 to 2014 demonstrated that 46 percent of adults 18 years and older in the United States had hypertension.¹ In surveys similar to NHANES that were performed in Canada and Europe, the age- and sex-adjusted prevalence of hypertension ranged from 20 to 55 percent.² A population-based screening study in China of 1.7 million adults aged 35 to 75 years found a prevalence of hypertension of 45 percent.³

African continent seems to be the most affected region in the world about 46% for both sexes combined.⁴ In Nigeria, the prevalence of hypertension forms a substantial portion of the total burden in Africa because of the large population of the country, currently estimated to be over 170 million.⁵ According to⁶ the burden of hypertension in Nigeria might be underestimated due to paucity of data and this might leave the illness undiagnosed and untreated. From their findings on prevalence, detection, treatment and control of hypertension in Nsukka, South-Eastern Nigeria, among 756 adult participants (364 men and 392 women) aged 18 years and above the prevalence of hypertension was 21.1%. Hence, uncontrolled hypertension clearly places a significant strain on health care delivery system. Long-term projections suggest that, by 2025, 29 percent of adults worldwide would have hypertension (i.e. 1.56 billion people globally).⁷

The relationship between blood pressure (BP) and risk of cardiovascular diseases events is continuous, consistent, and independent of other risk factors. The higher the BP, the greater is the chance of heart attack,

heart failure, stroke, and kidney diseases⁶. Despite all that is known about the adverse health consequences of hypertension, majority of hypertensive patients in Nigeria still have a poor control (management) of their blood pressure⁸. According to Eight Report of the Joint National Committee (JNC 7) on prevention, detection, evaluation, and treatment of high blood pressure in 2004 the risk factors of hypertension are divided into two groups; the modifiable and un-modifiable risk factors. The un-modifiable risk factors are those that are beyond human control.⁹

On the other hand the modifiable risk factors are determined by lifestyle choices such as poor diet, excess weight gain, excess dietary sodium intake, reduced physical activity, inadequate intake of fruits, vegetables, and potassium, excess alcohol intake and smoking.¹⁰ The prevalence of these characteristics is high. At least 122 million Americans are overweight or obese. Mean sodium intake is approximately 4,100mg per day for men and 2,750 mg per day for women, 75 percent of which comes from processed foods. Fewer than 20 percent of Americans engage in regular physical activity, and fewer than 25 percent consume five or more servings of fruits and vegetables daily.⁹

Many guidelines exist for the management of hypertension. These includes pharmacologic (medication) and non-pharmacologic (lifestyle modification) therapy.¹¹ The Joint National Committee (JNC), the American Diabetes Associate (ADA), American Heart Association/American Stroke Association (AHA/ASA) and other groups involved in the management of hypertension recommend lifestyle modification as the first step in managing hypertension. They also recommend implementation of lifestyle interventions to be used throughout the management of all patients with high blood pressure for effective control. Studies have also shown that adherence to lifestyle modification helps to prevent, reduce the risk, and treat hypertensive conditions. It also facilitates drug step-down and drug withdrawal in highly motivated individuals who achieve and maintain lifestyle changes. Yet the prevalence of high blood pressure and consequent of poor management is high among the populace. Hence, there is a need to assess the knowledge and practice of lifestyle modification among hypertensive patients.

II. Materials And Method

The study adopted a descriptive survey design carried out among hypertensive patients attending medical out-patients department (MOPD) in Alimosho General Hospital, IgandoLagos. The hospital is the only secondary health facility that serves Alimosho Local Government Area, being one of the largest Local Government Area of Lagos State, Nigeria. Purposive sampling technique was used to select hypertensive patients in MOPD of the health facility. A total number of 38 (both males and females) aged ≥ 18 years were purposively selected for the study

Study design: Descriptive Research Survey Design

Study location: This was in a Secondary Health Facility, done in medical out-patients department of Alimosho General Hospital, Igando Lagos.

Study Duration: February 2019 to July 2019

Sample Size: 38 Respondents

Sample Size Calculation: Sample size was determined using Taro Yamane method of sample size determination with population size (N) of 42 based on daily out-patients clinic attendance and margin of error of 0.05 with a confidence level of 95% given a sample size of 38 participants.

Subject and Selection Method: Purposive Sampling Technique was used to select hypertensive patients aged ≥ 18 years from medical out-patients department based on inclusion criteria.

Instrumentation: A modified Hypertension Self-Care Activity Level Effects (H-SCALE) adapted from Warren-Findlow and Seymour (2011) was used to gather data on the knowledge and practice of lifestyle modification among the participants. The questionnaire was divided into three sections.

Section A: Patients demographic characteristics and clinical data which have eight (8) items.

Section B: knowledge of lifestyle modification with twelve (12) items, constructed in the form of Yes or No questions. A score of one (1) was given for each correct answer and zero (0) for incorrect answer. Lowest score for respondent is 0 while highest score 12. 0-5 points was graded as low knowledge, 6-8 points moderate knowledge and 9-12 points as high knowledge level

Section C: this elicited information on practice of lifestyle modification with seventeen (17) items using physical exercise, low salt diet, alcohol consumption, smoking and weight management practices with a modified H-Scale adapted to local context to ultimately determine the relative contribution of each activity to blood pressure control. Each categories of lifestyle were coded and the scores of the items were summed up given overall score of 45 points. A score of 23 points and above ($>50\%$) of the total score indicates good practice while less than 22 points ($<50\%$) indicates poor practice of lifestyle modification.

Inclusion criteria: adult hypertensive patients who

1. were ≥ 18 years old at the time of data collection
2. registered and attending medical out-patients clinics (MOPD)

3. were available and willing to participate in the study.
4. could communicate either in English or Pidgin English
5. were able to walk for recommended periods [30 minutes /day]
6. were not suffering from heart diseases interfering with activities
7. Were free from stroke.

Exclusion criteria

1. hypertensive patients who were unable to tolerate moderate physical exercise or stress at the time of data collection
2. have diabetes mellitus with hypertension.
3. other patients at MOPD who were not diagnosed to be hypertensive.

Procedure methodology

Ethical approval for the study was obtained from Babcock University Health Research Ethics Committee (BUHREC) with approval reference number BUHREC102/19 on 27th February, 2019. Babcock University Ref. number NUREC/24/01/2019. The researchers had obligation to the subjects by getting their informed consent consistent with the principle of individual autonomy. Their voluntary participation, anonymity, privacy and confidentiality when collecting the data was guaranteed. Their right to participate and not to participate was also respected. Data was collected over a period of 2 weeks.

Statistical analysis

The completed questionnaires were checked thoroughly to ensure that it was properly filled before retrieval from the participants. Data collected were coded and processed using statistical package for social science (SPSS), version 21. Frequency table was constructed and data were expressed on it. The research questions were answered using descriptive statistics of mean and standard deviation.

III. Results

Table no 1 Shows that greater number of the participants was females 26 (68.4%). Majority 17 (44.7%) participants were between the ages of 46 to 60 years, also majority, though below average, 11 (28.9%) have primary education. Many of the participants, 16(42.1%) were self-employed. This could also be related to the fact that the study was carried out in one of the largest commercial city in South-west Nigeria.

Table no 1: Socio-Demographic characteristics of respondents

Variable	Frequency	Percentages (%)
Age (years)		
18-30 years	2	5.3
31-45 years	3	7.9
46-60 years	17	44.7
>60 years	16	42.1
Total	38	100.0
Gender		
Male	12	31.6
Female	26	68.4
Total	38	100.0
Educational Level		
No formal education	11	28.9
Primary education	11	28.9
Secondary education	5	13.2
Tertiary education	11	28.9
Total	38	100.0
Occupation		
Employed	8	21.1
Retired	10	26.3
Self employed	16	42.1
House keeper	4	10.5
Total	38	100.0
Duration of Hypertension		
1-5 years	16	42.1
6-10 years	21	55.3
>10 years	1	2.6
Total	38	100.0

Knowledge about lifestyle modification

Table no 2 reveals that 44.7% of the participants indicated that the way of life or behaviour of an individual has effect on his/her blood pressure in the Only 10.5% of the participants believed that eating a diet rich in fruits, vegetables for at least five (5) servings (a cup of 100mls per serving) a day can lower the blood pressure. Not more than 7.9% of the participants agreed that consuming less than 2.4g (1 teaspoon) of salt per day can lower blood pressure. Just 10.5% of the participants know that 30 minutes of regular physical activity at least five days in a week can lower blood pressure.

Table no 2: showing knowledge about lifestyle modification n=38

knowledge of Lifestyle modifications		n=38	
	Do you know that:	Frequency	Percentages (%)
1	way of life or behaviour of an individual has effect on his/her blood pressure?	17	44.7
2	eating diet high in saturated fat increases risk of high blood pressure (such as red meats, margarines, and cooking oils like coconut, palm kernel, and palm oils)?	13	34.2
3	regular taking of fish, poultry, beans, nuts, vegetable oils and whole grain can lower blood pressure?	11	28.9
4	eating a diet rich in fruits, vegetables for at least five (5) servings (a cup of 100mls per serving) a day can lower the blood pressure?	4	10.5
5	high salt intake increases the risk of high blood pressure?	21	55.3
6	consuming less than 2.4g (1 teaspoon) of salt per day can lower blood pressure?	3	7.9
7	reduced physical activities increase risk of high blood pressure?	14	36.8
8	30 minutes of regular physical activity at least five days in a week can lower blood pressure?	4	10.5
9	uncontrolled weight gain increase the risk of high blood pressure?	18	47.4
10	maintain normal body weight can lower blood pressure?	5	13.2
11	High consumption of alcohol could lead to high blood pressure?	15	39.5
12	reducing alcohol intake can contribute to reduction of blood pressure?	6	15.8

Table no 3 summarily shows that 31 (81.6%) participants had low level of knowledge, 7 (18.4%) participants had moderate knowledge level while 0(0.00%) participants had high knowledge level about lifestyle modification.

Table no 3: sowing summary of responses on knowledge about lifestyle modification

Knowledge level about lifestyle modification n=38	Frequency	Percentage (%)
Low knowledge (0-5 points)	31	81.6
Moderate knowledge (6-8 points)	7	18.4
High knowledge (9-12 points)	0	0.00
Total	38	100

Table no 4 summarizes self-reported practice of lifestyle modification among the participants. The practice of diet and salt restriction among the participants were poor (92.1%). More so, 89.5% of the participants have poor exercise practice.

Table no 4: showing summary of self-report practice of lifestyle modification

Practice of lifestyle modification	n =38	
Diet and Salt Restriction	Frequency	Percentage %
Poor practice (0-10 points)	35	92.1
Good practice (11-21 points)	3	7.9
Total	38	100.0
Exercises		
Poor practice (0-8 points)	34	89.5
Good practice (9-18 points)	4	10.5
Total	38	100
Weight Management		
Poor practice (0-2 points)	16	42.1

Good practice (3-5 points)	22	57.9
Total	38	100
Alcohol Consumption		
Poor practice (involved in alcohol)	15	39.5
Good practice (abstainers)	23	60.5
Total	38	100

Table no 5 shows the overall reported practice level of lifestyle modification among the participants.52.6% of the participants have poor practice of lifestyle modification.

Table no 5: showing Overall Practice Level of Lifestyle Modification among the participants

Practice of Salt and Diet Modification	Frequency(n=38)(%)	Percentages (%)
Poor practice (≤ 22 points)	20	52.6
Good practice (≥ 23 points)	18	47.4
Total	38 (100.0)	100.00

IV. Discussion

The findings of the study revealed that greater number of participants (81.6%) had poor knowledge level of lifestyle modification. This is higher as compared with a study done by ¹² in South Ethiopia which showed that 55.1% of the respondents had poor knowledge about the life style modification. However, the findings support the study done in India which showed that 83.3% of the respondents had the poor knowledge about the life style modification practices. This discrepancy in the findings may be due to the differences in literacy level as majority of the respondents had primary level of education. This finding agreed with ⁸ in a studied carried out in south East Nigeria that majority of the participants were not knowledgeable about the role of exercise, moderate alcohol consumption, salt restriction, fruits and vegetables on blood pressure control. This also corroborates the report of World Health Organization that people around the world are consuming more energy-dense foods that are high in saturated fats, trans-fats, sugars, and salt; and that their eating patterns shifted to consuming less fruit vegetables and dietary fiber (such as whole grains), that are key components of a healthy diet which contributes to reduce blood pressure ¹³

Evidence has shown a significant relationship between sodium intake and blood pressure. Sodium restriction has been shown to lower systolic and diastolic blood pressure, particularly in patients with hypertension, and lowering blood pressure is associated with better cardiovascular outcomes.^{14, 15} According to WHO, an estimated 2.5 million deaths could be prevented each year if global salt consumption were reduced to the recommended level. This should be one of the top priority actions to tackle the global non-communicable disease crisis through high level of awareness.^{16, 13}

The study findings also showed that majority (52.6%) of the participants had poor practice of lifestyle modification. This finding was lower compared with the study done in China in which 70% of the participants had poor adherence to lifestyle modification practices but lower to the findings of the study done in Addis Abba (2017) which had 23% level of adherence. This might be due to level of awareness about lifestyle modification and its advantages among the participants. It also might be due to patients relying only on medication considering lifestyle modification has no effect on their blood pressure. This finding agreed with ¹⁷ that the desired level of changes in the attitude of patients toward knowledge and practice of lifestyle modification was not attained because of inadequate level of advice provided by the health care provider.

V. Conclusion

This study assesses the knowledge and practice of lifestyle modifications among hypertensive patients. This was related to the fact that despite the availability of different drugs option for the control of hypertension and advice to modify lifestyle, millions of people are living with the disease and new diagnosis are made every day. It was shown that the knowledge of lifestyle modification has a direct impact on the practice. Hence, detailed and specific information on lifestyle modification should be given to hypertensive patients by the Nurses to improve their knowledge which consequently affects the practice for effective blood pressure control.

VI. Recommendations

Based on the findings on the findings of the study the following recommendations were made:

- Health sector should intensify effort on health educating the populace on the type of lifestyle that put the society at risk of developing hypertension.
- Time allotted for health talk at clinics should be extended; this will give opportunity for hypertensive patients to have specific and more focused information on the application of lifestyle modification in the control of blood pressure.
- There should be increase awareness on lifestyle modification among hypertensive patients to promote adoption of healthy lifestyle. This could be achieved through regular jingle and mass media.
- Periodic training on lifestyle modification should be part of the treatment guideline for hypertensive patients.

Compliance with ethical standard

Conflict of interest: (Nil)

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