



Determinants of Hypertensive Patients on Adherence to Therapeutic Regimen in Hospitals of Kwara State, Nigeria

Umar, N., Jibril, ¹, Rejuaro, F. Morisola ²., Olubiyi, S. Kayode ³ Anyebe, E.E⁴.,
Ibraheem, A. A.⁵., Imam, A. A⁶.

¹⁻⁶Department of Nursing Science, Faculty of Clinical Sciences
College of Health Sciences, University of Ilorin, Nigeria

Corresponding Author: Umar N. Jibril,
Corresponding Email: umaribna@gmail.com

Abstract

Hypertension is a serious public health issue in both developed and developing countries while compliance and adherent to medication has been a challenge among hypertensive patients. This study examined the determinants of adherence to treatment regimen among hypertensive patients attending Kwara State hospitals in Nigeria. The study adopted cross-sectional descriptive research design. A total number of 304 formed the sample size of this study. A multi-stage sampling technique (purposive, stratified simple random sampling and proportionate sampling technique) was used to drawn respondents from three Senatorial districts of Kwara State. Research questions were raised and hypothesis tested, A standardize tool was employed for data collections base on WHO/CDC criteria and instrument reliability was ascertain with correlation coefficient and $(r) = 0.78$ obtained through test re-test method. The collected data were analysed using SPSS version 20. The results revealed that knowledge, perception, coping pattern and level of compliance influenced hypertensive patients adherence to therapeutic regimen in hospitals of Kwara State, Nigeria. The study concluded that knowledge ($=0.035$), perception and coping pattern of hypertensive patients and level of compliance with (P values <0.05), influenced adherent to therapeutic regimen among hypertensive patient in hospitals in Kwara State. The study recommended that health education on the risk factors to hypertension, regular use of drugs and lifestyle modification, importance of compliance and adherence to therapeutic regimen should be encouraged through the use of mass media. Government should intensify efforts on provision of affordable and accessible anti-hypertensive drugs to the patients in the communities of Kwara State, Nigeria.

Keywords: *Adherence, Compliance, Coping Pattern, Hypertensive Patients, Knowledge therapeutic regimen.*

Introduction

Hypertension otherwise referred to as elevated blood pressure is a serious medical condition which is of great public health concern. This condition significantly increases the risks of heart, brain, kidney and other diseases. An estimated 1.13 billion people worldwide have hypertension, most (two-thirds) living in low- and middle-income countries (WHO; 2017).

In 2015, 1 in 4 men and 1 in 5 women had hypertension. Fewer than 1 in 5 people with hypertension have the problem under control. Hypertension has been identified as one of the major cause of premature death worldwide. According to the World Health Organization fact sheet report shows that one of the global targets for non-communicable diseases is to reduce the prevalence of

hypertension by 25% by 2025 (baseline 2010). In 2016, WHO and the United States Centres for Disease Control and Prevention launched the Global Hearts Initiative to support governments to prevent and treat cardiovascular diseases.

In Nigeria a total number of estimated deaths resulting from all cardiovascular diseases and hypertensive heart disease recorded for in 2004 by WHO was 201,500 and 10,700 respectively, this placed Nigeria in the 16th position globally (Sanusi, Muhammad, Ahmed, & Idris, (2017). On this trend it is clear there is a growing health problem that requires intervention. The World Health Organization through its technical team responded on ways to tame the prevalence of hypertension among populations. One of the efforts by WHO was five technical packages that comprise the Global Hearts Initiative, the HEARTS technical package aims to improve the prevention and management of cardiovascular diseases, including hypertension detection and management. The five modules of the HEARTS technical package included Healthy-lifestyle counselling, Evidence-based treatment protocols, Access to essential medicines and technology, Team-based care, and Systems for monitoring and provision of a strategic approach to improve cardiovascular health in countries across the globe (WHO; fact sheet, 2017).

Hypertension which is high blood pressure (HBP), is categorised among chronic non-communicable diseases characterized by persistently elevated arterial blood pressure usually without symptoms (WHO; 2017). Centres for Disease Control and Prevention, (2015) identified risk factors for hypertension such as inadequate levels of knowledge and practice of non-drug use, the Family history; gender (age 45 to 64, men and women), race, obesity, children and adolescents who are obese are at greater risk for high blood pressure when they reach adulthood.

However, studies have shown that hypertensive patient's knowledge and perception about the treatment regimen and adherent are some of the contributory factors hindering positive treatment outcome. Sanusi, Muhammad, Ahmed, and Idris (2017) in their study opined that about 86.3% of the patients with hypertension were aware of the various components of non-pharmacological therapy for NCDs; this ranged from the knowledge of the diseases and knowledge about lifestyle modifications. Only about 13.8% of the respondents with hypertension had good knowledge of hypertension prevention, whereas 62.8% had fair knowledge and 23.5% had poor knowledge of hypertension prevention, respectively.

Compliance viewed in health and clinical perspectives as a patient's behaviour in terms of timeliness in seeking care, attendance at follow-up appointments or observance of the physician's advice. In a study on factors associated with self-reported compliance among hypertensive patient in South-western Nigeria, out of 440 hypertensive patients studied, only 51% reported high compliance to treatment regimen improves the outcome of hypertension treatment, understanding its pattern is an important step in evaluating the effect of a hypertension management regimen (Ayodele, Alebiosu, Salako, Awoden & Abigun, 2011). Patients' compliance to the prescribed anti-hypertensive medication is also an important factor in achieving blood pressure targets. Babatsikou and Zavitsanou, (2011) highlighted several types of non-compliance with degree of overlap, the first is known as the primary non-compliance, the second type is persistence in which patients decide to stop taking a medication after starting it against medical advice, and the third type is known as non-conforming, this type includes a variety of ways in which medication are taken as prescribed, this behaviour can range from skipping doses to taking medications at incorrect times or at incorrect doses, to even taking more than prescribed (Li., Stewart., Stotts & Froelicher, 2006).

In any case, compliance and adherence to hypertensive treatment as well as Lifestyle changes with therapeutic regimen constitute a major and vital component of the treatment of hypertension, the successful treatment of hypertension depends greatly upon compliance and adherence with the prescribed therapeutic regimen (Al-Sowielem & Elzubier; 1998). Studies have shown that many reasons are identified as hindrance to compliance and adherence to hypertensive treatment regimen, Kazaure, Abubakar, Ibrahim, Gidado abitu and Nguku (2017) observed factors that were independently associated with non-adherent were being a low-income earner, exhaustion of drugs before the next clinic appointment, buying in private pharmacies and open market and total time spent counselling of fewer than five minutes. They, however, concluded that the number of -non-adherent in the study was found to be too high and recommended that drugs be made available for dispense, spending more time to counsel and educate the patients on the treatment regimen.

In three senatorial districts Hospitals in Kwara State, the researchers observed an imbalance between the prescribed therapeutic regimen and actual compliance and adherence resulting in little or no changes in the blood pressure readings of outpatient coming for their clinical appointment. In most cases, the patient does not come back for a check-up but came back only when there were signs and symptoms of complication arisen from either non-compliance or non-adherent to the therapeutic regimen. On interaction with some hypertensive patients in some of the hospitals, many patients could not know nor associated any importance to treatment regimen as recommended by health caregivers as regard to routing medication, dietary restriction and lifestyle modification. Base on the above perceived low level of knowledge and non-compliance as well as poor coping pattern and adherence to therapeutic regimen among hypertensive patients attending hospitals in Kwara State, this study examine various determinants of adherence to therapeutic regimen among hypertensive patients in

Kwara State, Nigeria. The study hypothesized that there is no significant relationship between the knowledge, perception, the coping pattern and the level of compliance and the adherence to therapeutic regimen among hypertensive patient attending Hospitals in Kwara State respectively.

Methodology

This study adopted a cross-sectional descriptive research design aimed to examine the determinants of adherence to therapeutic regimen among hypertensive patients attending secondary and tertiary Hospitals in Kwara State, Nigeria. A sample of three hundred and four (304) hypertensive patients were purposively drawn from three senatorial districts in Kwara State using a multi-stage sampling technique. A standardise tool was employed for data collections base on WHO/CDC criteria. The data collection instrument comprises of three sections that is, in section A, ten (10) question items questionnaire was used to obtained information on patients' knowledge (6 Q. items), and patients' perception (4 Q. items), while in section B an eight (8) question items questionnaire was used to assess the compliance level (4 Q. items) and coping pattern (4 Q. items) and section C determined the relationships between the variables under study on adherence to therapeutic regimen among hypertensive patients attending Hospital in three senatorial districts of Kwara State.

The face and content validity of the instrument was established by the researchers and the instrument covers all variables included in this study. The instrument reliability was ascertained using a correlation coefficient. The instrument was later subjected to a pilot study, on 50 respondents in three selected hospitals in the neighbouring state (Ekiti State) and the result shows a correlation coefficient of 0.78% reliability index indicating the reliability of the instrument. The approval for the conduct of this study was given by ethical review committees of the selected hospitals in Kwara

State. The informed consent was sought from hypertensive patient's one on one basis to assure their confidentiality and to facilitate full participation in this study. A total of 304 questionnaires were administered to hypertensive patients with the help of research assistants in a conducive environment of the studied Hospitals in the State for maximum co-operation of the respondents. Enough time was given to the respondents to fill and return questionnaires. The completed questionnaire was collected and analysed using computer software (Statistical Package for Social

Science (S.P.S.S; version 20) and results presented using inferential statistics in the form of chi-square to test hypotheses.

Result

H₀₁: there is no significant relationship between the knowledge and adherence to the therapeutic regimen among hypertensive patient attending Hospitals in Kwara State.

Table 1: Chi-square Test Showing the Relationship between Knowledge and Adherence to the therapeutic Regimen among Hypertensive Patient Attending Hospitals in Kwara State. (n=304)

Knowledge about the therapeutic regimen	Level of adherence with therapeutic regimen			Pearson chi-square X ²	p-value	Df	Result
	High	Low	Total				
Good	268	30	298	10.378a	0.035	4	H ₀ Rejected
Poor	6	0	6				
Total	274	30	304				

Table 1 above showed that there is a significant relationship between the knowledge of hypertensive patient about therapeutic regimen and their adherence to the therapeutic regimen with p-value (0.035) <0.05, therefore rejecting the null hypothesis. This implies that knowledge is a significant

factor that determined the hypertensive patients' adherence to the therapeutic regimen. **H₀₂:** there is no significant relationship between the perception and adherence to therapeutic regimen among hypertensive patients attending Hospitals in Kwara State.

Table 2: Chi-square test Showing the Relationship between Perception and Adherence to Therapeutic Regimen among Hypertensive Patients in Hospitals, Kwara State. (n=304)

Perception of hypertensive regimen	Level of adherence with therapeutic regimen			Pearson chi-square X ²	p-value	Df	Result
	High	Low	Total				
Good	90	0	90	89.838a	0.000	6	H ₀ : Rejected
Poor	184	30	214				
Total	274	30	304				

Table 2 above showed that there is a significant relationship between the patients' perception of hypertensive treatment regimen and their level of adherence to the therapeutic regimen with p-value (0.000) <0.05, rejecting the null hypothesis. This implies that patients' perception is a significant factor that

determined the adherence to therapeutic regimen among hypertensive patient in Hospital in Kwara State. **H₀₃:** there is no significant relationship between compliance and adherence to therapeutic regimen among hypertensive patients in Hospitals, Kwara State.

Table 3: Chi-square test Showing the Relationship between Compliance and Levels of Adherence to Therapeutic Regimen among Hypertensive Patient Attending Hospitals in Kwara State. (n=304)

Level of compliance with therapeutic regimen	Level of adherence with therapeutic regimen			Pearson chi-square X ²	p-value	Df	Result
	High	Low	Total				
High	262	30	292	32.899a	0.000	6	H0: Rejected
Low	12	0	12				
Total	274	30	304				

The table above showed a significant relationship between the level of compliance with the therapeutic regimen and adherence to therapeutic regimen among hypertensive patients in Kwara State with p-value (0.000) <0.05, rejecting the null hypothesis. This implies that the level of compliance is a significant factor that determined adherence

of the hypertensive patient to the therapeutic regimen in hospitals of Kwara State.

H0₄: there is no significant relationship between the coping pattern of hypertensive patients with the therapeutic regimen and their adherence with therapeutic regimen.

Table 4: Chi-square test Showing the Relationship between Coping Pattern and Adherence to Therapeutic Regimen among Hypertensive Patients in Kwara State.(n=304)

Coping Pattern with therapeutic regimen	Adherence with therapeutic regimen			Pearson chi-square X ²	p-value	Df	Result
	High	Low	Total				
Good	256	30	286	80.493a	0.000	4	H0: Rejected
Poor	18	0	18				
Total	274	30	304				

Table 4 showed a significant relationship between the coping pattern of hypertensive patients with the therapeutic regimen and their adherence with a therapeutic regimen with p-value (0.000) <0.05, therefore rejecting the null hypothesis. This implies that coping pattern is a significant factor that determined the coping pattern of a hypertensive patient with a therapeutic regimen and their adherence with therapeutic regimen.

the therapeutic regimen. It is evident in this study that an inadequate level of knowledge and perception on the hypertension treatment regimen and ignorance of the severity of hypertension are contributory factors to patient adherent to the hypertensive regimen. A better knowledge of patient condition enhance their adherent to treatment compared with those who had low knowledge about their health condition, and as well as among patients who felt that they could stop taking anti-hypertensive drugs once the blood pressure had stabilized. This demonstrates how a lack of knowledge, information regarding treatment and poor perception about treatment regimen among hypertensive patients can contribute negatively to patient

Discussion

This study on determinants of hypertensive patients' adherence to treatment regimen Hospitals in Kwara State revealed that knowledge, perception, coping pattern and compliance are important determinants that influence hypertensive patients adherence to

adherence to treatment. This findings are in line with the report of (Centres for Disease Control and Prevention, 2015), and corroborates with the work of Helena, & Zavitsanou, (2011) where they affirmed that several factors could make patients more likely to know and perceived that drug and diet are important in the treatment of hypertension.

In this study, it was found that compliance to treatment has also been a contributing factor that influences patient adherence to the therapeutic regimen. That is, implementing lifestyle modification alongside with medical or health advice, a patient's behaviour in terms of timeliness in seeking care, attendance at follow-up appointments or observance of the health caregivers advice, will improve the outcome of hypertensive patients treatment regimen. This finding also corroborates with the findings of Morisky, (2009), and Elliot,(2015).

This study findings on the influence of knowledge, coping pattern perception and compliance on the adherence to therapeutic regimen may be connected to the patients failure to enter a treatment programme, premature termination of therapy, incomplete implementation of instruction and non-attendance at appointment, are resultants of patient non-adherence to treatment regimen and potential complications that arise thereafter.

Conclusion

In conclusion, this study posited that patients' with hypertension are more vulnerable and affected by various factors such as knowledge, perception, level of compliance and coping pattern that have a serious effect on the adherence to therapeutic regimen among hypertensive patients which has placed the incidence of hypertension on the increase. Lifestyle changes and medication has been found to be very efficient in the treatment of hypertension when strictly adhere to.

Recommendations

Based on the results and conclusion of this study, the following recommendations were made.

- i. Health education on the significance of compliance and adherence to treatment regimen should be encouraged through the use of mass media, jingles, support through home visits, telephone calls and other reminders that facilitate adherence.
- ii. Hypertensive patients should be routinely health educated on the dangers of not taking recommended treatment regimen and Lifestyle modifications that promote health and alleviate persistent high blood pressures.
- iii. Patients should be reminded of the need to keep up with their appointment on discharge.
- iv. The government should provide more health care centres in various areas, so as to ease and encourage people to go for check-up regularly.
- v. The drug should always be made available, accessible and at a cheap cost to the patient to foster their adherence.

References

- Small-scale L. & Scrubbier A.G. (1998). Compliance and Knowledge of hypertensive Patients Attending PHC Centres in Al-Khobar, *Saudi Arabia. Eastern Mediterranean Health Journal*, Vol.4(2), pp. 301-307.
- Ayodele, O.E., Alebiosu, C.O., Salako, B.L., Awoden, O.G., Abigun, A.D. (2011). Factors associated with treatment compliance in hypertension in South-west Nigeria. *J.Health PopL Nutri*. 209(6): pp. 619-628.
- Babatsikou, F. O. & Zavitsanou, A. S., (2011). Epidemiology of Hypertension in Elderly. *Health Science Journal*; Vol.4(1): pp. 50-53.
- Li, W.W., Stewart, A.L., Stotts, N. & Froelicher, E.S. (2006). Cultural factors associated with anti-hypertensive medication adherence in Chinese immigrants. *The Journal of*

- Cardiovascular Nursing, Vol. 21(5), 354.
- Morisky DE¹, Kominski GF, Afifi AA, Kotlerman JB. (2009). The effects of a disease management programme on self-reported health behaviours and health outcomes: evidence from the "Florida: a healthy state (FAHS)" Medicaid programme. *Health Educ Behav*;36(3):505-17. doi: 10.1177/1090198107311279. UCLA School of Public Health, Los Angeles, California, USA. dmorisky@ucla.edu;
- Muhammad LU, Ahmed A, Idris F. (2017). Knowledge, attitude, and adherence to non-pharmacological therapy among patients with hypertension and diabetes attending hypertension and diabetes clinics at Tertiary Hospitals in Kano, Nigeria. *Sahel Med J* 2017;20:102-8
- Smeltzer, S. C, Bare, B. G, Hinkle, J. L and Cheever, K. H. (2010). *Brunner & Suddarth's Textbook of Medical-Surgical Nursing*. 1^{2th} ed. Philadelphia, Baltimore, New York. London.
- Nsitou, M.B., Stéphane, M., Bouso and Bwira, B. (2013) Patients-Related Predictors of Poor Adherence to anti-hypertensive Treatment in Congo-Brazzaville: A Cross-Sectional Study. *Global Journal of Medicine and Public Health*, 2.
- Centres for Disease Control and Prevention, (2015). High Blood Pressure Facts [Internet] Atlanta: Centres for Disease Control and Prevention. (updated 2015 February 19, cited 7 May 2015). Accessed from: <http://www.cdc.gov/bloodpressure/facts.htm>. [Google Scholar] on 15th April 2019.
- World Health Organization Fact Sheet, (2017). Cardiovascular diseases (CVD). WHO. international/news-room/fact sheet. Available on www.google.chrome, retrieved on 3rd Jan. 2020.