

Adherence to Antihypertensive Medications and Determinants Among Patients at Yekatit 12 Hospital, 2022 G.C.

Kidist Kenea Madessa ^{1**}, Zemene Yohannes Afework ³, Lemlem Tamene Ergano ⁷, Tsion Wolanewos Asfaw ⁸, Wintana Tsefaye Desta ⁴, Ruth Sahelu Tilahun ², Dawit Yosef Barkesa ⁷, Tamrat Werash Hailu ³, Biniyam Mequanent Sileshi ⁵, Meklit Getnet Belay ⁵, Aelaf Aseged Mammo ⁶, Nahom Addisu Bekele ¹, Eyerusalem woldetensae Nimane ^{2*}, Mekdes Tarekegn Ambaye ^{2*}

¹ Department of Medicine Yekatite 12 Hospital Medical College, Addis Ababa, Ethiopia

² Department of Medicine Sante Medical College Addis Ababa, Ethiopia

³ Department of Medicine, Addis Ababa University, College of Medicine and Health Science, Addis Ababa, Ethiopia.

⁴ Department of Medicine: Zhengzhou University College of medicine Henan province China

⁵ Department of Medicine, University of Gonder, College and Health Science, Ethiopia

⁶ Department of Medicine: Wachemo University Nigist Eleni Mohammed Memorial Comprehensive Specialized Hospital Hosaena, Ethiopia

⁷ Department of Medicine Jimma University Oromia Region, Ethiopia

⁸ Department of Medicine: Debre Tabor University College of Health Sciences, School of Medicine.

***Corresponding Authors:** Kidist Kenea Madessa - Department of Medicine Yekatite 12 Hospital Medical College, Addis Ababa, Ethiopia.

Eyerusalem woldetensae Nimane and Mekdes Tarekegn Ambaye - Department of Medicine, Sante Medical College, Addis Ababa, Ethiopia.

Received date: January 18, 2025; **Accepted date:** January 29, 2025; **Published date:** February 07, 2025

Citation: Kidist K. Madessa, Zemene Y. Afework, Lemlem T. Ergano, Tsion W. Asfaw, Wintana T. Desta, et al., (2025), Adherence to Antihypertensive Medications and Determinants Among Patients at Yekatit 12 Hospital, 2022 G.C, *J Clinical Cardiology and Cardiovascular Interventions*, 8(2); DOI: [10.31579/2641-0419/444](https://doi.org/10.31579/2641-0419/444)

Copyright: © 2025, Kidist Kenea Madessa. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Abstract

Background: Hypertension is a major global issue, with high morbidity and mortality rates. It is estimated to be 6% in Ethiopia and 30% in Addis Ababa. Adherence is the degree to which a person's medication-taking behaviour corresponds to the health care provider's medical advice. It encompasses both dosage frequency and timing of ingestion. Poor adherence is connected with poor illness outcomes and a waste of healthcare expenditures.

Objective: To assess the extent of Adherence to antihypertensive medications and the reasons for non-adherence among hypertensive patients.

Methodology: An institution-based cross-sectional study was conducted at Yekatit12 Hospital Medical College using structured questionnaires from February to May 2022 G.C. The collected data was processed and analyzed using computer software using SPSS version 21.0, presented in tables and figures and then interpreted based on the findings.

Results: - Of 127 respondents, 78 (61.9%) and 49 (38.8%) were Female and Male, respectively. The majority of the study participants, 73 (57.6%), were in the age group of 50-64. In a more significant proportion of patients, 88(69.4%), the cost of drugs was covered by themselves. At least one side effect of hypertensive medications had been reported by 60 (80%) of participants. Of the 127 study subjects, 79 (62.2%) were adherent, (37.8%) were non-adherent to their antihypertensive medication. The majority of patients (41.2%) reported stopping their medication when they felt better & only (10.2%) of them reported financial problems with stopping their medication.

Conclusion and Recommendation: - In general, these hypertensive individuals did not take their medications as prescribed. To enhance the patient's quality of life, pharmacists and other medical specialists must to work together. They must emphasize the value of following their hypertension treatment plan, its advantages, and the possibility of problems.

Keywords: assessment; adherence; antihypertensive medications; determinants

1. Introduction

1.1 General Background

Hypertension is defined as elevated systolic blood pressure (SBP), diastolic blood pressure (DBP), or both. It is a global challenge, with hypertension (HTN) or high blood pressure (systolic BP \geq 140 mmHg and diastolic BP \geq 90 mmHg) ranking third as a cause of disability-adjusted life years. [1-4]. Hypertension causes 7.1 million premature deaths each year worldwide and accounts for 13% of all deaths globally. Analysis of the global burden of hypertension revealed that over 26% of the world's adult population had hypertension in 2000 [4, 5].

According to the Seventh Report of the Joint National Committee (JNC) on Hypertension, there are approximately 50 million hypertensive individuals in the United States only and 1 billion worldwide [6]. The prevalence of hypertension in Ghana has been increasing over the past years [7, 8]. In 2002, the prevalence rate was estimated at 35% of Ghanaians in the 40 – 45 age group and 40% in those above 55. The prevalence will be approximately 6% in those below 40 years. In this age group, the prevalence will be higher in males than females [7]. It has been identified as the most common cause of heart failure, stroke, chronic renal disease and spontaneous sudden deaths in Ghana [8].

In Sub-Saharan Africa, hypertension has also emerged as a serious public health problem. A meta-analysis of hypertension studies in the region reported that hypertension is more prevalent in urban than rural areas in all countries of the region. Also, hypertension is a significant public health problem in Sub-Saharan Africa, but unfortunately, most countries of the region lack the resources to detect, prevent and treat the disease [9]. Effects of Westernization, urbanization, changes in dietary patterns and sedentary lifestyles are among the factors fueling the epidemic of hypertension in sub-Saharan Africa [10]. In developing countries, morbidity and mortality are increasing from time to time due to a change in lifestyle and sedentary life. In Africa, 15% of the population has hypertension. Although there is a shortage of extensive data, 6% of the Ethiopian population has been estimated to have HTN. Approximately 30% of adults in Addis Ababa have hypertension above 140/90 mmHg or reported use of antihypertensive medication [11, 12].

There are effective medical therapies for hypertension management. However, only 37% of hypertensive patients in a 2003-2004 survey were reported to have their blood pressure controlled. Despite the development of many effective antihypertensive drugs, targets to reduce morbidity and mortality due to high blood pressure are reached in only a minor of patients in clinical practice. Many people with age indifference are attacked by this "silent killer," which results in target organ damage as a complication. [13]. The World Health Organization (WHO) describes poor Adherence as the most important cause of uncontrolled blood pressure and well documented that uncontrolled blood pressure increases the risk of ischemic heart disease 3-to 4-fold and the overall cardiovascular risk by 2-to 3-fold [13]

Nonadherent behavior depends on interacting variables related to patients' illness and environment. Adherence to life modifications and avoidance of non-recommended behaviors are necessary to control blood pressure [14]. Failure to adhere to medications can lead to poor blood pressure control and increased risk of cardiovascular complications like coronary artery disease, cerebrovascular disease, congestive heart failure, chronic renal failure and peripheral vascular disease [15]. There are many problems affecting human health worldwide. Hypertension and related complications are important health problems. Hypertension sufferers' non-adherence to their pharmacological regimen and lifestyle results in

uncontrolled hypertension and consequent complications such as cardiovascular, renal and cerebrovascular diseases [16]. Poor Adherence is one of the biggest obstacles in therapeutic blood pressure control. The problem of non-adherence to medical treatment remains a challenge for the medical professions and social scientists, as a result, substantial numbers of patients do not get the maximum benefit of medical treatment, resulting in poor health outcomes, lower quality of life and increased health care costs. In spite of many advances made in adherence research, non-adherence rates have remained nearly unchanged in the last decades [17]. Prescribers uniformly underestimate the problems of non-adherence in their patients. If a healthcare professional cannot detect non-adherence, they can't correct the problem. Hence, it becomes imperative to measure and evaluate patient adherence reliably. This can be done by self-reporting, pill counting, and, in some cases, measuring serum or urine drug levels. Self-reporting is the most practicable and widely used tool [18]. Poor adherence to antihypertensive medication is frequently associated with a negative illness outcome and a waste of limited healthcare resources. In Ethiopia, particularly in the research area, little is known about adherence rates and associated factors. As a result, the purpose of this study is to analyze adherence to antihypertensive medication and related factors among patients on follow-up at Yekatit 12 Hospital Medical College in 2022.

1.2. Objectives

1.2.1 General objective

To investigate Adherence to antihypertensive medication regimens at Yekatit 12 Hospital Medical College from February to May 2022 G.C.

1.2.2 Specific Objectives:

- To assess the prevalence of non-adherence to antihypertensive therapy
- To investigate the factors affecting Adherence to antihypertensive therapy

1.3 Significance of The Study

As there have been no sufficient studies conducted about the Adhesion of hypertensive patients to their antihypertensive therapy, this study aimed to be a source of information on the prevalence of Adhesion to antihypertensive therapy and the factors that affect Adhesion to antihypertensive therapy.

This study can also increase awareness among prescribers, pharmacists, other healthcare professionals, and health managers in developing strategies to minimize non-adherence to antihypertensive medicines.

2. Methodology

2.1 Study area & Study period

2.1.1 Study area

The study was conducted at Yekatit 12 Hospital and Medical College's, internal medicine department. Yekatit 12 Hospital was established in 11923G. Until the Ethiopian revolution of the 11970s, it was known as Haile Selassie I Hospital, named after Emperor Haile Selassie I. The hospital serves over 5 million people in its central 5 Departments in the catchment area.

Addis Ababa was chosen as the study setting due to its diverse population, representing various socioeconomic backgrounds and cultural contexts. The city is known for its well-established healthcare infrastructure,

making it a suitable location to access a significant number of emergency patients. An institutional-based cross-sectional study will be carried out in the study was conducted at Yekatit 12 Hospital and Medical College's Internal Medicine Department. Yekatit 12 Hospital was established in 11923G. Until the Ethiopian revolution of the 11970s, it was known as Haile Selassie I Hospital, named after Emperor Haile Selassie I. In addition, Yekatit 12 Hospital Medical College maintains electronic medical record systems, which streamline the process of collecting data for this study. These records contain detailed information on patient demographics, medical history, investigation results, diagnoses and disease progress over time. The hospital serves over 5 million people in its central 5 Departments in the catchment area.

Addis Ababa was chosen as the study setting due to its diverse population, representing various socioeconomic backgrounds and cultural contexts. The city is known for its well-established healthcare infrastructure, making it a suitable location to access a significant number of emergency patients. An institutional-based cross-sectional study will be carried out in Yekatit 12 hospital medical colleges from February to May at 2022 G.C.

2.1.2 Study period

This study was conducted at Yekatit 12 hospital medical colleges from February to May 2022 G.C.

2.2 Study design

A retrospective cross-sectional study design was used among hypertensive patients on follow-up in Yekatit 12 hospital medical colleges from February to May 2022 G.C.

2.3 Population

2.3.1 Source population

All hypertensive patients who are on the antihypertensive medication in Yekatit 12 hospital medical colleges.

2.3.2 Study population

All adult hypertensive patients on antihypertensive medication who were visiting at Yekatit 12 hospital medical colleges from February to May 2022 G.C. at the chronic ambulatory care unit and fulfilling the inclusion criteria throughout the study period were used.

2.4 Inclusion and exclusion criteria

2.4.1 Inclusion criteria

Hypertensive patients who are on follow-up as outpatients, at the age of 18 or above and less than 80, have been on medication for at least 6 months.

2.4.2 Exclusion criteria

Hypertensive patients who are admitted to inpatient wards, pregnancy-related hypertensive patients, and patients who have been on medication for less than six months.

2.5 Sample Size Determination and Sampling Techniques.

This study included all hypertensive patients at Yekatit 12 hospital medical colleges from February to May 2022 G.C. who had follow-up and fulfilled the inclusion criteria.

2.6 Data Collection Method

Data was collected using a structured standard questionnaire, which contains questions descriptive of the demographic status of the patient and factors affecting Adherence to antihypertensive medication was used as a data collection instrument.

2.7 Study Variables

2.7.1 Independent Variables

- Demographic variables: age, sex, marital status, educational status, financial support, social support, occupation, residence, and family history.
- Disease-related variables: stage of hypertension, complications.
- Drug-related variables: Duration of therapy, number of antihypertensive drugs
- Set up related variables: frequency of follow-up visits, quality of medical service

2.7.2 Dependent Variables

- Adherence

2.8 Definitions of terms

Adherence- is the extent to which a person's medication-taking behavior coincides with the healthcare provider's medical advice

Fully Adherent - Those who take adequate amounts of medications in accordance with prescribed regimens.

Partially Adherent - Those who take many doses but not regularly enough to control their disease.

Non-adherent - Those who take few or no doses.

Over-adherent - Involves taking doses too.

Hypertension is defined as persistent systolic blood pressure equal to and greater than 140 mmHg and/or diastolic blood pressure equal to and greater than 90 mmHg.

A hypertensive patient refers to a person diagnosed with hypertension, as defined above.

Factors are conditions of hypertensive patients that influence the development and course of the disease.

Lifestyle: attitudes, habits and behaviors of hypertension patients.

2.9 Data quality control

The principal investigator collected the data. Before starting the data collection, the data collection format was cross-matched with available information on records; then, the study questions were rearranged as necessary. The incomplete chart was discarded.

2.10 Data collection process & analysis

All the necessary data was collected using the structured standard questionnaire. The questionnaire was presented to each patient as an interview with proper explanation. Patient medication charts were reviewed carefully to assess the characteristics of hypertension and antihypertensive treatment.

The collected quantitative data was checked for completeness, accuracy, and consistency, ensuring no instructions were missed during the entry process. Frequencies, proportions and summaries were used to describe the study population into relevant variables. Then, the Data was coded, entered, and analyzed using a Statistical package for social science.

2.11 Ethical considerations

The Ethical Review Committee of the Yekatit 12 Hospital Public Health Department provided a formal letter of permission. Each questionnaire's cover page included an introduction to the study, a method of inquiry, and a confidentiality letter. The participants were informed that they had complete freedom to participate or not participate in the study, and that they might withdraw at any moment during the interview. Strict secrecy was maintained by utilizing codes instead of the patient's name, and no information was shared with anybody not directly involved in the study without the patient's permission.

2.12 Limitation of the study

This study has the following limitations: self-reporting was the only method of measuring Adherence. This method has the disadvantages of recall bias and eliciting only socially acceptable responses, which may overestimate Adherence. In addition, it didn't consider HTN patients who did not fulfill the study's inclusion criteria. Hence, the generalizability is limited to similar patients on chronic illness follow-up care for at least six months and a short study period.

3. Result

3.1. Socio-demographic characteristics

A total of 127 patients were interviewed using a standardized structured questionnaire. Among these, 78 (61.2%) were females & 49 (38.8%) were males. Most of the study participants, 73 (57.6%), were 50-64. Sixty-seven respondents (52.2%) were currently married, whereas only 3(2.7%) were widowed. Most of the respondents, 71 (55.9%), were Muslim, and 88 (69.4%) participants were Oromo. A significant number, 48 (37.6%) of the respondents did attend formal education until secondary school, while 9(7.1%) were illiterate. Of the total respondents, 37(29.1%) were employed, and only 28(22%) were farmers. The monthly income of the majority of the respondents, 46(36.2%), was 500-1000 birr, whereas 45(35.4%) had a monthly income greater than 2000 birr. 52 (40.9%) were from Jimma town and 31(24.4%) and 44(34.6%) came from other urban and rural areas respectively. Details on the socio- demographic characteristics can be obtained from Table 1.

Sociodemographic characteristic		Frequency	Percentage
Sex	Male	49	38.6%
	Female	78	61.4%
Age	18-24	5	3.9%
	25-49	42	32.5%
	50-64	73	57.6%
	>64	7	5.9%
Marital status	Married	67	52.2%
	Single	39	31.8%
	Divorce	17	13.3%
	Widowed	4	3.1%
Ethnicity	Oromo	88	69.4%
	SNNP	26	20.4%
	Amhara	10	7.8%
	Other	3	2.4%
Religion	Protestant	18	13.7%
	Orthodox	37	29.1%
	Muslim	71	55.9%
	Others(catholic)	1	0.7%
Education level	Uneducated/illiterate	9	7.1%
	Primary school	30	23.9%
	Secondary school	49	37.6%
	Graduate/above	39	30.2%
Occupation	Housewife	14	11%
	Employed	37	29.1%
	Farmer	28	22%
	Daily laborer	9	7.1%
	Merchants	21	16.5%
	Students	15	11.8%
	No job	3	2.4%
Residence	Jimma town	52	40.9%
	Other urban area	31	24.4%
	Rural area	44	34.6%
Monthly income	500-1000	46	36.5%
	1000-2000	36	28.5%
	>2000	45	35.3%

Table 1: Sociodemographic characteristics of hypertensive patients at the chronic ambulatory at Yekatit 12 hospital medical colleges from February to May 2022 G.C.

3.2 Percentage of drug adherence

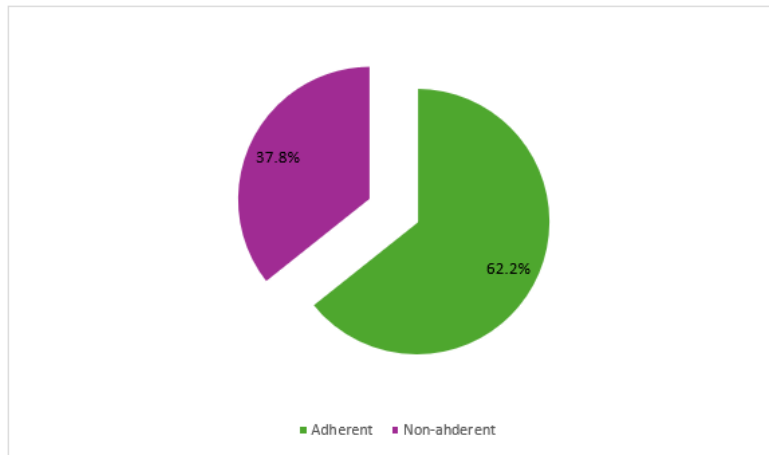


Figure 1: Percentage of respondents' Adherence to antihypertensive medication at the chronic ambulatory in Yekatit 12 hospital medical colleges from February to May 2022 G.C.

Based on the MMAS majority, 79(62.2%) of the 127 patients were adherent to their antihypertensive medication (MMAS \geq 3), whereas 48(37.8%) were non-adherent. About 99% of patients believe that

medication adherence is essential; 45 adherent respondents were male, 37 were female, 17 non-adherent respondents were male, and 28 were female.

3.3 Reason for Non-adherence

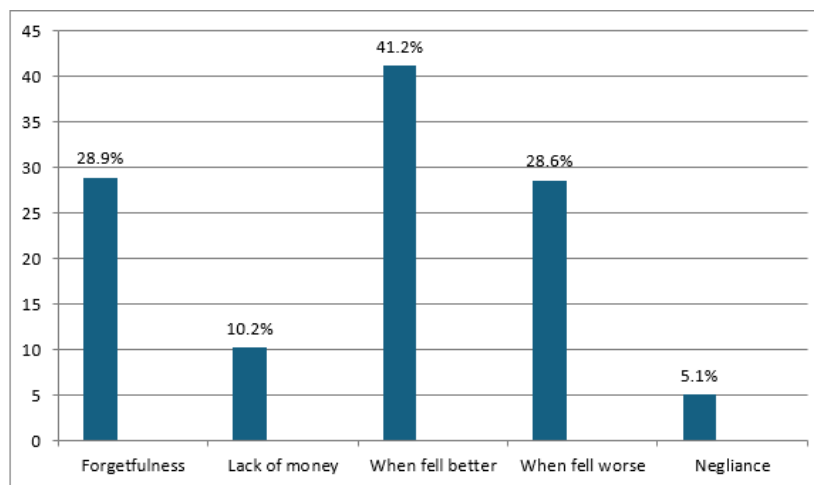


Figure 2: Reason for Non-adherence of hypertensive patients at chronic ambulatory care in Yekatit 12 hospital medical colleges from February to May 2022 G.C.

The most common reason cited by the respondents for being non-adherent was feeling better, which accounts for 52(41.2%). 37(28.9%) forgetfulness, 36(28.4%) when feeling worse, 13(10.2%) lack of money, and 6(5.1%) negligence were other reasons stated by patients. 3 (2.7%) stopped their medication due to medication adverse effects. Among 127 respondents, 125(98.4%) of the patients responded that lifestyle is essential for treating hypertension.

Variable	Possible response	Frequency	Percentage
cost of drug	Free of payment	39	30.6%
	Self /by using charge	88	69.4%
follow up	Every 1month	65	50.6%
	Every 2month	36	28.6%
	Every 3month	19	14.5%
	Have no regular follow-up	8	6.3%
Distance from health center	<30 min	50	39.3%
	30min -1hr	40	31.4%
	1-2hr	28	22%
	>2hr	9	7%

Table 2: Distribution of medication cost and related factors among hypertensive in Yekatit 12 hospital medical colleges from February to May 2022 G.C.

Regarding who covers the cost of drugs, 88 (69.4%), a large proportion of patients replied that they cover it by themselves. At the same time, 39(30.6) got free of charge. Among the patients on follow-up, 53(41.2%) took antihypertensive medication over one year & 15(11.8%) took medication for six months. 89(69.9%) of patient perform exercise, most of the patient 50(39.3%) travel less than 30min to reach health center.

3.4. Contraindicated substance

Variable	Frequency	Percentage
Animal fat	7	5.1%
Salt	31	24.3%
Coffee	22	16.9%
Alcohol	26	20.9%
Smoke cigarette	15	11.9%
Chew-chat	53	41.6%

Table 3: Distribution of contra indicated substance taken by patient on follow-up at chronic ambulatory care in Yekatit 12 hospital medical colleges from February to May 2022 G.C

Among 127 Participants, 74(58.3%) of the patients stopped taking contra-indicated substances, but 41.7% still taking contraindicate substances. Among 127 participant Only 15(11.9%) were smoker, from this only 2(1.6%) smoke always.

Duration of HTN medication	Frequency	Percentage
6 months	3	2.4%
6-12 month	15	11.8%
One year	39	30.5%
>one year	70	55.3%

Table 4: The duration of patients taking antihypertensive medication in Yekatit 12 hospital medical colleges from February to May 2022 G.C.

From 127 participants, 102(80%) had regular follow-up, and 8(6.3%) had no regular follow-up.

	Age of respondents			
	18-24 years	25-49 years	50-64 years	>64 years
Adherent	3	29	42	5
Non-Adherent	2	13	30	3
Total	5	42	72	8

Table 5: Adherence and age Cross tabulation

- Age and sex were found to be less significantly and independently associated with Adherence in this study. Patients (25-49 years) presented lower levels of Adherence compared to those in younger and older age groups. Occupation status and monthly income also had less significance on Adherence in this study, but Patient factors like stopping medication when they felt better and worse are highly associated with patient adherence to medication.

4. Discussion

Ensuring patients' Adherence to anti-hypertension medication to prevent complications of hypertension remains a major challenge to public health in many developing countries. Poor Adherence to treatment is the single most important reason for uncontrolled hypertension, serious complications and the wastage of health care resources. Several factors, which may be patient or health system-related, continue to militate against adherence behaviour [3]. The majority of participants in this study, 78 (61.2%), were female, while 57, 6 % of the study subjects were between 50 and 64, and 7. were illiterate.

This goes in line with a study done in Malaysia in which females are (62.8%), but in a study done in Malaysia, 69.2% of the study subjects were at the age \geq 50 years [19]. A large proportion of the subjects, 67(52.2%), were married, which is almost similar to the reported figure from Gondar, Ethiopia (20), in which 60.7% were married and lower than the reported figure from Nigeria [21], in which 78.4% were married. Most of the subjects lack family support for their Adherence. Only 36(28.6%) patients get family support to buy medication, and 69.4% pay

their medication expenses alone. At the same time, 30.6% of the subjects get the medication free. In a study done in Pakistan [22], the availability of a support system was greater (54%), while payment of medical expenses was higher (93.8% of the patients paid their medication by themselves, and 37% of them got medication expenses covered by the family). Of 127, only 3(2.7%) stopped their medication due to medication adverse effects; this is relatively low when compared with a study done in Finland in which 33% of participants stopped their medication due to adverse effects of medication; this variation may be due to increasing patient awareness about disease & medication use

The majority of patients (55.3%) in this study had been on antihypertensive medication for more than one year. Similarly, in the study conducted in Ghana, more than half of the patients (53%) had been on antihypertensive medication for more than one year [6]. However, in another study done in Brazil [23], more than half (55%) of the study subjects had been receiving treatment for more than three years. This shows that patients in our country do not have the trend of long-term medical follow-ups in comparison with those in Brazil.

Only 62.2% of the study participants were adherent, while 37.8% % were non-adherent. This was similar to the study conducted in Malaysia [19], in which 53.4% were adherents. It is however almost similar to the study done in Gondar [20] (64.6%) were adherent and from the study done in Nigeria [34] which was based on patients' self-report adherence rating, (64.4%) of the patients adhered strictly to their medications while (35.5%) not adherents to their medication.

This study is relatively high compared to the survey done in Adama Referral Hospital. Of 365 participants, 217 (59.5%) adhered to medication, while the rest did not. This variation is May due to increased patient awareness about disease and medication use.

A study in Seychelles reported magnitudes of adherents engaged in physical exercise were (50%), but in this study, 88(69.3%) of the patients performed the exercise. In this study 15 (11.9%) smoke cigarettes. It is a relatively similar study on Seychelles, where 15.84% were smokers. 32(24.3%) respondents used salt, which is identical to the study done on Seychelles (24.51%), were used salt.

From the total of 127 participants, only 26(20.9%) drank alcohol. This is in line with the study done in Hawasa Referral Hospital. Out of 104 respondents, 21 (20.9%) ingested alcohol, and 52(41.6%) chewed chat. This is relatively high compared with the study done in Hawasa Referral Hospital, in which only 14(13.46%) chewed chat. This is because there is a high prevalence of chat in Jimma. Regarding perception, all respondents (100%) think that changing lifestyle-modifying regimens is essential in improving disease. This is a similar study done in Hawasa Referral Hospital.

In this study, Adhesion is assessed using the interview method. This method is simple and practical. However, its output might be overestimated. To prevent this, questions in the MMAS are phrased to avoid "yes saying" bias by reversing the wording of the questions about how patients might experience failure in following their medication regimen. It should be noted that not only entirely non-adherent patients are in trouble. The level of non-adherence is even more dangerous as it might lead the patient not to think the medications are working. Co-morbidities can worsen the conditions of the patient and make them unable to adhere to their antihypertensive medications.

Right knowledge about HTN and its treatment creates a clear understanding and avoids confusion about the treatment and the disease condition. Knowledge about HTN and its treatment was positively associated with adherence behavior. Patients with better awareness were more likely to adhere to their treatment. A similar study from Pakistan and Gaza demonstrated that patients who were aware of their diseases and treatments had been attributable to better outcomes of the treatment, which may offer the patient good satisfaction and create strong motivation towards the treatment. However, a lousy outcome (uncontrolled BP) could make the patient hopeless and low satisfaction and hence urge them to stop their treatment.

5. Conclusion & Recommendation

Poor adherence to antihypertensive medication is typically associated with a worse illness outcome and a waste of limited healthcare resources. In Ethiopia, particularly in the research area, little is known regarding the adherence status and associated factors. As a result, the purpose of this study is to analyze the adherence status and associated factors for antihypertensive medication among patients on follow-up at Yekatit 12 Hospital Medical College in 2022.

The study estimated that 62.2% of patients adhered to antihypertensive treatment and 37.8% did not. This has several ramifications for the country's health-care system and pharmacy practices. The ideas below are intended to help health institutions provide better drug counseling and develop greater adherence rates.

- Pharmacists and dispensing technicians/technologies should be adequately trained and resourced to offer proper counseling

to hypertensive patients on their medication and disease conditions.

- pharmaceutical care protocols and guidelines for antihypertensive medication counseling must be developed and implemented.
- the attitude of pharmacists and pharmacy staff towards professional responsibilities must be re-oriented to provide patient-centred services.
- Effective communication and counselling techniques for pharmacists and pharmacy staff should be developed through regular in-service training.
- Pharmacists must always be available and accessible to hypertensive patients. This can develop a cordial relationship with the patient and facilitate a frank exchange of information, leading to improved Adherence.
- Clinicians and other prescribers must educate their first-time diagnosed hypertensive patients about their disease conditions and the importance of Adherence to treatment programs
- to promote patient education and medication counselling, all health professionals in the institution should collaborate in totality.
- the designers of health institutions must consider including counselling rooms for the pharmacy department instead of pinhole windows.
- the hospital should provide free service for exceptional cases, such as indigent and very old patients with no sufficient income because these conditions contribute significantly to non-adherence.

Abbreviation

AIDS	Acquired Immunodeficiency Syndrome
AKU-ADS	Aga Khan University Anxiety and Depression Scale
AKUH	Aga Khan University Hospital
BP	Blood Pressure
GPHA	Ghana Ports and Harbors Authority
HTN	Hypertension
JNC	Joint National Commit
MMAS	Morisky Medication Adherence Scale
mmHg	Millimeter Mercury
NHSP	National Health Survey of Pakistan
SNNPR	South Nation nationality people Region
WHO	World Health Organization

References

1. Tesema S, Disasa B, Kebamo S, Kadi E (2016). Knowledge, Attitude and Practice Regarding Lifestyle Modification of Hypertensive Patients at Jimma University Specialized Hospital, Ethiopia. *Primary Health Care* 6:218.
2. Khan MU, Shah S, Hameed T (2014) Barriers to and determinant of medication adherence among hypertensive patients attended National Health Service Hospital, Sunderland. *J Pharm BioalliedSci* 6:104-108.

3. Kearney PM, Whelton M, Reynolds K, Muntner P, Whelton PK, He J. (2005). Global burden of hypertension: analysis of worldwide data. *Lancet*; 365(9455):217–223.
4. Chobanian AV, Bakris GL, Black HR, Cushman WC, Green LA, et al., (2003). Seventh report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure. *Hypertension*; 42(6):1206–1252
5. Hajjar I, Kotchen TA. (2003). Trends in prevalence, awareness, treatment, and control of hypertension in the United States, (1988–2000) *JAMA*; 290(2):199–206.
6. Angaran DM. (1999). Telemedicine and telepharmacy, current status and future implications. *Tam J Health Syst Pharm*. 56: 1405 – 1426
7. Buabeng KO, Matowe L, Plange-Rhule J, (2004). Unaffordable drug prices: A significant cause of non-compliance with hypertension medication in Ghana. *J Pharm Phamaceut Sc*, 7(3): 350 – 352.
8. Balakrishnan R, (2013). The importance of medication adherence in improving chronic disease-related outcomes, what we know and need to know further. *Med Care*; 9(2):1 – 44.
9. Addo, J., Smeeth, L., & Leon, D. (2007). A Hypertension in Sub-Saharan Africa, a systematic review, *Hypertension*, 50, 1012-1018
10. Opie, L. H., & Seedat, Y. K. (2005). Hypertension in Sub-Saharan African populations. *Circulation*, 112, 3562-3568.
11. Salako LA. (1993) Hypertension in Africa and Effectiveness of Its Management with Various Classes of Antihypertensive Drugs and in Different Socio-Economic and Cultural Environments. *Clin Exp Hypertens*, 15(6)
12. Tesfaye F, Byass P, Wall S. (2009). Population-based prevalence of high blood pressure among adults in Addis Ababa: uncovering a silent epidemic. *BMC Cardiovasc Disord*, 9:39
13. Ong KL, Cheung BMY, Man YB, Lau CP, Lam KSL. (1999–2004). Prevalence, Awareness, Treatment, and Control of Hypertension among United States Adults. *Hypertension*, 49:69–75.
14. Burt VL, (1995). Trends in the prevalence, awareness, treatment and control of hypertension in the adult population, Data from the Health Examination Surveys of *Hypertension*, 26: 60-69.
15. Morisky DE, Green LW, Levine DM. (1986). Concurrent and predictive validity of a self-reported measure of medication adherence: *Med Care*.; 24: 67–74.
16. Gottlieb H. (2000). Medication non-adherence: finding solutions to a costly medical problem, *Drug Benefit Trends*.; 12:57 – 62.
17. Primatesta P, Poulter NR. (2003). Improve hypertension management in England: results from the Health Survey for England. *J Hypertens*, 24(6):1187–1192
18. Brody DS, (1980). An analysis of patient recall for their therapeutic regimens. *J Chronic Dis*, 33:57-63.
19. Turki AK, Sulaiman SAS. (2010). Elevated blood pressure among patients with hypertension in hospital Penang, Malaysia; does Adherence matter? *Int J Pharm Pharm Sci*.; 2(1); 24
20. Eselin JA, Carter BL. (1994). Hypertension and Left Ventricular Hypertrophy: is drug therapy Beneficial? *Pharmacotherapy*, Jan-Feb.
21. Roland N, Cyprian K: (2012). Assessment of patient's antihypertensive medication adherence level in non-co morbid hypertension in a tertiary hospital in Nigeria. *Int J Pharm Biomed Sci*, 3(2), 47-54
22. Hashmi SK, Afridi MB, Abbas K, Sajwani RA, Saleheen D, et al., (2007). Factors associated with Adherence to antihypertensive Treatment in Pakistan. *PLoS One*, 2(3): e280.
23. Hawkins DW, Bussey HI, Prisant LM. (1992). Hypertension in Dipiro's Pharmacotherapy. A Pathophysiological Approach. *Elsevier*, N. Y; 139 – 143.



This work is licensed under Creative Commons Attribution 4.0 License

To Submit Your Article Click Here:

Submit Manuscript

DOI:10.31579/2641-0419/444

Ready to submit your research? Choose Auctores and benefit from:

- fast; convenient online submission
- rigorous peer review by experienced research in your field
- rapid publication on acceptance
- authors retain copyrights
- unique DOI for all articles
- immediate; unrestricted online access

At Auctores; research is always in progress.

Learn more <https://auctoresonline.org/journals/clinical-cardiology-and-cardiovascular-interventions>