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ASSESSMENT OF SELF-CARE MANAGEMENT PRACTICE AMONG HYPERTENSIVE PATIENTS ATTENDING TEACHING HOSPITAL IN ONDO STATE, NIGERIA

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ABSTRACT: *Hypertension is a chronic disease and global public health problem which accounts for large proportion of cardiovascular deaths and complications. This study assessed the level of self-integration practice, self-monitoring and describing medication adherence of patient with hypertension in two Teaching Hospitals in Ondo State Nigeria. The study adopted a descriptive cross-sectional research design. Convenient sampling technique was used to select sample size of 298 respondents out of the total population of 920 in two Teaching Hospitals Ondo State. The research tool was a structured questionnaire which consists of Demographic, Socio economic characteristic, self-integration, self-monitoring and medication adherence. Face and content validity were determined by given the questionnaire to the supervisor and expert in the field necessary correction were made. Reliability was also ascertained using split half method result was analysed and the Cronbach alpha coefficient ranges from 0.861-0.938. Data obtained was analyzed using statistical package of social sciences SPSS version 23. Frequency, means, standard deviation was used to provide answer to the research questions while inferential statistic of ANOVA was utilised to provide answers to the three hypotheses generated at 0.05 level of significance. The result showed that majority 71.5% of the respondent are female with the age range of 31-50 years. 9.7% of the respondent had high level of self-integration as self-care management practice, 3.4% of the respondent had high level of self-monitoring as self-care management practice, minority 11.4% of the respondent adhere to medication 14.1 % had high practice of lifestyle modification. Findings also showed that respondent's level of education, income and duration of diagnosis of hypertension had no statistically significant difference with self-care management with the p value of (p=0.923, p= 0.505, p= 0.227) respectively. In conclusion, self-care management practices were low among the respondents, socio-economic characteristic of the respondents had no statistically significant difference with self-care management. It was also observed that respondents who were diagnosed earlier had higher self-care management. Therefore, it is recommended that target intervention should be done in order to improve hypertension self-care practices. Also, health education on integrating health care into daily life through daily activities should be intensified by health professionals at the clinic regularly.*

KEYWORDS: Duration, Hypertensive Patient, Self-Care Management, Self-Integration, Socio-Economic Characteristics, Lifestyle Modification

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INTRODUCTION

Hypertensive self-care management practices are essential for control of high blood pressure and its complications in individuals with hypertension. It encompasses a wide range of behaviours in addition to medication adherence and monitoring of symptoms, such as individuals' ability to manage physical, psychosocial and lifestyle behaviours related to their condition (Kim, Lyu & Lee, 2016). It has been recommended by the Joint National Committee of seven as a key step in controlling high blood pressure (Chan, Han, Kim, Lee, Nguyen, Song et.al, 2014). Hypertension is one of the most common diseases worldwide and the main cause of cardiovascular and cerebrovascular morbidity and mortality (Forouzanfar, Gregory, Mohammad & Patrick, 2017). Hypertension is a chronic medical condition in which there is an abnormally high arterial blood pressure. Normal blood pressure is a systolic of less than 120 mmHg and diastolic pressure of less than 80 mmHg. Hypertension is defined as a systolic pressure level of ≥ 130 mmHg and diastolic of ≥ 80 mmHg (America Heart Association, 2016).

The prevalence of high blood pressure has been increasing globally, it is anticipated that in the year 2025, the number of patients with high blood pressure will reach 1.56 billion, accounting for up to 54% of stroke and 47% of ischemic heart disease as well as 13.5% disability adjusted life years (DALYs) (Bell, Twiggs, & Olin, 2015). The global burden of hypertension and other non-communicable disease is rapidly increasing, and African continent seems to be the most affected region in the world. In Nigeria, there is a rise in the incidence of hypertension and non-communicable disease the rise will usually lead to increase in incidence of cardiovascular diseases and their consequence (Adeloye, Aderemi, Basquill, Obi & Thompson, 2015). Some behavioural factors, including poor nutrition, drinking alcohol, physical inactivity, overweight and age has been ascribed as risk factors for the increase in the prevalence of hypertension (WHO, 2018).

According to county profile report by World Health Organisation it was discover that non-communicable diseases accounted for an estimated 29% of all deaths in Nigeria with cardiovascular disease as the primary cause of non-communicable disease related death which is 11% death that is 17.9 million deaths annually (World Health Organisation, 2018). World Health Organization's (WHO) report that complications of hypertension accounts for 9.4 million of the annual 17 million worldwide deaths from cardiovascular disease. Also, it is responsible for approximately 45% of deaths resulting from heart disease and 51% of deaths from stroke (World Health Organization, 2013). In addition, hypertension is a risk factor for renal and eye diseases (Fraser-Bell, Symes & Vaze, 2017). Poor self-care management of high blood pressure is a possible risk factor for cardiovascular disease and increases the chances of its complications. Therefore, it is of high significance to control hypertension and in order to decrease the chance of these complications (WHO, 2013).

Hypertensive self- care management is a strategy which describes the behaviour of hypertensive individual's in monitoring and controlling their blood pressure (Magid & Farmer, 2014). It is an essential activity in which an individual undertaken in order to improve health or prevent disease. Hypertensive self-management approaches include medication adherence, self-monitoring of blood pressure and self-integration in term of lifestyle modifications relating to diet, exercise, smoking and alcohol cessation (Ard, Eckel, Houston, Hubbard, Jakicic, Lee et.al, 2014). These self-management behaviours form the key areas of recommended hypertension treatment and have been shown to be associated with

significant improvements in hypertension control and also yield better results than the pharmacological based hypertension management approach (Magid & Farmer, 2014).

Self-care management is a dimension of wellness and it emphasizes the fulfilling of basic needs that maintain life in a secure and normal way. It is needed as patients try to make themselves healthy by exercising, losing weight or changing their eating habits so that they control blood pressure effectively. Collective evidence revealed that adherence to self-care management practices lowers blood pressure, increases the efficacy of antihypertensive medications, and reduces the complications and overall mortality associated with HTN (Kenerson, Lindholm, Mann, Weber, Schiffrin, et.al, 2014). High blood pressure control is considered to have optimal health benefit by reducing the risk of cardiovascular diseases and reduction in untimely death from stroke and coronary heart disease.

Elbur (2015), in his study found that some factors such as age, marital status, income, gender, level of education, duration of diagnosis and individual's knowledge on hypertension influences lifestyle modification practices. Evidences had shown that the problem of uncontrolled hypertension revolves mainly around non-compliance with self-management practice and some socio demographic factors like advanced age, income, education, and duration of diagnosis (Khatib, Schwalm & Yusuf, 2014). Majority of the patients in health care facilities receive medication but not self-care management, indicating partial adherence to JNC7 guidelines. For instance, on average, only 30% of hypertension patients practice self-care management as a treatment of hypertension (Frieden, King & Wright, 2014). Previous studies suggest personal factors like age, gender, level of education, socioeconomic, duration of diagnosis and knowledge as relevant factors to self-care management of hypertension. Some previous studies showed that those factors have positive relationship with self-care management of hypertension (Avery, Lynch, Liebman, Richardson & Ventrelle, 2014).

The rate of hypertension self-awareness, access to treatment services, and hypertension control rate are relatively low because early stages of the disease do not show any obvious signs and symptoms (WHO, 2016). As a result, patients neglect to take good care of themselves together with having an unhealthy lifestyle. Instances of these unhealthy behaviours include the lack of body movements and regular exercise, being overweight, smoking, bad diets such as those high-in-fat foods, incomplete intake of medication for hypertension, and chronic stress conditions. Lack of self-management ability among the patients with hypertension is a significant cause of higher rates of disability and death, especially from stroke, renal failure, or heart failure (Carter, Cushman, Dennison, Handler, James, Ortiz, et.al, 2014). Therefore, lowering blood pressure (BP) through lifestyle modification and antihypertensive medications, or both can substantially reduce an individual's risk for subsequent cardiovascular disease (CVD) and stroke (Carter, et.al. 2014). Even a moderate reduction in systolic Blood Pressure (SBP) of 10 mm Hg or diastolic blood pressure (DBP) of 5 mm Hg has been found to decrease risk of mortality from coronary heart disease and stroke by 22% and 41%, respectively. Therefore, it is of high importance to control hypertension and to decrease the chances of these consequences (Chen, Fox & Ku, 2016).

Despite the presence of several useful non-pharmacologic methods to hypertension management, hypertension control is still poor, with less controlled blood pressure. Actively engaging patients in their care may improve outcomes, save money by avoiding unnecessary treatment, and reduce the number of clinic visits (Carter, et.al, 2014). To reduce the rate of

prevalence and mortality among hypertensive patients there is a need to promote self-care management abilities. Therefore, the researcher assessed self-care management practices of hypertension among hypertensive patients attending Teaching Hospitals in Ondo State.

Objective of the Study

The main objective of this study is to assess self-care management practices among hypertensive patient attending two Teaching Hospitals in Ondo State. The specific objectives are to:

1. assess the level of self-integration as self-management practice among hypertensive patients attending Teaching Hospitals Ondo State;
2. determine level of self-care monitoring as self-management practice among hypertensive patient attending Teaching Hospital Ondo State;
3. assess the level of medication adherence as self-management practice among hypertensive patient attending Teaching Hospital Ondo State and
4. assess life style modification as self-care management practice among hypertensive patient attending Teaching Hospital Ondo State.

Significance of the Study

The findings from this study would assist the nurse to develop self-care management practice guidelines for health education for hypertensive patient. The findings would assist the health care providers to improve their action and their communication with the patient to ensure a better influence on self-care behaviour. Finding would also help young adult and the elderly to improve their health and self-care through life style modification in controlling one's blood pressure. The findings from this study would help health policy on protocol of self-care management program for hypertensive patient at each health facilities in order to prevent complication resulting from hypertension. Findings would also be useful as a baseline data for nurses

Research Questions

The following were the research questions generated

1. What is the level of self-integration practice as self-care management practice among hypertensive patients attending Teaching Hospitals Ondo State?
2. What is the level of self-monitoring as self-care management practice among hypertensive patient attending Teaching Hospital Ondo State?
3. What is level of medication adherence as self-care management practice among hypertensive patient attending Teaching Hospital Ondo State?
4. What is the lifestyle modification as self-care practice among hypertensive patient attending Teaching Hospital Ondo State practice?

Hypotheses

The hypotheses generated are as follows;

$H_0$1 There is no significant relationship between respondent education and self-care management practices among hypertensive patient.

$H_0$2 There is no significant relationship between respondent income and self-care management practices among hypertensive patient.

$H_0$3 There is no significant relationship between respondent duration of diagnosis of hypertension and self-care management practices among hypertensive patient.

LITERATURE/THEORETICAL UNDERPINNING

Hypertension also known as high blood pressure is the elevation of pressure in the arteries it is the major risk factor for stroke (ischaemic and haemorrhagic), myocardial infarction, heart failure, chronic kidney disease, peripheral vascular disease, cognitive decline and premature death. Untreated hypertension is associated a progressive rise in blood pressure, often culminating in a treatment resistant state due to associated vascular and renal damage. Hypertension being one of the main cardiovascular risk factors, affects about 40% of adults across the world (Cepene, Jureniene, Kriaucioniene, Klumbiene, Petkeviciene, Raskiliene et.al, 2014).

Hypertension, or high blood pressure, is probably the most common of all health problems in adults and is the leading risk factor for cardiovascular disorders. High blood pressure is sustained elevation of the blood pressure to 140/90 mmHg is the most common Non-Communicable Disease (NCD) globally and it affects all races with variable prevalence. It is becoming a public health challenge in many developing countries including Nigeria. The prevalence of hypertension varies across regions and countries, the prevalence of the disease in adult males in the United States in the year 2000 was 27%, while in Nigeria it was 34.8%; meaning that over 56 million Nigerians are hypertensive (Agwu, Godwin, Augustine, Frances & Ezinne, 2014). Hypertension is more common in younger men compared with younger women, in blacks compared with whites, in persons from lower socioeconomic groups, and in older persons. Men have higher blood pressures than do women up until the time of menopause, at which point women quickly lose their protection (National Institute for Health and Care Excellence, 2018).

Hypertension commonly is divided into the categories of primary and secondary hypertension. Primary hypertension was previously termed “essential hypertension” because of a long-standing view that high blood pressure was sometimes “essential” to perfuse diseased and sclerotic arteries. It is now recognised that the diseased and sclerotic arteries were most often the consequence of the hypertension and thus the term “essential hypertension” is redundant and the “primary hypertension” is preferred. Primary hypertension refers to the majority of people with sustained high blood pressure (approximately 90%) encountered in clinical practice, for which there is no obvious, identifiable cause. the chronic elevation in blood pressure occurs without evidence of other disease. The remaining 10% are termed “secondary hypertension” for which specific causes

for the blood pressure elevation can be determined such as kidney disease, Conn's adenoma, renovascular disease, or phaeochromocytoma (National Institute for Health and Care Excellence, 2018).

Blood pressure is quantified as diastolic and systolic pressures measured in millimetres of mercury (mmHg). The diastolic pressure represents the pressure during ventricular relaxation in diastole whereas the systolic pressure represents the peak pressure due to ventricular contraction during systole. Either or both pressures have specified upper limits of normal and elevation in either or both pressures are used to define hypertension. Blood pressure is normally distributed in the population and there is no natural cut-point above which "hypertension" definitively exists and below which, it does not. Epidemiological studies demonstrate that the aforementioned disease risk associated with blood pressure is a continuous relationship and above blood pressures of 115/70mmHg, the risk of cardiovascular events doubles for every 20/10mmHg rise in blood pressure. The threshold blood pressure determining the presence of hypertension is defined as the level of blood pressure above which treatment has been shown to reduce the development or progression of disease (Joint National committee on prevention, detection, evaluation and treatment of high blood pressure (JNC) 2004).

Lifestyle changes can be used as an initial treatment before the start of antihypertensive medications and as an adjunct to medications in persons already on drug therapy. Lifestyle changes include weight loss if overweight; adoption of the Dietary Approach to Stop Hypertension eating plan; dietary sodium restriction; moderate alcohol consumption; regular aerobic physical activity; smoking cessation; and stress reduction (Cryer, Horani & Pette, 2016).

Lifestyle modifications are essential for the prevention of high BP, and these are generally the initial steps in managing hypertension. As the cardiovascular disease risk factors are assessed in individuals with hypertension, pay attention to the lifestyles that favourably affect BP level and reduce overall cardiovascular disease risk. A relatively small reduction in BP may affect the incidence of cardiovascular disease on a population basis. A decrease in BP of 2 mm Hg reduces the risk of stroke by 15% and the risk of coronary artery disease by 6% in a given population. In addition, a prospective study showed a reduction of 5 mm Hg in the nocturnal mean BP and possibly significant (17%) reduction in future adverse cardiovascular events if at least one antihypertensive medication is taken at bedtime (Kim & Kong 2015).

Life style modification includes reduction in sodium intake, maintenance of adequate potassium intake, weight reduction if overweight, regular aerobic physical activity, and modification of alcohol intake. A reduction in dietary saturated fats and cholesterol is recommended for overall cardiovascular health. Smoking cessation should be encouraged for people who smoke. For persons with stage 1 hypertension, the initial step to control blood pressure is lifestyle modification with weight loss before initiating pharmacologic treatment (Siervo, Lara, Chowdhury, Ashor, Oggioni & Mathers, 2015).

The American Heart Association recommends that the daily salt intake for adults in the general population should not exceed 6 g/day, since many prepared foods are high in sodium, it was recommended that persons consult package labels for the sodium content of canned foods, frozen foods, soft drinks, and other foods and beverages to reduce sodium intake adequately.

Moderate dietary sodium reduction (about 2500 mg Na^+ or 6 g NaCl per day) added to angiotensin-converting enzyme (ACE) inhibition was more effective than dual blockade (ACE inhibitor [ACEI] and angiotensin II receptor blocker [ARB]) in reducing both proteinuria and BP in nondiabetic patients with modest chronic kidney disease. Furthermore, a low-sodium diet added to dual therapy yielded additional reductions in both BP and proteinuria, emphasizing the beneficial effect of dietary salt reduction in the management of hypertensive patients with renal insufficiency (NICE, 2018).

The DASH eating plan encompasses a diet rich in fruits, vegetables, and low-fat dairy products and may lower blood pressure by 8-14 mm Hg. The 2011 ADA standard of care supports the DASH diet, with the caution that high-quality studies of diet and exercise to lower blood pressure have not been performed on individuals with diabetes. Dietary potassium, calcium, and magnesium consumption have an inverse association with BP. Lower intake of these elements potentiates the effect of sodium on BP. Oral potassium supplementation may lower both systolic and diastolic BP. Calcium and magnesium supplementation have elicited small reductions in BP (Siervo, Lara, Chowdhury, Ashor, Oggioni & Mathers, 2015).

High dietary potassium intake may protect against the development of hypertension or improve blood pressure control in people with hypertension. Therefore, an adequate intake of potassium (approximately 90 mmol per day), preferably from food sources such as fresh fruits and vegetables, is recommended. Weight reduction of as little as 4.5 kg (10 lb) can produce a decrease in blood pressure in a large proportion of overweight people with hypertension (American Heart Association, 2017). Joint National Committee also discovered that alcohol consumption is associated with high blood pressure therefore they recommends restriction of alcohol consumption to no more than 1 oz (30 mL) ethanol per day (equal to 2 oz of 100-proof whiskey, 10 oz of wine, or 24 oz of beer) or 0.5 oz per day for women or lighter weight people. A regular program of aerobic physical exercise (e.g., walking, biking, swimming) is protective, especially for those at increased risk for cardiovascular disease because of hypertension. Exercise may have additional indirect benefits, such as weight loss or motivation for changing other risk factors (JNC, 2004).

The decision to initiate pharmacologic treatment is based on the severity of the hypertension, the presence of target organ disease, and the existence of other conditions and risk factors. Drug selection is based on the stage of hypertension. Among the drugs used in the treatment of hypertension are diuretics, β-adrenergic–blocking drugs, angiotensin-converting enzyme (ACE) inhibitors or angiotensin II receptor blockers, the calcium channel-blocking drugs, central α2-adrenergic agonists, α1-adrenergic receptor blockers, and vasodilators. The physiologic mechanisms whereby the different hypertension drugs produce a reduction in blood pressure differ among agents. Diuretics lower blood pressure initially by decreasing vascular volume (by suppressing renal reabsorption of sodium and increasing salt and water excretion) and cardiac output. With continued therapy, a reduction in peripheral resistance becomes a major mechanism of blood pressure reduction (American Heart Association 2016).

β-Adrenergic–blocking drugs are effective in treating hypertension because they decrease heart rate, cardiac output, and renin release by the kidney. The ACE inhibitors act by inhibiting the conversion of angiotensin I to angiotensin II, thus decreasing angiotensin II levels and reducing its effect on vasoconstriction, aldosterone levels, intrarenal blood flow, and the glomerular filtration rate. The calcium channel blockers decrease peripheral vascular

resistance by inhibiting the movement of calcium into arterial smooth muscle cells. The centrally acting α2-adrenergic agonists act in a negative-feedback manner to decrease sympathetic outflow from the central nervous system (Angeras, Redfors & Saluveer, 2017).

The α1-adrenergic receptor antagonists block α1 receptors on vascular smooth muscle causing vasodilation and a reduction in peripheral vascular resistance. The direct-acting smooth muscle vasodilators promote a decrease in peripheral vascular resistance by producing relaxation of vascular smooth muscle, particularly of the arterioles. Pharmacologic treatment of hypertension usually follows a stepwise approach. It is usually initiated with a low dose of a single drug. The dose is slowly increased at a schedule dependent on the person's age, needs, and desired response. If the response to the initial drug is not adequate, one of three approaches can be used: the dose can be increased if the initial dose was below the maximum recommended; a drug with a different mode of action can be added; or the initial drug can be discontinued and another substituted. Combining drugs with different modes of action often allows smaller doses to be used to achieve blood pressure control, while minimizing the dose-dependent side effects from any one drug. In treating stage 3 or 4 hypertension, it often is necessary to add a second or third drug after a short interval if the treatment goal is not achieved (Chan, Lieu & Sobey 2015).

Amal (2015), in his conducted in Aswan on self-management practice the findings showed that the level of practices of self-care management among the respondent was high that is the respondent had good self-care management practices in the control of hypertension.

Emmanuel, Okwuonu, and Ojimadu (2014) in their study conducted in South East Nigeria reported the proportion of respondents practice of self-integration in terms of lifestyle changes. Dietary measures in hypertension control which was low (13%). Among the respondent less than 15% adhere to intake of food rich in vegetables and low in dairy products. Also, 92.5% and 87.1% of those aware of reduction in saturated oil and increased fruit intake respectively did not show evidence of adherence to it. More concerning was the fact that among those who were aware of effect of regular exercise in blood pressure control, only 8.6% of them practiced it. Also 65% of the participants are aware of weight reduction as a lifestyle measure in BP control but only 7.5% of them practice any form of it, such as physical exercise and nutrition. Knowledge of smoking cessation as a measure in BP control was demonstrated by 44.6% of the respondents. Among the 26 hypertensive smokers in this study, 6.5% accepted to have quit smoking after diagnosis of hypertension.

Alula, Eyasu, Lolemo and Robera (2017) conducted a study in South Ethopia among 205 participants to assess self-care management practices and associated factors among hypertensive patients. The study revealed low lifestyle modification practice 56(27.7%) among hypertensive patient regarding weight control, adherence to treatment, regular physical activity, abstaining smoking and alcohol and changes in eating only (16.1%) of the participants practice regular exercise 30 min per day for most of the days in a week. This might be due to different educational back ground of patients and level of awareness about self-care management and its advantages. It also might be due to patient's reliance only on medication considering lifestyle modification has no effect on their blood pressure.

A similar study done in Saudi Arabia by Elbur (2015) showed low self-integration practice. Another study was done in the USA among 186 African Americans in 2011 by him showed that more than half of the participants practiced physical activity and adhere to medication

recommendation. A randomized study conducted by Alireza, Fahimeh, Fakhri, Farsani, Mohsen, and Maryam, (2016) on effect of life style modification on knowledge attitude and practice of hypertensive patient in Iran shows increase in the means score of practice of self-integration practice in patient with hypertension.

Joseph, Chiranjeevi, Sen, Singh, Saini and Beg, (2016) in their study conducted on awareness on Hypertension and its Self-Management Practices in South India out of 315 participant majority (58.7%) were of the age group of 41 to 60 years and majority (53.6%) were males. Most of the patients (69.5%) were educated up to high school level. The study found out that self-integration practices were found to be good (60.6%).

In a study conducted in Korea by Jung, Jun, Ka, Myung, Sang, Seo et al., (2017) the finding revealed that increase in physical activity and reduction in salt intake are associated with successful control of blood pressure. The study also revealed that female get their blood pressure controlled compared to male due to better compliance and adherence among women. The study also reported that low sodium intake was associated with a reduced risk of stroke and coronary heart disease. The study concluded that to achieve better control of blood pressure, control of self-care management should be advised.

Seymour and Warren-Findlow, (2013) reported that good practice to self-management which was significant associated with lower systolic pressure and weight management practice associated with low diastolic pressure. A study conducted in western Nigeria by Ahmad, Fatima, Jamila, Muhammad and Saidu, (2017) showed good level of awareness of lifestyle modification which is needed in the management of hypertension but low level of practice of life style modification measures. According to a study conducted by Alshimaa, Aseel, Lama, Maradi, Rana, Reem, et.al, (2017) in Saudi Arabia on Awareness and Knowledge on Hypertension and its Self-Care Practices. The self-integration practices that were carried out by patients to control their blood pressure were low salt diet (79.3%), exercise (57.3%), stress control (55.7%), weight loss (59.9%) and quitting smoking (31.2%).

Aparajita, Ayon, Bijit, Bobby, Nazrul, and Sembagamuthu, (2018) in their study reveal that the self-care practice is poor among respondent who had hypertension. Also, in previous study conducted by Obirikorang, Acheampong, Anto, Amoah, Fosu Amehere, et al., (2018) on determined adherence to lifestyle modification among hypertensive in Ghana the findings shows that out of the 300 participants, 216 (72.0%) were adherent to life style modification that is the had a good self-integration practice. Dalal, Etemad, Maha and Thubiany, (2015) in their study conducted Egypt revealed that there is poor practice of self-care management majority of the respondent find it difficult to integrate the health activity into their daily living in terms of diet modification, physical exercise, alcohol cessation. Sewunet, Fekadu and Debela in the study conducted in Ethioia in 2019 showed that there is a poor practice of self-care management among respondent.

Niriayo, Ibrahim, Kassa, Asgedom, Atey, Gidey, Demoz, and Kahsay, (2019) in their study whereby a total of 276 patients were included in the study. The majority of the participants were nonsmokers (89.9%) and alcohol abstainers (68.8%). and recommended physical activity level (44.9%). Moreover, only 21.45% and 29% were adherent to weight management and low salt diet recommendations, respectively. Therefore, rate of adherence to self-care behaviors particularly weight management, low salt intake, physical exercise, and medication intake was low in our study. Also, in a study conducted in Nigeria

by Gabriel, Agwu, Godwin, Augustine, Frances and Ezinne, (2014). It was revealed poor adherence to consumptions of dietary vegetables (75.7%), dietary fruits (66.2%), dietary fat and oils (64.2%) and physical activity (16.4%).

According to a study conducted by Alshimaa, Aseel, Lama, Maradi, Rana, Reem, et.al., (2017) in Saudi Arabia on Self Care Practices. The practices that were carried out by patients to control their blood pressure were taking medications (83.7%), Thirty-eight percent of the participants claimed that they visit a doctor or health care provider monthly for BP check-up while most of the patients, 74(53%), go for check up every 3-6 months and 11(5.2%) visit their doctors every 12 months. Good compliance with treatment was reported by 46.7% of patients. About 19.8% reported monitoring their blood pressure with their own sphygmomanometer weekly, with mean frequency of BP monitoring a week and only 38% of the patients practiced regular check-up of BP, however, self-care management practices were good.

According to Dalal, Etemad, Maha and Thubiany (2015) in their study revealed that self-monitoring practice which reflects self-taking of blood pressure and monitoring of symptoms and taking action based on the symptoms identified was poor among the respondents. A study conducted in Enugu by Kosisochi, Glory, Chibueze & Mathew in 2016 revealed that majority of the respondent had poor self-monitoring of their blood pressure.

A study conducted in Northern Sri Lanka by Guruparan, Kumanan, and Pirasath, (2017) revealed that among 303 patients who were recruited majority of the respondent (84.5%) had poor compliance of drugs. Also, in a study conducted in sokoto by Olumide, Rasaq, and Titilayo (2018) it was also revealed that the respondent level of adherence to medication was poor.

Alshimaa, Aseel, Lama, Maradi, Rana and Reem, et.al, (2017) in their study conducted Saudi Arabia shows that majority of the respondent control their blood pressure were taking medications. Anitha, Muthuthandavan, and Vanitha (2016) in their study conducted in Nadu revealed that drug compliance was very poor among males with hypertension. Also, in a study conducted by Joseph, Chiranjeevi, Sen, Singh, Saini & Beg (2016) it was revealed that majority of the respondent had good medication adherence.

Solomon, Tesfay and Tigestu (2018) conducted a study in Ethiopia it was discovered that among 280 hypertensive patients, 61.8% of the study respondent were found to have good medication adherent. Majority (53.2%) of the respondent were males and the age of the 55. Habtamu, Mignote, Kokeb & Abebaw (2017) in their study conducted in Ethiopia found out that out of 409 study respondent who were interviewed majority were with the mean age of the 54.5 years, the overall rate of medication adherence was good 67.2%. A study conducted in Enugu by Kosisochi, Glory, Chibueze & Mathew in 2016 showed that minority of the patients monitor their blood pressure very often. Also, in a study conducted by Sayed, Reza, Erfan and Ahmad, (2016) results indicated that few participants adhered to their medication protocols among 74.8% of the participants had been prescribed medications, only 36.1% of them were adherent to medication.

Niriayo et al 2019 in their study revealed that Less than half of the participants were adherent to the prescribed antihypertensive medications (48.2%). A study conducted in Nigeria by

Gabriel, Agwu, Godwin, Augustine, Frances & Ezinne, 2014 revealed poor adherence to medication with the overall adherence rate of 16.4%.

A study conducted in Ethiopia by Elbur (2015) revealed that patients aged greater than 65 years have low self-care management practice than patients with below 65 years. On the other hand, hypertensive patients with high income have good self-care management practice as compared to patients with low income. Patients without formal education practice good lifestyle modification as compared to those who had formal education. Individuals with 5 to 10 years duration of diagnosis practice self-care management as compared to those on with less than 2 years duration.

According to a study conducted by Dalal, Etemad, Maha and Thubiany (2015). The study revealed that younger patients with hypertension had healthier self-care behavior than older patient. In the study patients who had no formal education had low self-care management compared to those who had University education and had higher self-management behavior. Length of time since diagnosis more than 5 years was associated with higher self-management compared to those with less than 5 years. Accordingly, longer duration of hypertension was associated with improved self-management behavior. It was found that young and middle-aged patients had significantly higher score than older age. It was found that patient who had enough income had insignificantly higher score than others.

Furthermore, a study conducted in Saudi Arabia on awareness and knowledge on hypertension and its self-care practices by Alshimaa et.al. (2017), the scores of self-care practices in the study was found to decline with increasing age of the participants (above 50 years) But self-care practices were found to be significantly better among females, young patients, educated and patients who have a better socioeconomic status.

Amatayakul, Sholihul, and Sirikul, (2015) in their study conducted in Indonesia revealed that age was not associated with self-care management of hypertension. Most of the participants are middle age from 40 to 59 years old. The finding of this study indicated that income was not associated with self-care management of hypertension. Moreover, Bourne & Eugene, (2014) evaluated the self-care management practices level among hypertensive clinic in Jamaica found that age has negative relationship with self-care management of hypertension. The study revealed that education level was not associated with self-care management of hypertension.

Obirikorang, Acheampong, Anto, Amoah, Fosu Amehere, et.,al. (2018), in their study conducted in Ghana, found out the association between socio-demographics and adherence to lifestyle modification to be that level of education, marital status and duration of disease significantly influenced the general rate of adherence. With education, participants who had secondary and tertiary education had good adherence to lifestyle modifications compared with those who are illiterate. A higher educational level helps the patients in understanding educational information about the disease. Moreover, highly educated patients have better chance to come across considerable information on the disease from different educational sources. The result also shows that, participants who have had hypertension for 5 - 10 years had an increased odd of adhering to lifestyle modifications, but those with more than 15 years have reduced odds of adhering. This could be that those who have had it for more than 15 years do not see the condition as life threatening anymore as compared to those with 5 - 10 years who might still follow strict lifestyle modification. Patients who have had the condition

for more than 15 years might not be experiencing any symptoms even without medication. For these people, modification of lifestyle is useless; especially in patients who feel better and their health condition is improving.

Self-Care Model

Orem's Self Care theory is applied in the context of this study, self-care theory was utilized which is activities an individual performs to maintain life, achieve optimum level of health and improve well-being. The self-care management practices are self-integration, self-motoring and medication adherence.

Self-Integration: behaviour performed by the hypertensive patients in improving their health like physical exercise, low salt diet, weight reduction and cessation of smoking and alcohol.

Self-Care Monitoring: is the ability of the hypertensive patient to monitor their blood pressure, weight, and diet. Self-care management are expected changes like normal blood pressure, normal body mass ability to adjust treatment in response to change ability to seek follow up.

Medication Adherence: Ability of the hypertensive patient in the use of prescribed anti-hypertensive medication.

METHODOLOGY

A descriptive cross-sectional research design was used to assess self-care management practices among hypertensive patients attending two Teaching Hospitals in Ondo State. The target population are hypertensive patient attending university of medical science teaching hospital Ondo and Akure.

The sample size was determined using Cochran's formula. A convenient sampling technique was used to select 298 respondents among hypertensive patient.

The instrument for collection of data in this study was a structured questionnaire adapted from (Nilmanat & Akhter, 2010). It comprises of six sections: Demographic, socio economic characteristic, self-integration, self-monitoring and medication adherence tools.

Section A: Demographic assessment form which include Age, sex, marital status, religion, blood pressure, duration for the diagnosis of hypertension.

Section B: Socio economic characteristics which includes level of education, occupation, monthly income.

Section C: Self integration is the respondent ability to integrate health care activities of daily living, it comprises of 15 items, the respondent was asked to rate items to show how regular they practice self-integration. Items were scored on a 4-point scale ranging from 0 (never) to 3 (always). The score was divided into three levels: low, moderate and high the means was calculated to be 24.3 those who score 0-20 were group to have low self-integration practice, 21-26 were group to have moderate self-integration while 27-45 grouped to have high self-integration practice.

Section D: Questions on self-monitoring is the ability of the respondent to monitor blood pressure at home to detect blood pressure level in order to modify self-care activities. It consists of 4 items in which respondents were asked to rate items to show how regular they monitor their blood pressure. Items were scored on a 4-point scale ranging from 0 (never) to 3 (always). Self-monitoring was categorised into low, moderate and good based on a mean of 5.69. Respondent who scored 0-4 had low self-monitoring as self-care management practice, 5-7 were grouped as moderate while those who scored 8-12 had high self-monitoring as self-care management practice.

Section E: Questions on medication adherence refers to respondent use of antihypertensive medication as prescribed. The section consists of 4 questions. The question were rated on a 4 point scale ranging from 0 (never) to 3 (always) and was categorised as low, moderate and high based on a mean 5.1 those who scored 0-4 had low adherence to medication, 5-7 were grouped as moderate practice while those who scored 8-12 had high medication adherence practice.

Section F: Questions on lifestyle modification. The section consists of 10 questions. The question were rated on a 4 point scale ranging from 0 (never) to 3 (always) and was categorised as low, moderate and high based on a mean 15 those who scored 0-10 had low lifestyle modification, 11-17 were grouped as moderate lifestyle modification practice while those who scored 18-30 had high lifestyle modification practice.

The face and content validity of the instrument was ascertained by subjecting the instrument for correction by the supervisor and three experts in the field of Nursing Science. The correction made was properly affected before the administration of the instruments. The instrument was pretested by administering it to 54 hypertensive patients in State specialist hospital Ikare Akoko. The correlation coefficient of internal consistency was analysed and the Cronbach alphas was found to be 0.938 for self-integration, 0.928 for self-monitoring and 0.861 medication adherence instrument.

Data was collected through distribution of questionnaire to the selected hypertensive patient. Data was analysed using descriptive statistics in form of frequency, percentage, mean and standard deviation. Inferential statistics of ANOVA was used to test the three hypotheses at 0.05 level of significant and the results were presented in tables.

RESULTS/FINDINGS

Table 1: Demographic Data of the Respondents

	Variables	Frequency	Percentage (%)
Age Range	18-30	23	7.7
	31-50	197	66.1
	51-70	78	26.2
	Total	298	100.0
Gender	Male	85	28.5
	Female	213	71.5
	Total	298	100.0

Religion	Christianity	222	74.5
	Islam	76	25.5
	Total	298	100.0
Marital Status	Single	20	6.7
	Married	210	70.5
	Divorce	8	2.7
	Separated	21	7.0
	Widow	39	13.1
	Total	298	100.0
Duration of Diagnosis	≤1	38	12.8
	2-4	147	49.3
	5-7	83	27.9
	7 and above	30	10.1
	Total	**298**	**100**

The findings from Table 1 show that 213 (71.5%) of the respondent were female. Predominant age of the respondent falls within ages 31 and 50 years, 197 (66.1%). 222 (74.5%) of the respondent were Christians by religion while 210 (70.5%) of the respondent were married. The findings on duration of diagnosis of hypertension revealed that 147 (49.3%) had their diagnosis between 2 and 4 years.

Table 2: Socio-Economic Characteristics of the Respondents

Variables	Frequency (298)	Percentage (%)
Level of Education		
No formal education	31	10.4
Primary education	44	14.8
Secondary education	128	43.0
Tertiary education	95	31.8
Respondents' Occupation		
Unemployed	62	20.8
Self-employed	35	11.7
Civil servant	148	49.7
Retired	53	17.8
Level of Monthly Income		
No income	4	1.3
<50000	158	53.0
50000-149000	115	38.6
150000-249000	15	5.0
>250000	6	2.0
Total	**298**	**100.0**

Result from Table 2 shows the level of education of the respondent which reveals that 128 (43.0%) had secondary education. 148 (49.7%) are civil servant. The findings on income depict that 158 (53.0%) have income of less than 50000.

Table 3: Self-Integration as Self-Care Management Practice among Hypertensive Patient

Self-Integration Practice	Category of Score	Criteria	Frequency	Percentage (%)
Below average	0-20	Low	159	53.4
Average	21-26	Moderate	110	36.9
Above average	27-45	High	29	9.7
Total			**298**	**100**

Table 3 shows self-integration as self-care management practice among hypertensive patient the findings revealed that 159 (53.4%) had poor self-integration practice in terms of diet, exercise, weight control and cessation of smoking and alcohol, 110 (36.9%) had moderate self-integration as self-care management while 29 (9.7%) had high self-integration practice.

Table 4: Self-Monitoring as self-Care Management Practice among of Hypertensive Patient

Self-monitoring as Self-Care Management Practice	Category of Score	Criteria	Frequency	Percentage (%)
Below average	0-4	Low	213	71.5
Average	5-7	Moderate	75	25.2
Above average	8-12	High	10	3.4
Total			**298**	**100**

Table 4 shows self-monitoring as self-management practice of respondents to hypertension the findings reveals that 213 (71.5%) had low self-monitoring practice which denote that they do not check their blood pressure and weight regularly, 75 (25.2%) had moderate level of self-monitoring while 10 (3.4%) had high level of self-monitoring as self-care management practice among hypertensive patient.

Table 5: Adherence to Medication as Self-Care Management among Hypertensive Patient

Medication Adherence Practice	Category of Score	Criteria	Frequency	Percentage (%)
Below average	0-4	Low	133	44.6
Average	5-7	Moderate	131	44.0
Above average	8-12	High	34	11.4
Total			**298**	**100**

The findings from Table 5 show respondent medication as self-care management practice which depict that 133 (44.6%) had low medication adherence practice that is they do not take

their prescribed medication regularly and at the right time, 131 (44.0%) had moderate medication adherence while 34 (11.4%) had high level of medication adherence as self-care management practice.

Table 6: Lifestyle Modification as Self-Care Management Practice among Hypertensive Patient

Lifestyle Modification Practice	Category of Score	Criteria	Frequency	Percentage (%)
Below average	0-10	Low	166	55.7
Average	11-17	Moderate	90	30.2
Above average	18-30	High	42	14.1
Total			**298**	**100**

The findings from Table 6 show respondent lifestyle modification as self-care management practice which depict that 166 (55.7%) had low lifestyle modification practice that is they do not practice life style modification, 90 (30.2%) had moderate lifestyle modification practice while 42 (14.1%) had high level of lifestyle modification as self-care management practice.

Table 7: Relationship between Level of Education of the Respondent and Self-Care Management Practices of Hypertension

Level of Education	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.254	3	.085	.160	.923
Within Groups	155.615	294	.529		
Total	**155.869**	**297**			

From Table 7 it was observed that there was no statistically significant difference between level of education of the respondents and self-care management practices (F (3,294) =0.160, p= 0.923). Hence, the null hypothesis which stated that there is no significant relationship between level of education of the respondent and self-care management practices was not rejected.

Table 8: Relationship Between Respondent Income and Level of Self-Care Management Practice of Hypertension

Income level	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	1.233	3	.411	.782	.505
Within Groups	154.636	294	.526		
Total	**155.869**	**297**			

Result from Table 8 shows no statistically significant difference between respondent income and self-care management practices (F (3,294) =0.782, p= 0.505). Hence, the null hypothesis which stated that there is no significant relationship between respondent income and self-care management practices was not rejected.

Table 9: Relationship Between Duration of Diagnosis of Hypertension and Self-Care Management Practices

Duration of Diagnosis	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	2.283	3	.761	1.457	.227
Within Groups	153.586	294	.522		
Total	**155.869**	**297**			

From Table 9 it was observed that there is no statistically significant difference between respondent year of diagnosis of hypertension and self-care management practices (F (3,294) =1.457, p= 0.227). Hence the null hypothesis which stated that there is no significant relationship between the respondent year of diagnosis of hypertension and self-care management practices was not rejected.

DISCUSSION OF FINDINGS

The findings reveal that predominant age of the hypertensive patients was between the ages of 31-50 years which represent 197 (66.1%) this contradicts the study conducted at Indonesia by Amatayakul, Sholihul, and Sirikul, (2015) revealed that most of the participants are middle age from 40 to 59 years old. Majority 213 (71.5%) of the respondent are females indicating high incidence among female than male, the result was not in support with the study conducted by Anitha, Muthuthandavan, & Vanitha (2016). Majority of the respondent 222 (74.5%) were Christians by religion. The findings on marital status revealed that majority 210 (70.5%) of the respondent were married. The findings also revealed that majority 147 (49.3%) had their duration of diagnosis of hypertension between 2 and 4 years.

Findings reveals that self-integration practice of the respondent was poor with majority 159 (53.4%) below average of grade of 0-24 in obtaining 45 score. Therefore, the findings showed that good number of respondents in this study do not practice self-integration in the management of hypertension. The Finding establishes the report of Alula, Eyasu, Lolemo and Robera, (2017) which revealed poor self-care practice. Elbur (2015), also confirmed in his study conducted in Saudi Arabia which show low self-integration practice. However, other study done by Alireza et al. (2016) contradict the result as the study showed good means score of practice of self-care management in patient with hypertension. Also, studies conducted by Obirikorang et al., (2018) contradict the study the findings showed that more than half of the participant had good self-care management practice.

This study also shows that most of the respondents now consumed fruits, vegetables, grains and beans more than when they didn't have hypertension. This was in disagreement with report of low intake of these products in a study conducted among hypertensive patients in south east Nigeria (Emmanuel, Okwuonu & Ojimadu, 2014). Also, it was revealed that most of the respondents have reduced intake of fatty foods. This was in agreement with report of low intake of fatty foods in a study conducted among hypertensive patients in south east Nigeria (Emmanuel, Okwuonu & Ojimadu, 2014). It was further revealed in this study that majority of the respondents exercised for about 30 minutes every day to reduce their weight. This was in agreement with study conducted among 186 African Americans in 2011 by him

showed that more than half of the participants practiced physical activity and adhere to medication recommendation. The study showed that most of the respondents have tried to control their stress by listening to music, taking rest, talking with my family or friends, stopped taking alcohol and quit smoking. This was supported with a study conducted among hypertensive patient in Saudi Arabia which reported that most of the patient have low salt diet, exercise, stress-control, weight loss and take medications regularly (Alshimaa et al., 2017).

This was not supported with a study conducted among hypertensive patients in south Ethiopia which reported low lifestyle modification practice regarding weight control, adherence to treatment, regular physical activity, abstaining smoking and alcohol and changes in eating (Alula, Eyasu, Lolemo & Robera, 2017). This was also in agreement with a study conducted among hypertensive patient in Ghana which reported that higher proportion of the respondents knew smoking and alcohol consumption can affect blood pressure, and have been educated by health personnel on the effect of smoking and alcohol and exercise in relation to their condition (Obirikorang et al., 2018). The study also showed that most of the respondents have reduced stress at work.

The findings reveal that respondent do not monitor their blood pressure with majority 161(54%) below average of grade of 0-5.68 in obtaining 12 score. Therefore, the findings showed poor practice of self-monitoring in the management of hypertension. The Finding contradict the report of Alshimaa, et al., (2017) in Saudi Arabia on Self Care Practices which revealed that majority of the respondent had good self-monitoring practice with 38% of the participants claimed that they visit a doctor or health care provider monthly for BP check-up while most of the patients. The study was in support with the study conducted in Enugu by Kosisochi, Glory, Chibueze & Mathew (2016) which revealed that majority of the respondent had poor self-monitoring practice.

The findings reveal that respondent do not adhere to prescribed medication majority 198 (66.4%) below average of grade of 0-5 in obtaining 12 score. Therefore, the findings showed poor adherence to prescribed medication. The finding was in support with the Guruparan, Kumanan, and Pirasath, (2017) study which revealed that among 303 patients who were recruited majority of the respondent (84.5%) had poor compliance of drugs. Also, in a study conducted in sokoto by Olumide, Rasaq, and Titilayo (2018) it was also revealed that the respondent level of adherence to medication was poor. Also, the study establishes the report of Solomon, Tesfay and Tigestu (2018) conducted in Ethiopia discovered that among 280 hypertensive patients, 61.8% of the study respondent were found to have good medication adherent. Anitha, Muthuthandavan, and Vanitha (2016) in their study conducted in Nadu revealed that drug compliance was very poor. A study conducted in Enugu by Kosisochi, Glory, Chibueze & Mathew (2016) revealed that minority of the respondents had good adherence to medication. The findings contradict the study conducted by Joseph, Chiranjeevi, Sen, Singh, Saini & Beg (2016) which revealed that majority of the respondent had good medication adherence. Also, the finding was not in support of Habtamu, Mignote, Kokeb & Abebaw (2017) which revealed that out of 409 study respondent majority had good medication adherence.

Findings show that respondents education level has significant relationship with self-care management practices (p<0.05). The study reported that respondent who had primary education had significantly higher self-care management practices compared to those with

other educational level. This study was in line with other study by Elbur (2015) which revealed that patient without formal education practice good self-care management compare to those who had formal education. Amatayakul et al. (2015) also revealed that education level has no significant association with self-care management practice. However, this was in disagreement with report of high self-care management among respondent with higher educational level in a study conducted among hypertensive patient in Saudi (Alshimaa et al. 2017). This was in agreement with report of poor self-care management among patients with no formal education (Delal, Etemad, Maha & Thubiany, 2015). This was also in agreement with Obirikorang et al., 2018).

The Anova value reveals that respondent's income was significantly associated with self-care management practice of hypertension ($p<0.05$). The findings showed that respondent who earn higher had significantly good self-care management than those who earn lesser. This was in keeping with the report from a study conducted among hypertensive patient in Ethiopia which reported that respondents with high income have good self-care management practice as compared to patients with low income with low income (Elbur, 2015). Also, Amatayakul et al. (2015) in their study showed that income has no significant association with self-care management practice.

The study also reported that respondents who belong to low socio-economic status have significantly higher self-care management compared to those who belong to high socio-economic status. This was not tandem with report of low self-care management among respondents with high socio-economic class in a study conducted among hypertensive patient in Saudi Arabia but supports the significant relationship between socio-economic status and self-care management (Alshimaa et al., 2017). This was also in disagreement with the report of a study conducted in Indonesia which reported that there is no association between socio-economic status and self-care management. Hence, the null hypothesis which stated that there is no significant relationship between socio-economic characteristic of the respondent and self-care management practices was rejected.

This study reported that the proportion of respondents who were diagnosed 5years and above had higher self-care management than those who were diagnosed later but not significant ($p>0.05$). Hence, the null hypothesis which stated that there is no significant relationship between the respondent year of diagnosis of hypertension and self-care management practices was accepted. This was in keeping with the report from a study conducted among hypertensive patient in Ethiopia which reported that respondents who were diagnosed earlier (5years and above) had good self-care management practice as compared to those with lesser durations (Elbur, 2015). This was also in agreement with the report from a study conducted among hypertensive patient who reported that respondents who were diagnosed above 5 years had good self-care management practice than those with lesser durations (Dalal, Etemad, Maha and Thubiany, 2015). This was not supported with the report from a study conducted among hypertensive patient in Ghana which reported that duration of disease significantly influenced the self-care management. Accordingly, longer duration of hypertension was associated with improved self-management behavior.

Implication for Nursing

The outcome of this study revealed that patient had poor self-care management practices in terms of integrating their health into activities of their daily living by monitoring their diet, physical exercise, checking of their blood pressure at home, adherence to prescribed medication. Nursing profession should work on expanding the role of nurses in improving hypertension care.

CONCLUSION

The self-care management practices in terms of integration with lifestyle changes, monitoring of blood pressure and adherence to medication among respondents was found to be poor also socio-economic characteristic of the respondents was significantly associated with self-care management practices. It is therefore very important to organise an intervention study on the knowledge of self- care management practices and also for health professional to intensify their health education talk during clinic on self–care management practices.

RECOMMENDATIONS

The following recommendations were made based on the findings from this study:

- There is need for educational intervention on how they can integration their health in activities of daily living.
- There should be adequate follow up of patient by nurses in ensuring compliance with their medications and other self-care practices.
- There is need for intensive treatment program which will focus on importance of self-integration, self-monitoring and adherence to prescribed medication.
- Increased health education by the health workers of the danger involved in the practices that may likely complicate the disease condition.
- There is need to increase the awareness of people on self-care practices.
- There is need for guidelines to be set by health care providers to encourage people to improve their health.

SUGGESTIONS FOR FURTHER STUDIES

The following suggestions were made for further studies:

1. Further research should focus on exploring intervention study on knowledge of self-care management practices.
2. Further study should focus on alternate practice use by hypertensive patient in controlling their blood pressure.

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