ADDIS ABABA UNIVERSITY
COLLEGE OF HEALTH SCIENCES
SCHOOL OF NURSING AND MIDWIFERY
DEPARTMENT OF NURSING

ASSESSMENT OF KNOWLEDGE, TREATMENT COMPLIANCE AND ASSOCIATED FACTORS AMONG HYPERTENSIVE PATIENTS AT TIKUR ANBESSA SPECIALIZED HOSPITAL

IN ADDIS ABABA, ETHIOPIA

BY: SENAIT DEBEL(BScN)

A THESIS SUBMIED TO ADDIS ABABA UNIVERSITY, COLLEGE OF HEALTH SCIENCES, SCHOOL OF NURSING AND MIDWIFERY DEPARTEMENT OF NURSING IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER IN CARDIOVASCULAR NURSING.

June, 2021
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APPROVAL SHEET

ADDS ABABA UNIVERSITY COLLEGE HEALTH SCIENCES SCHOOL OF NURSING AND MIDWIFERY DEPARTMENT OF NURSING

I, the undersigned MSc student, declare that I have submitted my original work on a title Assessment of Knowledge, treatment compliance and associated factors among hypertensive patients at Tikur Anbessa Specialized Hospital, Addis Ababa, Ethiopia 2021.

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This thesis by the title, Assessment of Knowledge, treatment compliance and associated factors among hypertensive patients at Tikur Anbessa Specialized Hospital, Addis Ababa, Ethiopia 2021. **is accepted in its present form by the board of examiners as satisfying thesis requirement for the degree of Masters in Cardiovascular Nursing.**

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STATEMENT OF DECLARATION

By my signature below, I declare and affirm that this thesis is my own work. I have followed all ethical principles of scholarship in the preparation, data collection, data analysis and completion of this thesis. All scholarly matter that is included in the thesis has been given recognition through citation. I affirm that I have cited and referenced all sources used in this document. Every effort has been made to avoid plagiarism in the preparation of this thesis.

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LIST OF ACRONYMS/ABBREVIATIONS

BP= Blood Pressure

CVD= Cardio vascular Disease

DBP= Diastolic Blood Presure

HTN= Hypertension

IRB= Institutional Review Board

JNC= Joint National Committee

KAP= Knowledge, Attitudes and Practices

NCD_s= Non-Communicable diseases

SBP= Systolic blood pressure

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ABSTRACT

Background: The majority of hypertension people are at high risk of developing cardiovascular disease. The primary barriers to controlling hypertension are a lack of awareness about the disease and poor medication adherence, both of which have a negative influence on the patient's behavior.

Objective: To assess knowledge of hypertension and compliance of treatment and factors associated among hypertension patients at TASH Addis Ababa Ethiopia, 2021.

Methods: The institutional based cross sectional study design was used at TASH, and 375 hypertensive patients were recruited in the follow-up clinic. The data was gathered using a standard structured questionnaire. Face-to-face interviews were used to conduct a survey by professional data collectors. EPI-data was used to enter data, which was then exported to statistical package for social science(SPSS) software version 20 for additional analysis. Multiple linear regression and binary logistic regression analysis were employed to asses' factor associated with knowledge and association between compliance and indpendnet variables respectively. The association between variables was determined by the p values below 0.05 using 95% confidence level (CI).

Result: The current study found that only 45.9% of patients comply with antihypertensive therapy and majority of the respondets (63.75%) have good knowledge about hypertension except only around one-third (35.4%) were aware of the signs and symptoms of hypertension. Factors that associated with treatment compliance were including: Age above 60 years(AOR=0.129; 95% CI: 0.066,0.254), no formal education (AOR=0.250; 95% CI: 0.099, 0.634), less than 5 years since hypertension diagnosis (AOR=3.989; 95% CI: 1.586,10.033)., comorbidity(AOR= 0.360; 95% CI: 0.195,0.665), and missing medications (AOR= 0.366 ; 95% CI: 0.199, 0.674) were associated with poor treatment compliance, whereas rigorous physical activity(AOR=1.169; 95% CI: 1.003,1.362); and client knowledge of hypertension(AOR=1.336; 95%CI: 1.106, 1.615) . In addition, the factors associated with knowledge of HTN include, no formal education β=-0.815;(-1.293, -0.337) and governmental employment β=1.164; (0.626,1.702), were found to be statistatically significant association with knowledge of HTN.

Conclution and recommendation: The current study reveled that only 45.9% of partisipants comply with antihypertensive terapy and more than one third of the participant were aware of the signe and symptoms of HTN. Therefore, the findings suggest that health care practitioners should pay attention to increase the awareness of clinets toward antihypertensive treatmet adherence in order to minimize the complications.

CHAPTER ONE

1. INTRODUCTION

1.1. The Study background

Hypertension remains the most significant cardiovascular disease risk factor (1). More than half of hypertension individuals worldwide have systolic blood pressure (SBP) of 140 and/or diastolic blood pressure (DBP) of 90 mmHg (2).

Hypertension affects around one billion people globally and is anticipated to rise by 29 percent by 2025, reaching 1.56 billion and it is often a symptomatic chronic illness that need lifetime care. Despite the fact that hypertension treatment is becoming more effective as a result of newer drugs and published research, it is still inadequately controlled in both developed and underdeveloped countries (3).

The high proportion of high blood pressure exacerbated by inadequate regulation of hypertension in developing countries remains a major community health issue. Several studies have found that poor compliance/adherence is the primary risk factor for uncontrolled hypertension, leading to morbidity and early death. Antihypertensive medication adherence is important for blood pressure management. Poor adherence to these drugs raises the chance of hypertension problems as well as the risk of cardiovascular problems, decreasing overall health outcomes (4-6).

Compliance/adherence is defined by the World Health Organization as the extent that a person's behaviors, such as taking medicine, adopting a diet, or making behavioral changes, align with agreed-upon advice from a healthcare professional (7). Treatment adherence is a strong predictor of patient outcome. Poor adherence restricts maximum treatment improvements, lowering the overall efficacy of health-care systems. Medicines will not function if they are not administered correctly, and they will be ineffective if they are not taken as directed. Even in industrialized nations, barely half of chronic illness patients follow their treatment regimen(8).

Despite the fact that the typical proportion of hypertension is between 10 and 15 percent , prevalence rates as high as 30-32 percent have been documented in developing nations (9). Despite a lack of comprehensive statistics, HTN is expected to affect 6% of the Ethiopian population. In Addis Abeba, 13.7 percent of people was hypertensive, while over 20% of males

and 38% of females were obese, with 10.8 percent of females obese(10). And nti-hypertensive medicine is used by around 31.5 percent of males and 28.9 percent of females (11).

Hypertensive knowledge relates to a person's understanding of what hypertension is, the factors that contribute to it, the capacity to identify and respond to meaning, risk factors, and hypertension preventive methods. When patients see their doctor, it is critical that they are informed about the idea of hypertension and counseled on lifestyle adjustments(12). A lack of information regarding hypertension has a negative impact on patients' knowldge and actions, and it is a significant difficulty in treating hypertension (13).

1.2. Statement of the Problem

Cardiovascular diseases (CVDs) are the largest cause of mortality in the world, killed approximately 17.9 million people per year. High blood pressure is one of the individual risks of CVD, along with other chronic diseases (6).

Hypertension is a significant medical condition that increases the risk of heart, brain, and kidney problems, among other things. It is a leading cause of death globally. Globally, hypertension affects an estimated 1.13 billion individuals, with the majority (two-thirds) living in low- and middle-income countries. In 2015, one in every four males and one in every five females had hypertension, with less than one in every five having it under control. As a result of rising risk factors in those populations in recent decades, the impact of hypertension is shared disproportionately by low- and middle-income nations, which account for two-thirds of all cases (6, 14).

Lack of hypertension awareness has a detrimental influence on the patient's behaviors; it is also a significant barrier in treating hypertension (13). As a result, offering information on hypertension, including prevention techniques such as lifestyle adjustments, is critical for patients to achieve outstanding health outcomes (12). Treatment adherence is a major factor of treatment success. Adherence problems reduce ideal treatment effects and, as a result, the overall efficacy of health-care systems. Medicines will not be effective if they are not taken correctly. If patients do not follow the directions, their medications will be useless (8). Despite several advances in hypertension therapy and prevention, real-world progress in blood pressure (BP) management has been little, with low rates of population BP control globally (4).

Massive disparities in the geographical burden of hypertension are associated by low levels of understanding, treatment, and management in low and middle-income countries (LMIC) as

compared to high-income countries (HIC). In response to low overall knowledge of hypertension (67 percent in HIC and 38 percent in LMIC), the International Society of Hypertension (ISH) established the May Measurement Month campaign to promote awareness of high blood pressure. (15, 16). Despite the establishment of clinical standards, HTN control remains limited. Furthermore, the availability of effective antihypertensive drugs did not result in the predicted results in terms of HTN management (17).

Poor compliance to chronic disease treatments is a worldwide problem. Compliance issues are common in antihypertensive therapy patients and have been related to an increased risk of cardiovascular and cerebrovascular events (18). The rate of nonadherence to antihypertensive therapy among hypertension patients ranges from 10% to 80%, resulting in unsatisfactory blood pressure management; further, poor adherence to these drugs increases the risk of cardiovascular events, lowering the overall clinical prognosis (6, 18, 19). Poor adherence is to blame for excessive medication over-prescription, severe illness progression, increases in avoidable hospital admission rates, and prolonged hospital stays, all of which result in a significant patient burden such as reduced optimum health benefit and an increased risk of heart related disease (20, 21).

Treatment adherence is influenced by knowledge of hypertension and lifestyle modifications, and poor adherence is associated with poor blood pressure management and leads to problems. Patient education and medication reminders have a substantial influence on treatment compliance. Aside from the healthcare system, pharmaceutical treatments, other comorbidities such as diabetes, and their socioeconomic level, hypertension patients' compliance will be influenced by their socioeconomic status (8, 21, 22).

To monitor their blood pressure, hypertensive patients must be well-versed in sodium restriction, adhere to prescription, engage in daily physical activity, and refrain from smoking (7, 22, 23). As a result, evaluating the level of hypertension knowledge and its relationship to treatment compliance is a significant strategy to creating awareness for hypertension diagnosed patients. Studies on knowledge of hyperteion are being undertaken in Ethiopia; nevertheless, data on the aforementioned background is still sparse, and its relationship with compliance is little researched. As a result, the focus of this study was on hypertension patients' awareness, treatment adherence, and related variables in the research region, and it demonstrated the magnitude of the problem by giving information using standard techniques. Therefore, the aim of this study wasto assess knowledge, treatment compliance/adherance and determinanats among patients with hypertention at Tikur Anbessa Specialized Hospital in Addis Ababa.

1.3. Significance of the Study

This study is deemed necessary because it contributes to the identification of the association between hypertension knowledge and medication adherance among hypertensive patients in one of Ethiopia's top hospitals. The study's findings serve as a foundation for developing critical counseling and patient education programs to reduce problems associated with uncontrolled hypertension. It aids local health officials, particularly those who are dealing with possible problems, by educating, invoking, cooperating, and controlling their clients' hypertension-related health condition. Based on the results, the education and counselling services program areas are conscious, and it is an alert system to improve the information of education and counseling, then assist patients in obtaining improved understanding and treatment compliance practice toward hypertension in order to avoid hypertension complications.

1.4. Justification of the study

As a result, hypertension awareness and compliance are critical in reducing mortality and morbidity associated with uncontrolled hypertension. The majority of the research conducted in this field were out of date, and current information on knowledge and treatment compliance is required. Furthermore, the majority of patients that visit the chronic clinic are there because of a hypertension-related problem at Tikur AnbessaSpecialized Hospital. Thus, proper knowledge and medication adherence should be the primary goals in reducing hypertension consequences. And, according to a survey of many literatures, data pertaining to the aforementioned context is restricted in the domain of knowledge and treatment compliance in Ethiopia.

CHAPTER TWO

2. LITERATURES REVIEW

2.1. Introduction

Hypertension is considered when systolic blood pressure (SBP) and diastolic blood pressure (DBP) of 140/90mmHg or above (24). It is one of the world's death knells and a major risk factor for a wide range of other diseases such as cardiovascular disease, stroke, renal illness, and many more. That is maybe the most essential reason to go to a healthcare center (25).

Hypertension is a major public-health issue across the world. Noncommunicable illnesses were responsible for 63 percent of the projected 57 million deaths worldwide in 2016. (Neoplasms). Cardiovascular illnesses account for four-eighths (48%) of these cases. Worldwide, hypertension is the main cause of cardiovascular disease (26). Hypertension gradually and irreversibly destroys vital organs, resulting in life-threatening illnesses and death. As a result, disease prevention, early detection, treatment, and control should be prioritized (27). There was a 5.2% increase in the global prevalence of hypertension with the 10 year duration between 2000 and 2010 (28, 29). According to the literature, the prevalence of hypertension among individuals aged 25 and above in Africa is greater than in America, at around 46 percent and 35 percent, respectively. , Ethiopia followed suit, with a prevalence rate of 29.9 percent for males and 27.6 percent for women (30). In terms of blood pressure control, in low-middle income nations such as Ghana, around 9.9 percent of adult hypertensive patients have good blood pressure management. In low-middle income nations, urban residents have better hypertension control than rural groups (31).

2.2. Classification of Hypertension

Adult blood pressure categorization is based on the average of two or more accurately recorded blood pressure measurements from two or more clinical visits (see Table 1). If the systolic and diastolic blood pressure values are not in the same group, the larger of the two blood pressures determines the overall classification. Normal blood pressure, prehypertension, stage 1 HTN, and stage 2 HTN are the four blood pressure categories. Prehypertension is not a disease, but it does identify those who are at likelihood of developing stage 1 or stage 2 HTN in the future (32).

Table 1: **Classification of Hypertension**

Classification	**Systolic Blood Pressure (mmHg)**		**Diastolic Blood Pressure (mmHg)**
Normal	<120	AND/OR	<80
Prehypertension	120-139	OR	80-89
Stage 1	159	OR	90-99
Stage 2	>160	OR	>100

2.3. Management of patients with Hypertension

In hypertensive people, lifestyle changes and pharmacologic (medication) therapy are used to lower blood pressure and avert cardiovascular (heart) events such as a heart attack. As part of their therapy, all patients with high blood pressure should undertake lifestyle changes. (32).

The first step in hypertension therapy may be to change one's lifestyle, which may involve dietary treatments (decreasing sodium, increasing potassium, limiting alcohol, and exercising multimodal dietary control), weight reduction, smoking cessation, physical exercise, and stress management. Healthy lifestyle change is a realistic and safe approach of therapy, as well as the first line of antihypertensive medication in the initial stage. Lifestyle changes can also improve the efficacy of antihypertensive medication. Patients with hypertension should get lifestyle counseling both shortly after diagnosis and on a regular basis. Dietary changes, abstention from alcohol, weight control, smoking cessation, and regular physical activity are all important and effective hypertension therapy methods. Regardless of the proposed treatments, all hypertension patients who require blood pressure management should be given information and support in developing and maintaining healthy lifestyle behaviors (14, 23).

However, antihypertensive medicine is initiated based on blood pressure thresholds, which are depending on the presence and absence of concomitant illnesses (renal illness, diabetes, obesity, hyperlipidemia, and patients with metabolic syndrome)(33). In people with comorbid conditions such as diabetics, obesity, hyperlipdemia, and patients with metabolic syndrome, hypertension medication is started at systolic blood pressure (SBP) of 130mmHg or higher or diastolic blood pressure of 80; and systolic blood pressure (SBP) of 140mmHg or higher or diastolic blood pressure of 90 or higher in those without comorbid conditions (34). Individuals with SBP 160 or

DBP 100 are given monotherapy, but those with SBP 160 or DBP 100 are given dual, triple, or quadruple therapy. However, hypertensive patients should be placed on once-daily monotherapy medication as much as possible (28).

2.4. Knowledge of Patients towards Hypertension

The capacity to detect abnormal BP readings is part of hypertension knowledge and awareness. In this context, high blood pressure is defined as systolic pressure greater than 140 mmHg, whereas normal systolic blood pressure is less than 130 mmHg. In addition to understanding when to visit their doctor about their blood pressure records; and being able to identify risk factors for hypertension such as excessive salt consumption, sedentary lifestyle, and so on,(24).

According to studies, there are knowledge gaps that demand continued therapy. According to a New York-based study, the majority of hypertension patients were aware of the importance of HTN and the dangers it posed to their health(5). In contrast, a health literacy research on hypertension awareness in rural China showed that only a tiny percentage of respondents correctly answered questions on hypertension risks (i.e., 36.5 percent for stroke, 38.9 percent for heart attack, 18.0 percent for kidney failure, and 27.9 percent for eye disease among hypertensive respondents)(26). Another study conducted in Asia showed that 70% of hypertensive patients in the sampled population were aware of their condition (35).

Dizziness was the most prevalent symptom in an Indian research on the Assessment of KAP and Risk Factors in Hypertensive Patients, whereas a heart attack was the most prevalent consequence reported to patients(4). According to a cross-sectional study conducted in Nepal, more than half (56%) of hypertensive patients were familiar with the concept of hypertension (36). Hypertension, according to a prior study done among Iranian hypertensive patients, Seventy-three percent of individuals questioned are aware of the normal hypertension level. The majority of the people (87.3%), overweight (70.9%), and ageing (48.2%) were aware that stress, obesity, and ageing are all risk factors for hypertension(37).

Several studies in Africa found low awareness of hypertension. For example, in a research conducted in Cameroon, 14.0 percent, 53.4 percent, and 32.6 percent of participants had acceptable, average, and poor understanding of hypertension, respectively (22). Furthermore, a study conducted in Ghana's capital to assess hypertension patients' awareness, behaviors, and lifestyle habits reveals that knowledge about the disease's origins was not missed (38).

The level of hypertension awareness varies by study population and research location in Ethiopia. According to a survey conducted in Ethiopia's capital of Addis Abeba, 43.6 percent of research participants were knowledgeable about hypertensive self-care(39). According to a research conducted among adult hypertension patients in Harar, Eastern Ethiopia, 73.0 percent of participants demonstrated adequate understanding (40). In addition, according to another study conducted in Arsi Zone, Oromia Regional State, The proportion of patients who knew how to self-monitor their blood pressure was 31.5 percent (41).

2.5. Treatment compliance

Medication noncompliance is a big public health issue. Medicine adherence is defined as the extent to which a patient's behaviors in taking medication correspond to agreed-upon instructions from a healthcare professional. Several research found that compliance rates varied depending on the institution and research location. Noncompliance with chronic medication regimens is common; patients diagnosed hypertention account for around 43 percent to 65.5 percent of individuals who do not follow prescribed regimens. (7, 11, 23, 42).

According to a research conducted in India, the medication adherence rate was greater, and the study found that the majority (96 percent) of the hypertensive individuals in the research population had an adherence rate of 85% (43). It was discovered that 35.23 percent of patients were compliant with their antihypertensive medication treatments, and 42.95 percent, 52.27 percent, and 4.77 percent of patients, respectively, had low, moderate, and sufficient understanding of HTN (44). Furthermore, according to study conducted in Palestine, 47.8% of the clints reported as favorable treatment compliance with antihypertensive therapy(45)

Antihypertensive medication compliance/adherence is lower in Africa than in most industrialized countries, according to a research done in Cameroon, the antihypertensive compliance rate was 43.9 percent (22), only 35.5% were adherents algeria. According to univariate analysis, there is a favorable connection between awareness of hypertension problems and adherence (46). Also, more than half of the stduy participant in Ghana had the rate of noncompliance to AHT was 58.6%(38)

A study conducted at Jimma University Specialized Hospital in southwest Ethiopia found that 61.8 percent of study participants were adherent. According to the findings of the study done in West Ethiopia, just 54 (31.4%) of the research participants followed their treatments (47).

According to a research conducted in Northwest Ethiopia, the total percentage of excellent adherence was 67.2 percent (23).

2.6. The relationship between Knowledge and treatment compliances

Patients' knowledge of treatment compliance is an important aspect in establishing medication adherence and controlling blood pressure. According to a prior study report performed in Chennai, Tamil Nadu, respondents with high awareness of any four of five drug-compliance parameters were shown to be 3.1 times higher drug-compliant than hypertensive individuals with poor understanding(48). Another study also reported similar finding thus, Participants who had adequate knowledge of hypertension were more compliant than those who did not (22). There is evidence that knowledge or information can have an effect on medication adherence levels. A lot of research back up this claim, finding a beneficial link between knowledge and adherence (31, 49, 50).

Aside from patient education, there are a variety of factors that impact hypertension adherence to antihypertensive therapy. Socio-demographics, treatment views, the patient-provider interaction, and the help received from healthcare professionals are all factors that influence hypertension patients' adherence (51-55). According to the findings of a study conducted in southwest Ethiopia, regular alcohol use, self-purchase of medications, and antihypertensive drug combinations were substantially but negatively connected to antihypertensive medication adherence/compliance (56). Another study discovered that educational background, monthly salary status, duration of therapy, physical exercise status, and knowledge of hypertension and therapy were all associated to antihypertensive medication non-adherence (19, 49).

Furthermore, one of the predictors of compliance was the customer' age. As a result, clients over the age of 60 demonstrated lesser compliance than those under the age of 45. However, a previous study that discovered a positive relation between age and adherence also discovered a negative relation between age and compliance after the age of 70. The reasoning was that as people age, they are more likely to suffer with drug adherence. To promote compliance among elderly patients, a comprehensive method should be adopted (57). In addition, forgetfulness was the most often cited cause of poor antihypertensive medication adherence. According to an Indian survey, the most common reasons for not taking medications were being forgetful and not having any symptoms (43). Regarding physical activity, physical exercise (rigorous exercise such as gym exercise) is strongly associated with improved treatment adherence. Thus, a research conducted in Nigeria (58) which found that exercise is a facilitator of adherence to

hypertension treatment. Physicians should help patients discover an activity they like, since enjoyment will increase adherence. Additionally, blood pressure affects adherence to antihypertensive medication. Controlled blood pressure was therefore discovered to be adherent. A low diastolic blood pressure was associated with a better treatment outcome. Another research done in Ethiopia came to a similar conclusion(55), and other sub-saharan african countries(59). The importance of medication adherence in the fight to minimize hypertension-related morbidity and death cannot be emphasized, since adequate treatment and management of BP has been emphasized as one of the approaches to reduce CVD burden by 25% by 2025(29). Excessive salt consumption was identified as a predictor of treatment adherence in a research conducted at Jimma University Specialized Hospital in Ethiopia (60) other similar studies (61, 62).

The expensive expense of the medications, as well as the large number of tablets eaten each day, impeded adherence. Drug compliance hurdles encompass a wide range of problems such as complicated prescription regimens, dose length, behavioral issues, and treatment adverse effects. The most prevalent problems are outside the patient's control, such as the patient's medication experience and attitudes (23, 42, 62). There was also a statistically significant difference in compliance between individuals who used conventional medication to treat their hypertension and traditional medication. Those who didn’t use traditional medicine reported higher levels of compliance(48)

2.7. Conceptual Framework

The researcher believes that when evaluating knowledge, treatment compliance, and predictors, the control variables can be divided into four categories: social and economic characteristics, personal behavior, physical activity, and clinical and treatment related aspects. The variables were then examined for significant association with the dependent variables.

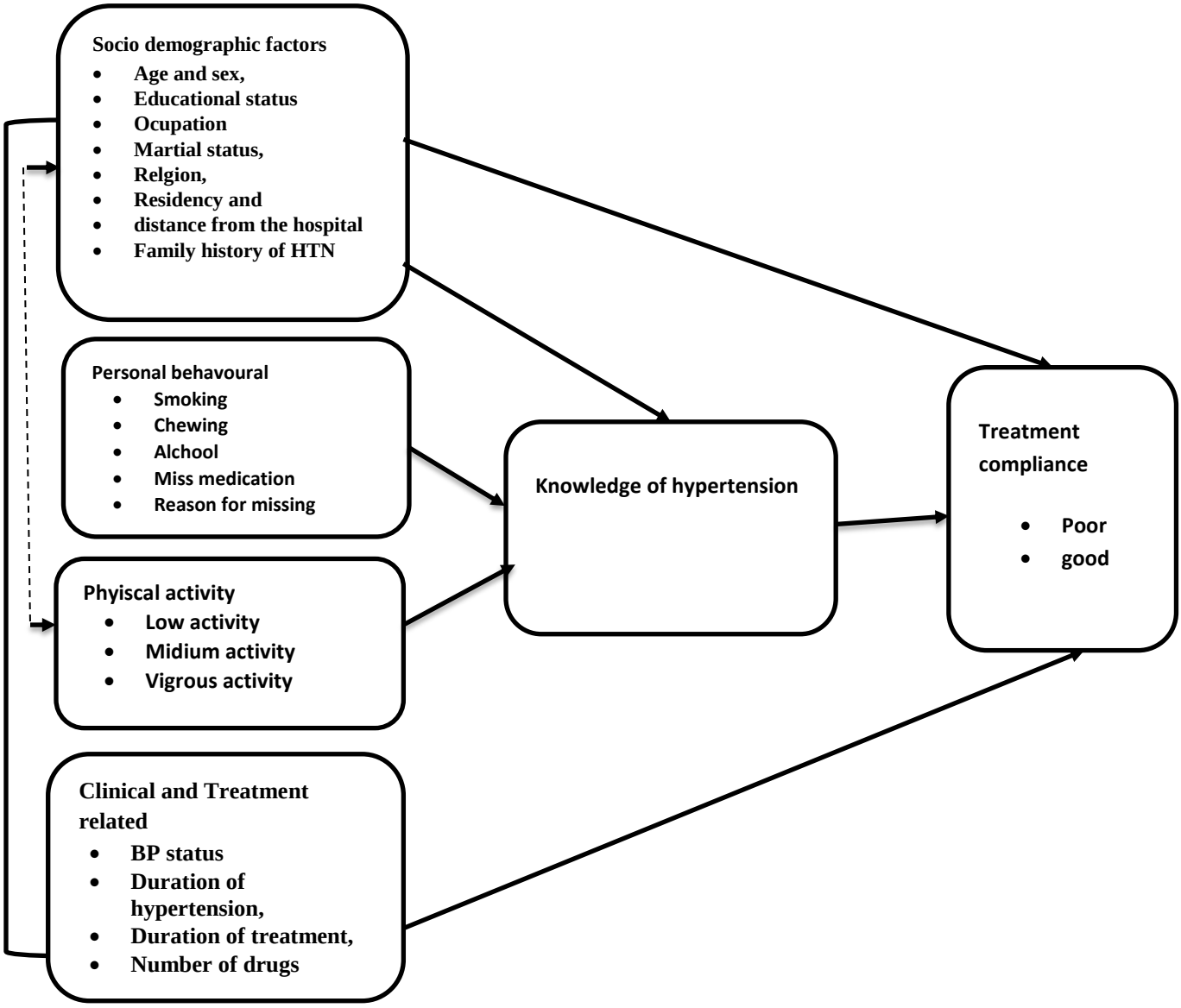

Figure 1: Conceptual Framework (developed from literature) that shows association of factors with knowledge of hyperttention and treatment compliance among hypertensive pationts.

CHAPTER THREE

3. RESEARCH OBJECTIVES

3.1. General Objective

- To assess the knowledge of hypertension, treatment compliance and associated factors among patients with hypertention at Tikur Anbessa Specialized Hospital Addis Ababa Ethiopia, 2021.

3.2. Specific Objectives

The specific objectives are:

1. To determine knowledge of hypertension among patients with hypertention at Tikur Anbessa Specialized Hospital, Addis Ababa Ethiopia, 2021.
2. To identify the determine of treatment compliance among patients with hypertention at Tikur Anbessa Specialized Hospital, Addis Ababa Ethiopia, 2021.
3. To identifay factors associated withtreatment compliance among patients with hypertention at Tikur Anbessa Specialized Hospital, Addis Ababa Ethiopia, 2021.
4. To identifay factors associated with knowledge of HPN among patients with hypertention at Tikur Anbessa Specialized Hospital, Addis Ababa Ethiopia, 2021.

CHAPTER FOUR

4. METHODS AND MATERIALS

4.1. Study setting

Just before to 1972, the School of Medicine was located on the main campus, while medical training takes place in the Pricees Tsehay Memorial Hospital (formerly the Amed Forces General Hospital) where Pre-clinical training takes place. When the Tikur Anbessaa Specialized Hospital (TASH) opened in 1972, it became the primary venue for educating Medical Doctors. The TASH, the country's largest referral hospital with 700 beds, was given to the school by the Federal Ministry of Health in 1998, and has since been transformed into a university teaching hospital. The Hospital now serves as the principal teaching hospital for the majority of specialties, offering clinical and preclinical training. It is also a center that provides specialized therapeutic treatments to the entire nation that are not available in other public institutions.

TASH employs 200 physicians, 379 nurses, and 115 other health professionals to provide health care services. The hospital's patient care is provided by numerous departments, faculties, and residents who are highly trained at the School of Medicine. In addition, the hospital employs 950 full-time and part-time administrative personnel to support hospital operations. Furthermore, practically all of Addis Abeba's rigion and federal hospitals are linked with the school of medicine as clinical service and training locations.

4.2. Study design and period

Institutional based cross-sectional study was conducted from October, 2020-May, 2021

4.3. Source of Population

All patients diagnosed withhypertension and have regular follow-up in Tikur Angessa Specialized Hospital.

4.4. Study Population

All patients diagnosed with hypertension and have regular follow-up who present during the study period in Tikur Anbessa Specialized Hospital.

4.5. Eligibility Criteria

Inclusion Criteria

This research included patients who met the following inclusion criteria:

- Patients with hypertension who are over the age of 18
- Have been taking at least one antihypertensive medication per day for the previous six months

Exclusion Criteria

Patients with the following criteria were prevented from participating in this study:

- Patients who are too sick/ mentally unstable

4.6. Sample Size and Sampling Procedure

To estimate the minimum sample size required for this investigation, epi info version 7 is utilized for each of the specified objectives.

The following assumptions are taken into account for specific objective I. 73.1 percent of knowledge derived from a previous similar research(40), 95% CI and 5% confidence limit(margin of error). Then, 302 sample is obtained.

The sample size for specific objective two (proportion of treatment compliance) can be calculated by calculating the minimum sample needed for accuracy in estimating proportions by taking into account the standard normal deviation set at 95 percent confidence level (1.96), proportion of good compliance/adherence (66.8 percent), and percentage of good compliance/adherence (66.8 percent)(54) and the confidence limit (margin of error (±5%). A total of 341 clients are obtained which is the higher sample size from. The formula is shown below:

$$n = \frac{z_{\alpha}^2 p(1-P)}{d^2}$$

$$= \frac{(1.96)^2 * 0.67(1-0.67)}{(0.05)^2} = 341$$

Where,

n=sample size

z_{α}^2 = 1.96; critical value of 95% CI

P=0.67 Proporton ofgood treatment compliance (66.8%)

d= 0.05. Margin of error (5%)

Considering both sample size estimation, the maximum sample size which is 341 was considered. Afteradding 10% non response rate, 375 participants were selected for this study.

In this study, the number of study participants was allotted proportionately (based on case load per month). The approach of systematic random sampling was adopted. According to the Tikur Anbessa Specialized Hospital, around 1000 hypertensive patients attend the facility each month. As a result, the sample fraction is 1000/375=2.66|. So the sampling interval was a maximum of 3. The first individual was selected with lottery method and the other were selectod at aregular interval by systematic random sampling and those selected were interviewed by data collectors.

4.7 Operational definition of terms

Hypertension is defined as self-reported use of antihypertensive medication in the previous two weeks, an average SBP of 140 mmHg, or both. DBP is more than 90**.**

Knowledge of hypertensionan: understanding of the impact, risk factors, signs and symptoms, effect, diagnostic methods, and management of hypertension by hypertensive individuals. It was assessed using a one-to-eight-item questionnaire, with the final score based on the percent of correctly answered answers. The overall score varies between 0 and 100.

Treatment compliance: is the degree to which an individual's behaviors, such as taking medication, adhering to a diet, or making lifestyle changes, correlate with agreed-upon recommendations from a health professional, and it was treated as a dichotomous variable and measured using the Morisky 8-item Medication Scale (MMAS-8), which has proven particularly useful in chronic conditions such as hypertension.(63).Participants scored eight or higher were classifieded as good compliant, while those who scored less than eight were classified as poor compliant.

4.8. Data Collection Tools

After evaluating numerous prior literatures and standard questioner, a data gathering instrument was designed. In this study, data was gathered through the use of a standardized questionnaire. The questioner is divided into four pieces. The first component includes socio - demographic information from participants such as age, gender, educational attainment, occupation, marital status, area, domicile, and distances from the facility. (5, 33, 37, 41, 60).

The second section include clinical and treatment related factors such as, Duration since hypertension diagnosis (years), duration since treatment initiation (years), The number of antihypertensive medications and the measurement of current blood pressure (mmgH). The current blood pressure (mmgH) was determined. Two blood pressure readings on the right arm, five minutes apart, were obtained at least five minutes after the patient came for his/her medical evaluation.(63).Co-morbidiy (1=yes, 0=No), tobacco (1=yes, 0=No), achool (1=yes, 0= no), Miss medication 1=yes, 0=No),

The third portion of the questioner comprises of knowledge questions that were assessed using eight questions collected from previous research on a comparable topic (5, 33, 37, 41, 60). Thus each quaetion has Yes = 0, No=1 options. Since favorable option is the response no.

The fourth component comprises of questions meant to measure the level of physical activity of the individuals. Physical activity was measured using the International Physical Activity Questionnaire in its shortened form due of its convenience. The IPAQ is designed and suited for collecting data on physical activity. It has received international acclaim in a number of contexts and has been translated into numerous languages. It has been evaluated for reliability in both developed and developing nations, and it has a verified reliability of 0.8 (64, 65).

The sixth segment of the questioner comprises of questions designed to test patients' treatment adherence. Because the eight-item scale was more sensitive than the original four-item scale, treatment compliance was measured by the Morisky 8-item Medication Adherence Scale (MMAS-8), which has a high reliability (=.83) and validity (predictive sensetivity of 93 percent) and has been particularly useful in chronic conditions like hypertension. It also features eight items that can be scored as no (scoring 1) or yes (scoring 2). (Score 0). A patient with a score of 8 on the scale was recognized as having good adherence, whereas a patient with a score of 8 was recognized as having poor adherence (63).

4.9. Study Variables

4.9.1 Dependent variable

- ✓ Knowledge about HPN
- ✓ Treatment compliance

4.9.2 Independent Variables

The exposure variables were either continuous or categorical variables. These were factors that have been linked to treatment compliancefrom previous studies. They were;

- ✓ Socio-demographic characteristics (age, geneder, educational status, ocupation, martial status, relgion, residency and distance from the hospital, Family history of HTN)
- ✓ Clinical variables (BP systolic and diastolic), Time since hypertension was diagnosed, Time since beginning therapy, The number of antihypertensive medications)
- ✓ Physical activity (Low activity, medium activityand vigorues activity)
- ✓ Personal beheveral (smoking, chat, alcohol, missmedication, reason for missing and relation ship with health professional)

4.10. Data Collection Techniques

Data was gathered using a standardized and pretested questionnaire by four qualified nurses who did not work at the hypertension clinic using a systematic random sample approach. The data collectors had began collecting after defining the study's objective and advantages. A face-to-face interview was used to obtain data. Following a medical examination, each of the selected individuals was questioned.

4.11. Data Quality Assurance

Both data collectors and supervisors were given a half-day training on the research objective, technique, and data collection strategy. The main aim of training was to ensure that all data collectors have the same understanding of the research instrument and follow the same interview procedures. The training covered confidentiality as well as how to approach and forward questions to clients. To maintain reliablity, the questionnaire was translated into local language (Amharic) and then translated back to English by a different person. A pretest was performed on 10% of the samples at a health care institution that was not included in the survey, with the questions' clarity and understandability assessed. Before commencing real-world data collection, the instruments' completeness, consistency, and applicability were evaluated.

4.12. Data Processing and Analysise

All surveys were thoroughly verified for completeness and uniformity of responses. Data was input into EPI 3.1 after cleaning and coding, and then exported to SPSS versions 20 for analysis. To summarize the characteristics of study participants, descriptive statistics (mean and standard deviation) were utilized. Hypertension knowledge was treated as a continuous variable. As a result, simple and multiple linear regression analysis were performed to find characteristics associated with hypertension knowledge and to account for confounding variables. Treatment adherence was handled as a dichotomous variable. Therefore, bivariabele and multivariable binary logistic regression analysis were employed to identify factors associated with treatment compliance and to handle confounding variables. The relationship between variables was established using a 95 percent confidence interval (CI) and a p value less than 0.05.

4.13. Ethical Consideration

The Institutional Review Board (IRB) of the College of Health Sciences gave approval to the School of Nursing and Midwifery. Prior to the study, participants provided a voluntary informed consent. All participants were informed about the study, its aims, and data collecting procedure in a language they could understand. Participants were given adequate information about the study to make an educated decision about participating or not.

There was no monetary incentive for any of the volunteers, and they may leave the study at any time without consequence. There were no hazards, and the individuals received instant personal rewards. Participants stated that the knowledge they offer will be valuable for policymakers and the advancement of research in the future. Telephone numbers, folder numbers, and respondents' names were not collected as personal identifiers. All data gathered is saved and saved electronically under password security, and only the lead investigator and supervisor of this project have access to it.

CHAPTER FIVE

5. RESULT

5.1. Socio demographic characteristics

This study included 375 participants with a 100% response rate, with more than half of them being females 196 (52.3%), and the mean age was 57.42±14.31. The majority (82.7%) came from urban. One-fourth of those surveyed had no formal education, and one-third (32%) were merchants or day laborers. Table 5.1 provides a detailed socio-demographic overview.

Table 2: Socio demographic characteristcs of the study participants at Tikur Anbessa Specialalized Hospital, Addis Ababa, Ethiopia, 2021.

Variables	Frequency	Percentage
Age of respondents		
<45 years	140	24.0
45-60 years	77	13.2
>60 years	158	27.1
Sex		
Male	179	47.7
Female	196	52.3
Marital status		
Single	30	8.0
Married	224	59.7
Separated	29	7.7
Widowed	92	24.5
Relgion		
Orthodox	203	54.1
Protestant	65	17.3
Muslim	73	19.5
Catholic	23	6.1
Others (only Jesus, Jehovah)	11	2.9

Residency		
Urban	311	82.9
Rural	64	17.1
Educational status		
No formal education	91	24.3
Primary education	88	23.5
Secondary education	104	27.7
Tertiary (college/university and above)	92	24.5
Occupation		
Governmental employee	90	24.0
Non-governmental employee	90	24.0
Merchant/daily laborer	120	32.0
Farmer/house wife	34	9.1
Unemployed	41	10.9

5.2. Clinical and treatment related factors

The mean duration after hypertension diagnosis was 9.62±5.5 years, and the mean duration since therapy initiation was 7.39±4.3. More than one-third (34.7%) of study participants had systolic blood pressure ≥160mmHg, while 43.2% had diastolic blood pressure between 90 and 99mmHg. In addition, 46.7% had a family history of hypertension. In terms of therapy, a mean number of prescribed drugs was 1.96±0.81 and on average clients were taking 2.51 pills daily, with more than half (54.4%) of clients taking the medicine twice a day. However, 44.5% of client's weredo not know the name of the medication they take. Out of the total study participants, 46.1% had co-morbidities, with heart disease, renal disease, and diabetes being the top three. Regarding physical activity, more than half of the clients (54.1%) had low levels of physical activity and sat for an average of 4.7±1.70 hours each day. The average number of days per week of hard physical activity was 2.03±1.989, moderate exercise was 2.63±1.86, and minor/walking was 2.86±1.585.The clinical and treatment-related parameters are shown in table 5.2 below. The clinical and treatment-related parameters are shown in table 5.2 below.

Table 3: Clinical and treatment related factors, Tikur Anbessa Specialalized Hospital, Addis Ababa, Ethiopia, 2021.

Variables	Frequency	Percentage
Current Systolic Blood pressure		
<140 mmHg	86	22.9
140-159 mmHg	159	42.4
≥160 mmHg	130	34.7
Current Diastolic Blood pressure		
<89 mmHg	187	49.9
90-99 mmHg	162	43.2
≥100 mmHg	26	6.9
Family history of HTN		
No	200	53.3
Yes	175	46.7
Duration since the diagnosis of hypertension		
<5 years	109	18.7
5-15 years	209	35.8
>15 years	57	9.8
Dosage frequency		
Once	171	45.6
Two times	204	54.4
Know medicine you take		
Yes	208	55.5
No	167	44.5
Co- morbidity		
Yes	173	46.1
No	202	53.9
Types of comorbidity		
Stroke	21	5.6
Kidney Disease	48	12.8
Heart Disease	57	15.2
DM	47	12.5
Tabaco		
Yes	4	1.1
No	371	98.9
Alcohol		
Yes	10	2
No	365	98
chat		
Yes	13	3.5
No	362	96.5
Miss medication		
Yes	144	38.4
No	231	61.6
Reason for missing		

Forgetfulness	88	23.5
Shortage of medicine	13	3.5
Busy at Work	43	11.5
Life style(physical activity)		
Lowphysical activity	203	54.1
Medium physical activity	82	21.9
Rigrous activity	90	24.0

5.3. Knowledge of clients about hypertension

Regarding the knowledge status of clients on hypertension, the majority of the clients answered the knowledge questions, and the mean score of knowledge was 5.16±1.84. However, the majority of participants (63.5%) were unaware of the normal blood pressure range. Most (92.3%) were aware of the risk of skipping medication and 84.5% were aware of the need of lowering salt in the diet in regulating Blood Presure, 65.1% were aware of their most recent blood pressure measurement, and the majority (82.9%) were aware of the risk factors of uncontrolled hypertension. However, only around one-third (35.4%) were aware of the signs and symptoms of hypertension (Table 5.3).

Table 4: Knowledge of Clients About Hypertension, Tikur Anbessa Specialalized Hospital, Addis Ababa Ethiopia, 2021.

knowledge items	Frequency	Percentage

Do you recall your most recent blood pressure reading?		
No	131	34.9
Yes	244	65.1
Do you know what the normal blood pressure range is?		
No	238	63.5
Yes	137	36.5
Do you understand the dangers of missing medication?		
No	29	7.7
Yes	346	92.3
The risk factors to un controlled hypertension		
No	64	17.1
Yes	311	82.9
Do you know the time the medicines should be taken		
No	120	32.0
Yes	255	68.0
Do you realize how important it is to limit salt in your diet when it comes to blood pressure control?		
No	58	15.5
Yes	317	84.5
Do you know sign and symptom of Hypertension		
No	243	64.8
Yes	132	35.2
Do you know the complication of hypertension		
No	47	12.5
Yes	327	87.2

5.4. Proportion of treatment compliance

Participants'treatment compliance was assessed by a series of eight questions Thus, 67.2% of repondets sometimes forget to take antihypertensive pills and 16.0% had ever stopped the demication without telling to health profetionals. Most (62.7%) the clients forget when they travel to somewhere else and leave their home. Also, 21.9% study participant's responed they sometimes stop taking thier medicinewhen they feel thier blood pressure is under control. Moreover, 70.9% feel hassled about sticking to their antihypertensive treatment plan and38.9% of were difficulty of remembering to take the prescribed drugs.As a result, the treatment compliance questions had a total of 15 score points. If the response is favorable in terms of compliance, the respondent receives a higher score, and vice versa.Participantsscored eight or higher out of 13 score, were classed as good compliance, while those who scored less than eight were classed as poor compliance. In this study, more than half of the study participants(54.1%) exhibited poor treatment compliance (Figure 5.5).

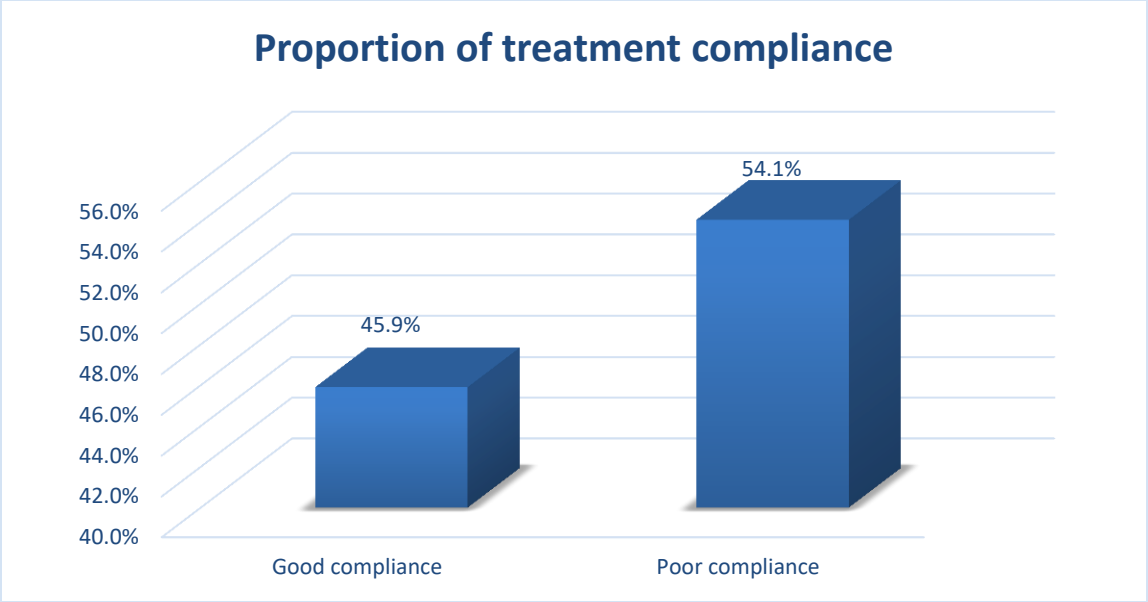

Figure 2: Proportion of treatment compliance among hypertensive patients under follow up, , Tikur Anbessa Specialalized Hospital, Addis Ababa Ethiopia, 2021.

5.5. Factors associated with treatment compliance

Bivariate and multiplebinary logistic regression models were used to assess treatment compliance factors. To account for confound effect, known confounders and variables with P<0.20 were included in multivariate logistic regression. Following a review of the model's possible assumptions (Hosmer and Lemeshow, multicollinearity), multivariate logistic regression was performed as a result, the assumptions were met since Hosmer and Lemeshow's p value was larger than 0.05. Hence, Age, level of education, year since hypertension diagnosis, comorbidity, missing medicine, diastolic blood pressure, rigorous physical activity, and client awareness of hypertension were all substantially linked with treatment compliance. However, after controlling for confounders, residence, family history of hypertension, knowing the name of the prescription, the number of prescription drugs, systolic blood pressure, medium, and low physical activity were unlikely with treatment compliance to be significance

The age of hypertensive patients was associated witht reatment adherence. Thus, participants above the age of 60 years were 87% less likely to comply with therapy than those under the age of 45 (AOR=0.129; 95% CI: 0.066, 0.254). Lack of formal education was also associated with poor compliance. Thus, those clients who had no formal education were 75% less likely to comply with treatment as compared to teritiary education (AOR=0.250; 95% CI: 0.099, 0.634). The length of time after hypertension diagnosed was also a significant predictor of medication adherence. Thus, participantswho stayed on treatment for less than 5 years had almost 4times the

chances of treatment compliance compared toparticipantswho continued on treatment for over 15 years (AOR=3.989; 95% CI: 1.586,10.033).In this study, comorbidity was a strong predictor of treatment adherence. When compared to those without comorbidities, hypertensive patients with comorbidity were 66% less likely to comply with therapy (AOR= 0.360; 95% CI: 0.195,0.665). In addition, missing drugs to take were associated with poor treatment adherence. Thus patient who miss drug had 63% less likely to comply with antihypertensive medication as compared to counterpart (AOR = 0.366; 95% CI = 0.199, 0.674). Lower diastolic blood pressure was linked to better treatment adherence. Diastolic blood pressures of less than 89 mmHg and 90-99 mmHgpredicted 7 and 6 times increased chances of treatment adherence (AOR=7.288; 95% CI: 1.974,26.908) and, (AOR= 6.373; 95% CI:.736,23.399), respectively.

Only intense physical activity was significantly asscoatedwith treatment compliance when it came to physical activity. Thus, for every one-day increase in rigorous exercise, the odds of good compliance rise by 16.9% (AOR=1.169; 95 %CI: 1.003,1.362). Even while sitting was not statistically significant, it was related with poor treatment compliance after controlling for covariates. Client knowledge of hypertension, on the other hand, was a significant predictor of treatment adherence. As a result, for every unit improvement in knowledge score, the probabilities of compliance rise by 33.6%. (AOR=1.336; 95%CI: 1.106, 1.615).

Table 0: Bivariate and Multiple binary logistic regression for factors associated with treatment compliance, Tikur Anbessa Specialalized Hospital, Addis Ababa Ethiopia, 2021.

Variables	Compliance		COR 95% CI	AOR, 95%CI	P-value
	No	Yes			
Age					
<45 years	33	107	1	1	.000
45-60 years	20	57	0.879 (0.463,1.670)	0.810(0.366,1.795)	.604
>60 years	119	39	0.101 (0.059,0.172)**	0.129(0.066,0.254) **	.000
Educational status					
No formal education	63	28	0.108 (0.055,0.214)**	0.250(0.099,0.634) **	.003
Primary education	50	38	0.185 (0.095,0.360)**	0.468 (0.193,1.133)	.092
Secondary education	41	63	0.374 (0.195,0.715*	0.676 (0.289,1.580)	.366
Tertiary education	18	74	1	1	
Years since diagnosis of hypertension					
<5 years	42	67	4.088 (2.041,8.188)*	3.989 (1.586,10.033)**	.006
5-15 years	89	120	3.455 (1.823,6.549)*	4.360 (1.536,12.377)	.003
>15 years	41	16	1	1	
Comorbidity					
Yes	110	63	0.254 (0.165,0.390)**	0.360 (0.195,0.665) **	.001
No	62	140	1	1	
Ever missing medication					.001
Yes	90	54	0.330 (0.214,0.509)**	0.366 (0.199, 0.674) **	
No	82	149	1	1	
Current diastolic BP					
<89 mmgH	76	111	6.134 (2.216,16.978)**	7.288 (1.974,26.908)**	.003
90-99 mmgH	75	87	4.872 (1.752,13.552)**	6.373 (1.736,23.399) *	.005
≥100 mmgH	21	5	1	1	
Level of physical activity					
Lowactivity	108	95			
Mediumactivity	41	41	1.137 .680 1.899	0.889 (0.586,1.349)	.097
Rigrous activity	23	67	3.312 1.914 5.729	2.169 (1.121,4.362)*	.023
Knowledge score about hypertension			1.521 (1.335,1.733) **	1.336 1.106 1.615*	.001

*Note: *P<0.05; **P<0.01; AOR= Adjusted Odds Ratio; COR= Crude Odds Ratio*

5.6. Factor associated with knowledge of hypertension

Before fitting into a regression model, essential assumptions such as multicollinearity, model good of fittiness, independence of error, residual normality were evaluated. To test for the presence of multicollinearity, all variance inflation factor (VIF) values were assessed and they were less than 10. This suggests that there is no major Multicollinearity concern among independent variables. The overall goodness of fit of the numerous linear regression models is tested using an ANOVA table with a F value. The F-value for this model from this study is (df (12) =13.37, P<0.001), as a result, the model is good fit. The test for independence of error was assessed using Durbin Watson test of independence. The test statistic can vary between 0 and 4 with a value of 2 meaning that the residuals are uncorrelated. In this study, the assumption was fulfilled since Durbin Watson was 1.835.since, values less than 1 or greater than 3 are definitely cause for concern; however, values closer to 2 may still be problematic but, not significant influence on the estimats(66).

Multiple linear regression models were used to identify the factors affecting the clients' knowledge of hypertension. The dependent variables were the knowledge scores obtained through a series of questions. Prior to using multiple linear regression, simple linear regression was used and variable with P<0.2 were included in the multiple linear regression to control confounders. Age, residency (Rural yes=1, No =1). Years since diagnosed of HTN, no education (Yes=1, No=0), tertiary education (yes=1, No=0) and Governmental employee (yes=1, No=0) and Non-governmental employee (Yes=1, No=0) were considered as dummy variables and included as independent variable to adjust for the confounders.

Multiple linear regression revealed that residence, year since diagnosis, no formal education, tertiary education, governmental work, and non-governmental work were all significant predictors of hypertension knowledge score.

For patients come from rural area, knowledge of hypertention decreases by 79.6% (β= -0.796; (-1.251, -0.341). This suggests that clients from rural werenot getting adquet awarerness. The number of years after diagnosis and knowledge of hypertension were positively related. Thus, an increamant of one year since being dignosed for hypertention, the patient's knowledge about HTN increases by 4.8% (β =0.048, (0.017,0.078). Another major predictorof client knowledge is their educational status. Thus, no education (β=-1.815; (-1.293, -0.337) and primary education (β=0.363(-0.822,0.096) were negetively linked with client knowledge. Thus, being not educated decreases the knowledge level about HTN by 82% education. while being educated upto the tertiary level education the patients' knowledge increases by 55.8% (β=0.558; (0.078,1.038).

Furthermore, after controlling for covariates, becoming an employeeparticularly a government employee the knowledge of HTN increases by 1.24 score (β=1.243; (0.626,1.702) and being non-governmental employment would also raise the knowledge score by 65% (β=0.650; (0.088,1.043).

Table 6: Multiple linear regression for factors associated with knowldge score of hypertention, Tikur Anbessa Specialalized Hospital, Addis Ababa Ethiopia, 2021.

Variables	Adjusted Coefficients (B)	t	95% Confidence Interval for B
(Constant)	**5.669**	**8.077**	**4.289**
Age of respondents	**-.008**	**-1.315**	**(-0.020,0.004)**
Sex of respondents	**-.121**	**-.654**	**(-0.484,0.242)**
Residency	**-.796**	**-3.440**	**(-1.251,-0.341)***
Family History of HTN	**.232**	**1.347**	**(-0.107,0.571)**
Years since diagnosed of HTN	**.048**	**3.088**	**(0.017,0.078)***
No formal education	**-.815**	**-3.353**	**(-1.293,-0.337)****
Primary education	**-.363**	**-1.553**	**(-0.822,0.096)**
Tertiary education	**.558**	**2.288**	**(0.078,1.038)***
Governmental employee	**1.164**	**4.257**	**(0.626,1.702)****
Non-governmental employee	**.565**	**2.329**	**(0.088,1.043)**
farmer/house wife	**.146**	**.444**	**(-0.499,0.791)**
Unemployed	**-.127**	**-.390**	**(-0.770,0.515)**

CHAPTER SIX

6. DISCUSSION

Noncompliance with antihypertensive medication continues to be a barrier for health-care teams, as well as an underestimated risk factor that contributes to insufficient blood pressure management, which leads to the development of cardiovascular events such as stroke, coronary artery disease, heart failure, and renal failure. The primary goal of this study was to assess hypertension patients' knowledge, treatment compliance, and associated factors at Addis Ababa's Black Lion Hospital. Adherence to antihypertensive drugs was examined using MMAS-8 in this study, and it was 45.9% when defined by the MMAS-8 8 cut off.. Age, level of education, year since hypertension diagnosis, comorbidity, missing medicine, and diastolic blood pressure were all linked with poor treatment compliance, whereas rigorous physical activity and client awareness of hypertension were substantially linked with good treatment compliance.

In this study, over half of the study patients, 45.9 percent, were found to be complying with their antihypertensive drug therapy. The findings were congruent with a study report from Palestine, which found that 47.8% of were comply with antihypertensive therapy(45). However, this is lower than the findings of previous studies from Jimma, Ethiopia, which found 61.8 percent adherence(56), north west Ethiopia (64.8%)(55), north east Ethiopia(74%)(61),USA 57.6%(67), Pakistan 77%(68), United Arab Emirates 54.4%(69). The explanation for this might be that customers have greater access to care and treatment in these nations and areas.

On the other hand, the adherence level reported in this study was higher than the findings from at Nedjo General Hospital in West Ethiopia that only 31.4% of the study participants were adherent to their medication(47), a studies reported from hospitals in Ghana and Nigeria 33.3%(59), Algeria that reported only 35.5% were adherents(46).This discrepancy might be attributed to variations in the populations investigated, sample sizes, and assessment instruments employed to assess adherence.However, contrary to earlier findings that advanced age is associated with improved compliance(57, 62), we discovered the opposite. Thus, customers beyond the age of 60 exhibited lower compliance than those under the age of 45. This could be because most of the study participants in this study were elders and while the age increase the compliance decrease among advanced age. Thus, a prior research that found a favorable link between age and adherence also support the current finding that a negative link between age and compliance after the age of 70.The rationale given was that as people get older, they are more prone to struggle

with drug adherence. A sophisticated strategy should be used to improve compliance among older patients (57).

The current study found that patients' educational status was an important predictor of treatment adherence. As a result, illiterate (uneducated) people were less likely to comply with the treatment. Other previous studies in Nedjo found that illiterate (AOR = 0.148) and elementary grade 95% (AOR = 0.046) hypertension patients were less likely to be adherent than those who were college and university graduates, respectively (47).A similar discovery was made in Jimma(56) and other countries(42). Education may result in a greater knowledge that would raise treatment compliance. Literate people and those who are determined to learn more about their sickness are more receptive to health education than illiterate people who have a strong perception of their ailment (62).

In our study, we found that comorbidity was a significant predictor of compliance. Patients with no or one co morbidity were thus more likely to stick to their therapy than those with two or more co morbidities. Patients with a greater number of co morbidities may have major problems and difficult treatment regimens, making it easier for them to fail to take their prescriptions. Another research from northwest Ethiopia confirmed our results that co morbidity was related with more than twice the risks of death (AOR=2.5, 95%CI=1.01, 6.21)(55). Moreover studies from southwest ethiopia(56), addis ababa(54)Algeria(46), and finland(42) confirm our finding.

The blood pressure management was linked to adherence behavior in this study. Those who had their blood pressure under control were found to be adherent. Low diastolic blood pressure was linked to a favorable treatment result. A similar conclusion was reached in another study conducted in Ethiopia(55), and other sub-saharan african countries(59). The importance of medication adherence cannot be overstated in the fight to avoid hypertension-related morbidity and death, since appropriate treatment and management of BP has been highlighted as one of the measures to reduce CVD burden by 25% by 2025 (29).

We found that physical exercise (rigorous exercise such as gym exercise) was strongly associated with improved treatment adherence. A similar conclusion was found in a research conducted in Nigeria (58)which found that exercise is a facilitator of adherence to hypertension treatment. Physicians should assist patients in finding an activity that they love, since enjoyment will boost adherence.

Occasionally, a medication goes missing. Forgetfulness was likewise the most often reported cause for poor antihypertensive medication adherence. According to the current study and the indeia study, the most prevalent causes for skipping prescriptions were being(43)forgetful and not experiencing any symptoms. Other research have found this to be true (70-72). As a result, health professionals should work closely with patients to choose the right regimen and time of administration based on each patient's circumstance in order to increase adherence.

The most striking conclusion was a link between knowledge of hypertension and drug adherence. Thus, awareness regarding HTN and its treatment has been identified as a major driver of treatment compliance in studies conducted in northwest Ethiopia (55), southwets Ethiopia (62), as well as a research conducted among hypertensive patients in selected government hospitals in Addis Abeba (54). Furthermore, understanding of the condition was discovered to be a substantially linked factor, as respondents with strong understanding were shown to be three times more likely to adhere to prescribed drug regimens(54). Knowledge is also related to educational status, and the higher the degree of education, the greater the clints' knowledge. Because education was found to be substantially connected with compliance in the current and previous research, having high knowledge will lead to excellent treatment compliance among hypertension patients. This might be the case. Good knowledge of HTN and its treatment leads to a clear understanding and eliminates uncertainty about the therapy and the disease condition. Adherence behavior was found to be favorably correlated with knowledge of HTN and its treatment. Patients who were more aware were more likely to stick to their treatment regimen.(5, 22, 37, 50).

Because these well-informed individuals are aware of the lifestyle they should adopt in order to regulate their blood pressure levels and Smoking cessation, moderation or abstinence from ethanol consumption, salt restriction, regular physical activity, a balanced eating pattern, and weight loss are all lifestyle approaches for decreasing blood pressure. Lifestyle treatments have a critical role in lowering the number of drugs used by hypertensive patients and lowering the risk of acquiring hypertension in the general population(49). Health care practitioners should inspire and allow individuals to regulate their blood pressure by providing continuous guidance on lifestyle changes(60).

In this study, we assessed the level of knowledge regarding hypertension among hypertensive patients who were being followed up on. Most(92.3%) were aware of the risk of skipping medication and 84.5 percent were aware of the need of lowering salt in the diet in regulating BP,

65.1 percent were aware of their most recent blood pressure measurement, and the majority (82.9 percent) were aware of the risk factors of uncontrolled hypertension. However, only around one-third (35.4%) were aware of the signs and symptoms of hypertension. Similarly, the study at Jimma University Specialized Hospital in Ethiopia found that 80 percent of individuals avoid salt in their diet and that 59.2 percent are aware of the target blood pressure(60). As a result, the health profession should pay attention to good education of hypertensive patients on hypertensive signs and symptoms, life style change, and suitable comprehension of their BP measurement system..

We also used multiple linear regression to investigate predictors of hypetention knowledge in this study sample. In this study, respondents' residence, educational status, time since diagnosis, and employment all revealed a significant connection with knowledge. Thus, illiteracy was connected with a low knowledge score, whereas tertiary education was connected with a high knowledge score of the clients. Another study validated our findings, as participants' educational level was substantially correlated with knowledge score in a research conducted among irainin hypertensive patients(37). Furthermore, educated consumers would have greater access to health-related information than uneducated consumers, as well as greater liberty to make decisions and employ excellent health care services. In other words, illiteracy may impair a client's capacity to comprehend concerns during therapy(40).

Furthermore, according to the present study, the longer a client stays in therapy, the better their awareness of hypertension. Clients receiving extended therapy may have greater contact with health professionals and enhance their knowledge over the following phase and exposure to the health facility.

According to the current study, respondents who worked for the government or a non-governmental organization had a greater degree of hypetention. Another investigation, this time in Harrar, Ethiopia, revealed the same results (40). This might be because formal work is directly tied to a higher educational degree. It is associated with knowledge as a result of littrecy and the ability to capture facts.

7. Strength and Limitation of the Study

The main strength of this study is that we used a validated tool to measure cmpliance Morisky Medication Adherence Scale (MMAS), physical activity, and client knowledge, which strengthens the reliability of our results. However, this was a cross-sectional study, it is impossible to determine cause and effect relationship between variables.

8. CONCLUSION

The current study found that 45.9 percent of patients comply with antihypertensive therapy, which is lower than the majority of industrialized countries. And the majority of the clients had higher knowledge questions, with a mean knowledge score of 5.16. However, the majority of participants were uninformed of the normal blood pressure range, and only around one-third were aware of hypertension's sign and symptoms. Age, education level, year since hypertension diagnosis, comorbidity, missing medications, and diastolic blood pressure were all associated with poor treatment compliance, whereas rigorous physical activity and client knowledge of hypertension were significantly associated with good treatment compliance.In the multiple linear regression model, residency, year since diagnosis, no formal education, tertiary education, governmental employment, and non-governmental job were all significant predictors of hypertension knowledge score.

Therefore, these findings suggest that health care practitioners should pay close attention to the awareness of clinets, adherence and the factors that influence adherence; specifically, boosting knowledge and generating awareness of the hypertensive patint would be beneficial.

9. RECOMMENDATION

Based on the conclusion and finding of this study, the following recommondations are forwarded. Since knowledge of hypertention was significant predictor of compliance and it is influenced by clinets level of education, practitioners always look for poor adherence and work to improve it by stressing hypertension awareness and giving specific attention to clients with lower educational status. Because low education was the main predictor of knowledge and the knowlde inturn affects the compliance, more emphasis should be given for patients with lowere educational status. Pateints with comorbidities should also receive additional attention and follow-up on a regular basis. Because Clints' knowledge is affected by residency, more emphasis should be placed on clinets from rural areas. Health care providers should work with hypertension patients to build methods that will remember them to take their prescriptions on a regular basis. To increase patient education and medication counseling, all health professionals in the institution should work together completely

By reading pamphlets and bruchers offered by hospitals, hypertensive individuals expected to increase awerness of the signs and symptoms of hypertension. Furthermore, they should set up a reminder and an alert to remind them of the time of drug consumption in order to limit the number of missing medications. Moreover, institution and higher officals in minster of health expected to establish mechansims and methods which help the patient’s remaind the medication time.

Researchers should investigate the precise relationship between age and compliance in order to reconcile the conflict between many studies that have produced conflicting outcomes. Furthermore, qualitative evaluation should be considered in order to gain greater insight into the probable hidden determinants of treatment compliancy.

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Annex I: Subject Information Sheet (English Version)

Addis Ababa University, College of Health Sciences, Department of Nursing and Midwifery Graduate Studies

Code No----Information Sheet

Hello participant I am here to collect data for a study entitled as" Assessment of Knowledge, Treatment Compliance and Associated Factors among Hypertensive Patients at Tikur Anbessa Specialized Hospital". The study is being conducted by Sr. Senait Debel who is a graduating class student at Addis Ababa University College of Health Science, School of Nursing and Midwifery, at the department of Cardiovascular Nursing. For this study, you are selected as a participant and before getting consent, you need to know all necessary information related to the study. Thus the purpose of this study is to assess Knowledge, treatment compliance and associated Factors among Hypertensive Patients at Tikur Anbessa Specialized Hospital.

You are being asked to take part in this study and to respond sincerely.You are selected to be involved by chance. This questionnaire focuses on assessing your knowledge and treatment compliance about Hypertension. Your cooperation and willingness is greatly helpful in identifying problems in the mentioned area.

You will receive no compensation or special privileges as a result of your inclusion in the research. Your answers to the following questions will help you and other hypertensive patients develop hypertensive awareness and recognize the causes that influence knowledge so that recommendations can be given to responsible organizations to fill those gaps.

The research will be done by interviews, and you will be asked to give us a few minutes of your time, up to 20 minutes, to assist us with this study. Except for the time spent responding to the questionnaire, there is no risk associated with engaging in this study.

Your name will not appear on this form, and any information you provide will not be shared with a third party. Your participation is entirely voluntary, and you are under no obligation to answer any questions that you do not want to answer. If you are uncomfortable with the issue, you have the right to withdraw it at any moment. If you have any concerns about this study or would like to be kept updated on its progress, please contact the principal investigator.

Address of the principal investigator

Sr.Senait Debel

Cell phone: +251911174351

Email: SenaitDebel@gmail.com

Are you willing to participate in this study?

- Yes ( )
- No ( )

If yes, please proceed to verbal informed consent

Thank you in advance

Annex II: Subject Information Sheet (Amharic Version)

ADDIS ABABA UNIVERSITY

COLLEGE OF HEALTH SCIENCES

SCHOOL OF NURSING AND MIDWIFERY

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መለያቁጥር---------

የቃለመጠይቁ መረጃ

ጤና ይስጥልኝ ውድ ተሳታፊ እኔ በዚህ የተገኘሁት ለጥናት ግበዐት የሚሆኑ መጠይቆችን ለመሰብሰብ ሲሆን የጥናቱም ርዕስ "በደም ግፊት ታካሚዎች ዙሪያ ስለ ደም ግፊት ያላቸውን እውቀት፣መድሐኒትን በአግባቡ ስለመውሰድ እና ተያያዥ ምክንያቶችን ጥናት ለማድረግ ነው"። ጥናቱም የሚካሄደው ጥቁር አንበሳ ስፔሻላይዝድ ሆስፒታል በአዲስ አበባ ዩኒቨርስቲ የጤና ሳይንስ ኮሌጅ ነርሲንግ እና አዋላጅ ነርስ መረሃ ግብር የምረቃ ጥናት በካርዲዮቫስኩላር ነርሲንግ ትምህርት ክፍል የሁለተኛ ዓመት ተማሪ ሲ/ር ሰናይት ደበል ነው። በዚህም ጥናት እርሶ ተሳታፊ እንዲሆኑ ተመርጠዋል እናም የጥናቱ አላማ በደም ግፊት ታካሚዎች ዙሪያ ስለ ደም ግፊት ያላቸውን እውቀት፣መድሐኒትን በአግባቡ ስለመውሰድ እና ተያያዥ ምክንያቶችን ለመገምገም ነው። በዚህ ጥናት ውስጥ እንዲሳተፉ እና በአግባቡ እንዲመልሱ በትህትና እንጠይቃለን። ስለዚህ በዚህ ላይ ለመሳተፍ የእርሶ መልካም ፍቃደኝነት እና ታማኝነት ችግሩን በተጠቀሰው ቦታ ለመለየት እጅጉን ይረዳናል። በዚህ ጥናት ውስጥ በመካተቶ ምንም አይነት ካሳ አያገኙም ለጥያቄዎቹ የሚሰጡት መልስ እርሶን እና ሌሎች የደም ግፊት ታካሚዎችን ይረዳል። ይህም የደም ግፊት ግንዛቤን ማዳበር እና በእውቀት ላይ ተጽኖ የሚያሳድሩትን ምክንያቶች አውቆ ለሚመለከተው ክፍል ጥቆማ ለመስጠት እና ክፍተቶችን ለመሙላት ይረዳል። በዚህ ጥናት ላይ ቃለ መጠይቁ 20 ደቂቃ ያህል ይፈጃል። ለጥያቄው መልስ ለመስጠት ከሚያጠፉት ሰዓት በስተቀር በእርሶ ላይ የሚመጣ ምንም አይነት ችግር የለም። የእርሶ ስም በዚህ ቅጽ ላይ አይታይም እንዲሁም የሚሰጡት መረጃ ለሶስተኛ ወገን አይጋራም። የጥናቱንም ውጤት ምን ላይ እንደረሰ ማወቅ ቢፈልጉ እባኮትን ዋናዎን ጥናት አድራጊ ያናግሩ።

የዋና ጥናቱን አድራጊ አድራሻ

ሲ/ር ሰናይት ደበል

የሞባይል ቁጥር፡- 0911174351

ኢሜል፡- senaitdebel@gmail.com

በዚህ ጥናት ላይ ለመሳተፍ ፍቃደኛ ኖት?

- አዎ ( )
- አይ ( )

አመሰግናለሁ!!!

Annex III: Informed Consent Form (English Version)

CodeNo_____

Verbal informed Consent

In undersigning this document, I am giving my consent to participate in the study entitled as "Assessment of Knowledge, treatment compliance and associated Factors among Hypertensive Patients at Tikur Anbessa Specialized Hospital" I have been informed that the purpose of this study is to Assess Knowledge, treatment compliance and associated Factors among Hypertensive Patients at Tikur Anbessa Specialized Hospital, Addis Ababa Ethiopia,

I acknowledge that my inclusion in this research is absolutely voluntary. My answers to the questions will not be provided to anybody else, and no results from this analysis will ever mark me in any way. I understood that participation in this study doesn't involve risks except the time spent for completing the questionnaireThat was clear to me, Sr. Senait Debel is the person to contact if I have any queries regarding the study or my rights as a study participant.

Date of interview_____/_____/_____

Thank you for your willingness to participate!!!

Annex IV: Informed Consent Form (Amharic Version)

መለያ ቁጥር-------

የቃል ስምምነት

በዚህ ጥናት ላይ ለመሳተፍ ፍቃዴን እሰጣለሁ የጥናቱ ርዕስ "በደምግፊት ታካሚዎች ዙሪያ ስለ ደምግፊት ያላቸውን እውቀት መድሐኒቱን በአግባቡ ስለመውሰድ እና ተያያዥ ምክንያቶችን ጥናት ለማድረግ ነው። "እኔ በዚህ ምርምር ውስጥ መካተቴ በፋቃደኝነት መሆኑን አውቂያለሁ።እና የዚህ ጥናት ሪፖርት በምንም መንገድ አይመለከተኝም።መጠይቁን ለመሙላት ከሚያስፈልገው ሰዓት ውጭ በዚህ ጥናት ውስጥ መሳተፌ ምንም ችግር እንደማያመጣ ተረድቻለሁ።ስለ ጥናቱ ጥያቄ ቢኖረኝ ለመጠየቅ ዋናዋ ጥናቱን አድራጊ ሲ/ር ሰናይት ደበል መሆኗን አውቂያለሁ።

የቃለ መጠይቁ ቀን፡- ------/--------/----------

ለመሳተፍ ፍቃደኛ በመሆኖዎ አመሰግናለሁ።

Annex V: Questionnaire (English Version)

Questionnaires prepared for Assessment of Knowledge, Treatment Compliance and Associated Factors among hypertensive patients at Tikur Anbessa Specialized Hospital on 2021 by Senait Debel from Addis Ababa University College of Health Sciences School of Nursing and Midwifery.

1.Socio demographic characteristics			
S. No.	Questions	Responses	
101	What is your Age?	_____	
102	Sex	1. Male 2. Female	
103	What is your Martial status?	1. Single (never married) 2. Married (live togather) 3. Separated 4. Other(specify)----------	
104	What is your Religion?	1. Orthodox 2. Protestant 3. Muslim 4. Catholic 5. Others(specify)_____	
105	Where is your residency?	1. Urban 2. rural	
106	What is your level of education?	1. Illiterate 2. Read and write 3. 1-8 4. 9-12 5. 12+	
107	What is your occupation?	1. Government 2. Merchant 3. Farmer 4. Housewife 5. Non employed 6. Retired 7. Other_____	
108	Distance from the hospital (duration) hr?	_____	

109	Family history of HTN?	1. Yes 2. No	
2.Clinical and treatment related factors			
201	Previous visit BP reading	Systolic _____ Diastolic _____	
202	Current BP reading	Systolic _____ Diastolic _____	
203	How many years, since you diagnosed for hypertension	_____	
204	Do you know the medicine you take for HPN treatment?	1. Yes 2. No	
205	If yes, What is the name of medicine you take for HPN treatment?	_____	
206	How many years, since you start treatment?	_____	
207	Number of prescribed anti-hypertensive drugs ?	_____	
208	Number of tablets per day you supposed to take?	_____	
209	Dosage frequency?	_____	
210	Medical cost per month (birr) for hypertension treatment?	_____	
211	Co- morbidity	1. Yes 2. No	
212	If yes which comorbidity of the following you have?	1. Stroke 2. Kidney disease 3. Heart disease 4. Eye disease 5. Diabetes mellitus **6.** Other	
3.Personal behavior and life style related			
301	Do you smoke Tobacco or cigarette	1. Yes	

		2. No	
302	Do you use chewing Chat	1. Yes 2. No	
303	Do you drink alcohol?	1 Yes 2 No	
304	Have you ever Miss medication within this month?	1. Yes 2. No	
305	If yes, what was the Reason for missing?	1. Forgetfulness 2. Being asymptomatic/ normal BP 3. shortage of medication 4. doctor advice to stop 5. busy at work 6 other----	
306	Do you have good r/n ship with health professional	1. yes 2. No	
4. Knowledge questions			
401	Do you Know your recent BP measurement ?	1. Yes 2. No	
402	Do you know the Normal BP range?	1. Yes 2. No	
403	Do you know the Risk of missing medication?	1. Yes 2. No	
404	Do you know the risk factors to un controlled hypertension?	1. Yes 2. No	
405	Do you know the time medicines should be taken?	1. Yes 2. No	
406	Do you Know the importance of reducing salt in the diet in controlling BP?	1. Yes 2. No	
407	Do you know the Sign and symptom of hypertension?	1. Yes 2. No	

408	Do you know the Complication of hypertension?	1. Yes 2. No	

5.Physical activities		
501	During the last 7 days, on how many days you do vigorous physical activities for 10 minutes like **heavy lifting**, **digging**, **aerobics**, or **fast bicycling**?	_____ days per week
502	During the last 7 days, on how many days you do moderate physical activities for 10 minute like carrying **light loads**, **bicycling at a regular pace**, or **doubles tennis**? **Do not** include walking.	_____ days per week
503	During the last 7 days, on how many days you **walk** for at least 10 minutes at a time?	_____ days per week
504	During the last 7 days, how many time you spend **sitting** per day?	_____ hours per day
505	Which time is convenient for exercise?	1. morning 2. Afternoon 3. Evening

	6 Treatment compliance/adherence	
	The Eight-Item Medication compliance/Adherence Scale	
	Questions	**Responses (yes=0, No=1)**
601	Do you sometimes forget to take your high blood pressure pills?	0. Yes 1. No
602	Over the past two weeks, were there any days when you did not take your high blood pressure medicine?	0. Yes 1. No
603	Have you ever cut back or stopped taking your medication without telling your doctor because you felt worse when you took it?	0. Yes 1. No
604	When you travel or leave home, do you sometimes forget to bring along your medications?	0. Yes 1. No
605	Do you think as you didn't take your high blood pressure medicine yesterday?	0. Yes 1. No
606	When you feel like your blood pressure is under control, do you sometimes stop taking your medicine?	0. Yes 1. No
607	Taking medication every day is a real inconvenience for some people. Do you ever feel hassled about sticking to your blood pressure treatment plan?	0. Yes 1. No
608	Do you have difficulty of remembering to take all your blood pressure treatment?	1 "Always". 2 "usually" 3 "sometimes", 4 "once in a while", 5 "never",

Thank you very much!!

Annex VI: Questionnaire (Amharic Version)

ጥያቄዎቹ የተዘጋጁት "በደም ግፊት ታካሚዎች ዙሪያ ስለ ደም ግፊት ያላቸውን እውቀት፣ መድሐኒትን በአግባቡ ስለመውሰድ እና ተያያዥ ምክንያቶችን ጥናት ለማድረግ ነው"። ጥናቱም የሚካሄደው በሲ/ር ሰናይት ደበል ሲሆን በ2013ዓ.ም በአዲስ አበባ ዩኒቨርስቲ የጤና ሳይንስ ኮሌጅ ነርሲንግ እና አዋላጅ ነርስ መርሃ ግብር ነው።

1.የተጠያቂ መሰረታዊ መረጃዎች			
ተራ ቁጥር	ጥያቄዎች	ምላሾች	
101	እድሜዎ ስንት ነው?	_____	
102	ጸታ	1. ወንድ 2. ሴት	
103	የጋብቻ ሁኔታ ምንድ ነው?	1 ያላገባ 2 ባለትዳር 3 ተለያይቷል 4 ሌላ_____	
104	ሃይማኖቶ ምንድ ነው?	1 .ኦርቶዶክስ 2 ፕሮቴስታንት 3 ሙስሊም 4 ካቶሊክ 5ሌሎች_____	
105	የመኖሪያ ቦታዎ የት ነው?	1 ከተማ 2 ገጠር	
106	የትምህርት ደረጃ?	1. ማንበብ እና መጻፍ አልችልም 2. ማንበብ እና መጻፍ እችላለው 3. (1-8) 4. (9-12) 5. (12+)	

107	የስራ ሁኔታ?	1 የመንግስት 2 ነጋዴ 3 ገበሬ 4 የቤት እመቤት 5 ተቀጣሪ ያልሆነ 6 ጡረታ ወጥቷል 7 ሌላ_____	
108	ከቤቶ ሆስፒታል ለመምጣት ስንት ሰዓት የፈጃል?	_____	
109	በቤተሰቦ ውስጥ የደም ግፊት አለ?	1 አዎ 2 አይ	
2.ክሊኒካል እና ህክምና ነክ ጥያቄዎች			
201	የበፊት የደም ግፊት ንባብ	የላይኛው _____ የታችኛው _____	
202	የዓሁን የደም ግፊት ንባብ	የላይኛው _____ የታችኛው _____	
203	የደም ግፊት እንዳለቦት ካወቁ ምን ያህል ጊዜ ሆነው?	_____	
204	ለደም ግፊት የሚወስዱትን መድሃኒቶች ስም ያቃሉ?	1. አዎ 2. አይ	
205	መልሶ አዎ ከሆነ ለደም ግፊት የሚወስዱትን መድሃኒቶች ስም ምንድን ነው?	_____	
206	መድሃኒቱን ከጀመሩ ምን ያህል ጊዜ ሆኖት?	_____	
207	ለደም ግፊት የሚወስዱት የመድሃኒት ብዛት ስንት ነው?	_____	
208	በቀን ምን ያህል የመድሃኒት እንክብል		

	ይወስዳሉ?	_____	
209	በቀን ስንት ጊዜ መድሃኒት ይወስዳሉ?	_____	
210	ለደም ግፊት ህክምና በወር ምን ያህል ያወጣሉ?	_____	
211	በጤናዎ ላይ ተዛማች ችግር አለ?	1 አዎ 2 አይ	
212	መልስዎ አዎ ከሆነ የትኛው ተዛማች ችግር ነው?	1 ስትሮክ 2 የኩላሊት በሽታ 3 የልብ ህመም 4 የዓይን በሽታ 5 የስኳር በሽታ **6** ሌላ	

3. የግል ባህሪ እና የአኗኗር ሁኔታ ጥያቄዎች

301	ትምባሆ ወይም ሲጋራ ያጨሳሉ?	1 አዎ 2 አይ	
302	ጫት ይቅማሉ?	1 አዎ 2 አይ	
303	መጠጥይጠጣሉ?	1 አዎ 2 አይ	
304	በዚህ ወር ውስጥ መድሐኒት ረስተው ያቃሉ?	1 አዎ 2 አይ	
305	መደሃኒት የረሱበት ምክኒያቱን ያቃሉ?	1 በመርሳት 2 ህመም ሳይኖረኝ 3 በመደሃኒት እጥረት 4 በህኪም ትዛዝ 5 በስራ ስጠመድ 6 ሌላ	

306	ከጤና ባለሞያ ጋር ጥሩ ግንኙነት አሎት?	1 አዎ 2 አይ	
4.የእውቀት ጥያቄዎች			
401	የቅርብ ጊዜውን የደም ልኬትዎን ያውቃሉ?	1 አዎ 2 አይ	
402	መደበኛ የደም ግፊት ክልል የሚባለውን ያቃሉ?	1 አዎ 2 አይ	
403	መደሃኒት አለመውሰድ የሚያመጣውን አደጋ ያውቃሉ?	1 አዎ 2 አይ	
404	የደም ግፊት አለመቆጣጠር የሚያመጣውን አደጋ ያቃሉ?	1 አዎ 2 አይ	
405	ትክክለኛ መድሃኒት መወሰድ ያለበትን ሰዓት ያቃሉ?	1 አዎ 2 አይ	
406	የደም ግፊትን ለመቆጠጠር በምግቦ ውስጥ የጨው መጠን መቀነስ ጥቅም ያውቃሉ?	1 አዎ 2 አይ	
407	የደም ግፊት ምልክት እና እመሙ ምን እንደሆነ ያውቃሉ?	1. አዎ 2. አይ	
408	የደም ግፊት የሚያመጣውን ውስብስብ ችግር ያውቃሉ?	1 አዎ 2 አይ	

5 የአካላዊ እንቅስቃሴ ጥያቄዎች		
501	ባለፉት 7 ቀናት ውስጥ ከባድ ነገር ማንሳት፤ መቆፈር፤ የአካል ብቃት እንቅሰስቃሴ ወይም ብስክሌት መንዳት የመሳሰሉትን ለ10 ደቂቃ ያህል ጠንካራ የአካል ብቃት እንቅስቃሴዎችን ስንት ቀናት አደረጉ?	_____ቀን በሳምንት
502	በአለፉት 7 ቀናት ውስጥ ቀላል ሸክም ፣በአንስተኛ ፍጥነት በብስክሌት መንዳት ወይም ቴኒስ መጫወት የመሳሰሉት ለ 10 ደቂቃ መጠነኛ እንቅስቃሴዎችን ስንት ቀን አድርገዋል? በእግር መጓዝን አይጨምርም?	_____ቀንበሳምንት
503	ባለፉት 7 ቀናት ውስጥ ስንት ቀን በግር በመጓዝ ቢያንስ በአንዴ ለ 10 ደቂቃ እንቅስቃሴዎችን አድርገዋል?	_____ ቀንበሳምንት
504	ባለፉት 7ቀናት ውስጥ ምን ያህል ሰዓት በቀን በመቀመጥ አሳልፈዋል?	_____ ሰዓት በቀን
505	የአካል ብቃት እንቅስቃሴ ለማድረግ የትኛው ሰዓት ምቹ ይመስሎታል?	1 ጠዋት 2 ከሰዓት በሓላ 3 ምሽት

	6. መድሃኒትን በአግባቡ ስለ መውሰድ የመለኪያ ጥያቄዎች	
	መድሃኒትን በአግባቡ የመውሰድ ስምንት አይነት መለኪያዎች	
	ጥያቄዎች	**ምላሽዎ(አዎ=0 ፡ አይ=1)**
601	አንዳንድ ጊዜ የደም ግፊት መደሃኒት ረስተው ሳይወስዱ ቀርተው ያቃሉ?	0. አዎ 1. አይ
602	ባለፉት ሁለት ሳምንታት ውስጥ የደም ግፊት መድሃኒት ሳይወስዱ የቀሩበት ቀን ያውቃሉ?	0. አዎ 1. አይ
603	በእራሶ ምክንያትመድሃኒቱ ከፍተኛ ችግር አምጥቶብኛል ብለው ለሐኪሞ ሳይናገሩ መድሃኒቶን ቀንስው ወይም አቁመው ያውቃሉ?	0. አዎ 1. አይ
604	አንዳንድ ጊዜ የደም ግፊት መደሃኒት ከቤት ሲወጡ ወይም በጉዞ ምክንያት እረስተው ያውቃሉ?	0. አዎ 1. አይ
605	ትላንት የደም ግፊት መድሃኒት አልወሰድኩም ብለው ያስባሉ?	0. አዎ 1. አይ
606	የደም ግፊት በቁጥጥር ስር እንደዋለ ሲሰማዎት አንዳንድ ጊዜ መድሃኒትዎን መውሰድ አቁመው ያቃሉ?	0. አዎ 1. አይ
607	ለአንዳንድ ሰዎች በየቀኑ መድሃኒት መውሰድ እውነተኛ ምቾት ማጣት ነው ።። የደም ግፊት መድሃኒቶትን ሐኪም ባዘዞሎት መሰረት የመውሰድ እቅዶትን ሲያስቡት የመሰልቸት ሰሜት ተሰምቶታል?	0. አዎ 1. አይ
608	ሁሉንም የደም ግፊት መድሃኒቶን አስታውሰው ለመውሰድ ይቸገራሉ?	1 ሁል ጊዜ 2. በተለምዶ 3. አንድ አንዴ 4. አልፎ አልፎ 5. በጭረሽ

አመሰግናለሁ!!

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