DOI 10.5281/twist.10049652#537

TWIST, 2025, Vol. 20, Issue 4, pp. 333-339

TWIST

Journal homepage: www.twistjournal.net

Factors Influencing Non-Adherence to Antihypertensive Drugs among Patients Attending Medical Outpatient Clinics at State Hospital Ikirun, Osun State

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Abstract
The study assessed the knowledge of hypertension among the respondent; it also assessed the level of adherence to antihypertensive drug and the factors influencing their adherence. A descriptive cross-sectional design was adopted for the study. The respondent was selected through convenience sampling technique and analysis was done with SPSS version 28 using both descriptive and inferential statistics. A sample size of 152 respondents was selected. A well-structured and validated questionnaire was used to secure information from the respondents that gave their consent to participate in the study. The level of significance was set at $p < 0.05$. The mean ± SD age of participants was 42±5.63 years. Regarding the knowledge of hypertension 40(26.3%) of the respondent has Poor Knowledge of Hypertension while 112(73.7%) has Good Knowledge of hypertension. The findings It shows that 53(34.9%) are adherence to their antihypertensive medication while majority 99(65.1%) are Non adherence to their antihypertensive drug. Also, factors influencing non adherence to antihypertensive drug: 82 (53.9%) high cost of the drug, 77 (50.7%) side effects from the medications, 88 (57.9%) tight schedules are factors influencing their adherence to their medications. The study was concluded that high cost of drug, side effects from the medication and tight schedules are factors influencing non-adherence to medication. It was also recommended that the government should su hypertensive patient should have a regular follow-up appointment to monitor patients' progress and address any concerns they may have about their medication.

Keywords
antihypertensive drug, hypertension, factors, clinical appointments, medical clinics, adherence, non-adherence

INTRODUCTION

In March 2023, the World Health Organization (WHO) stated that 1.28 billion adults aged 30–79 years have hypertension globally, with two-thirds of those living in low- and middle income countries (World Health Organization,

2023). Hypertension is a crucial driver of the global burden of cardiovascular diseases. (WHO, 2023) . It is a major risk factor for coronary artery disease, heart failure, stroke, renal insufficiency, and blindness among diabetics (Al-Ramahi, 2019). In 2015, the WHO African Region had the highest prevalence of 27%, while the WHO Region of the Americas had the lowest prevalence of 18%. (Meinema et al., 2022), fortunately, control of hypertension reduces cardiovascular morbidity and mortality.

However, low- and middle-income countries (including Nigeria) have the lowest control rates, with hypertension control rates below 5%. This is attributed to poor access to care and insufficient treatment. It is estimated that more than 70% of patients on antihypertensive medications do not take them as prescribed (Al-Ramahi, 2021). The non-adherence practice may be particularly higher in developing countries where there is poor accessibility to medicines and healthcare services (Kang et al., 2021) as well as low level of awareness about the lifelong nature of hypertension management among patients (Kearney et al., 2020). Optimal control of blood pressure has been reported to reduce the incidence of stroke by an average of 35–40%, myocardial infarction by 20–25% and heart failure by > 50% (Kettani et al., 2020). Thus, adoption of healthy lifestyle as well as ensuring regular and continuous adherence to prescribed medications are integral to successful management of hypertension (Kang et al., 2022). Non-adherence to anti-hypertensive medications remains a significant challenge for controlling hypertension globally.

Medication adherence is a patient's active, voluntary, and collaborative involvement in a mutually acceptable course of behavior to produce a therapeutic result (Kettani et al., 2023). This is in addition to adherence to the lifestyle modifications such as the Dietary Approach to Stop Hypertension (DASH) diet, weight management, and exercises. This definition of medication adherence suggests variability in medication adherence due to differences in patient characteristic and setting. Therefore, assessing medication adherence is essential in managing patients with hypertension in different settings. Furthermore, a recent systematic review and meta-analysis and a study in a primary care setting showed that at least eight of ten patients with poorly controlled hypertension are non adherent to medication (Kang et al., 2020). This suggests that non adherence to antihypertensive medication is a significant challenge among patients with poorly controlled disease. Many patients have negative attitudes towards taking medication, especially if they 'feel well' (Hashmi et al., 2023). According to Jadelson et al., (2022) the major reasons for non compliance are multi-factorial and range from lack of adequate guidance to socioeconomic status.

Limited studies have been conducted to assess the Non-adherence to antihypertensive medication and its associated factors among those with poor control who are more likely to develop complications in Nigeria.

Statement of Problem.

Hypertension is the leading cause of mortality and the third largest cause of disability; it is poorly controlled worldwide. It is estimated that almost one-half of patients drop out entirely from treatment with failure to control hypertension and this takes an unacceptable toll on patients and their families. In addition to the personal cost to the individual patients, uncontrolled hypertension creates a huge, avoidable economic burden when viewed in terms of the general population (Sit et al. 2010). Even with the advances in medical technology and treatment of hypertension one still wonders why patients with hypertension still come down with severe complications and death. Non adherence to medication is a growing concern and is associated with adverse outcomes. Maintaining medication adherence to multiple medications is a complex issue in patients with chronic diseases, particularly cardiovascular diseases (CVDs). Adherence to antihypertensive medications is the cornerstone for achieving hypertension control. Therefore, this study will assess the factors influencing non adherence to antihypertensive drugs and clinical appointments among patient attending medical clinics at state hospital Ikirun, Osun state.

The specific objectives are to:

- Assess the level of knowledge of hypertension among patients attending medical outpatient clinics at state hospital Ikirun, Osun state.
- Determine the level of adherence to anti-hypertensive drugs among patients attending medical outpatient clinics at state hospital Ikirun, Osun State.

Research Questions

1. What is the level of knowledge of hypertension among patient attending medical outpatient clinics at state hospital Ikirun, Osun state?
2. What is the level of adherence to anti - hypertensive drug among patient attending medical outpatient clinics at state hospital Ikirun, Osun State?

Research Hypotheses

1. There is no significant relationship between patients' level of knowledge of hypertension and adherence to Anti-hypertensive drug.
2. There is no significant association between selected socio-demographic variables of patients and Non-adherence to Anti-hypertensive drug.

Significance of study

The results of the study will contribute to increase the awareness of healthcare providers, particularly nurses and physicians, on the issues of Non adherence and might help in the development of strategies to improve adherence with

treatment regimens among hypertensive patients. Recommendations from this study will assist policymakers and stakeholders in the healthcare sector in developing context-specific and relevant policies capable of improving the management of hypertension.

RESEARCH METHODOLOGY

This research is a descriptive cross-sectional research design, among patient attending medical outpatients clinics at state hospital, Ikirun, Osun State. The hospital poised to provide an array of qualitative health service that enhance the dignity of the human person, her services cut across surgery, medicine, obstetrics and gynecology, pediatrics, accident and emergency etc. Average clinic attendance in a month is 25 hypertensive patients/clients that do come for clinic in a month. Total population of patient/client for the past six month was used for this study. 152 patient/clients came for clinic for the past six months. Therefore, the target population for this study is 152. Sample Size was determined, using total enumeration of the respondents. A convenience sampling technique was used to select the respondents for this study. A self-structured and self-administered questionnaire was used as instrument for data collection. The reliability of the research instrument was determined by test-retest method. A pilot study (preliminary study) was conducted in Alayo hospital Ikirun, Osun state. The pilot study result was analyzed and internal consistency was used to measure the reliability co-efficient of the instrument. Data Collection was collected, participation was voluntary, informed consent was obtained and confidentiality was maintained.. Data were analyzed using Statistical Package for Social Sciences (SPSS) version 26. Result was presented using tables, pie chart and figures. While the hypotheses was tested using appropriate inferential statistical tool at 0·05 level of significant. Ethical Consideration Permission to conduct the study was collected from the ethical and research committee of Joseph Ayo Babalola University, Ikeji-Arakeji, Osun State. Permission and approval to conduct the study was also obtained from the heads of cardiology unit of the Centre.

RESULTS

Table 1 The socio-demographic characteristics (n=152)

Variables	Frequency (n=152)	Percentage (%) n=100
Age: Mean Age 42±5.63		
Less than 30	23	15.1
31-40	36	23.7
41-50	29	19.1
51-60	38	25.0
Above 50	26	17.1
Gender		
Male	109	71.7
Female	43	28.3
Religion		
Christians	114	75.0
Islam	32	21.1
Traditional	6	3.9
Marital status		
Single	38	25.0
Married	71	46.7
Widowed/widower	24	15.8
Divorce	19	12.5
Ethnicity		
Yoruba	93	61.2
Igbo	31	20.4
Hausa	22	14.5
Others	6	3.9
Educational Level		
No level of education	24	15.8
Primary	15	9.9
Secondary	31	20.4
Tertiary	82	53.9
Occupation		
Unemployed	5	3.3
Business/Trading	43	28.3
Civil servant	48	31.6
Retired	18	11.8
Farming	38	25.0
Duration of Diagnosis		
< 6 months	37	24.3
1-2 years	21	13.8
3-4 years	51	33.6

5 years and above	41	26.9
Family History of Hypertension		
Yes	51	33.6
No	101	66.4
Number of Anti-hypertensive drug		
1	68	44.7
2	39	25.7
3 and more	45	29.6

The age distributions of respondents covers different age groups, more than two-thirds were male 71.7%,most 46.7% were married, majority were Christians and Yoruba; as regards to level of education, majority 53.9% had tertiary education, and majority were employed; in terms of duration of diagnosis, some 33.6% had been diagnosed for 3-4years, 26.9% had been diagnosed for 5years and above, 24.3% were diagnosed for less than 6months, while 13.8%had been diagnosed for 1-2years. Meanwhile, 33.6% had family history of hypertension and 66.4% had no family history of hypertension; 44.7% were on one anti-hypertensive, 25.7% were on two antihypertensive, 29.6% were on more than three antihypertensive

Table 2 Respondent responses on the knowledge of Hypertension

Statement	Strongly Agree	Agree	Disagree	Strongly Disagree	Mean
Hypertension is also referred to as high blood pressure	121(79.6)	34 (22.4)	2(1.3)	-	1.21±0.44
In Hypertension Systolic Blood pressure is more than 140 and diastolic blood pressure is more than 90	114(75.0)	22(14.4)	12(7.9)	4(2.6)	1.38±0.74
High Blood pressure causes stroke and Kidney problem	88(57.9)	31(20.4)	22(14.5)	11(7.2)	1.71±0.96
High Blood pressure can cause kidney problem and heart attack	84(55.3)	26(17.1)	11(7.2)	31(20.4)	1.92±1.20
High Blood Pressure can be controlled with medications	132(86.8)	18(11.8)	2(1.3)	-	1.14±0.38
Is it possible for High Blood pressure to be cured	68(44.7)	34(22.4)	22(14.4)	28(18.4)	2.06±1.15
Hypertension can be caused by smoking and alcohol intake	112(73.7)	24(15.8)	13(8.6)	3(1.9)	1.38±0.72
A person with High Blood pressure should eat less salt and more fruits and vegetables	73(48.0)	41(26.9)	22(14.5)	16(10.5)	1.87±1.01
Do you believe that Exercise can help lower Blood pressure.	43(28.3)	21(13.8)	56(36.8)	32(21.1)	2.50±1.11

On knowledge of hypertension, 79.6% agreed that hypertension refers to as high blood pressure; 75.0% agreed that in hypertension; systolic blood pressure is more than 140 and diastolic blood pressure is more than 90; 57.9% agreed that high blood pressure causes stroke and kidney problems; 55.3% agreed that high blood pressure can cause kidney problem and heart attack; 86.8% agreed that high blood pressure can be controlled; 44.7% agreed that it is possible for high blood pressure to be cured; 73.7% agreed that hypertension can be caused by smoking and alcohol intake; 48.0% agreed that a person with high blood pressure should eat less salt and more fruits and vegetables; 36.8% agreed that exercise can not help lower a person's blood pressure.

Assessment of the Knowledge of Hypertension

The knowledge was summed based on their answers by assigning scores to the responses, strongly agree – 4, Agree – 3, Disagree – 2, Strongly Disagree – 1. A total of 36 marks was achieved. Scores between 18 - 36 was rated good knowledge while 0 - 17 was rated poor knowledge.

Table 3 Knowledge of Respondents on Hypertension

Knowledge	Frequency	Percentage
Poor	40	26.3
Good	112	73.7
Total	**152**	**100**

The table above revealed that 26.3% of the respondent has Poor Knowledge of Hypertension while 73.7% has Good Knowledge of hypertension.

Table 4 Respondent responses on the adherence of Antihypertensive Medication

Statements	Yes n(%)	No n(%)
Are you on any antihypertensive drug	148(97.4)	4(2.6)
Sometimes I forget to take the antihypertensive drug	84(55.3)	68(44.7)
When you travel or leave home do you sometimes forget To take along your antihypertensive drug	67(44.1)	52(34.2)
Have you ever cut back or stopped taking your Medication without telling your doctor	74(48.7)	78(51.3)
When you feel like you don't have any symptoms of HBP ,do you sometimes stop taking your medication	66(43.4)	86(56.6)
When you feel bad about your condition ,have you ever Stop taking your medication	81(53.3)	71(46.7)
Do you find it difficult to stick to the treatment plan	53(34.9)	99(65.1)

The above table reveals that 97.4% were on antihypertensive drug; majority,55.3% sometimes forget to take the anti-hypertensive drug; 44.1% forget to take their medications because they traveled or leave home; 51.3% never stopped or cut back on taking their medications without informing their doctors; 56.6% never stopped taking their medications even when they don't have the symptoms of hypertension; above half, 53.3% stopped taking their medications when they felt bad about their condition; while 65.1% find it difficult to stick to their treatment plan.

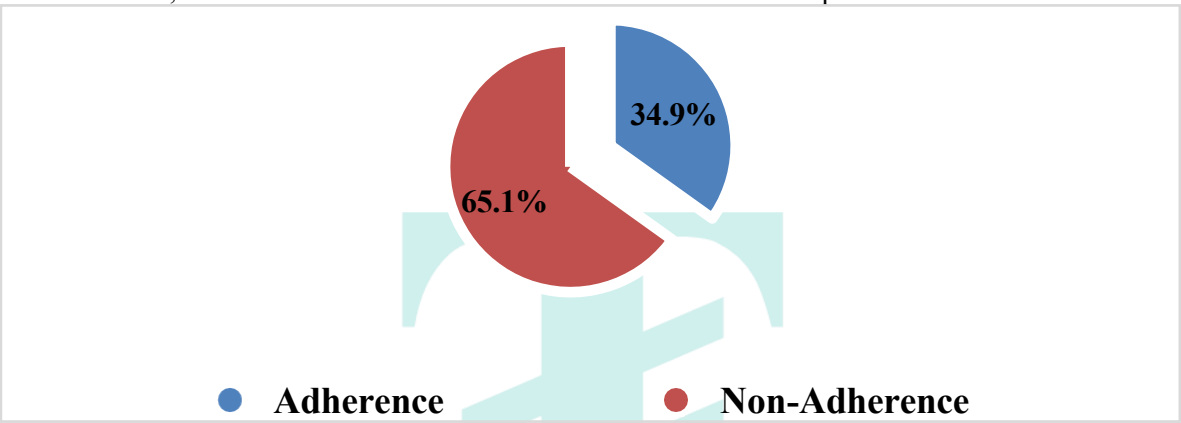

Fig. 1 Distribution of respondents Adherence and Non adherence to Antihypertensive Drug

The figure above revealed the overall adherence and non-adherence level of the respondent regarding antihypertensive drug.

SUMMARY, CONCLUSION AND RECOMMENDATIONS

A total of 152 respondents were recruited for this study, predominantly, the result of the socio-demographic information showed that the mean age was 42 ±5.63 years. Above two-thirds were male gender, ever married, Christians, Yoruba and were educated. Most of the respondents 31.6% were civil servants, 28.3% were business owners and traders, 25.0% were farmers, 11.8%were retired, 3.3% were unemployed. Majority, 33.6% had been a known hypertensive patients for 3-4years, 26.9% for 5 years and above. Meanwhile, 33.6% had family history of hypertension and 66.4% had no family history of hypertension;

The findings revealed an amazing Knowledge level of hypertension. These findings disagree with the study of Ehwarieme et al., (2018) in a study conducted on Knowledge of and Compliance with Therapeutic Regimens among Hypertensive Patients in Nigeria. This is in line with the study of Akoko et al., (2017) in Cameroon, who, in their study, reported the majority of the respondents with average knowledge of hypertension (53.4%). On the other hand, this study is in contrast with the study by Mugwano et al., (2016) in Kampala. This is probably owing to the level of education and the rate at which awareness is being created through health education and advertisements in this par t of the country.

In addition, 79.6% agreed that hypertension refers to as high blood pressure; 75.0% agreed that in hypertension; systolic blood pressure is more than 140 and diastolic blood pressure is more than 90; 57.9% agreed that high blood pressure causes stroke and kidney problems; 55.3% agreed that high blood pressure can cause kidney problem and heart attack; 86.8% agreed that high blood pressure can be controlled. This is similar to the study conducted by Ajewole et al., (2017) in a study among all public secondary school teachers in Ekiti State, found that all of their respondents had vast knowledge on hypertension.

The findings revealed that majority 65.1% are non adherence to their antihypertensive drug. This finding is in consonance with the study conducted in selected hospitals in Benin City, Edo state to assess compliance to treatment regimen among hypertensive patients by Ehwarieme et al. (2018) .Results revealed that the respondents have fair knowledge on hypertension. Furthermore, the study revealed that most respondents, 61.3% had poor drug compliance while few 38.7% had good compliance to hypertension treatment regimen. This finding is similar to the findings of

Okwuonu et al.,(2015). The findings is equally similar to Iloh et al., (2013) in a study in Umuahia, Abia State, eastern Nigeria and Boima et al., (2015) in a similar study conducted in Ghana.

Conclusion

This study concluded that even though the respondents have good knowledge on hypertension but their adherence to their antihypertensive drugs are so poor despite the awareness of scourge of hypertension and its complications.

The following recommendations are made base on the above conclusions:

The government should-

- Implement educational programs that inform patients about hypertension, the importance of medication adherence, and the potential consequences of non-adherence. This can enhance their understanding and motivate them to stick to their treatment plans.
- Develop individualized treatment plans that consider each patient's unique circumstances, including their lifestyle, preferences, and any barriers they face. This personalized approach can increase their commitment to adhering to their medication.
- Schedule regular follow-up appointments to monitor patients' progress and address any concerns they may have about their medication. This ongoing support can reinforce the importance of adherence.
- Encourage the use of mobile applications or reminder systems that can help patients remember to take their medications. These tools can be particularly useful for those who have busy schedules or forget to take their doses. Facilitate support groups where patients can share their experiences and challenges with medication adherence. Peer support can motivate individuals to stay on track with their treatment.
- Engage family members in the care process to provide additional support and encouragement for patients.

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