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Assessing Hypertension Awareness among the Patients in the Cardiology Outpatient Clinic at Obafemi Awolowo University Teaching Hospital, Ile-Ife

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The purpose of the study was to assess patients' awareness of hypertension while they were enrolled in the cardiology outpatient clinic at the Obafemi Awolowo University Teaching Hospitals Complex (OAUTHC), located in Ile-Ife. The study used a cross-sectional survey approach and focused on adult patients who had outpatient cardiology consultations and were diagnosed with essential hypertension. During their clinic appointments, 330 individuals in all were enlisted, and case files contained their clinical information. Interviews were used to deliver a structured questionnaire used for data gathering. Six sections made up the questionnaire, which included standardised questions intended to gauge respondents' familiarity with hypertension as well as sociodemographic data. The questionnaire was pre-tested using validated scales from previous research on hypertension patients outside the study site to ensure its usefulness and reliability. Using a scoring system, participants' knowledge of hypertension was categorised; those who scored above a predetermined threshold were considered to have "good knowledge." 85.15% of respondents were found to have a fair knowledge of the causes, risks, and management of hypertension. Strong drug compliance was linked to this high level of knowledge for a significant portion of respondents. The outcomes show how important it is to continue patient knowledge in outpatient settings. To enhance comprehension of the impact of information on long-term management of hypertension, future research should focus on health literacy and consider longitudinal studies.

Keywords: Health Literacy, Knowledge, Patient Knowledge, Cardiology outpatient clinic, Hypertension awareness

Introduction

High blood pressure, also referred to as hypertension, is a major risk factor for heart disease, stroke, and early mortality and a global public health concern (Whelton et al., 2018; WHO, 2021). Worldwide, it affects over 1.28 billion adults between the ages of 30 and 79, and a large percentage of those affected reside in low- and middle-income nations like Nigeria (Mills et al., 2020; Kearney et al., 2005). Despite advancements in treatment, many settings still have unsatisfactory effective care, in part because patients are not well-informed about the ailment, its implications, and available treatments (WHO, 2021).

In order to effectively manage hypertension, patient knowledge is essential. It affects attendance at follow-up consultations, healthy behaviour, and medication adherence (Adeloye et al., 2022; Saleem et al., 2021). Previous research indicates that hypertension patients frequently lack knowledge, especially in underdeveloped nations where access to health knowledge is scarce (Abubakar et al., 2019). According to Bharati et al. (2010), 25% of adults worldwide suffer from hypertension, and estimates indicate that number will rise to 29% by 2025, especially in developing countries with limited access to healthcare.

There is an increasing prevalence of hypertension in Nigeria, which is made worse by a lack of knowledge and poor treatment (Ike et al., 2021). However, little study has been done on the knowledge levels of hypertension patients in outpatient settings, particularly in tertiary healthcare facilities such as the Obafemi Awolowo University Teaching Hospitals Complex (OAUTHC) in Ile-Ife. Being a referral centre known for offering specialised cardiovascular treatment, OAUTHC is a perfect place to gauge patient awareness and guide focused initiatives.

According to existing research, patient knowledge gaps greatly impair blood pressure control, with the main causes being noncompliance with medication schedules and a lack of awareness of lifestyle changes (Enlund et al., 2020; Adeloye et al., 2022). Additionally, according to global data, roughly 66% of hypertension patients do not attain ideal blood pressure control, frequently as a result of persistent problems or noncompliance (Elliot et al.,

2020). It is crucial to comprehend these issues in the Nigerian setting in order to develop methods that would improve patient outcomes.

In order to fill a significant gap in the literature, this study assesses adult patients' knowledge of hypertension who visit the OAUTHC cardiology outpatient clinic. It investigates how well patients comprehend risk factors, problems, and management strategies in order to pinpoint areas in need of focused knowledge interventions. Nigerian policymakers and healthcare professionals would benefit from the findings, which will help them create context-specific plans to raise patient knowledge, encourage treatment compliance, and eventually lessen the prevalence of hypertension in the area.

Statement of the Research Problem

Many patients are unaware of the causes, risk factors, treatment options, and lifestyle modifications required for hypertension, despite its high prevalence and serious health consequences (Osamor & Owumi, 2011). Due to this knowledge gap, patients may not follow their treatment plans, make important lifestyle changes, and eventually be at higher risk of consequences like heart disease, stroke, and death (Elliot, 2003; Rudd, 1998). The necessity for focused knowledge-driven programmes that address these inadequacies and enhance patient outcomes is highlighted by the fact that inadequate information about hypertension impedes effective disease treatment.

Although hypertension is widely acknowledged as a serious public health issue, little research has been done to assess patient knowledge of the problem, especially in Nigeria and other comparable countries (Osamor & Owumi, 2011). Designing successful knowledgeal programs that enable patients to take charge of their health requires knowledge of the precise knowledge gaps that exist among patients.

However, the purpose of this study is to assess the degree of knowledge among patients who visit the cardiology outpatient clinic at the Obafemi Awolowo University Teaching Hospitals Complex (OAUTHC) in Ile-Ife, Nigeria. The study also gives healthcare professionals useful information to customise interventions that improve hypertension management and enhance overall health outcomes by identifying areas where patient knowledge is deficient.

Objectives of the Study

The main objective of this study is to assess the knowledge of hypertension among the patients attending the cardiology outpatient clinic at the Obafemi Awolowo University Teaching Hospitals Complex (OAUTHC), Ile-Ife. Specifically, it aims to assess the knowledge of the causes, signs, risk factors, consequences, and management of hypertension. It also looks at how well they grasp the significance of changing their lifestyle and following treatment regimens.

Research Questions

This study will attempt to provide answers to the following research questions:

(1) What effects does a patient's knowledge of hypertension, its causes, symptoms, risk factors, and treatment have on how well they take their antihypertensive drugs?
(2) What demographic, socioeconomic, or other factors influence patients' adherence to antihypertensive treatment plans?
(3) What are the main areas where patients lack knowledge about managing their hypertension, such as the significance of treatment adherence and lifestyle changes?

Literature Review

High blood pressure, also known as hypertension, is a chronic condition that raises the risk of cardiovascular disorders like heart attacks and strokes by maintaining a consistently high force of blood against the artery walls (World Health Organisation [WHO], 2023). According to Ezzati et al. (2002), it ranks third in terms of its impact on disability-adjusted life years and is acknowledged as a global health concern. Around 25% of adults worldwide suffer from this illness, and estimates indicate that by 2025, the prevalence will increase dramatically in emerging countries, from 10% to 29%, impacting an estimated 1.15 billion people globally (Kearney et al., 2005).

There are regional differences in the prevalence of hypertension. According to Bharati et al. (2010) and Ogah et al. (2014), the prevalence is roughly 35% in Latin America, 20% to 30% in China and India, and 14% in sub-Saharan Africa. Studies show that the incidence of hypertension in Nigeria, a country in sub-Saharan Africa, is rising, with prevalence rates ranging from 22% to 47%. Urbanisation, changes in lifestyle, and restricted access to healthcare facilities are some of the contributing causes (Akinlua et al., 2015).

According to Cappuccio et al. (2004), patients with moderate to severe hypertension (diastolic blood pressure > 100 mm Hg) have more severe economic effects than those with mild hypertension (diastolic blood pressure < 100 mm Hg). According to Ekere et al. (2005), the severity of hypertension increases the cost of healthcare, including frequent hospital stays, problems, and prescription drug costs. This cost burden is especially difficult to bear in low-resource countries like Nigeria, where most healthcare funding is paid for out of pocket (Ojo et al., 2020).

Although antihypertensive medications have advanced, attaining ideal blood pressure control is still a global problem. According to clinical trials and meta-analyses, antihypertensive drugs dramatically lower the risk of death, stroke, and coronary heart disease (Lawes et al., 2004). However, studies show that about two-thirds of hypertensive patients do not regulate their blood pressure adequately, with rates much below the 50% goal established by health programs such as Healthy People 2000 (Andrade et al., 2004; JNC-7, 2003).

One of the most modifiable factors contributing to insufficient management of hypertension is noncompliance with authorised treatment plans. Adherence involves taking medications at the

recommended dosage, intervals, and frequency, whereas persistence refers to consistently maintaining therapy over time, often for life in the case of hypertension (Rudd, 1998; Insua et al., 1994). According to research done in Nigeria, one of the biggest barriers to effectively managing hypertension is a lack of knowledge about the ailment, its risk factors, and the need of adherence (Olukokun et al., 2017; Iloh et al., 2021).

According to Ogah et al. (2014), patients in sub-Saharan Africa, particularly Nigeria, have low awareness and insufficient knowledge about hypertension, which has been linked to poor adherence to treatment plans and lifestyle modifications. According to Akinlua et al. (2015), targeted knowledgeable interventions are essential to dispelling myths and improving patient outcomes. In a similar vein, studies conducted at tertiary hospitals in Nigeria have shown that enhanced adherence and improved management of hypertension may be achieved with better patient knowledge (Ojo et al., 2020; Iloh et al., 2021).

Materials and Method

Study Location

The study was carried out at the Cardiology Clinic of the Obafemi Awolowo University Teaching Hospitals Complex (OAUTHC) Ile-Ife, southwestern Nigeria. Serving about a million people in Ile-Ife and the surrounding states, OAUTHC is a 613-bed tertiary medical centre. For other medical facilities in the area, the hospital serves as a referral centre. Eleven resident physicians, multiple nursing officers, and four consultant cardiologists make up the Cardiology Unit. Serving 140 patients a week on average, the outpatient clinic is open twice a week.

Study Population

The study population consisted of patients with a diagnosis of essential hypertension who had received treatment at the outpatient clinic for a minimum of six months. At least eighteen years of age and enrolment in the Cardiology Outpatient Clinic during the study period were prerequisites for eligibility. Patients with diabetes mellitus, thyroid

disorders, heart failure, secondary hypertension, or those who did not wish to participate were excluded in order to ensure the reliability and consistency of the data.

Sample Size Determination

The smallest sample size was determined using Fisher's formula, a frequently used method for determining the appropriate sample size in epidemiological investigations (Fisher et al., 1998):

$$n = \frac{Z^2 \cdot p \cdot q}{d^2}$$

Where:

- n = desired sample size
- $Z = 1.96$, i.e., the standard normal deviate corresponding to the 95% confidence interval
- $p = 0.321$, estimated compliance level from previous study (Busari et al., 2010)
- $q = 1 - p = 1 - 0.321 = 0.679$
- $d = 0.05$, degree of accuracy desired

Substituting the values:

$$n = \frac{(1.96)^2 \cdot 0.321 \cdot 0.679}{(0.05)^2}$$

The study's calculated sample size guaranteed sufficient power to identify statistically significant connections.

Sampling Procedure

The participants were selected using the systematic random sampling method. During its two outpatient days for patients with hypertension, the Cardiology Clinic sees an average of 70 patients per day. To reach the target sample size, 20 patients were selected per clinic day, resulting in a sampling interval of three (70/20). The first participant was chosen at random from the first three individuals on each clinic day, followed by the selection of every third patient. If a chosen patient did not meet the inclusion criteria, the next eligible patient was recruited. This process was repeated until the necessary sample size was obtained throughout the course of 17 clinic days.

Data Collection

Data were collected using structured questionnaires that were adapted from established tools in previous studies. The survey assessed demographic data, medication compliance, and blood pressure control. Before data was collected, the validity and reliability of the questionnaire were pilot evaluated.

Data Analysis

The data collected were analysed using the SPSS version 16. Three levels of analysis were utilised, specifically: univariate, bivariate, and multivariate analysis. Univariate analysis was employed to depict the background characteristics of the respondents. Subsequently, these values were converted into percentages and presented in the form of frequency tables. Chi-square was used to do bivariate analysis. This study aimed to examine the correlation between compliance and specific variables, as well as the correlation between blood pressure regulation and specific variables. Binary logistic regression was used to conduct a multivariate study in order to establish the correlation between certain variables and both compliance and blood pressure control. Statistical significance level was set at $p < 0.05$ for all analysis.

Ethical Approval

The OAUTHC granted ethical approval, guaranteeing compliance with standards for human subject's research. All participants gave their informed consent after being given guarantees

of anonymity and the freedom to discontinue participation at any time without facing consequences.

Results and Discussion

Results

Table 1 Socio-demographic characteristics of respondents (N=330)

Characteristics	Frequency (n)	%
Age group (yrs)		
25–34	2	0.6
35–44	33	10.0
45–54	83	25.2
55–64	124	37.6
65+	88	26.7
Sex		
Male	68	20.6
Female	262	79.4
Marital status		
Single	96	29.1
Married	234	70.9
Religion		
Christianity	168	50.9
Islam	162	49.1
Education		
None	85	25.8
Primary	55	16.7
Secondary	63	19.1
Tertiary	127	38.5
Occupation		
Unemployed	43	13.3
Self-employed	160	48.5
Public servant	127	38.5

Table 1 describes the socio-demographic characteristics of respondents. The minimum age was 26 while the maximum age was 90, giving a range of 64 years. Most of the respondents (79.4%) were females and were married (71.9%).

Table 2 shows the summary of knowledge of hypertension among respondents. It reveals that 84.8% knew that hypertension is life-threatening, 83% knew that something could be done to prevent hypertension, 57.9% knew that most of the time people with hypertension don't feel it, 30.6% knew that taking drugs will not cure hypertension, 93.3% knew that high salt intake is associated with hypertension, and 80% knew that being overweight is associated with hypertension.

Table 3 describes the duration of treatment with antihypertensive, treatment complexity, and blood pressure control of respondents. 62.7% of respondents have been on medication for up to 5 years. Also, 73.6% of respondents were on simple regimen while 26.4% of respondents were on complex regimen. In addition, 62.7% of respondents have controlled blood pressure while 37.3% of respondents have uncontrolled blood pressure.

Table 4 describes the reasons given by respondents for missing drugs. The major ones included: running out of supply (19.1%), feeling well (14.2%), forgetfulness (12.4%), side effects (10.0%), fasting (10.0%), and busy schedule (9.7%).

Table 4 shows respondents' satisfaction with items of care received at the hospital. Respondents were least satisfied with appointment waiting time (90.8%), and were most satisfied with the information given to them by the doctors (99.4%). 97.6% of respondents were satisfied overall.

Discussion

This study examined participants' knowledge of hypertension and its connection to treatment compliance. Over 80% of respondents had a satisfactory comprehension of their illness, according to the data, which is probably due to the study's clinical context. A common focus of hospitals and clinics is patient knowledge, which raises knowledge of illnesses and treatment options. Compared to Busari et al. (2010), who found that just 47.1% of patients had adequate awareness about hypertension, this high level of knowledge is superior. Previous research has demonstrated that patients who are more informed are more likely to adhere to recommended treatments, which suggests that such an increase in knowledge may improve treatment adherence (Edelman et al., 2017).

Despite the participants' high levels of knowledge, certain misconceptions remained. 42.1% did not understand that hypertension is a symptomless condition, and 15.1% were ignorant or rejected that it can be lethal. These misconceptions are troubling because they may lead to noncompliance with treatments and medicines, which could compromise the management of the disease. These discrepancies may be explained by cultural attitudes that minimise the severity of asymptomatic diseases or by a lack of attention on hypertension teaching during consultations (Olusanya et al., 2021). Improving adherence and lowering the risk of consequences need addressing these mis-information through focused knowledge that emphasises hypertension as a "silent killer."

As shown in Table 3, the study also showed that a sizable percentage of patients were following straightforward treatment plans. This is a good result because better adherence is frequently linked to simpler regimens. Research indicates that when patients are faced with less dosages and easier schedules, they are more likely to take their drugs on a regular basis (Ingersoll & Cohen, 2008). On the other hand, complicated regimens that call for several daily dosages or drugs with precise scheduling might cause confusion and missed doses. Simplifying medication prescriptions should be a top priority for future hypertension management efforts in order to improve adherence and attain better results.

Table 4.7 showed significant patient satisfaction, which is known to have a favourable impact on health outcomes and treatment adherence. Improving patient knowledge and removing adherence hurdles depend on trust and open communication, both of which are fostered by patient satisfaction with healthcare practitioners (Farley et al., 2014). Insights into how satisfaction improves comprehension and adherence may be gained by investigating the dynamics of provider-patient relationships in this study. Patient satisfaction, for example, may encourage more candid conversations about problems, which could result in more individualised treatment plans and improved illness control.

Table 4 found some obstacles to medication adherence, such as cultural views and financial difficulties, despite the overall positive results. If ignored, these obstacles may jeopardise the long-term control of hypertension. For instance, lack of

Table 2 Summary of knowledge of hypertension (N=330)

Knowledge	Yes (%)	No (%)	Don't know (%)	Total
Hypertension is life-threatening	280 (84.8)	15 (4.5)	35 (10.6)	330
Something can be done to prevent hypertension	274 (83.0)	17 (5.2)	39 (11.8)	330
Most of the time people with hypertension don't feel it	191 (57.9)	96 (29.1)	43 (13.0)	330
Taking drugs will cure hypertension	191 (57.9)	101 (30.6)	38 (11.5)	330
High salt intake is associated with hypertension	308 (93.3)	12 (3.6)	10 (3.0)	330
Being overweight is associated with hypertension	264 (80.0)	19 (5.8)	47 (14.2)	330

Table 3 Duration of treatment, treatment complexity, and blood pressure control of respondents (N=330)

	Frequency (n)	%
Duration of treatment (years)		
0–5	207	62.7
6–10	67	20.3
11–15	34	10.3
16+	22	6.7
Treatment complexity		
Simple regimen	243	73.6
Complex regimen	87	26.4
Blood pressure control		
Controlled	207	62.7
Uncontrolled	123	37.3

Table 4 Reasons for missing drugs (N=330)

Reasons	Frequency	%
Run out of supply	63	19.1
Feeling ok	47	14.2
Forget	41	12.4
Side effects	33	10.0
Fasting	33	10.0
Busy	32	9.7
Travelling	26	7.9
Cannot afford the cost	22	6.7
Drugs not available at Pharmacy	19	5.8
Missing clinic	18	5.5
Faith belief	12	3.6

funds frequently results in irregular medicine purchases, and cultural mis-information may encourage the use of complementary therapies rather than prescription drugs (Ajayi et al., 2019). Adherence rates could be raised by addressing these problems through community involvement, subsidies, and culturally relevant instruction.

However, this study's results are consistent with those of Wang et al. (2002), who found no evidence of a significant relationship between adherence and knowledge. Accordingly, adherence may be significantly impacted by unknown variables such socioeconomic status, cultural norms, and access to healthcare. Because of the high expense of medications or the logistical difficulties of attending clinics, for example, even well-informed patients may find it difficult to follow (Piette et al., 2015). In

Table 5 Respondents' satisfaction with items of care received at the hospital (N=330)

Items	Satisfied (%)
Appointment waiting time	297 (90.8)
Availability of doctor	310 (93.9)
Information provided by doctor	328 (99.4)
Concern of doctor about patient's health	327 (99.1)
Relationship with doctor	327 (99.1)
Overall satisfaction	322 (97.6)

order to close this gap, a multifaceted strategy that incorporates knowledge with useful support networks adapted to the population's sociocultural background is needed.

While the Busari et al. (2010) study shows advancements in hypertension knowledge, it is important to place these results in the larger context of Nigerian healthcare. Research from more recent times, such Olusanya et al. (2021), has shown a similar pattern of growing knowledge but enduring adherence disparities. In spite of the fact that clinic-based knowledge and awareness initiatives have produced positive outcomes, systemic issues like healthcare infrastructure and affordability continue to be barriers. By fortifying these elements, the gap between practice and knowledge can be closed.

Conclusion

The study emphasises how crucial patient knowledge is to the management of hypertension, but it also stresses the need to clear up enduring misknowledges, streamline treatment plans, and remove socioeconomic obstacles. Strong provider-patient communication and high patient satisfaction have been identified as possible factors that could improve adherence and results. To enhance the overall management of hypertension, future strategies should include these lessons.

Recommendations

From the result of this study, the following recommendations are suggested to further assess the knowledge of hypertension among the patients attending the cardiology outpatient clinic at the Obafemi Awolowo University Teaching Hospitals Complex (OAUTHC), Ile-Ife.

(1) **Patient Knowledge:** To help patients with hypertension better understand their illness, put in place

structured knowledgeable programmes. Topics including the causes of hypertension, risk factors, lifestyle changes, medication adherence, and the value of routine monitoring should all be included in these programs.

(2) **Health Literacy Assessment:** Determine the degree of health literacy among patients who come to the outpatient cardiology clinic by administering assessments. This will enable healthcare professionals to better adapt their communication and knowledge tactics so that patients with different reading levels may understand the content.

Suggestions for Further Study

(1) **Longitudinal study:** Conduct a follow-up study to evaluate how patients who visit the cardiology outpatient clinic over time have changed in their knowledge of hypertension. This may indicate whether knowledgeable treatments are successful and whether patients retain the knowledge they have been given.

(2) **Assess the health literacy of the patients who come to the cardiology outpatient clinic** in order to find out how much of a role it plays in their comprehension of hypertension and how to treat it. This could entail investigating the association between hypertension knowledge and health literacy using validated techniques for assessment.

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