

**ENSIGN GLOBAL COLLEGE, KPONG
EASTERN REGION, GHANA**

**FACULTY OF PUBLIC HEALTH
DEPARTMENT OF COMMUNITY HEALTH**

**ADHERENCE TO ANTIHYPERTENSIVE MEDICATIONS AMONG PATIENTS
ATTENDING AKUSE GOVERNMENT HOSPITAL IN THE EASTERN REGION OF
GHANA**

By

**AMARIAH KADMIEL AGBALENYOH
(217100215)**

AUGUST, 2022

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**A THESIS SUBMITTED TO THE DEPARTMENT OF COMMUNITY HEALTH, FACULTY
OF PUBLIC HEALTH, ENSIGN GLOBAL COLLEGE IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE
MASTER OF PUBLIC HEALTH DEGREE**

AUGUST, 2022

DECLARATION

I hereby certify that except for references duly cited for other people's work, this project submitted to the faculty of Public Health, Ensign Global College, Kpong is the result of my investigation under the supervision of Dr Edward Kofi Sutherland, and has not been presented for any other degree elsewhere.

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Certified by:

Dr Stephen Manortey
(Head of Academic Program)	Signature	Date

DEDICATION

I dedicate this work to the Almighty God for his kind mercies and abundant grace.

ACKNOWLEDGEMENT

I humbly thank the Lord God Almighty for his blessings and the gift of life, and my family and loved ones for helping me come this far with their tremendous support.

I express my sincere appreciation to my Parents – Apostle & Mrs. Kadmiel E. H. Agbalenyoh for their financial, moral and spiritual supports.

I acknowledge the immense contributions, corrections and productive criticisms of my supervisor Dr Edward Sutherland.

My gratitude to the Management and Medical and nurses team at the Outpatients unit of Akuse Government Hospital headed by Dr. Mrs. Edna Asamoah–Agyare for allowing me to carry out the research at the hospital.

I am grateful to all my classmates especially, Mr Raymond Amenya for their awesome support this whole period.

DEFINITION OF TERMS

Hypertension - an elevated systolic blood pressure (SBP), diastolic blood pressure (DBP), or blood pressure that is greater than 140/90 mmHg.

Medication adherence is the ratio of drug doses taken to doses recommended over a specified period, such as the medication possession ratio (MPR)

ABBREVIATION/ACRONYMS

AIDS	Acquired Immune Defficiency Syndrome
BP	Blood Pressure
CV	Cardiovascular
CVD's	Cardiovascular Diseases
DBP	Diastolic Blood Pressure
HB MAS	Hill Bone Medication Adherence Scale
HIV	Human Immunodeficiency Virus
HPT	Hypertension
LMMHD	Lower Manya Krobo Municipal Health Directorate
MNA	Medication Non-Adherence
NCD	Non-Communicable Diseases
OPD	Outpatients Department
SBD	Systolic Blood Pressure
SSA	Sub Saharan Africa
WHO	World Health Organization

ABSTRACT

Background: Only about half of persons take their prescribed prescriptions for chronic illnesses. The main objective of the study is to determine the factors associated with the adherence to antihypertensive treatments amongst patients at the Akuse Government Hospital at Akuse in the Lower Manya Krobo Municipality of the Eastern Region of Ghana.

Methodology: This study employed a descriptive cross-sectional quantitative approach. The Hill-Bone Medication Adherence Scale (HB-MAS) was used for data collection. Data were analysed using STATA 17 and the results obtained were expressed as frequencies and percentages. Bivariate and Multivariate analyses were also conducted to assess the association between sociodemographic variables and adherence.

Results: Majority of the respondents were males with the highest ages of 50-59 years. There was a high adherence to antihypertension medications with a percentage of 85. Statistically significant association was found between antihypertensives adherence and age with a (p-value=0.04) and the bivariate analysis also found a significant association between marital status and adherence to antihypertensives with p-value=0.016.

Conclusion and Recommendation: There is a high level of adherence measured among the out-patients - 85%. It is recommended that the public health unit continues to ensure patients are educated well on their condition to enable them to become more adherent

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CHAPTER 1

1.0 INTRODUCTION

1.1 Background of the Study

One of the greatest issues with public health is a lack of drug adherence (Brown and Bussell, 2011). One of the most prevalent non-communicable diseases worldwide is hypertension (Gupta and Xavier, 2018). Hypertension is defined as a consistent rise in systolic blood pressure (BP) of 140 mmHg or higher and/or diastolic BP of 90 mmHg or higher, measured at least twice on two distinct occasions (Gemmechu and Awel, 2020).

Worldwide, more than 26% of adults have been diagnosed with hypertension, and the risk of developing hypertension increases with age. The chance of developing heart, brain, kidney, and other problems might arise due to this significant medical condition (WHO, 2021).

More than a million people around the world; 1 in 4 men and 1 in 5 women—have the illness, which makes it a major cause of premature death. Two-thirds of instances of hypertension are found in low- and middle-income nations, where the disease is more prevalent. This is partly because risk factors have risen in these populations over the past few decades (WHO, 2021).

The incidence of hypertension in Sub-Saharan Africa is reported to reach 38% in some areas, with a projected increase by 2025 (Desormais *et al.*, 2019). According to research, around 50-70% of hypertension individuals do not take their antihypertensive medication as prescribed (Asgedom, Atey and Desse, 2018) and poor adherence has been recognized as the leading cause of uncontrolled blood pressure.

The prevalence of adult hypertension in Ghana is growing, ranging from 19% to 48%, according to the Ghana Health Service Report 2017 for the year under review (GHS, 2017). Further studies indicate that about 70% of people with hypertension are not taking medication (Atibila *et al.*, 2021).

Treatment Adherence is defined by the World Health Organization in the context of chronic conditions disorders as “the extent to which a person’s behaviour concerning taking medication, following a diet, and/or executing lifestyle changes, corresponds with agreed recommendations from a healthcare provider” (WHO, 2003).

Only about half of persons take their prescriptions for chronic illnesses, and in the case of high blood pressure (BP), low concentrations of adherence are attributed to worse BP control and adverse additional medical and psychosocial complications, such as stroke, myocardial infarction, heart failure, and death which can lead to, a reduction in quality of life, and waste of health care resources, all of which are potential burdens on the healthcare system. Despite the availability of medicines that can lower blood pressure and lower the risk of stroke, kidney disease, and cardiovascular disease, uncontrolled blood pressure and poor antihypertensive treatment adherence continue to pose significant clinical and public health issues (Gemmechu and Awel, 2020).

Factors influencing adherence are caused by patients' lack of awareness of hypertension and its treatment, as well as health-seeking behaviours and self-perceived views about hypertension and antihypertensive medication. Studies have shown that when hypertension is well-controlled, the rates of cerebrovascular disease and cardiovascular disease are reduced (Olowookere *et al.*, 2015). This study determines the factors associated with the adherence to antihypertensive treatment amongst patients at the Akuse Government Hospital at Akuse in the Lower Manya Krobo Municipality of the Eastern Region of Ghana.

1.2 Problem Statement

Although blood pressure control has improved, hypertensive patients continue to struggle with poor medication adherence, which has been identified as one of the primary causes of blood pressure control failure (Carey *et al.*, 2018).

According to a research done in Eritrea, there is alarmingly little awareness of hypertension and a significant incidence of non-adherence (28%) to anti-hypertension drugs. Decentralization of educational assistance and health care services was a crucial intervention avenue for this demographic overall (Mebrahtu *et al.*, 2021).

According to (Najjuma *et al.*, 2020), In sub-Saharan Africa (SSA), health prevention and treatment activities continue to be mainly focused on communicable diseases like tuberculosis, HIV, and malaria even though hypertension is the most prevalent noncommunicable disease (NCD). Cardiovascular morbidity and mortality in Africa are mostly caused by the failure to recognize and treat hypertension. Although strategies for better hypertension detection and treatment have been developed and put into practice globally, poorly managed hypertension and its complications continue to be a major cause of morbidity and mortality in Sub-Saharan Africa (van de Vijver *et al.*, 2013).

More recently, less than half of Ghana's hypertension patients are aware of their condition. Common behavioural modifications constitute a low-cost approach for prevention given the consistently alarming HPT statistics worldwide and particularly in Ghana. In addition, adherence to both pharmaceutical and non-pharmacological therapy and diagnosis, commencement, and retention of care is crucial for patients with Hypertension to minimize the ensuing cardiovascular problems (Woode *et al.*, 2022).

Poor medication adherence is one of the reasons for poor blood pressure management in people living with hypertension, and it accounts for a rising significant and large public health burden.

Poor adherence has been linked to inappropriate drug over-prescription, considerable disease progression, unwarranted increases in hospital admission rates, and longer hospital stays, resulting in a large medical cost. Improving adherence to antihypertensive drugs through changes in medication-taking behaviour is a critical public health priority (Lee *et al.*, 2013).

In Africa, a study to assess the adherence to antihypertensive medications among adult hypertensive patients attending chronic follow-up units found good adherence to antihypertensive medications at 51.9% (Andualem *et al.*, 2021). And also patient-related variables, societal and economic issues, health system/health care team-related factors, and therapy-related factors are all possible factors that influences medication adherence (Roldan, Ho and Ho, 2018).

The level of adherence varies greatly across industrialized and developing nations as well as between urban and rural communities. According to a study conducted in Ghana and Nigeria, adherence was found to be 27.5% in Ghana (Boima *et al.*, 2015). A study conducted in two district hospitals in Ghana found three independent determinants of adherence to medications. These included awareness of hypertension, assessment of the severity of their disease, and amount of alcohol taken per day. Oral antihypertensive medication adherence was 89.2%. However, it indicated that more than half of these respondents had uncontrolled blood pressure (Sarkodie *et al.*, 2020).

There is insufficient data on the degree of adherence in rural areas with poor healthcare facilities. More study is needed to assess the degree of adherence and factors influencing adherence in rural settings so that immediate strategies to enhance adherence to medicine can be implemented to lower CVD mortality and morbidity. This study aims to assess the drug adherence profiles of

patients of Akuse Government Hospital prescribed antihypertensive agents and to examine the factors associated with antihypertensive drug adherence among these patients.

1.3 Rationale of Study

According to WHO, many persons with hypertension are unaware of their disease because it has no signs and symptoms, it has been termed the "silent killer" (WHO, 2021). When it is diagnosed, it can be controlled with frequent drug intake to prevent problems. The need to conduct this study is to identify factors related to the adherence to antihypertensive medications of patients at Akuse Government Hospital. This study will provide the evidence needed to create strategies that may lead to increased adherence to medication, hence preventing the devastating impacts of hypertension.

1.4 Conceptual framework

To determine factors affecting medication adherence, several models and theories have been created and put to use. The best fit of a model's or theory's components to various practice units should be considered while choosing a model or theory. This section provides an overview of the theories used in medication adherence research and intentional and unintentional medication non-adherence.

The model was adapted from Murwanashyaka et al (2022) based on the Ecological model which included factors related to adherence to medications. These factors include Sociodemographic including Age, Gender, Marital Status, and education; Socioeconomic factors also including Income, occupation and NHIS Status; and Socio-cultural such as Religion. In both developed and developing nations, socio-demographic factors have been shown to impact drug adherence. The model depicts how a patient's age might affect drug adherence. Furthermore, the patient's

education level, religion, marital status, income, and employment are all possible predictors of medication adherence. These factors act through intermediate variables to influence adherence to medication by patients. These intermediate factors include duration of treatment and medication behaviour. Other associations between these variables might be revealed in the study.

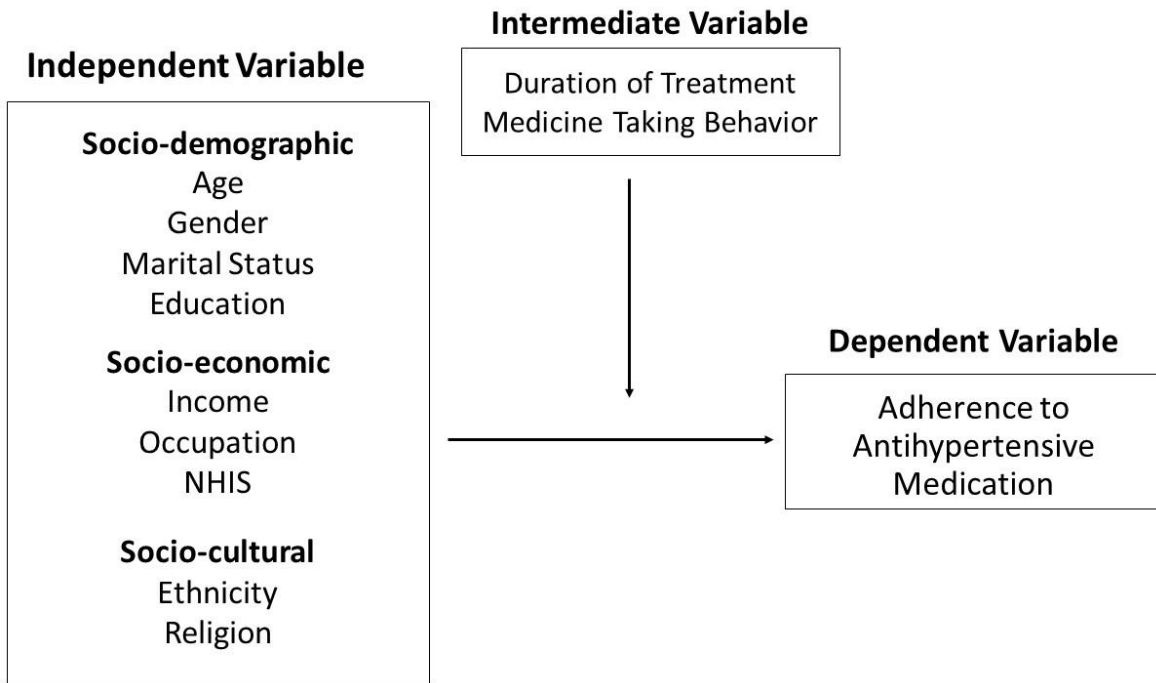


Figure 1: Conceptual Framework of the study

Source: (Murwanashyaka *et al.*, 2022)

1.5 Research Questions

- i. What is the socio-demographic profile of People living with hypertension presenting at the Akuse Government Hospital?
- ii. What is the level of adherence of patients to antihypertensive medication at Akuse Government Hospital?

- iii. What are the factors associated with adherence to antihypertensive medications at Akuse Government Hospital?

1.6 General Objective

To determine the factors associated with the adherence to antihypertensive treatments amongst patients at the Akuse Government Hospital at Akuse in the Lower Manya Krobo Municipality of the Eastern Region of Ghana.

1.7 Specific Objectives

- i. To assess the socio-demographic profile of profile of People living with hypertension presenting at the Akuse Government Hospital
- ii. To determine the level of adherence of patients to antihypertensive medication at Akuse Government Hospital.
- iii. To evaluate factors associated with adherence to antihypertensive medications at Akuse Government Hospital.

1.8 Profile of the Study Area

The study was carried out in the Lower-Manya Krobo District's at Akuse Government Hospital. The Lower Manya Krobo District has an estimated population of 114,068 as projected from the 2010 Population census with a growth rate of 2.3 in the Eastern Region of Ghana. Akuse has an estimated population of 9,186 people, and its natural growth rate is steady. Akuse Government Hospital, Atua Government Hospital, St. Martins De Porres Catholic Hospital, and Kpong Health Center are the three out of four healthcare institutions in the district. In all of the districts, there are additional private healthcare facilities, such as clinics and maternity homes (LMMHD, 2021).

As a reference hospital for clinics, CHPS compounds, health centers, and private hospitals in and around the area, the Akuse Government Hospital has been in operation since 1911. Its divisions include Out-Patient, Medical, Surgical, Maternity, Antenatal & Postnatal Care, Family Planning, Theatre, Eye, X-Ray, Voluntary Counseling and Testing, Prevention of Mother-to-Child Transmission (PMTCT), Psychiatric, Pharmacy, Laundry, and Mortuary. Health insurance and out-of-pocket spending are the two ways that health services are paid for. A total of 29,223 people attended OPD in 2021, of whom 25,081 (85.8%) had insurance and 4,142 did not. There were 20,732 females and 8,491 men (29.1%).

Source: Akuse Government Hospital (2021).



Map 1: A map of the Akuse Community

Source: Google Map

1.9 Scope of Study

This study examined medication adherence among patients with hypertension at Akuse Government Hospital as well as the contributing factors. The sociodemographic characteristics of profile of People living with hypertension admitted to the Akuse Government Hospital were

covered. The study also measured the level of patient adherence to their antihypertensive medication at Akuse Government Hospital. The relationship between the sociodemographic variables and the level of adherence among the patients in the hospital was also identified in the study.

1.10 Organization of Report

This research report consists of six Chapters. Chapter One consists of the Introduction, which includes the background of the study, problem statement, research objectives, and general and specific objectives. The Chapter also describes the rationale, profile of the study, the scope of the study and the organization of the report. Chapter two reviewed published literature of different authors on Hypertension, adherence to medications, and a factor associated with adherence to antihypertensive medications among patients diagnosed with hypertension. Chapter three outlines and focuses on the methodological approach utilized in the study and how the data collected was organized. It also dealt with how ethical issues were handled in the study. Chapters four and five cover the results and discussion of the study respectively. Reviewed Literature is used in the discussion in Chapter five with the findings of the study. Finally, Chapter six presents' conclusions and recommendations drawn from the study.

CHAPTER 2

2.0 LITERATURE REVIEW

2.1 Introduction

The overview of the literature is provided in this chapter, which aims to discuss research on anti-hypertensive medication adherence among adults visiting outpatient clinics in some developed and developing nations.

2.2 Definition of Hypertension

According to Schiffrin, Calhoun and Flack (2016) hypertension is characterized by elevated systolic blood pressure (SBP), diastolic blood pressure (DBP), or blood pressure that is greater than 140/90 mmHg. Hypertension can also be defined as a consistent rise in systolic blood pressure (BP) of 140 mmHg or higher and/or diastolic BP of 90 mmHg or higher, measured at least twice on two distinct occasions (Gemmechu and Awel, 2020).

2.2.1 Classification of Hypertension

According to the major guidelines, hypertension should be diagnosed when a person's systolic blood pressure (SBP) in the clinic or doctor's office is greater than 140 mm Hg and/or their diastolic blood pressure (DBP) is less than 90 mm Hg (Unger *et al.*, 2020).

Table 1 Classification of Hypertension

Category	Systolic (mmHg)		Diastolic (mmHg)
Normal	<130	And	<85
High Normal	130 – 139	And / Or	85 – 89
Grade 1 Hypertension	140 – 159	And / Or	90 – 99
Grade 2 Hypertension	≥160	And / Or	>100

Source: (Unger *et al.*, 2020)

2.2.2 Diagnosis of Hypertension

Accurate blood pressure readings are essential for the diagnosis of hypertension. For all individuals with hypertension, medical history and physical exam are required (Brown and Bussell, 2011). Searching for reversible precipitating causes, the presence and/or degree of end-organ damage, and the presence of extra cardiovascular (CV) risk factors like smoking or diabetes are the key objectives. All hypertensive individuals should also undergo laboratory testing (Nguyen *et al.*, 2010).

2.2.3 Management of Hypertension

Medication or lifestyle changes can both be used to control hypertension. Dietary adjustments and exercise are part of the lifestyle improvements. Reduced consumption of salt and saturated fat is necessary for those with hypertension. The patient is also advised to maximize their consumption of fruits, vegetables, and whole grains (Nguyen *et al.*, 2013). The DASH diet, which is high in fruits, vegetables, low-fat dairy, and low in saturated and total fat, was randomly assigned to subjects in the Dietary Approaches to Stop Hypertension (DASH)-sodium trial, which was conducted in the US. The managed diet, which is a typical US diet high in fat and low in fruits, vegetables, and dairy products, was also offered to the subjects. The trial found that both SBP and DBP could be reduced with adherence to a dietary regime for hypertension management (Bray *et al.*, 2004). Physical exercise is another non-drug method of managing hypertension in people with high blood pressure. Regular physical activity is shown to be critical in lowering blood pressure. Accordingly, aerobic exercise has an anti-inflammatory impact through the sympathetic nervous system and the hypothalamic-pituitary-adrenal axis, directly lowering BP, whereas medicines have limited effectiveness in reducing inflammation and its associated morbidity and mortality. Furthermore, it has been proven that consistent isometric

exercise resets the baroreceptors, resulting in long-term blood pressure reduction and an improvement in the effectiveness of antihypertensive medications (Ghadieh and Saab, 2015).

Reduced alcohol consumption reduces blood pressure in a dose-dependent way with what appears to be a threshold effect. In nations with high alcohol-attributable risk, implementing effective alcohol interventions in those who consume more than two drinks per day would lower the disease burden from alcohol intake and hypertension (Roerecke *et al.*, 2017). If lifestyle changes are not sufficient to achieve the desired goal of reducing high blood pressure, drug therapy is required (Nguyen *et al.*, 2010).

2.3 Adherence to Medication

According to Morrison, Stauffer and Kaufman, the standard definition of medication adherence is the ratio of drug doses taken to doses recommended over a specified period, such as the medication possession ratio (MPR) (Morrison, Stauffer and Kaufman, 2015). Based on Haynes' definition of adherence to antihypertensive medicine as taking 80% of pills, the canonical threshold for adherence is 80%. The standard method for determining whether a patient is taking their medicines as directed or not is to use an arbitrary cutoff point for the percentage of doses that are taken.

2.3.1 Adherence to Hypertension Medication

According to the World Health Organization (WHO), the prevalence of non-adherence to antihypertensive medication ranges between 30% and 50% per year. This disparity is due to differences in a drug class, type of prevention, and methods used to assess adherence (Naderi, Bestwick and Wald, 2012).

The greatest modifiable element in the management of hypertension continues to be medication adherence. The complexity of adherence and blood pressure (BP) regulation necessitates multifaceted, patient-centred approaches to boost compliance. Simplifying treatment plans, lowering out-of-pocket expenses, using allied health professionals to administer interventions, and self-monitoring blood pressure are all promising ways to increase adherence to antihypertensive medications and BP control (Peacock and Krousel-Wood, 2017).

2.4 Factors Affecting Adherence to Hypertensive Medication

It is important to comprehend the numerous elements that might affect how well patients take their antihypertensive medications. This is because antihypertensive medication noncompliance has been linked to a high prevalence of sequelae from hypertension. There have been identified certain patient characteristics, health-related, medication-related, healthcare provider, and health-system aspects. The influence of a single aspect, such as smoking status or gender differences, has been the subject of several research; nonetheless, the problem of non-adherence is multidimensional. Therefore, before making any strong judgments, it is vital to look at a number of aspects. Socio-demographic features of patients and clinical or therapy-related elements are highly stressed in order to adhere to the research's aims and purpose.

According to one study, non-adherence rates were highest among young adults (aged 18-44 years), Hispanics, and those with the lowest annual income of \$25,000 in the United States (Tong *et al.*, 2016). In another study, being employed and having a very poor self-perceived health status were found to be detrimental to drug adherence (Lee *et al.*, 2013)). In Hong Kong, it was discovered that ageing, living alone, and treatment control approach was all individuals associated with increased differences in medication adherence (Lo *et al.*, 2020).

In therapeutic practice, adherence might refer to a patient taking their meds as directed, and perseverance could refer to a patient continuing their therapy for the full duration of time necessary. According to the same measurements, between 30% and 70% of patients reported having subpar adherence to their antihypertensive medications (Webster, 2010).

2.5 Consequences of non-adherence to antihypertensive medication

Affordable medicine is a crucial factor to take into account since cost is a barrier to medication adherence, especially in low- and middle-income nations where hypertension is a major public health problem. This is more of a concern in various regions of the world, according to a recent systematic review of the literature on antihypertensive medication non-adherence among adults in poor and middle-income nations. Patients who are unable to pay for their prescriptions frequently choose not to take them, which affects the treatment initiation and persistence aspects of adherence. One of the cost factors is the escalation of therapy, which is impacted by poor adherence, treatment failure, illness progression, and more sophisticated therapies. Payers believe that adherence is linked to higher costs, and there is a need to make people aware that reimbursement to avoid treatment escalation is beneficial. Notwithstanding, the key message remains that the number of non-adherent patients is high, putting the healthcare budget at risk (Vrijens *et al.*, 2017).

2.6 Hill Bone Medication Adherence Scale

The Hill-Bone Medication Adherence Scale is formerly called the medication sub-scale of the original Compliance to High Blood Pressure Therapy Scale (John Hopkins University, 2022). This was reviewed and upgraded for the second version type 2 as Hill-Bone Medication Adherence Scale. The HB MAS is used in the Clinical setting. This Medication Adherence

scale is a nine-item scale that can be used to assess one's medication adherence for a variety of chronic diseases and disorders. The Medication Adherence Scale is a helpful tool to assess medication adherence in patients with a variety of conditions, including hypertension, diabetes, chronic obstructive pulmonary disease, and stroke (John Hopkins University, 2022).

The HB MAS Scale is used to assess patient behaviours on medication taking across these chronic to ascertain the adherence level indicated in order to develop suitable interventions. It is a self-administered questionnaire with the responses "All of the time," "Most of the time," "Some of the time," and "None of the time" which are scored 1, 2, 3, and 4, respectively. Each respondent has a total score, which ranges from 9 to 36. Respondent scoring between 28 and 36 are deemed to be high adherent, those scoring between 19 and 27 deemed to be moderately adherent, and those scoring between 9 and 18 are deemed to be low adherent (Raja *et al.*, 2021).

CHAPTER 3

3.0 METHODOLOGY

3.1 Research Methods and Design

This study used a quantitative research method and a descriptive cross-sectional research design. A cross-sectional study is an observational research type used to analyse data collected at one given point of time across the sample population. Quantitative research was used to gather and convert data into numerical form for analysis.

3.2 Study Population

The study was conducted amongst patients who are diagnosed with hypertension at Akuse Government Hospital. Akuse Government Hospital is located at Akuse in the Lower-Manya Krobo District. The study focused on hypertensive patients whose age is 30 years who visit the Akuse government hospital.

3.3 Sampling

The sample of a study is a section of the population whose properties are studied to gain information about the whole population. The desired level of precision was 5%. The estimated sample size was adjusted upwards by 5% to account for any misplaced questionnaires thus the total sample size of 369.6. This was approximated to 370.

According to Boima et al, the level of drug adherence among hypertensive patients is 67% (Boima *et al.*, 2015). The researcher hence used the prevalence in this to calculate the sample size.

Using Cochran's formula (Cochran, 1977) for cross-sectional study for sample size calculation, as shown below;

$$n = \frac{Z^2 \times pq}{e^2}$$

Where,

n = sample size

Z = the z-score that corresponds with a 95% confidence interval which is 1.96

p = Prevalence of hypertensive patients' drug adherence is 67%. (0.67)

q = Proportion of which people who don't self-medicate is equal to $1 - p = 1 - 0.67 = 0.33$

e = Margin of error set at 5% (0.05)

Therefore,

$$n = \frac{(1.96)^2 \times (0.67 \times 0.33)}{(0.05)^2} \cong 336$$

A non-response rate of 10 % was added to the projected total number ($336 + 33.6 \cong 369.6$).

Hence a total sample size of 370 individuals was used.

3.4 Data Collection Techniques and Tools

The Hill-Bone Medication Adherence Scale is a structured, standardized survey questionnaire that was employed in this study as a data gathering instrument (HB-MAS). Asantewaa Abeasi claims that Abugri and Osei Akumiah (2022) used the HB-MAS tool to carry out comparable study in Bawku, Upper East - Ghana. The study was conducted in the Upper East area of Ghana at the Hypertension Clinic of the Bawku Presbyterian Hospital. In 2020, 269 hypertensive people

who were referred to the clinic were collected using a convenience sample technique. The majority of patients (59.5%) had significant levels of poor adherence to antihypertensive treatment (Asantewa Abeasi, Abugri and Osei Akumiah, 2022). The questionnaire was adopted and used to collect data from the patients. The questionnaire contained close-ended Likert – scale questions for participants to choose from required options. The questionnaires were printed and disseminated to the patients who fit into the inclusion criteria in Akuse Government Hospital who are on medication and consent to participate in the study. Data collection was conducted between July 2022 and August 2022.

3.5 Study Variables

Adherence among individuals with high blood pressure was the study's primary outcome measure. These variables are categorised into three, namely; Independent including Sociodemographic factors, Socio-economic factors and Sociocultural factors; Intermediate which includes Duration of treatment and Medicine taking behaviour; and Adherence to antihypertension medication being the dependent variable. This was measured by using Hill-Bone Medication Adherence Scale (HB-MAS). Responses related to personal data were provided by ticking from the alternatives given respectively to the questions provided. Few responses were either 'yes' or 'no' associated with questions 9, 11 and 12 respectively.

3.6 Pre-testing

A pre-test was conducted on 10 patients at Sufficient Grace Theocracy Hospital at Pokuase among patients who fit the inclusion criteria. The aim of the pre-testing was to identify errors and find whether the instrument or tool used provided accurate results as intended. Also, this was used to testify whether questions were clear and understandable. Corrections were made and the

questionnaire was re-structured to suit the respondents. Results from the pretesting were not included in the main study.

3.7 Data Handling

Standardized questionnaires were exercised to obtain uniform and quality data. The questionnaires were checked for completeness before data entry. Questionnaires were numbered before entry to avoid duplication. Data was stored in a secure drive to ensure confidentiality. Following that, Microsoft Excel was used for the data entry after it was carefully cleaned and coded. The principal investigator was in charge of data handling.

3.8 Data Analysis

A statistical software tool - STATA, version 17.0 was used to analyse the data retrieved. Descriptive statistical analysis was carried out to obtain summary tables and graphs containing the demographic characteristics of the study participants. Results obtained were expressed as frequencies and percentages. Bivariate and Multivariate analyses were also conducted. The HB MAS Scale was used in the analysis to evaluate the responses to assess medication adherence levels. This tool used a self-administered questionnaire with the responses "All of the time," "Most of the time," "Some of the time," and "None of the time" with it scores 1, 2, 3, and 4, respectively. Each respondent had a total score, which ranges from 9 to 36. The respondent who scored between 28 and 36 were deemed to be high adherent, those who scored between 19 and 27 were deemed to be moderately adherent, and the least score range was deemed to be low adherent.

3.9 Ethical Consideration

The Research Ethics Committee of Ensign Global College approved this study after their review of the proposal as attached in appendix 1. Approval from the Ghana Health Service and the Akuse Government Hospital administration was also sought as attached to appendix 2.

A consent form was given out to these patients who agreed to be involved. Participants had enough time to consider the facts and the questions posed. For those who were unable to read, the information was presented to them in a language they could understand, and they were then asked to thumbprint as admission into the study.

All participants were guaranteed their privacy and that their identities would be protected in disseminating the findings of this study.

3.10 Limitations of Study

Some of the Participants may not provide accurate response to the questions due to their social status and for a personal reason especially about the income level. The researcher is not sure as to whether they took their medication as indicated or provided.

CHAPTER 4

4.0 RESULTS

4.1 Introduction

This chapter describes the outcomes of the study conducted in the Akuse government hospital about factors associated with adherence to antihypertensive medication. It presents the socio-demographic profile of hypertensive patients, Adherence level and associated factors to adherence and socio-demographic variables. Out of the 370-sample size, 360 patients correctly answered the administered questionnaires for the study.

4.2 Socio-Demographic Data

Table 2: Sociodemographic characteristics

Variables	Frequency (n)= 360	Percentage (%)
30 - 39yrs	61	16.9
40 - 49yrs	72	20.0
50 - 59yrs	86	23.9
60 - 69yrs	69	19.2
70yrs and above	72	20
Gender		
Male	202	56.1
Female	158	43.9
Level of Education		
No formal Education	40	11.1
Primary	35	9.7
JHS	60	16.7
SHS/Vocational/Tech	110	30.6
Tertiary	115	31.9
Marital Status		
Married	245	68.1
Single	27	7.5
Separated/Divorced	27	7.5
Widowed	40	11.1
Cohabiting	21	5.8
Ethnicity		
Akan	50	13.9
Ga	32	8.9
Ewe	63	17.5
Krobo	213	59.2
Other	2	0.6

Religion		
Christianity	304	84.4
Islam	33	9.2
Traditional	22	6.1
Others	1	0.3
Work of Respondent		
Student	6	1.7
Unemployed	28	7.8
Government Sector Worker	75	20.8
Private Sector Worker	70	19.4
Farmer	50	13.9
Trader	90	25.0
Retired	41	11.4
Income Level		
None	17	4.7
<500	77	21.4
501 - 1000	134	37.2
1001 - 1500	50	13.9
1501 - 2000	39	10.8
2001 - 2500	25	6.9
2501 - 3000	11	3.1
>3001	7	1.9

(Source- Field Survey, 2022)

From the study, 24% of the respondents whose ages falls between 50yrs and 59yrs have the highest number of respondents as indicated in the table above. Also, 56% of the respondents are males whilst the rest are females.

Among the respondents, 32% attained tertiary education, 30% had either SHS, vocational or technical education, 17% had attained a Junior High School education, and 10% and 11% of the respondent had primary education and non-formal education respectively.

The majority of the patients who responded to the questionnaires are married representing 68% whiles 11% are widows and the others represent the Singles, separated or divorced and cohabiting respectively with 7%, 8% and 6%. This is shown in the figure below.

From the study conducted, 59% of the respondents are Krobo, 17% are Ewe, 14% are Akan, and the remaining 9% and 1% represent the Gas and other languages respectively. This is also represented in the bar chart below.

Most of the Respondents are Christians represented by 85% whiles Islam and Traditional are represented by 9% and 6%. None of the respondents belongs to any other religion apart from the above-stated.

From the data collected, the majority of the respondents, 25% are traders while 21% are government employed, 19% of them are private workers, 14% are farmers, 11% of the respondents are retired and the remaining 8% and 2% are unemployed and students respectively.

Among the respondents, the majority of them earn 500 to 1000 represented by 37%. 21% of the respondent earn less than GH¢500 a month followed by 14% of respondents who earn between 1000 and 1500 Ghana cedi a month and the rest is represented by 11%, 7%, 3% and 2% respectively earn among 1501 – 2000, 2001 – 2500, 2501 – 3000 and >3,000 whiles 5% of the patients refuse to make known of the salary range.

4.3 Antihypertensive medication Related

Table 3: HPT Existence

Variable	Frequency (n)	Percentage (%)
HPT Duration		
1-3yrs	118	32.8
4-6yrs	145	40.3
7-9yrs	69	19.2
>10yrs	28	7.8
Other Chronic Diseases Exist		
Yes	123	34.2
No	237	65.8

(Source: Field survey, 2022)

From the data collected, the majority of the hypertensive patients indicated their hypertension duration as 4-6 years with a percentage of 40% with the least duration to be more than 10yrs (8%) Also, the majority of the respondents i.e. 66% do not have any other chronic diseases attached to HPT whilst the others have confirmed they have other chronic diseases. This is illustrated in figure 5.

The chart below further describes the 123 patients who have other chronic diseases apart from hypertension; 48% of the 123 patients have diabetes, which is closely followed by 13% of patients with sickle cell. 15% of respondents in this category are asthmatic, 10% are male patients with prostate enlargement, 8% of these patients are with HIV/AIDS infection while the remaining 5% and 4% have confirmed that they have cancer and tuberculosis respectively. This is further shown in the figure below.

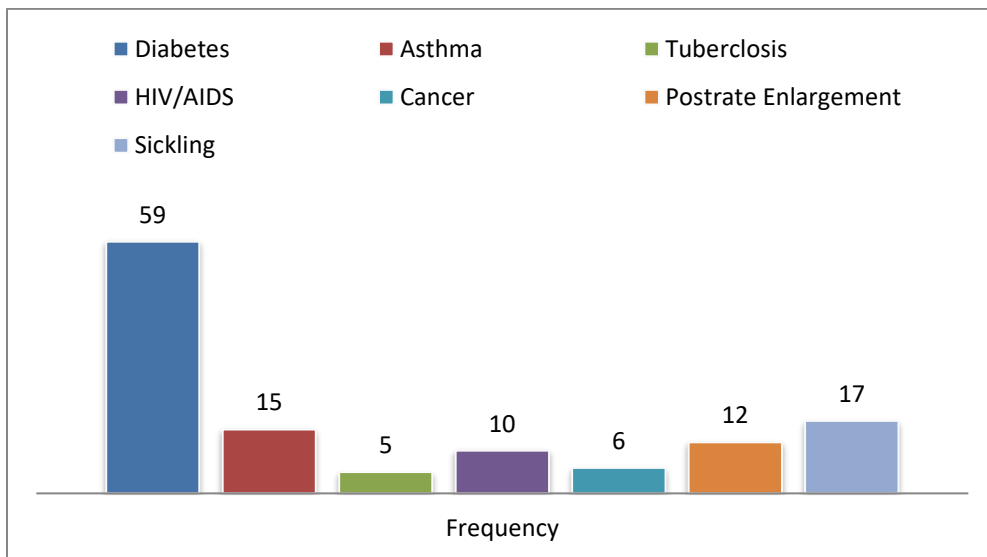


Figure 2 Other Chronic Diseases of respondents

Out of the 360 respondents to the questionnaires, the majority of the patients who visit the hospital for their Hypertension Medications are registered under the National Health Insurance

Scheme. This is represented by 97% whilst the rest did not have National Health Insurance. This is shown in the chart below.

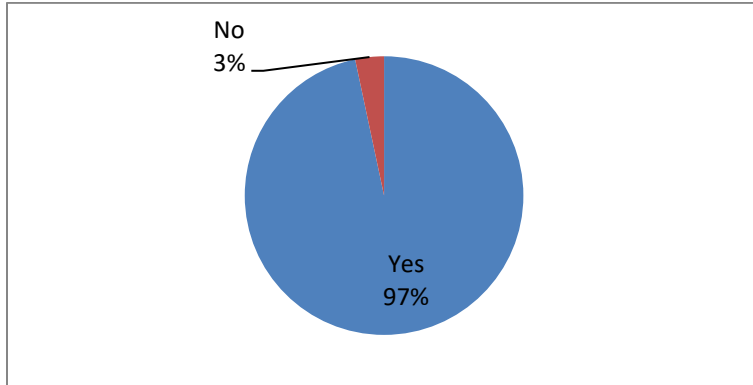


Figure 3 NHIS Status of respondents

4.4 Adherence to anti-hypertensive treatment

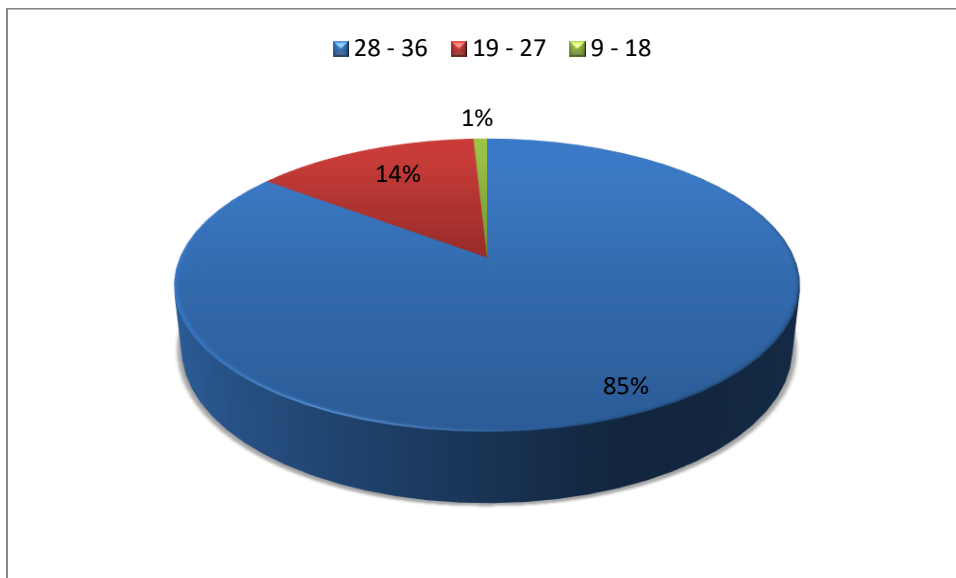


Figure 4 Adherence score

The patients' adherence to anti-hypertensive treatment is shown in the table above. Out of 360 patients who received anti-hypertensive treatment, 307 (85%) patients scored between 28 and 36 indicating high adherence to anti-hypertensive treatment while 50 (14%) are moderate adherence

with the score falling between 19 and 27 while the least representing the low adherence rate.

This is also represented in the chart below.

4.5 HBB Scale Adherence

Below is the adherence scale used in measuring the adherence of respondents and the results shown in percentages

Table 4 HBB Scale Adherence

HILL BONE MAS	All of the Time	Most of the Time	Some of the Time	None of the Time
	Freq(%)	Freq(%)	Freq(%)	Freq(%)
How often do you forget to take your high blood pressure medicine?	18(5.0)	39(11.1)	99(26.9)	205(56.9)
How often do you decide NOT to take your high blood pressure medicine?	9(2.5)	17(4.7)	78(21.7)	256(71.0)
How often do you forget to get prescriptions filled?	10(2.8)	22(6.1)	113(31.4)	215(59.7)
How often do you run out of high blood pressure pills?	6 (1.7)	20(5.6)	92(25.6)	242(67.2)
How often do you skip your high blood pressure medicine before you go to the doctor?	5 (1.4)	22(6.1)	102(28.3)	231(64.2)
How often do you miss taking your high blood pressure pills when you feel better?	11 (3.1)	46(12.8)	113(31.5)	190(52.7)
How often do you miss taking your high blood pressure pills when you feel sick?	12 (3.3)	18(5.0)	80(22.3)	250(69.4)
How often do you take someone else's high blood pressure pills?	6 (1.7)	11(3.1)	24(6.7)	319(88.6)
How often do you miss taking your high blood pressure pills when you are careless?	5 (1.4)	14(3.9)	25(6.9)	316(87.8)

Source: (Field Survey, 2022)

Majority of the responded (56%) took their High Blood Pressure prescription without forgetting it and 71% of the HPT patients interviewed responded that they decided to take their medications all the time. Moreover, 67% of the HPT patients who responded never run out off drugs, however, 25% sometimes run of drugs. Patients who participated in the study sometimes skipped represented by 28% while the majority of them never skipped their medications before visiting the doctor at the hospital for review. Majority of the respondents did not skip their medications whether they feel better or sick with the rate of 52% and 69% respectively where the few did the otherwise. 88% and 86% representing the majority who responded none of the time for taking someone's medication or were careless to take their medication. This represents that majority of the responded adhere to their medication leading to a high adherence rate.

Table 5: Bivariate Analysis of association between adherence and sociodemographic factors

Variables	Adherence Score remarks		Chi-Square P-value
	Low	High	
Age Range			0.040*
30-39	5	56	
40-49	12	60	
50-59	13	73	
60-69	17	52	
70yrs and above	6	66	
Gender			0.602
Male	28	174	
Female	25	133	
Highest level of education			0.844
No Education	8	32	
Primary	6	29	
JHS	8	52	
S.H.S /Vocational/Technical	16	94	
Tertiary	15	100	
Marital status			0.016*
Married	32	213	
Single	8	19	
Separated/Divorced	8	19	
Widowed	3	37	
Cohabiting	2	19	

Ethnicity			0.103
Akan	8	42	
Ga	8	24	
Ewe	12	51	
Krobo	24	189	
Other	1	1	
Religious affiliation			0.578
Christian	44	260	
Islam	4	29	
Traditional	5	17	
Other	0	1	
Work of Respondent			0.090
Student	1	5	
Unemployed	7	21	
Government Sector Worker	14	61	
Private Sector Worker	10	60	
Farmer	9	41	
Trader	12	78	
Retired	0	41	
Income			0.093
None	2	15	
<500	7	70	
501-1000	16	118	
1001-1500	12	38	
1501-2000	5	34	
2001-2500	6	19	
2501-3000	4	7	
>3000	1	6	

*p<0.05

From the bivariate analysis to find an association between respondents' sociodemographic factors and adherence to hypertensive medication which is illustrated in the table above, a statistically significant association was found between age and antihypertensives adherence with a p-value=0.04 and the analysis also found a significant association between marital status and adherence to antihypertensives with p-value=0.016. All other factors were statistically insignificant.

Multivariate logistic regression of adherence to antihypertensives and sociodemographic factors

Table 6: multivariate logistic regression of adherence to antihypertensives and sociodemographic factors

Variables	Categories	Unadjusted/Crude		Adjusted	
		P-value	OR (95% CI)	P-value	AOR (95% CI)
Age Range	30-39	R	1	R	1
	40-49	0.153	0.44 (0.147-1.35)	0.187	0.43 (0.13-1.49)
	50-59	0.214	0.50 (0.17-1.49)	0.679	0.76 (0.21-2.78)
	60-69	0.017	0.27 (0.09-0.80)	0.053	0.29 (0.08-1.02)
	70yrs and above	0.977	0.98 (0.28-3.40)	0.664	0.71 (0.15-3.30)
Gender	Male	R	1		1
	Female	0.60	0.86 (0.48-1.54)	0.399	0.69(0.285-1.65)
Highest level of education	No Education	R	1	R	1
	Primary	0.752	1.21 (0.37-3.90)	0.533	1.56 (0.39-6.30)
	JHS	0.376	1.63 (0.55-4.76)	0.129	2.85 (0.74-11.03)
	SHS/Voca/Tech	0.422	1.47 (0.57-3.76)	0.220	2.10 (0.64-6.95)
	Tertiary	0.290	1.67 (0.65-4.29)	0.042*	4.37 (1.06-18.06)
Marital status	Married	R	1	R	1
	Single	0.026	0.36 (0.14-0.88)	0.055	0.34 (0.11-1.02)
	Sep'td/Divorced	0.026	0.36 (0.14-0.88)	0.065	0.37 (0.13-1.06)
	Widowed	0.327	0.33 (0.54-6.36)	0.127	3.37 (0.71-16.04)
Ethnicity	Cohabiting	0.643	0.64 (0.32-6.42)	0.856	0.85 (0.16-4.67)
	Akan	R	1	R	1
	Ga	0.319	0.57 (0.19-1.72)	0.550	0.68 (0.19-2.41)
	Ewe	0.674	0.81 (0.30-2.16)	0.719	0.81 (0.26-2.55)
	Krobo	0.359	0.36 (0.63-3.57)	0.495	1.4 (0.51-3.95)
	Other	0.258	0.19 (0.01-3.37)	-	-
Religious affiliation	Christian	R	1	R	1
	Islam	0.714	1.22 (0.41-3.66)	0.365	1.91(0.47-7.73)
	Traditional	0.351	0.61 (0.22-1.73)	0.582	0.71 (0.21-2.37)
Work of Respondent	Unemployed	R	1	R	1
	Gov't Sec W'kr	0.559	1.34	0.04*	6.85(1.09-42.94)
	Private Sec W'kr	0.247	1.85	0.04*	5.7(1.08-30.48)
	Farmer	0.537	1.40	0.171	2.98(0.62-14.27)
	Trader	0.174	2.01	0.086	4.1(0.81-21.59)
Income	None	R	1	R	1
	<500	0.735	1.33 (0.25-7.07)	0.536	1.94 (0.24-15.67)
	501-1000	0.985	0.98 (0.21-4.70)	0.862	0.82 (0.09-7.38)
	1001-1500	0.294	0.42 (0.08-2.12)	0.168	0.20 (0.02-1.98)
	1501-2000	0.913	0.91 (0.16-5.21)	0.449	0.37 (0.03-4.73)
	2001-2500	0.331	0.42 (0.07-2.40)	0.125	0.13 (0.003-1.07)
	2501-3000	0.137	0.23 (0.03-1.59)	0.056	0.06 (0.003-1.08)
	>3000	0.865	0.8 (0.06-10.56)	0.245	0.13 (0.004-4.06)

*p<0.05

From the multivariate logistic analysis, tertiary education was found to have a statistically significant association with adherence to medication with a p-value of 0.042 holding all other variables constant. From the analysis government workers were found to have a higher odd of adhering to antihypertensive medications with an odds ratio of 6.85 and a significant p-value of 0.04. Private sector workers were also found to have a statistically significant association with adherence to antihypertensive medication with a p-value of 0.04.

CHAPTER 5

5.0 DISCUSSION

5.1 Introduction

This chapter delves into the factors that influence a patient's adherence to antihypertensive treatment.

5.2 Socio-Demographic Profile of hypertensive patients

From the study's demographics majority were males with the highest ages of 50-59 years. This complements several studies showing that high blood pressure occurs more in older adults compared to younger age groups. Hypertension is associated with increasing age (Adomako *et al.*, 2021). According to the study, most of the participants (32%) had their highest education as tertiary. More than half, 68% were married. Findings from the study revealed that more than half of the respondents were Krobos and a majority of the respondents (25.0%) were traders and government workers (21%) as per their chosen occupation. It was revealed from the study that 37% had an income level between 501-1000cedis, followed by those who earn less than 500cedis. A few (2%) earned more than 3000cedis.

According to the findings of the study, it was revealed that 145 (40%) have had hypertension for 4 to 6 years and a few (28) have had a duration of hypertension over 10 years.

There were a few comorbidities among the respondents of the study with 123 (34.2%) indicating whiles the remaining 237 (66%) indicated they didn't have any. Among the other chronic diseases, respondents indicated having, the majority (59) of the respondents had diabetes. National Health insurance was a major scheme almost all participants were registered under with a percentage of 97% and the remaining 3% paying out of pocket.

5.3 Level of adherence of patients to antihypertensive medication

The level of adherence of patients to antihypertensive medication was measured by Hill Bone Medication Adherence Scale (HB-MAS), a validated tool for assessing medication adherence. From the score generated from the findings of the study, the majority of the respondents fell within the high adherence score with a percentage of 85%. This indicated a higher adherence among the hypertensive patients of the out-patients clinic in the Akuse government hospital. This study is supported by Dennison et al (2007), (Dennison *et al.*, 2007) study who also used the Hill Bone Medication Adherence scale. Also, another study in China by Lee et al (2013) had an above 60% adherence rate to anti-hypertensive medication using the Morisky 8 scale (Lee *et al.*, 2013).

Similar studies were conducted among primary health facilities in Malaysia by Azuana Ramli, Ahmad and Paraidathathu (2012) who had 53.4% of the respondents adhering to anti-hypertensive medication using HB Mas (Ramli, Ahmad and Paraidathathu, 2012).

5.4 Factors associated with adherence to antihypertensive medications

Gender, marital status, age, work, and wealth status of hypertensive patients were analysed with adherence to find an association between anti-hypertensive treatment adherence. From the bivariate analysis conducted, sociodemographic factors such as marital status ($p=0.04$) and age ($p=0.016$) were found to be statistically significant. All other factors were statistically insignificant in this study. Other studies have identified age correlation and association with adherence to anti-hypertension medication. But this study is not in line with a study by Raja et al (Raja *et al.*, 2021) which indicated a correlation between increasing age and poor adherence to anti-hypertension medication using HB MAS.

The multivariate logistic analysis conducted also found tertiary education to have a statistically significant association with adherence to medication with a p-value of 0.042 holding all other variables constant. This corroborates with Okai et al, 2020 (Okai *et al.*, 2020) who found a significant association between education and adherence to anti-hypertensive medication. Also, a study by Nakwafila et al 2022 (Nakwafila *et al.*, 2022) supports these findings.

From the analysis, government workers were also found to have higher odds of adhering to antihypertensive medications with an odds ratio of 6.85 and a significant p-value of 0.04. Private sector workers were also found to have a statistically significant association with adherence to antihypertensive medication with a p-value of 0.04. This study is congruent with a recent study by Nakwafila et al, 2022 (Nakwafila *et al.*, 2022) indicating an association between employment and adherence to antihypertensive medication.

CHAPTER SIX

6.0 CONCLUSION AND RECOMMENDATIONS

6.1 Introduction

This chapter presents the conclusions drawn from the findings and recommendations of the study. The main objective of this study is to determine the factors associated with the adherence to antihypertensive treatments amongst patients at the Akuse Government Hospital in Akuse in the Lower Manya Municipality of the Eastern Region of Ghana. The study also investigated the level of patient adherence to hypertension medicine at Akuse Government Hospital, as well as evaluated the socio-demographic profile of hypertensive patients.

6.1 Conclusion

The sociodemographic profile of hypertensives of the respondents indicated that majority of the respondents had 50-59 years and above and also had hypertension 4-6yrs ago. From the study, majority of the responded visited the hospital for their medication with the national health insurance representing 98%. Moreover, Out of the 360 respondents, 123 patients had other chronic diseases apart from hypertension including diabetes, sickling cell, asthma, prostate enlargement, HIV/AIDS, cancer and tuberculosis.

From the study, there was a high medication adherence rate of 85% among hypertensive patients at Akuse Government Hospital. Also, there was statistically significant association between marital status, age of respondents and medication adherence in the bivariate analysis.

From the multivariate analysis conducted, a significant association was found among tertiary education. There were increasing odds among government and Private sector workers in adhering to antihypertensive medication with a p-value of 0.04.

6.3 Recommendations

Some recommendations were made based on the findings of the study

1. Akuse Government Hospital in collaboration with the district health directorate should enhance education campaigns to raise awareness about the risk factors, complications, and treatment of hypertension.
2. Prescribers and Nurses must ensure patients get the right information on their conditions to enable them to become more adherent.
3. Health workers should stress the effects of non-adherence on every visit to the facility and encourage patients regularly.
4. It is recommended that further study be done to assess and monitor the adherence among hypertensive patients

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APPENDIX
INFORMED CONSENT

CONSENT FORM FOR STUDY PARTICIPANTS FOR THE RESPONDENT

Project Title: Factors Associated With Adherence To Antihypertensive Medications Among Patients Attending Akuse Government Hospital.

Dear Respondent, my name is Amariah Kadmiel Agbalenyoh, a student at Ensign Global College, Kpong. I am conducting research on the adherence to antihypertensive medications among patients attending Akuse Government Hospital, Eastern region of Ghana. This is academic work which could be used to formulate a policy to improve our health and health services. You are cordially invited to participate in the research.

Procedures -You will be answering questions from a three (3) page questionnaire with questions about yourself as well as questions about determinants of modern contraceptive use among the youth. This is purely for academic purposes.

The General Aim of this research to be conducted is to determine the factors associated with the adherence to antihypertensive treatments amongst patients at the Akuse Government Hospital in Akuse in the Lower Manya Municipality of the Eastern Region of Ghana.

Confidentiality

Any information you give will be protected. You will not be named in any report and questionnaire will identify respondents with identity codes. However, the Supervisor of this project may occasionally go through the records. You have the right to access

information about them collected as part of the study. Also, the Research Ethics Committee had direct access to the results of the study but confidentiality was ensured.

Risks

This survey might require you to give very personal details about your self-medication experiences or practices. You might feel a bit awkward about some of the questions I'll ask but bear in mind you don't have to answer any questions if you don't want to. You should also bear in mind you don't have to explain if you refuse to partake in this survey and you don't have to explain why you don't want to answer any questions you're uncomfortable with.

Benefits

You will not be given anything to motivate you to partake in this survey. However, your participation will assist us to find out more about adherence to Antihypertensive medications and finding ways and means to educate people to make informed decisions about how to take their medication.

Duration

Due to the detailed nature of the questions provided, this interview might take 25 to 35 minutes to complete. It will involve some questions about your behaviour regarding medication and the facility's influence on your medication.

It is not compulsory to partake in this survey and you're not obliged to answer any or all of the questions.

For the Sanity of the Patients, All Covid 19 protocols would be observed.

Do you have any questions to ask about the interview?

Do you want to partake in it? YES [] NO []

ANSWER ANY QUESTIONS AND ADDRESS THE RESPONDENT'S CONCERNS.

RESPONDENT AGREES TO BE INTERVIEWED

1 ----- → BEGIN

RESPONDENT DOES NOT AGREE TO BE INTERVIEWED

2 ----- → END

Name of Interviewer _____

Date: _____

RESPONDENT'S SIGNATURE: _____

THUMB
PRINT

Contact for Additional Information

You can contact the following for answers to any questions you may have about the research:

Principal Investigator:

Name: Amariah K. Agbalenyoh

Phone number: 0207975059

QUESTIONNAIRES

Project Title: FACTORS ASSOCIATED WITH ADHERENCE TO ANTIHYPERTENSIVE MEDICATIONS AMONG PATIENTS ATTENDING AKUSE GOVERNMENT HOSPITAL

This study seeks to assess factors associated with adherence to antihypertensive medications among patients attending Akuse Government Hospital. Please you are kindly requested to fill out this questionnaire, and any information provided would be treated as purely confidential. However, findings will be used to improve the service provided to all patients.

A. Socio-Demographic Characteristics

(1). Age in years

(2). Highest level of Education

No.	Item	Tick One
a	No Formal Education	
b	Primary	
c	Junior High School	
d	SHS / Vocational / Technical	
e	Tertiary	

(3). Marital Status

No.	Item	Tick One
a	Married	
b	Single	
c	Separated / Divorced	
d	Widowed	
e	Cohabiting	

(4). **Ethnicity:** a) Akan [] b) Ga [] c) Ewe [] d) Krobo []
e) Other (Specify)

(5). **Religion:** a) Christianity [] b) Islam [] c) Traditional []
d) Other (Specify)

(6). **Occupation:** a) Student [] b) Unemployed [] c) Government sector worker []
d) Private sector worker [] e) Farmer [] f) Trader []
g) Other specify):.....

(7). **Income level per month in GHs:** a) <500 [] b) 501-1,000 [] c) 1001- 1500 []
d) 1501 - 2000 [] e) 2001-2500 [] f) 2501-3000 [] g) > 3001 []

(8). **How long have you been hypertensive:** a) 1-3 years [] b) 4-6 years []
c) 7-9 years [] d) > 10 years []

(9). **Do you have any other chronic condition/disease apart from hypertension?**
a) Yes [] b) No []

(10). **If Yes to Q.9 state which condition (s):**
.....

(11). **Do you take any other long-term medications for this chronic condition?**
a) Yes [] (b) No []

(12). **Do you have a valid NHIS card?** a) Yes [] b) No []

(13). What is the current Blood Pressure measurement at a visit?

Hill-Bone Medication Adherence Scale (HB-MAS)

Response: 1. All of the Time 2. Most of the Time 3. Some of the Time 4. None of the Time

Kindly choose from one of the above responses to answer the questions provided in the table below.

No.	Item	Tick One (√)			
		All of the Time	Most of the Time	Some of the Time	None of the Time
1	How often do you forget to take your high blood pressure medicine?				
2	How often do you decide NOT to take your high blood pressure medicine?				
3	How often do you forget to get prescriptions filled?				
4	How often do you run out of high blood pressure pills?				
5	How often do you skip your high blood pressure medicine before you go to the doctor?				
6	How often do you miss taking your high blood pressure pills when you feel better?				
7	How often do you miss taking your high blood pressure pills when you feel sick?				
8	How often do you take someone else's high blood pressure pills?				
9	How often do you miss taking your high blood pressure pills when you are careless?				

Thanks for your Participation

APPENDIX II

ETHICAL CLEARANCE



OUR REF: ENSIGN/IRB/ET/SN-215
YOUR REF:

July 08, 2022.

INSTITUTIONAL REVIEW BOARD SECRETARIAT

Amariah Kadmiel Agbalenyoh
Ensign Global College,
Kpong.

Dear Amariah,

ETHICAL CLEARANCE TO UNDERTAKE POSTGRADUATE RESEARCH

At the General Research Proposals Review Meeting of the *INSTITUTIONAL REVIEW BOARD (IRB)* of Ensign Global College held on Tuesday, June 21, 2022, your research proposal entitled **“Adherence to Antihypertensive Medications among Patients Attending Akuse Government Hospital, Eastern Region of Ghana.”** was considered.

You have been granted Ethical Clearance to collect data for the said research under academic supervision within the IRB's specified frameworks and guidelines.

We wish you all the best.

Sincerely,

A handwritten signature in black ink, appearing to read "Rebecca Acquah-Arhin", with a stylized flourish at the end.

Dr. (Mrs.) Rebecca Acquah-Arhin
IRB Chairperson

INTRODUCTORY LETTERS



OUR REF: ENSIGN/AR/EL/SN-215
YOUR REF:

July 26, 2022

**The Administrator
Akuse Government Hospital
P. O. Box 3, Akuse
Eastern Region.**

Dear Sir/Madam,

LETTER OF INTRODUCTION

We respectfully write to introduce to you **Amariah Kadmiel Agbalenyoh** (Student Identification number 217100215), a student of the Master of Public Health (MPH) degree program of the College.

As part of his graduation requirements, he is writing a thesis on the topic; **“Adherence to Antihypertensive Medications among Patients Attending Akuse Government Hospital, Eastern Region of Ghana”** and would like to obtain data from your outfit.

We would be grateful if you kindly accede him any assistance he may require in the collection of this data in your unit for the thesis.

Thank you.

Respectfully yours,

A handwritten signature in black ink, appearing to read "Patrick Kuma".

Patrick Kuma
Academic Registrar

In case of reply the number and the date of this letter should be quoted

GHANA HEALTH SERVICE



Core values of the Ghana Health Service

- * PEOPLE – CENTRED
- * PROFESSIONALISM
- * TEAM WORK
- * INNOVATION
- * EXCELLENCE
- * DISCIPLINE
- * INTERGRITY

LOWER MANYA KROBO MUNICIPAL HEALTH DIRECTORATE

P. O. Box 64, Odumase – Krobo	Tel: 03420-94419/0342098630	Email: lowermanyakrobodha@gmail.com
Tin Number: G003671142X	Digital Address code: EL-0070-3839	
My Ref.: No. LMK/MHD/EAS/079/2022/	Your Ref.:	Date: 1 st August, 2022

THE MEDICAL SUPERINTENDENT
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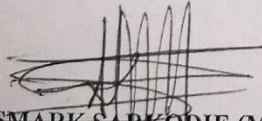
LETTER OF INTRODUCTION-
AMARIAH KADMIEL AGBALENYOH

This serves to introduce to you the above named student of the Master of Public Health (MPH) degree program at Ensign Global College to your facility.

As part of his graduation requirements, he is writing a thesis on the topic; **“Adherence to Antihypertensive Medication among Patients Attending Akuse Government Hospital, Eastern Region of Ghana”.**

We would be grateful if you kindly accede him any assistance he may require in the collection of this data in your facility for the thesis.

Thank you.



BISMARK SARKODIE (MR.)
MUNICIPAL DIRECTOR OF HEALTH SERVICES
LOWER MANYA KROBO MUNICIPAL
ODUMASE-KROBO

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