ENSIGN GLOBAL UNIVERSITY, KPONG

EASTERN REGION, GHANA

FACULTY OF PUBLIC HEALTH

DEPARTMENT OF COMMUNITY HEALTH

DETERMINANTS OF NON-ADHERENCE TO HYPERTENSION TREATMENT AMONG ADULTS IN THE LOWER MANYA KROBO MUNICIPALITY OF THE EASTERN REGION OF GHANA

BY

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NOVEMBER, 2025

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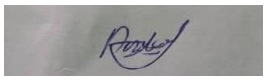
A THESIS SUBMITTED TO THE DEPARTMENT OF COMMUNITY HEALTH, FACULTY

OF PUBLIC HEALTH, ENSIGN GLOBAL UNIVERSITY IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE MASTER OF PUBLIC HEALTH DEGREE

NOVEMBER, 2025

DECLARATION

I hereby certify that, except for references to other people's work, which I have duly cited, this project submitted to the Department of Community Health, Ensign Global University, Kpong, is the result of my own investigation and has not been presented for any other degree elsewhere.

ANTONIO KOJO FULEAMENU  ……7-10-25……

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(Supervisor) Signature Date

(Certified by)

PROF. STEPHEN MANORTEY  7-10-25

(Head of Academic Program) Signature Date

DEDICATION

This work is dedicated to the Almighty God, whose guidance, strength, and grace have sustained me throughout this academic journey.

I also dedicate it to my family for their unwavering love, encouragement, and sacrifices, which gave me the resilience to persevere.

Finally, this thesis is dedicated to all individuals living with hypertension and those working tirelessly to improve health outcomes in Ghana; may this study contribute in some small way to better understanding and solutions.

ACKNOWLEDGEMENT

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My deepest appreciation goes to my supervisor, Prof. Stephen Manortey, for his invaluable guidance, constructive criticism, and encouragement throughout the preparation of this thesis. His mentorship has been a great source of learning and inspiration.

I would also like to thank the faculty, whose support and academic resources greatly enhanced my research. My sincere gratitude goes to the research participants for their time and willingness to share their experiences, without which this study would not have been possible.

ABSTRACT

Introduction: Hypertension is a widespread, life-threatening condition affecting over 1.28 billion adults globally, with a disproportionate burden in low- and middle-income countries. Despite the availability of effective medications and lifestyle interventions, treatment non-adherence remains a major barrier to blood pressure control, especially in sub-Saharan Africa. In Ghana, where the prevalence of hypertension ranges from 25% to 48%, studies show alarmingly low treatment adherence rates, often driven by a complex mix of economic, social, and cultural factors. This study aims to investigate the determinants of non-adherence with hypertension treatment among adults diagnosed with the condition in the Lower Manya Krobo Municipality of Ghana.

Methodology: A cross-sectional study design was employed. Data were collected from a sample of 410 hypertensive patients attending selected health facilities within the municipality using structured questionnaires. Quantitative data were analyzed using STATA 18 to identify patterns and associations. Results were presented in tables and graphs.

Results: The study revealed that non-adherence to hypertensive treatment was prevalent among respondents in the Lower Manya Krobo Municipality**.** Socio-economic determinants, including cost of medication, language or education barriers, and work schedules, showed significant associations with non-adherence. Psychological and behavioral factors such as the perception of being healthy without medication, fear of dependence, lack of confidence, and forgetfulness emerged as the most influential barriers.

Conclusions: The findings highlight that non-adherence to hypertensive treatment is shaped less by demographic factors and more by socio-economic, psychological, and behavioral determinants. Forgetfulness and no confidence in following treatment emerged as the strongest predictors of poor adherence. These results underscore the need for targeted interventions, including patient

education, reminder systems, and family or community-based support mechanisms, to improve adherence and ultimately reduce the burden of hypertension-related complications in Ghana.

Keywords: Hypertension, Non-adherence, Lower Manya Krobo Municipality, Ghana

LIST OF ABBREVIATIONS

BP – Blood Pressure

CHPS – Community-based Health Planning and Services LMICs

– Low- and Middle-Income Countries

mmHg- Millimeters of mercury

NCDs – Non-Communicable Diseases

NHIS – National Health Insurance Scheme

SSA – Sub-Saharan Africa

WHO – World Health Organization

IRB – Internal review Board

GHc – Ghana Cedis

CIs – Confidence Intervals

AOR – Adjusted Odd Ratio

OR – Odd Ratio

CHWs – Community Health Workers

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CHAPTER ONE

1.0 INTRODUCTION

1.1 Background of the Study

Hypertension, or high blood pressure, is a common but serious health condition that continues to affect millions of people around the world. It is defined as a persistent elevation in systolic blood pressure (≥140 mmHg) and/or diastolic pressure (≥90 mmHg) and is a leading contributor to heart disease, stroke, kidney failure, and premature death (WHO, 2023). Globally, an estimated 1.28 billion adults between the ages of 30 and 79 live with hypertension, and a large proportion of these cases are found in low- and middle-income countries (LMICs), where healthcare resources are often limited (Mills, Stefanescu and He, 2020).

The burden of hypertension is not only medical but also social and economic. While it is both detectable and manageable, a significant number of individuals remain unaware of their condition. Even when diagnosed, many patients do not receive adequate treatment or fail to adhere to prescribed medications and lifestyle changes, leading to complications that could have been prevented. In sub-Saharan Africa, the situation is especially troubling. A Aytenew et al. (2024) found that hypertension control rates remain low across the region, despite rising prevalence and improved access to care.

In Ghana, analytical study identifying perceived susceptibility/severity, perceived barriers (cost/stockouts), and cues to action as predictors of non-adherence (Atibila et al., 2022).

. Urbanization, changing dietary patterns, lack of physical activity, and rising rates of obesity are contributing to this trend. At the same time, improvements in healthcare delivery and media education, have led to increased screening and diagnosis. However, despite these efforts, many

Some of the Ghanaians with hypertension are still not reaching recommended treatment goals. One of the main barriers is treatment non-adherence, a situation where patients do not take their medications as prescribed or fail to maintain the lifestyle changes recommended by their healthcare providers (Shin & Konlan, 2023).

Treatment non-adherence is a multifaceted problem. Research from Ghana and other parts of Africa has shown that factors such as poor knowledge about hypertension, fear of side effects, and the cost of medications all influence whether patients stick to their treatment plans (Boima *et al.*, 2015; Akoko *et al.*, 2016). Cultural beliefs also play a significant role (*Shahin et al., 2019*). For some individuals, hypertension is not seen as a lifelong condition requiring ongoing care. Instead, it may be viewed as a temporary illness or even as a spiritual problem, best addressed through prayer or traditional medicine (*Elhag et al., 2022*). These perceptions affect how people interpret their diagnosis and the importance they attach to treatment adherence (Atinga et al., 2018).

Economic challenges further complicated the issue. Many patients struggle to afford medications, especially those without national health insurance or stable income. For people living in poverty, daily survival needs often take precedence over long-term health management. Even when medications are available, stockouts at public health facilities or long distances to clinics can make it difficult to obtain a consistent supply. In such situations, patients may ration their medications or abandon treatment altogether (Akoko *et al.*, 2016). Equally important is the relationship between patients and healthcare providers. Poor communication, rushed consultations, and a lack of culturally sensitive counseling can all contribute to misunderstandings about treatment instructions. Patients may leave the clinic without fully understanding how or why they should take their medications, or they may be discouraged by interactions that do not feel respectful or

empathetic (Jingi *et al.*, 2014). When trust in the healthcare system is low, adherence to medical advice is likely to suffer.

It is important to recognize that non-adherence is not simply a matter of patient irresponsibility. Rather, it is shaped by a complex web of personal, cultural, economic, and systemic factors (*Shahin et al., 2019*). Studies in similar contexts have shown that when interventions are tailored to local realities, such as using community health workers, involving families, or integrating traditional health beliefs, treatment adherence improves (Owolabi *et al.*, 2018). Therefore, gaining a deeper understanding of the specific barriers to treatment adherence in this municipality is not only academically valuable but also vital for public health action.

Although existing literature has shed light on hypertension treatment adherence in Ghana, there remains a noticeable gap when it comes to localized research in the Lower Manya Krobo area. Without such context-specific data, interventions risk being ineffective or poorly received by the target population. This study, therefore, aims to fill that gap by exploring the determinants of nonadherence with hypertension treatment among adults in this municipality. By identifying the personal, social, and systemic factors at play, the research can inform more responsive healthcare strategies that align with the lived experiences of those affected.

1.2 Problem Statement

Hypertension remains one of the most pressing non-communicable diseases globally, contributing to approximately 10.8 million deaths each year and affecting 1.28 billion adults aged 30 to 79 (Mills et al., 2020; WHO, 2023). Despite the availability of effective treatment and preventive strategies, blood pressure control rates remain low, less than 20% of those diagnosed globally have their condition adequately managed (Zhou *et al.*, 2021). Poor treatment adherence is recognized

as one of the leading causes of uncontrolled hypertension and its associated complications, including stroke, heart failure, and kidney disease.

In sub-Saharan Africa, the situation is even more dire. Hypertension prevalence in the region is estimated at 30–46%, yet control rates remain alarmingly low at less than 10% (Ataklte *et al.*, 2015). In Nigeria, a study by Ibrahim et al. (2024) found that only 9.3% of hypertensive patients had adequate blood pressure control, largely due to low adherence to medications. Similarly, research from Kenya reported that nearly half (46.6%) of the hypertensive patients interviewed were non-adherent to their medications. A study in Cameroon by Adidja et al. (2018) also found that 68% of hypertensive individuals did not adhere to medication regimens, citing cost, lack of knowledge, and side effects as key reasons.

Ghana reflects these trends as hypertension prevalence ranges from 25% to 48%, depending on the setting, with poorer outcomes in peri-urban and rural areas (Ofori-Asenso *et al.*, 2016). A nationwide study by Bosu and Bosu, (2021) found that only 22.4% of hypertensive patients were on treatment, and just 7.8% had controlled blood pressure. In urban Accra, (Awuah *et al.*, 2014) reported that only 9.4% of patients had good adherence to antihypertensive therapy. Another study by (Boima *et al.*, 2015) in Ghana and Nigeria found that 66.7% of patients reported medication non-adherence, mainly due to fear of side effects, forgetfulness, and spiritual beliefs.

In the Lower Manya Krobo Municipality, although hypertension screening and diagnosis rates have improved through community-based health services, treatment non-adherence remains a persistent issue. While national-level studies have helped identify some common barriers such as cost, health literacy, and trust in traditional healing, there is limited research specifically examining how these factors play out in the context of Lower Manya Krobo. A study conducted by Lamptey

et al. (2017) in the Lower Manya Krobo Municipality concluded that both the level of hypertension control and in-depth knowledge of the risk factors for hypertension were very low.

Given the serious health risks of uncontrolled hypertension and the potential to prevent complications through consistent adherence, it is essential to explore these issues in a localized, nuanced manner. This study, therefore, aims to investigate the key determinants of hypertension treatment non-adherence in the Lower Manya Krobo Municipality, offering evidence that can inform practical, culturally relevant interventions. Without addressing these barriers, the long-term burden of hypertension will continue to grow, both for individuals and the healthcare system at large.

1.3 Rationale

Hypertension has become a major global health concern, especially in low- and middle-income countries (LMICs), where detection, treatment, and control remain suboptimal despite the availability of effective interventions (Mills *et al.,* 2020; WHO, 2021). A growing body of evidence shows that the challenge is not simply identifying hypertensive individuals but ensuring that they adhere to long-term treatment and lifestyle recommendations. According to the *(Mills, et al., 2020)*, fewer than 20% of people with hypertension globally achieve adequate blood pressure control, with treatment non-adherence identified as one of the key contributors.

In sub-Saharan Africa, adherence rates are alarmingly low. A meta-analysis by Noubiap *et al*. (2019) found that across African countries, non-adherence to antihypertensive medication ranged between 35% and 93%, often due to systemic, socioeconomic, and cultural factors. Studies from Nigeria and Kenya have reported that patients frequently discontinue treatment due to medication side effects, costs, and reliance on traditional medicine (Odusola *et al.,* 2021; Mutua *et al.,* 2020).

In Ghana, the situation mirrors these broader patterns. Studies have found that between 25% and

48% of Ghanaian adults are hypertensive, yet only a small fraction achieve adequate control due to poor adherence to treatment (Ofori-Asenso *et al.,* 2019; Bosu *et al.,* 2019). While efforts have been made to expand access to medications and improve public awareness, these statistics suggest that current strategies may not be fully addressing the real-world barriers patients face.

Despite these challenges, there is a lack of localized research specifically focused on the reasons behind non-adherence in the Lower Manya Krobo District. National-level data and urban-centered studies may not accurately reflect the experiences and beliefs of individuals in rural and peri-urban communities like Lower Manya Krobo Municipality. Factors such as health literacy, perceived severity of illness, medication affordability, provider communication, and community-level norms may all shape adherence behaviour differently in this setting. Understanding these dynamics is essential for developing targeted, context-appropriate interventions.

Therefore, this study is necessary to bridge the gap between national health policies and the everyday realities of patients managing hypertension in the Lower Manya Krobo Municipality. By exploring the individual, social, economic, and health system-related determinants of nonadherence, the research aims to provide evidence that can inform more effective clinical practices, community health education, and policy responses. The ultimate goal is to support improved treatment adherence, reduce hypertension-related complications, and enhance overall quality of life for patients in this part of Ghana.

1.4 Conceptual Framework

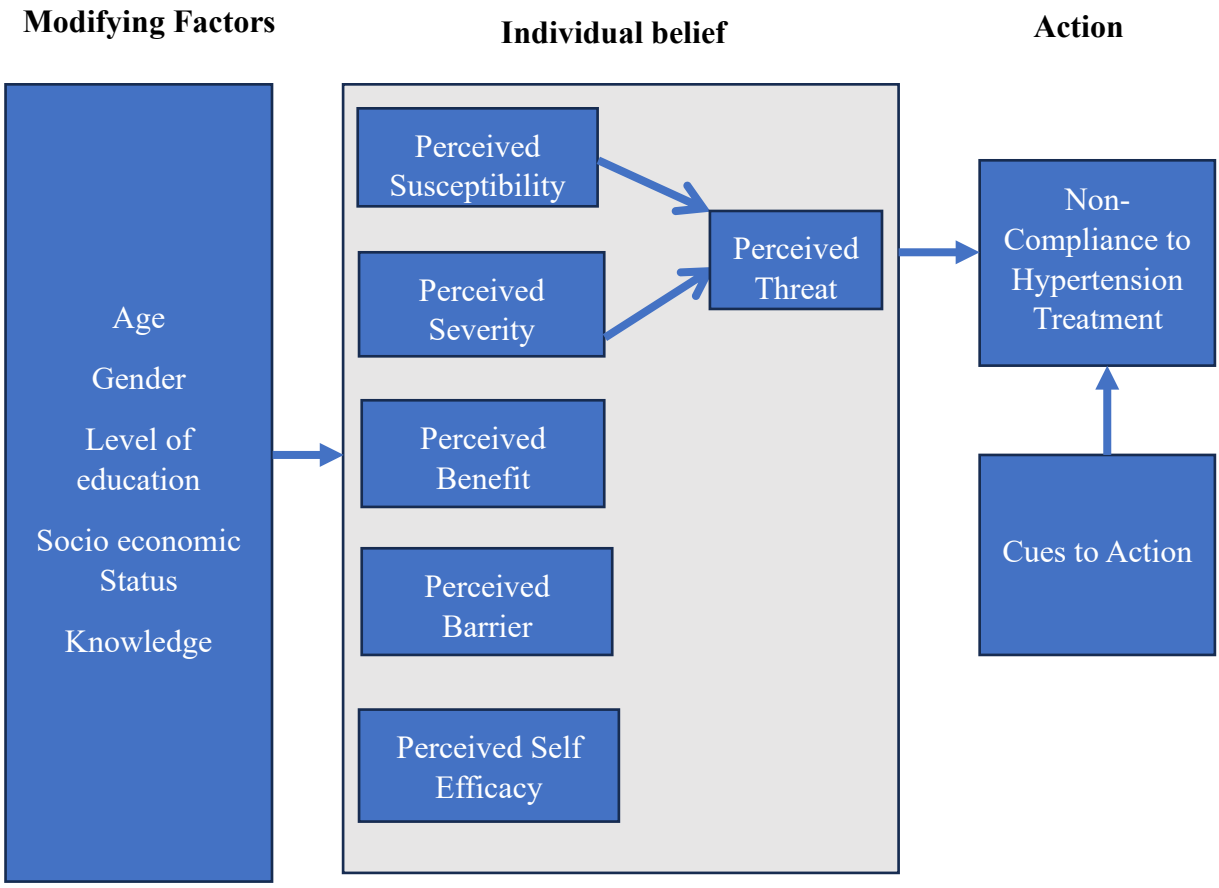

Figure 1: Conceptual Framework

Source: (Galson *et al.*, 2017)

The conceptual framework guiding this study is based on the Health Belief Model (HBM). The model explains how individual beliefs about health conditions influence health-related behaviours, especially preventive and treatment-seeking actions (Glanz *et al.,* 2015). In this study, the HBM provides a structure for examining how patients' beliefs influence their adherence or nonadherence with hypertension treatment.

Perceived Susceptibility: This refers to the individual's belief about their personal risk of experiencing health problems due to uncontrolled hypertension. In the Lower Manya Krobo

Municipality, some individuals may not fully recognize that hypertension is a silent condition with serious consequences. When patients do not feel at risk, they may not prioritize treatment. For example, Atinga *et al*. (2018) found that patients who believed they were not at risk of complications were more likely to skip medications.

Perceived Severity: This construct involves an individual's belief about how serious the condition and its complications are. In contexts where hypertension is seen as mild or non-threatening, adherence tends to be low. Patients in Ghana have reported discontinuing medication once their symptoms improve, suggesting a limited understanding of the long-term risks (Boima *et al.,* 2015).

Perceived Benefits: Perceived benefits refer to the belief in the effectiveness of treatment or preventive behaviour in reducing the risk or severity of the disease. If patients believe that taking medication or making lifestyle changes will lead to better health outcomes, they are more likely to adhere. However, if they are unsure or believe traditional medicine is more effective, adherence to biomedical treatment declines (Odusola *et al.,* 2021).

Perceived Barriers: These are the obstacles that individuals believe prevent them from engaging in the recommended behaviour. In the study area, common barriers include high medication costs, side effects, long distances to clinics, and spiritual beliefs. According to Mutua et al. (2023), such barriers were among the most cited reasons for medication non-adherence in the municipality.

Cues to Action: These are triggers or reminders that prompt individuals to take action. Cues may be internal factors such as symptoms like dizziness) or external factors including advice from a nurse, family pressure, or witnessing a peer suffer from stroke. In communities like Lower Manya Krobo, family involvement or community health education sessions can serve as effective cues to action (Awuah *et al.,* 2018).

Self-Efficacy: This refers to a person's confidence in their ability to successfully perform the behaviour. Hypertensive patients who feel confident in their ability to take medications regularly, modify their diet, and attend follow-ups are more likely to adhere to treatment. Lack of understanding of dosing or confusion about combining biomedical and herbal treatments can undermine self-efficacy (Mutua *et al.,* 2020).

1.5 Research Questions

1. What is the prevalence of non-adherence with hypertension treatment in the Lower Manya Krobo Municipality District?
2. What characteristics of respondents are associated with non-adherence to hypertension treatment in the Lower Manya Krobo Municipality?
3. What are the determinants of non-adherence with hypertension treatment Lower Manya Krobo Municipality?

1.6 General Objective

To examine the factors influencing non-adherence with hypertension treatment among adults in the Lower Manya Krobo Municipality.

1.6.1 Specific Objectives

1. To determine the prevalence of non-adherence among patients diagnosed with hypertension in the Lower Manya Krobo Municipality.
2. To evaluate the association of sociodemographic factors with non-adherence to hypertensive treatment among residents in the Lower Manya Krobo Municipality.
3. To examine the determinants of treatment non-adherence to hypertensive treatment among residents in the Lower Manya Krobo Municipality.

1.7 Profile of the Study Area

The Lower Manya Krobo Municipality is one of the administrative districts located in the Eastern Region of Ghana. It was established in 2008 when the former Manya Krobo District was split into two separate municipalities: Lower Manya Krobo and Upper Manya Krobo. The municipal capital is Odumase-Krobo, which serves as the administrative and commercial hub of the area.

Geographically, the municipality shares boundaries with the Upper Manya Krobo District to the north, Yilo Krobo Municipality to the west, and the Asuogyaman District to the east. To the south, it borders the Ada East District in the Greater Accra Region. The terrain is largely a mixture of lowland plains and undulating hills, with scattered rocky outcrops and valleys. The area is intersected by several rivers and streams, notably the Volta River to the east.

According to the 2021 Ghana Population and Housing Census, the Lower Manya Krobo Municipality has a population of approximately 121,000 people. (GSS, 2021) The population is fairly evenly distributed between males and females, with a youthful demographic, about 40% are under the age of 18. The municipality is predominantly rural and peri-urban, with a few urban centers like Odumase, Kpong, and Atua. The main ethnic group is the Krobo, with Dangme and Ewe minorities. Christianity is the dominant religion, followed by traditional African beliefs and Islam.

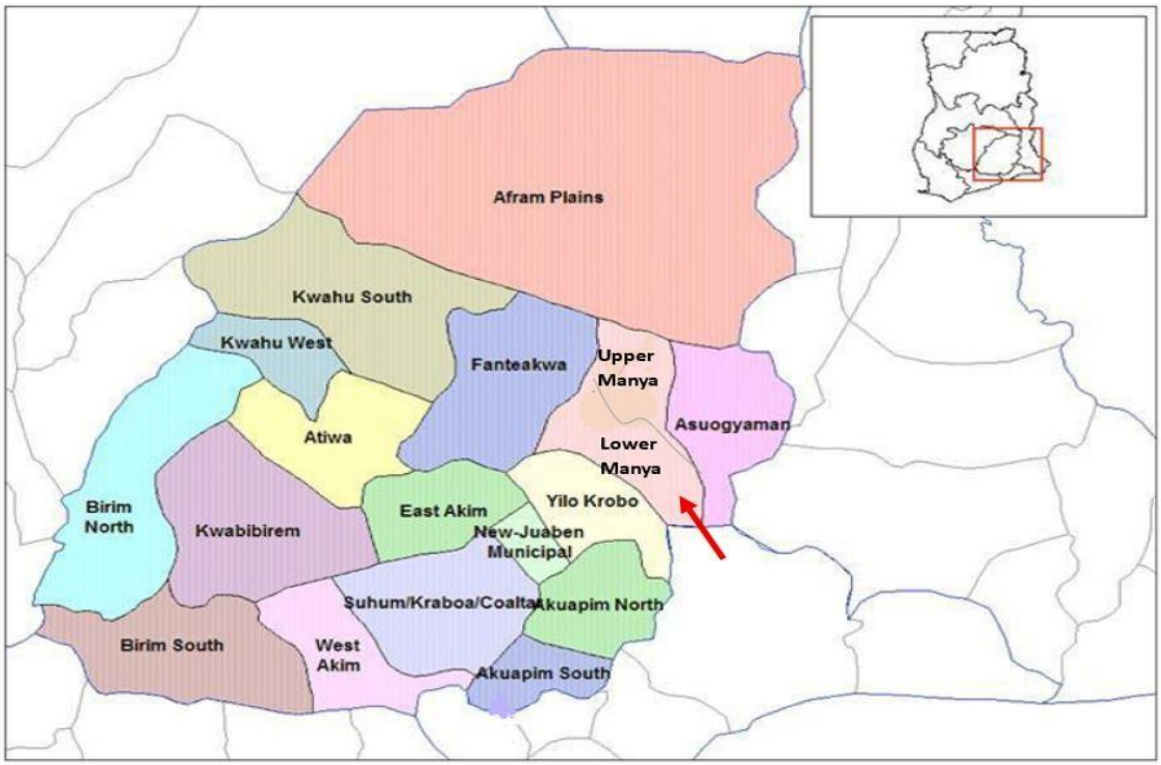

Figure 2 Map of the Lower Manya Krobo Municipality in the Eastern Region, Ghana

Source: (Owusu, 2020)

1.9 Scope of Study

The scope of this study is conceptually framed around the problem of treatment non-adherence in hypertension, a challenge that has been widely documented in both global and local literature. Previous studies indicate that non-adherence is shaped by a constellation of factors, broadly categorised into socio-demographic, socio-economic, and psychological or behavioural domains. For instance, age, sex, and educational attainment have been shown to influence how patients perceive the seriousness of hypertension and their ability to comply with prescribed treatment. Similarly, economic barriers such as the cost of medication, loss of income, and transport constraints are consistently reported in the literature as critical determinants of adherence, particularly in low- and middle-income countries. Beyond these, behavioural and psychological

elements such as forgetfulness, fear of dependence, self-efficacy, or lack of family support have been highlighted as persistent obstacles to long-term adherence in chronic disease management.

Guided by these insights, the present study focuses on hypertensive patients in the Lower Manya Krobo Municipality in the Eastern Region of Ghana, limiting its scope to individuals attending selected health facilities. This facility-based focus reflects the literature's emphasis on clinically diagnosed populations, whose treatment behaviours can be more reliably measured than those of community-based or undiagnosed groups. Methodologically, the study employed a cross-sectional descriptive design and quantitative analysis using structured questionnaires. The study's scope builds on established evidence regarding the nature of treatment non-adherence in hypertension.

1.10 Organization of Report

The report is structured into five chapters. Chapter One introduces the study by presenting the background, problem statement, research objectives, research questions, significance, scope, and organization of the report. Chapter Two reviews relevant theoretical and empirical literature on hypertension, treatment adherence, and associated determinants. Chapter Three outlines the research methodology, detailing the study design, population, sampling methods, data collection tools, and analytical techniques employed. Chapter Four presents the results of the data analysis together, Chapter Five presents discussions of the findings in relation to existing literature. Finally, Chapter Six provides the summary, conclusions, and recommendations based on the study outcomes.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction.

Hypertension remains a leading global cause of preventable morbidity and mortality, with an estimated 1.28 billion adults affected (*WHO, 2023*). Although antihypertensive therapies are effective, trends over the last three decades show a persistent mismatch between detection, treatment, and control: progress in some regions has been offset by rising prevalence and persistently low control rates in low- and middle-income countries (LMICs) (Mills et al., 2020). This paradox reflects not only health-system capacity constraints but also the everyday realities of living with a lifelong condition, where consistent medication taking and lifestyle change are difficult to sustain (*Gould, G.S., & Munn, J. 2017*). Nonadherence erodes the benefits of therapy and helps explain why only a minority of adults with hypertension achieve target blood pressure globally (WHO, 2023).

A cross sub-Saharan Africa (SSA), studies continue to report low adherence and poor control despite expanding screening and treatment programs (*Macquart de Terline et al., 2019*). A 2010–2021 meta-analysis focused on Africa estimated overall adherence at roughly one-third, with determinants including patient beliefs, knowledge, adverse effects, commodity availability, and socioeconomic barriers (Shin & Konlan, 2023). Complementary evidence shows uncontrolled hypertension remains common across SSA health-care settings (*Aytenew et al., 2024*). These regional patterns intersect with local structures that shape whether prescriptions translate into controlled blood pressure.

Ghana mirrors these challenges. A national meta-analysis reported high prevalence with low awareness and control, indicating system-level gaps and behavioural barriers (Bosu & Bosu, 2021). Understanding why adults do not adhere in specific municipalities is therefore essential to designing interventions that are not only evidence-based but also locally workable.

2.1 Prevalence of Non-Adherence to Hypertensive Treatment

Globally, prevalence studies highlight that non-adherence to antihypertensive therapy remains widespread despite improvements in pharmacological options and health education. Evidence from high-income countries shows that only about half of diagnosed hypertensive patients consistently adhere to prescribed regimens, and even fewer achieve blood pressure control (Mills et al., 2020). The World Health Organization (2023) similarly notes that non-adherence undermines progress in cardiovascular risk reduction, highlighting the importance of sustained behavioural commitment.

In sub-Saharan Africa, the challenge is even more acute. A systematic review covering 2010–2021 estimated that only one in three patients achieved adherence to antihypertensive therapy, with wide variations across countries depending on availability of medicines, affordability, and cultural attitudes towards chronic disease (Shin & Konlan, 2023). Studies confirm that uncontrolled hypertension remains highly prevalent in SSA, reflecting gaps in adherence to long-term treatment (Aytenew et al., 2024).

In Ghana, meta-analyses reveal similar patterns. Bosu and Bosu (2021) report high hypertension prevalence but low rates of treatment and control, driven largely by adherence-related barriers. Despite the introduction of screening programs and health promotion campaigns, non-adherence continues to undermine treatment outcomes. Yet there is limited disaggregated evidence at the municipal level. The situation in peri-urban areas like Lower Manya Krobo Municipality has not

been sufficiently studied, creating the need for localized evidence on adherence prevalence to inform interventions.

2.2 Association of Sociodemographic Factors with Non-Adherence

The relationship between sociodemographic characteristics and adherence to hypertension treatment has been widely documented, with evidence showing that age, gender, education, income, and marital status strongly influence whether patients follow prescribed regimens. These factors shape health behaviors, access to care, and perceptions of risk, making them central to understanding treatment compliance.

Age is one of the most consistent predictors of adherence. In high-income countries, younger adults are more likely to discontinue antihypertensive therapy than older individuals, influenced by lifestyle preferences, competing social demands, and a lower perception of risk (Burnier & Egan, 2019). Older patients, while more were of the dangers of uncontrolled hypertension, may face challenges linked to forgetfulness, cognitive decline, or the burden of managing multiple medications (Vrijens et al., 2017). In African settings, the same pattern emerges, with younger adults more likely to abandon treatment because of financial responsibilities or feelings of invulnerability (Mutua et al., 2023). In Ghana, Boima et al. (2015) found that younger patients frequently demonstrated poor adherence due to forgetfulness and low perception of severity, while older patients, despite stronger motivation, struggled with polypharmacy and memory lapses.

Gender also influences adherence in complex ways. Globally, some studies suggest that women adhere better to treatment than men, largely because they are more likely to seek care and engage in preventive practices, while other studies find little difference once socioeconomic conditions are controlled for (Mills et al., 2020). In Africa, gender inequalities introduce clearer barriers. Women may be constrained by limited financial independence and dependence on household

decision-makers to pay for treatment, while men are more likely to default because of occupational mobility and irregular clinic attendance (Ibrahim et al., 2024). In Ghana, the evidence remains mixed. Some findings suggest women are slightly more adherent, while others show no significant differences once income and education are taken into account (Bosu & Bosu, 2021). This highlights that gender-related differences are more strongly shaped by cultural and economic circumstances than by biology.

Education is another powerful predictor of adherence across contexts. Patients with higher levels of education generally demonstrate better health literacy, a stronger grasp of treatment instructions, and an appreciation of the chronic nature of hypertension (Bosworth et al., 2018). Limited education, by contrast, is associated with poor understanding, misconceptions, and a tendency to discontinue treatment once symptoms subside. This pattern is evident in sub-Saharan Africa, where patients with little or no schooling often perceive themselves as cured when symptoms ease, leading them to abandon therapy (Adidja et al., 2018). In Ghana, Lamptey et al. (2017) similarly found that patients with no formal education were more likely to rely on herbal remedies or spiritual healing, while those with higher education adhered more consistently. Even so, economic barriers and health system inefficiencies sometimes caused educated patients to default, showing that education alone cannot fully protect against non-adherence.

Income and occupation, while socio-economic in nature, also intersect strongly with sociodemographic characteristics. Globally, individuals with stable or higher incomes are better able to afford medicines, attend regular check-ups, and absorb indirect costs, while low-income groups remain disproportionately represented among non-adherent populations (NCD Risk Factor Collaboration, 2021). In Africa, the economic burden of treatment frequently leads to

discontinuation. Low-income earners, subsistence farmers, and informal workers face the added challenge of losing wages when attending clinics, while transport costs remain a common barrier (Shin & Konlan, 2023). Even educated individuals sometimes fail to sustain adherence when drug prices are high or when health facilities are located far away (Mutua et al., 2023). In Ghana, although the National Health Insurance Scheme has expanded access to medicines, gaps in covering and frequent drug shortages mean patients often pay out-of-pocket. In rural or peri-urban areas, transport expenses and opportunity costs further worsen the situation, leading many to ration doses or discontinue treatment (Bosu & Bosu, 2021).

Marital status and family support also play a critical role. Globally, married individuals are often more adherent, benefitting from spousal reminders, pooled resources, and emotional encouragement. In African contexts, these advantages are sometimes offset by patriarchal structures that limit women's autonomy in making health decisions or accessing household funds. In Ghana, Atinga et al. (2018) showed that patients who received encouragement from spouses or children were more likely to continue with therapy, while those without strong family networks were at greater risk of default. Family dynamics therefore interact with education and income to create complex pathways that shape adherence.

Taken together, sociodemographic characteristics influence adherence to hypertension treatment, but their effects differ across contexts. Younger age, low education, poverty, and weak family support consistently predict poor adherence, yet these determinants often interact with systemic and cultural barriers that compound their impact. In sub-Saharan Africa, and Ghana in particular, challenges such as limited health literacy, economic hardship, and gaps in drug availability intensify the difficulties patients face in maintaining long-term treatment. The evidence makes

clear that interventions must go beyond medical prescriptions to address the social and economic realities of patients' lives.

2.3 Determinants of Non-Adherence to Hypertensive Treatment

Beyond prevalence and sociodemographic associations, it is essential to understand the broader determinants of non-adherence, which extend beyond individual choice to reflect psychological, cultural, economic, and systemic influences. The World Health Organization (2023) emphasizes that adherence is not merely a patient responsibility but an outcome shaped by health systems, socioeconomic structures, and cultural environments.

Psychological and behavioural factors dominate explanations globally. The asymptomatic nature of hypertension often leads patients to discontinue therapy once they feel well, failing to appreciate the chronic risks of uncontrolled blood pressure (Burnier & Egan, 2019). This "silent illness" phenomenon is compounded by low perception of risk, limited self-efficacy, and fear of side effects. Research in Europe and North America shows that even mild adverse reactions such as dizziness or fatigue frequently lead to discontinuation, especially in the first year (Vrijens et al., 2017). Forgetfulness and lack of structured routines are also critical, particularly in younger populations balancing work and social commitments (Mills et al., 2020).

Economic and systemic factors also play a central role. Even in high-income countries, copayments and complex insurance systems reduce adherence rates, disproportionately affecting patients from lower socioeconomic backgrounds (Bosworth et al., 2018). In LMICs, barriers are more pronounced: out-of-pocket payments, stock-outs, and long travel distances undermine continuity of care. Communication between providers and patients also matters. Poor counselling and limited follow-ups lower comprehension and motivation, raising dropout rates (Lu et al., 2017).

In **sub-Saharan Africa**, non-adherence reflects the combined effect of economic, cultural, and systemic influences. Medication cost is the most cited reason for discontinuation, particularly where national insurance is weak or absent. Even when drugs are subsidized, hidden costs such as transport and time away from work are significant (Mutua et al., 2023). Frequent stock-outs in public facilities push patients to private pharmacies at higher prices, which many cannot sustain (Shin & Konlan, 2023).

Cultural beliefs also shape patient behaviour. In Cameroon, Adidja et al. (2018) found that nearly two-thirds of patients cited cultural beliefs as reasons for defaulting. In Nigeria, Ibrahim et al. (2024) reported that many abandoned therapies in favour of herbal medicine, especially when symptoms subsided. Such findings reveal that biomedical explanations of chronic illness may not align with prevailing community beliefs.

In **Ghana**, similar determinants are evident. Economic barriers remain central: although the NHIS covers antihypertensive drugs in principle, frequent stock-outs and limited formularies mean patients often pay out-of-pocket (Bosu & Bosu, 2021). Cultural perceptions play an especially strong role. Atinga et al. (2018) found that many Ghanaians view hypertension as temporary, resolving once symptoms abate, or as a spiritual condition requiring prayer or traditional medicine. Such beliefs encourage intermittent or discontinued therapy. Lamptey et al. (2017) observed that even when access to medicines improved, defaults persisted because of mistrust in long-term pharmaceutical use.

Psychological and behavioral factors also shape adherence in Ghana. Boima et al. (2015) reported that forgetfulness, lack of knowledge, and fear of side effects drive non-adherence. Patients often reduce doses or stop medications when they feel better, reflecting limited awareness of hypertension's silent progression. Fear of becoming dependent on medicines also leads some to

avoid consistent use. Family and community support further influence outcomes. Patients with strong social networks are more likely to remain adherent, while those without encouragement are at higher risk of default. (Awuah et al., 2014) showed that spousal reminders were critical in poor urban communities, while in peri-urban areas like Lower Manya Krobo, family cues and community health worker visits influenced adherence.

Health system barriers compound these problems. Long waiting times, limited counselling, and poor communication leave many patients confused or mistrustful. Overburdened staff often cannot provide detailed instructions, and weak follow-up systems mean that patients who stop treatment are rarely traced. Without systematic support, non-adherence persists largely undetected.

Crucially, determinants in Ghana are interconnected. Economic hardship amplifies cultural beliefs, with patients unable to afford medicines more likely to rationalize discontinuation through spiritual explanations. Poor health literacy magnifies fear of side effects, while weak health systems reinforce mistrust. These interactions highlight the need for comprehensive interventions addressing economic, cultural, behavioral, and systemic barriers simultaneously.

2.4 Conclusion

Hypertension treatment adherence remains a major global public health challenge, with nonadherence persisting despite decades of investment in screening, pharmacological innovation, and patient education. Studies in high-income countries show that even when drugs are accessible and affordable, patients often discontinue therapy due to behavioral factors such as forgetfulness, fear of side effects, and low perception of risk (Burnier & Egan, 2019; Vrijens et al., 2017). This highlights that adherence is not simply a supply issue but a problem of sustaining long-term behavioral commitment to a silent condition.

In sub-Saharan Africa, the challenge is intensified by structural and cultural barriers. Research shows that fewer than one in three patients achieve adequate adherence, with cost, health literacy, cultural beliefs, and weak health systems as key drivers (Shin & Konlan, 2023; Aytenew et al., 2024). Evidence from Nigeria, Kenya, and Cameroon confirms particularly low adherence, underscoring the need for interventions that extend beyond diagnosis to include education and stronger follow-up (Ibrahim et al., 2024; Mutua et al., 2023; Adidja et al., 2018). The WHO similarly stresses that adherence is shaped as much by systemic and cultural factors as by medicine availability (WHO, 2023).

Ghana reflects these patterns, with adherence undermined by cost, weak communication with providers, and reliance on herbal or spiritual remedies (Boima et al., 2015; Atinga et al., 2018; Bosu & Bosu, 2021; Lamptey et al., 2017). Despite ongoing screening and awareness programs, treatment coverage remains low, and barriers vary across urban, rural, and peri-urban contexts.

Significant gaps such as reliance on self-reported adherence, limited evidence from peri-urban areas like Lower Manya Krobo, underexplored family and community influences, and insufficient evaluation of NHIS effectiveness remain. Addressing these gaps is essential for tailoring interventions. By focusing on prevalence, sociodemographic associations, and determinants of non-adherence in Lower Manya Krobo, this study aims to generate context-specific insights to inform both local and national strategies for improved hypertension management.

CHAPTER THREE

3.0 METHODOLOGY

3.1 Study Design

This study adopted a quantitative cross-sectional design to assess the factors influencing non-adherence with hypertension treatment among adults in the Lower Manya Krobo Municipality. The cross-sectional approach allows for the collection of data at a single point in time, facilitating the estimation of prevalence and identification of associated factors without requiring follow-up.

3.2 Study Site

The study was conducted in the Lower Manya Krobo Municipality, a peri-urban district located in the Eastern Region of Ghana. The municipality's capital, Odumase-Krobo, serves as the administrative and commercial hub. The study was conducted in selected health facilities within the municipality where hypertensive patients commonly seek healthcare services.

3.3 Study Population

The study population consisted of adult individuals (aged 18 years and above) who have been diagnosed with hypertension and are currently residing in the Lower Manya Krobo Municipality. Participants included both male and female adults receiving care from public and private health facilities within the municipality.

3.4 Inclusion Criteria

- Adults age 18 years and above who have been clinically diagnosed with hypertension.
- Residents of the Lower Manya Krobo Municipality who have lived in the area for at least three months.

- Individuals who provide informed consent to participate in the study.

3.5 Exclusion Criteria

- Patients who are critically ill or cognitively impaired at the time of data collection.
- Individuals who decline to participate or are unable to provide informed consent.

3.6 Sample Size

The sample size was calculated using the Cochran's formula:

$$\boldsymbol{n} = \frac{\boldsymbol{Z^2.P(1-P)}}{\boldsymbol{e^2}}$$

Where;

n = sample size (Cochran, 1977)

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

p = Proportion of non-compliant hypertension patients = 58.6% (Amoak *et al.*, 2023)

q = 1-p = 1-0.586 = 0.414

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

Therefore;

$$n = \frac{(1.96)^2 \times (0.586 \times 0.414)}{(0.05)^2} \cong 374$$

Considering possible non-responses, a non-response rate of 15% was added to the sample size, which results in a total of 430 participants.

3.7 Sampling Procedure

A multi-stage sampling procedure was employed in selecting the study participants. In the first stage, purposive sampling was used to select health facilities within the Lower Manya Krobo Municipality that provide routine hypertension care and maintain comprehensive patient registers.

In the second stage, stratified random sampling was used to select patients from the hypertension registers. Patients were stratified based on the time since their last clinical visit:

- **Stratum A (recent visits)** – patients who visited within the last month
- **Stratum B (intermediate)** – patients who visited 1–3 months ago
- **Stratum C (long absence)** – patients who have not visited in over 3 months

From each stratum, a random sample of patients was selected. Regardless of whether they are physically present during the data collection period, selected patients were contacted via telephone or at the facility to seek concern to be recruited for the study. This approach ensured that all individuals are captured, even if they do not visit the facility during the data collection period.

3.8 Data Collection Methods and Instruments

Data were collected using a structured, interviewer-administered questionnaire designed to gather quantitative information relevant to the study objectives. The instrument is organized into five main sections each aligned with a specific objective of the study.

Section A captures basic demographic and background data such as age, sex, marital status, educational level, occupation, monthly income, health insurance status, and proximity to the nearest health facility. Section B contains Likert-scale items that assess behavioural and perceptual factors contributing to treatment non-adherence, including forgetfulness, stopping medication

when feeling better or worse, preference for traditional medicine, and experience of side effects. Section C evaluates how financial, educational, and occupational constraints influence adherence to treatment. Section D explores participants' beliefs, attitudes, and self-efficacy related to their condition and treatment. The final section assesses respondents' exposure to and perceptions of existing interventions aimed at promoting adherence.

The questionnaire was administered in English, Krobo, or Twi, depending on the participant's preference. Trained research assistants conducted face-to-face or phone call interviews using the mobile data collection tools known as KoboCollect to enhance data accuracy and security.

3.9 Pre-testing

The data collection tool was pre-tested with 40 hypertensive adults in Yilo Krobo district not included in the main study. The aim was to evaluate the clarity, length, and cultural appropriateness of the questions. Insights from the pre-test guided the revision of the tool to enhance validity and reliability.

3.10 Data Handling

All responses were securely stored on password-protected electronic devices. Data collected via KoboCollect were encrypted and backed up on a secure pen-drive accessible only to the research team and project supervisor. Person identifying information were excluded to ensure confidentiality. Data will be archived for five years before secure deletion in line with ethical standards.

3.11 Statistical Analysis

Data analysis was conducted using STATA statistical software package (*StataCorp.2023). Stata Statistical Software. Release 18*. StataCorp LP, College Station, TX, USA). Descriptive statistics, including frequencies, means, and percentages, were used to summarize the data. Bivariate

analyses such as Chi-square tests were used to explore associations between socio-demographic characteristics and non-adherence. Multivariate logistic regression was used to identify key determinants of non-adherence while adjusting for potential confounders. Results were presented in tables and figures.

3.12 Expected Outcomes

The provided reliable estimates of the prevalence of non-adherence with hypertension treatment and to identify key sociodemographic and contextual determinants. These findings will inform local healthcare providers, municipal health authorities, and policy makers in designing targeted interventions to improve treatment adherence and health outcomes.

3.13 Dissemination of Results

The results will be disseminated to the Lower Manya Krobo Municipal Health Directorate, Ghana Health Service, and relevant local stakeholders. Findings will be presented at academic and public health forums. A final report will be submitted to Ensign Global University and efforts will be made to publish the study in a peer-reviewed public health journal.

3.14 Ethical Considerations

Ethical approval was obtained from the Institutional Review Board (IRB) of Ensign Global University. A formal letter of introduction was sent to the Lower Manya Krobo Municipal Health Directorate and participating health facilities to seek permission for data collection.

Written informed consents were obtained from all participants. The study's purpose, procedures, confidentiality, and voluntary nature were explained in the preferred language of each respondent. Participants were informed of their right to withdraw at any point without penalty. No physical risks are anticipated, and anonymity was preserved throughout. While there may be no direct short

term benefit to participants, the research is expected to contribute to improved hypertension management services in the municipality.

3.10 Limitations of the Study

This study employed a cross-sectional descriptive design, which provides useful insights into the prevalence and determinants of non-adherence among hypertensive patients at a single point in time. However, this approach limits the ability to establish causal relationships between the factors identified and treatment adherence. The reliance on self-reported data also introduces the possibility of recall bias and social desirability bias, as some participants may have under- or overreported their adherence behavior. In addition, the study was conducted in selected health facilities within the Lower Manya Krobo Municipality, which may limit the generalizability of the findings to all hypertensive patients in Ghana or to other settings with different socio-economic and cultural characteristics.

Finally, while the use of structured questionnaires allowed for systematic data collection, the absence of longitudinal follow-up means that changes in adherence patterns over time could not be assessed.

3.11 Assumptions

This study was guided by several key assumptions. First, it was assumed that all respondents provided accurate and honest answers to the questions posed, reflecting their true experiences and behaviors regarding hypertension treatment. It was further assumed that participants had sufficient understanding of the questions and that language barriers did not significantly affect the validity of responses, given that trained research assistants administered the questionnaires.

The study also assumed that hypertensive patients attending the selected health facilities were representative of the broader population of patients in the municipality, thereby allowing for meaningful inferences.

CHAPTER FOUR

4.0 RESULTS

4.1 Demographic Characteristics

Table 4.1 presents the socio-demographic characteristics of the respondents. A total of 430 questionnaires were administered; however, 421 were assessed to be clean for analysis, yielding a response rate of 97.9%. The largest proportion of respondents (41.6%) were aged 55 years and above, followed by those aged 46–55 years (24.7%) and 36–45 years (20.4%). Smaller proportions were observed among those aged 26–35 years (10.5%) and 18–25 years (2.9%).

The sample was predominantly female, with 64.1% of respondents identifying as such, compared to 35.9% males. Regarding marital status, over one-third (36.3%) were married, 28.3% were widowed, 20.9% were single, and 14.5% were divorced.

With respect to education, the majority of respondents (39.9%) had attained secondary education. This was followed by 24.0% who had completed basic education and 21.6% with tertiary-level qualifications. A smaller proportion (14.5%) reported having no formal education.

Occupational distribution revealed that traders (33.0%) and the self-employed (31.6%) formed the largest groups. Unemployed respondents constituted 14.7%, while civil servants accounted for 13.1%. Monthly income patterns showed that 28.3% earned between GHS 1,000–1,499, 27.8% between GHS 500–999, 25.9% earned GHS 1,500 or more, while 18.1% earned less than GHS 500. Most respondents (94.8%) were registered with the National Health Insurance Scheme (NHIS), while only 5.2% reported not having insurance coverage. Finally, the distance to the nearest health facility varied. A majority (57.5%) lived within 1–5 km of a facility, 29.2% lived more than 5 km away, and 13.3% lived within 1 km of a health facility.

Table 4.1 Demographic Characteristics

Variable	Categories	Frequency	Percentage
Age Group		12	2.85
		44	10.45
		86	20.43
		104	24.7
	55 and above	175	41.57
Gender	18-25 26-35 36-45 46-55 Female Male Single Married Divorced Widowed	270	64.13
		151	35.87
Marital Status		88	20.90
		153	36.34
		61	14.49
		119	28.27
Highest educational level	No formal education	61	14.49
	Basic education	101	23.99
	Secondary education	168	39.90
	Tertiary education	91	21.62
Occupation	Unemployed	62	14.73
		139	33.02
		55	13.06
		133	31.59
		32	7.60

Monthly income	Self employed Civil servants Trader Other < 500 500-999 1000-1499 ≥1500	76	18.05
		117	27.79
		119	28.27
		109	25.89
NHIS Status	Yes	399	94.77
	No	22	5.23
Distance to nearest health facility	<1km	56	13.30
	1-5km	242	57.48
	≥5km	123	29.22

Source: *Field Data, 2025*

4.2 Primary Reasons for Non-Adherence

Table 4.2 presents the primary reasons for non-adherence to prescribed medication among respondents. Forgetfulness was the most frequently reported barrier. While the majority (59.6%) stated that they never forgot to take their medication, 37.8% admitted sometimes forgetting, and smaller proportions reported lapses rarely (0.9%), often (1.2%), or always (0.5%).

Most respondents (72.0%) indicated they never stopped treatment once they felt improvement, but 24.0% admitted sometimes doing so, while 0.7% reported stopping rarely and 3.3% often.

Discontinuing treatment when symptoms worsened was more widespread. A large proportion (83.6%) reported sometimes stopping their medication when they felt worse, with a further 5.7% admitting to doing so often or always. Only 9.5% stated that they never stopped treatment under such circumstances, and 1.2% said they did so rarely. More than three-quarters (76.5%) reported

sometimes discontinuing treatment due to side effects, while 9.3% did so often and 0.7% always. A smaller group (13.5%) reported that side effects never interfered with their treatment.

Perceptions of hypertension showed that the vast majority (88.1%) reported "never" agreeing that hypertension is not a serious condition. A smaller proportion (11.2%) selected "sometimes," while very few respondents said "rarely" (0.5%) or "often" (0.2%). This suggests that misconceptions about hypertension were confined to only a minimal segment of the study population.

Finally, nearly half (46.6%) responded "sometimes" when asked if they preferred herbal remedies over prescribed drugs. Meanwhile, 37.5% said "never," 11.2% said "often," and 4.5% said "always." This indicates that while a majority trusted conventional medicine, a significant minority still leaned towards herbal alternatives.

Table 4.2 Primary Reasons for Non-Adherence

	Frequency	Percentage
I forgot to take my medication		
Never	251	59.62
Sometimes	159	37.77
Rarely	4	0.95
often	5	1.19
Always	2	0.48
I stop taking my medication when I feel better		
Never	303	71.97
Sometimes	101	23.99
Rarely	3	0.71
Often	14	3.33
I stop taking my medication when I feel worse after taking it		
Never	40	9.50

Sometimes	352	83.61
Rarely	5	1.19
Often	23	5.46
I don't believe hypertension is a serious condition		
Never	371	88.12
Sometimes	47	11.16
Rarely	2	0.48
Often	1	0.24
I experience side effect that discourages me from continuing treatment		
Never	57	13.54
Sometimes	322	76.48
often	39	9.26
Aways	3	0.71
I prefer traditional or herbal medication over hospital drugs		
Never	158	37.53
Sometimes	196	46.56
Rarely	1	0.24
Often	47	11.16
Always	19	4.51

4.3 Prevalence of Non-Adherence to Hypertension Treatment

Figure 4.1 illustrates the compliance status of respondents with prescribed medication. Out of the 421 participants assessed, 165 (39.2%) demonstrated compliance, while a larger proportion of 256 (60.8%) were classified as non-compliant. This indicates that more than half of the respondents failed to adhere consistently to their treatment regimen.

The high level of non-compliance suggests that barriers such as forgetfulness, side effects, perceptions of illness, and reliance on alternative therapies (as shown in Table 4.2) may be strongly

influencing behaviour. This finding underscores the urgent need for interventions that promote better adherence, such as counselling, patient education, and follow-up support.

Compliance and non-Compliance Level

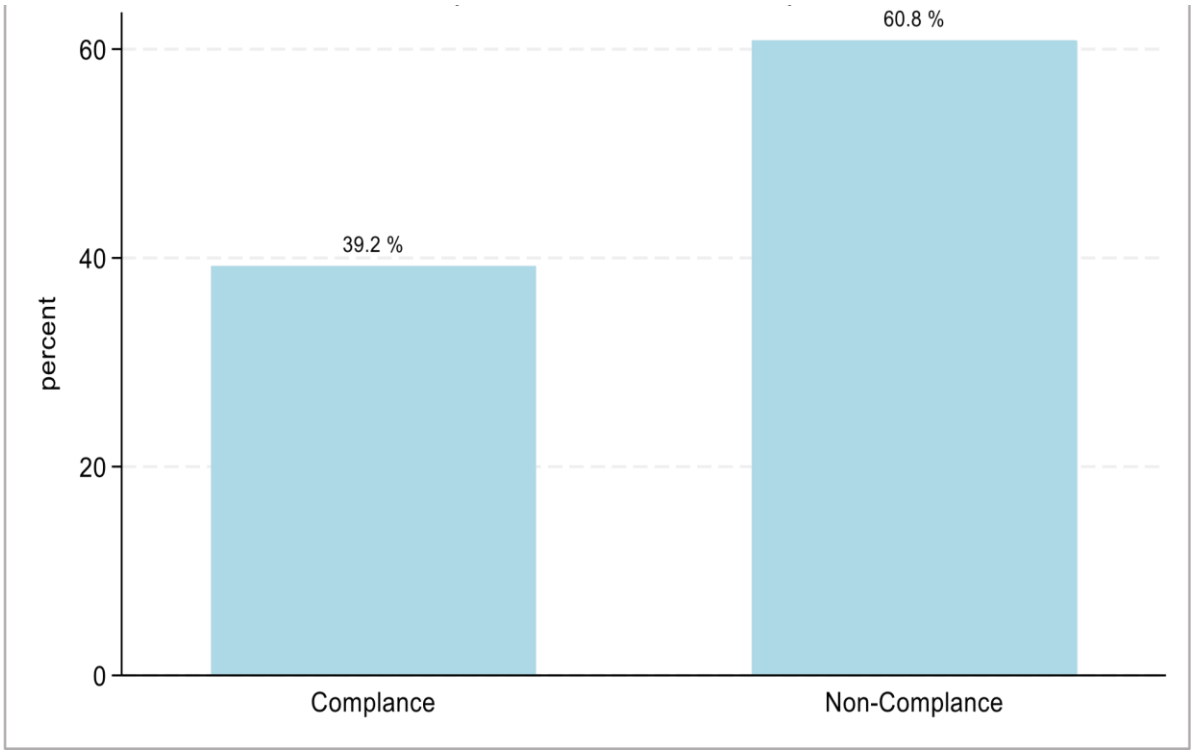

Figure 4.1 *Prevalence of Non-Adherence to Hypertension Treatment*

4.4 Association Between Sociodemographic Factors and Non-Adherence To Hypertensive Treatment

Table 4.3 presents the association between socio-demographic characteristics and non-adherence to prescribed medication. Age showed variation in levels of non-adherence, with participants in the group (36–45 years) recording the highest proportion of poor adherence (69.77%). Respondents aged 18-25 years and those aged 55 years and above demonstrated relatively better adherence (66.7%), making age grouping a statistically significant variable in the assessment (χ^2=12.38, p=0.015).

The gender of the respondents was also not significantly associated with adherence (χ^2=0.206, p=0.650). Female respondents (40%) and males (37.75%) showed closely related proportions of high adherence, suggesting that gender did not play a major role in influencing behaviour. Marital status showed some variation, though again without statistical significance (χ^2=4.68, p=0.197). Widowed (42.02%) and single (46.59%) respondents demonstrated relatively higher adherence compared to married respondents (33.33%), who had the poorest adherence levels.

Education on the other hand, showed a statistically significant relationship with adherence (χ^2=10.82, p=0.013), though respondents with no formal education (47.54%) and tertiary education (49.45%) had slightly better adherence compared to those with basic education (28.71%) and secondary education (36.9%). The reported occupation activities of the study participants were also statistically significant (χ^2= 13.53, p=0.09) with the assessed compliance status. Income levels were also not significantly associated with adherence (χ^2=3.05, p=0.383). Those earning ≥GHS 1500 (44.04%) and less than GHS 500 (43.42%) had slightly higher adherence compared to those in the GHS 500–999 range (34.45%). Health insurance status was also not a significant factor (χ^2=0.029, p=0.865). Both insured (19.5%) and uninsured (20.0%) respondents had nearly identical adherence levels. Distance to the nearest health facility also showed no significant relationship (χ^2=2.2187, p=0.330). However, those living closer than 1 km reported higher adherence (48.21%) compared to those 1–5 km away (37.60%) and those more than 5 km away (38.21%).

In summary, while descriptive differences were noted across age, marital status, NHIS and distance to health facility, only age, occupation and the educational status of the respondents demonstrated statistically significant associations with adherence in this analysis.

Table 4.3: Association Between Sociodemographic Factors and Non-Adherence To Hypertensive Treatment

Variable	Category	Frequency	Adherence Level		Pvalue
			Poor n (%)	High n (%)	
Age	18-25	12	4(33.3%)	8 (66.7%)	**0.015**
	26-35	44	28(63.6%)	16(36.4%)	
	36-45	86	60(69.77%)	26(30.23%)	
	46-55	104	70(67.3%)	34(32.7%)	
	55 Above	175	94(53.71s%)	81(66.7%)	
Gender	Female	270	162(60%)	108(40%)	0.650
	Male	151	94(62.5%0	57(37.75%)	
Marital status	Single	88	47(53.41%)	41(46.59%)	0.197
	Married	153	102(66.67%)	51(33.33%)	
	Divorced	61	38(62.30%)	23(37.70%)	
	Widowed	119	69(57.98%)	50(42.02%)	
Highest education level	No formal	61	32(52.46%)	29(47.54%)	**0.013**
	Basic	101	72(71.29%)	29(28.71%)	
	Secondary	168	106(63.10%)	62(36.90%)	
	Tertiary	91	46(50.55%)	45(49.45%)	
Occupation	Unemployed	62	31(50.00%)	31(50.00%)	**0.009**
	Civil servant	139	35(63.64%)	20(36.36%)	
	Self-employed	55	94(67.63%)	45(32.37%)	
	Trader	133	84(63.16%)	49(36.34%)	
	Other	32	12(37.50%)	20(62.50%)	
Monthly income	<500	76	43(56.58%)	33(43.42%)	0.383
	500-999	117	74(63.25%)	43(36.75%)	
	1000-1499	119	78(65.55%)	41(34.45%)	

	≥1500	109	61(55.96%)	48(44.04%)	
NHIS	Yes	399	243(60.90%)	156(39.10 %)	0.865
	No	22	13(59.09%)	9(40.91%)	
Distance to nearest health facility	<1km	56	29(51.79%)	27(48.21%)	0.330
	1-5km	242	151(62.40%)	91(37.60%)	
	≥5km	123	76(61.79%)	47(38.21%)	

4.5 To examine the determinants of treatment non-adherence to hypertensive treatment among residents in the Lower Manya Krobo Municipality.

4.5.1 Socio-Economic Determinants

Table 4.4 presents the socio-economic factors influencing non-adherence to treatment among residents in the Lower Manya Krobo Municipality. Cost of medication was a major barrier. Almost half of respondents (45.9%) agreed that they skipped treatment due to cost, with an additional 14.4% strongly agreeing. Although 26.8% disagreed and 5.6% strongly disagreed, this suggests that financial burden remains a significant contributor to non-adherence.

Transport to health facilities also emerged as a critical determinant. Nearly three-quarters of respondents (46.8% agree; 27.1% strongly agree) indicated that they missed appointments because of transport challenges. Only 23.3% disagreed or strongly disagreed, underscoring how accessrelated costs and logistics undermine continuity of care.

In contrast, lack of understanding of treatment instructions was less commonly reported. A vast majority (79.5%) disagreed that this affected adherence, with only 8.5% agreeing and 1.4% strongly agreeing. This shows that comprehension of medical advice was generally high among participants.

Work schedules, however, posed considerable obstacles. Over three-quarters of respondents admitted that their work commitments interfered with treatment: 31.5% agreed and 45.9% strongly agreed. Only 16.3% disagreed, while a small proportion (6.4%) remained neutral. This highlights occupational and time-related pressures as one of the strongest socio-economic determinants of non-adherence.

Table 4.4 Socio-Economic Determinants

Variable	Category	Frequency	Percentage
Skip due to cost	Strongly disagree	24	5.6
	Disagree	114	26.8
	Neutral	31	7.3
	Agree	195	45.9
	Strongly agree	61	14.4
Missed appointment due to transport	Strongly disagree	20	4.7
	Disagree	79	18.6
	Neutral	12	2.8
	Agree	199	46.8
	Strongly agree	115	27.1
Do not understand instructions	Strongly disagree	20	4.7
	Disagree	338	79.5
	Neutral	25	5.9
	Agree	36	8.5
	Strongly agree	6	1.4
Work schedule prevents adherence	Strongly disagree	5	1.2
	Disagree	64	15.1

	Neutral	27	6.4
	Agree	134	31.5
	Strongly agree	195	45.9

4.5.2 Psychological & Behavioural Determinants

Table 4.7 presents the psychological and behavioural factors influencing treatment adherence among respondents. Perceptions of risk played a key role. The majority (80.5%) disagreed with the statement that they were not at risk of complications, suggesting that most respondents recognised the dangers of untreated hypertension. However, 10.8% still agreed, and 6.4% remained neutral, indicating that a small but notable group underestimated their vulnerability.

Perceived health without medication was a more substantial barrier. Nearly equal proportions of respondents either agreed (43.8%) or remained neutral (43.1%) that they felt healthy even without medication. Only 12.2% disagreed, while less than 1% strongly disagreed. This perception that treatment is unnecessary in the absence of symptoms highlights an important behavioural challenge to adherence.

Fear of dependence also discouraged consistent use. Over half of the respondents (37.9% agree; 17.4% strongly agree) expressed concern that they might become dependent on antihypertensive medication. While 32.7% disagreed, and a small proportion remained neutral (11.8%), these findings point to widespread misconceptions that may reduce motivation to continue treatment.

Confidence to follow treatment appeared more favourable. Almost two-thirds (64.7%) disagreed with the statement that they lacked confidence in adhering, indicating a generally positive sense

of self-efficacy. Still, 17.2% agreed and 16.7% remained neutral, suggesting that a minority of patients struggled with confidence and consistency.

Forgetfulness was one of the most striking behavioural barriers. More than 80% of respondents admitted that they forget to take their medication unless reminded (61.2% agree; 19.3% strongly agree). Only 10.8% disagreed or strongly disagreed, highlighting forgetfulness as a critical driver of non-adherence.

Finally, family support was reported as a strong facilitator of adherence. More than half (55.5% agree; 19.1% strongly agree) stated they received family support in managing their condition. Only 8.5% disagreed or strongly disagreed, while 16.9% remained neutral. This demonstrates the important role of social support systems in enabling treatment adherence.

Table 4.5 Psychological & Behavioural Determinants

Variable	Category	Frequency	Percentage
Not at risk of complications	Strongly disagree	10	2.4
	Disagree	342	80.5
	Neutral	27	6.4
	Agree	46	10.8
Feel healthy without meds	Strongly disagree	1	0.2
	Disagree	51	12
	Neutral	183	43.1
	Agree	186	43.8
	Strongly agree	4	0.9
Afraid of dependence	Strongly disagree	1	0.2
	Disagree	139	32.7

	Neutral	50	11.8
	Agree	161	37.9
	Strongly agree	74	17.4
No confidence to follow treatment	Strongly disagree	5	1.2
	Disagree	275	64.7
	Neutral	71	16.7
	Agree	73	17.2
	Strongly agree	1	0.2
Forget unless reminded	Strongly disagree	5	1.2
	Disagree	41	9.6
	Neutral	37	8.7
	Agree	260	61.2
	Strongly agree	82	19.3
Family support	Strongly disagree	3	0.7
	Disagree	33	7.8
	Neutral	72	16.9
	Agree	236	55.5
	Strongly agree	81	19.1

4.5.3 Test or Reliability of Selected Questions

Table below displays the distribution characteristics of the participants' responses to the 12 ABQ items. Most of the items showed a positively skewed distribution of the scores, indicating a strong agreement to the item being a barrier. Exceptions like items 2 and 10 with relatively weak negative skewness indicate the respondents' strong disagreement with the preference of herbal medicine for treatment, and also the disagreement that their work schedule is a barrier to adherence.

A Cronbach's alpha (α) scale reliability coefficient on the 12-ABQ items was 0.5814, which demonstrates poor reliability in the responses provided. The Item-Total correlation ranged from 0.2456 to 0.5740, were item 5. *"I do not feel I am at risk of serious complications from hypertension,"* had the highest correlation.

Table 4.6: Cronbach Analysis for reliability test

Item	Adherence Barrier Questions	Mean	Median	Standard Deviation	Skew	Item-Test Corr.	Alpha
1	I do not fully understand the doctor's instructions due to language or education barriers.	2.1449	2	0.7810	2.3234	0.5516	0.5266
2	I prefer traditional or herbal medicine over hospital drugs.	3.4680	3	1.4855	-0.062	0.3936	0.5670
3	I do not have confidence in my ability to follow the treatment consistently	2.0356	2	0.6770	0.9253	0.5247	0.5339
4	I sometimes skip taking medication due to cost.	2.0736	2	1.2731	0.9502	0.4421	0.5552
5	I do not feel I am at risk of serious complications from hypertension	2.0024	2	0.5187	1.0282	0.5740	0.5204
6	I am afraid of becoming dependent on medication.	2.0998	2	1.1017	0.6364	0.3415	0.5792
7	I forgot to take my medication.	3.1591	2	1.4543	0.4519	0.4557	0.5518
8	I stop taking medication when I feel better.	2.7672	2	1.2791	1.1313	0.4895	0.5432
9	My family supports me in managing my condition.	2.0214	1	1.2486	0.6429	0.4338	0.5573
10	My work schedule prevents me from taking medication regularly or attending the clinic	2.7031	3	1.3521	-0.185	0.2456	0.6001
11	My family supports me in managing my condition.	2.0119	2	0.9648	0.1037	0.2705	0.5948
12	I experience side effects that discourage me from continuing treatment.	3.6152	4	0.7427	1.0282	0.3463	0.5781
						Test scale	**0.5814**

4.5.4 Determinants of Treatment Non-Adherence to Hypertensive Treatment Among Residents in the Lower Manya Krobo Municipality

The multivariable logistic regression identified education, occupation, and income as the key determinants of adherence to antihypertensive treatment among residents of the Lower Manya Krobo Municipality.

Respondents with secondary education were significantly less likely to default in treatment compared with those with no formal education (AOR = 0.23, 95 % CI: 0.09–0.69; p = 0.009). Likewise, those with tertiary education also had lower odds of non-adherence (AOR = 0.27, 95 % CI: 0.09–0.82; p = 0.019). Employment status also played a significant role. Unemployed respondents were more likely not to comply to treatment than government or public sector workers (AOR = 2.28, 95 % CI: 1.01–5.14; p = 0.047).

Monthly income showed a strong and independent positive effect. Compared with respondents earning less than GHS 500, those earning GHS 500–999 were more than twice as likely to default (AOR = 2.28, 95 % CI: 1.13–4.59; p = 0.021). The likelihood of non-adherence increased further among those earning GHS 1000–1499 (AOR = 2.67, 95 % CI: 1.29–5.56; p = 0.008) and was highest among those earning GHs 1500 or more (AOR = 2.91, 95 % CI: 1.26–6.74; p = 0.013).

Table 4. 7 The Demographic Determinants of Treatment Non-Adherence to Hypertensive Treatment Among Residents in the Lower Manya Krobo Municipality

Factors	Unadjusted		Adjusted	
	OR (95% CI)	p-value	OR (95% CI)	p-value
Age (ref: 18–25 yrs)				
26–35 yrs	2.46 (0.97–6.28)	0.055	2.46 (0.95–6.28)	0.065
36–45 yrs	2.05 (0.92–4.55)	0.080	1.56 (0.36–6.68)	0.537
46–55 yrs	2.65 (0.86–8.16)	0.083	1.64 (0.37–7.28)	0.528
55+ yrs	0.54 (0.06–4.68)	0.538	0.54 (0.06–4.69)	0.523
Sex (ref: Female)				
Male	1.34 (0.76–2.35)	0.308	1.34 (0.76–2.35)	0.308
Marital Status (ref: Other)				
Married	1.35 (0.61–2.97)	0.464	1.35 (0.61–2.97)	0.464
Single	1.02 (0.46–2.28)	0.925	1.02 (0.46–2.28)	0.925
Widowed	4.46 (0.68–29.5)	0.132	4.46 (0.68–29.5)	0.132
Educational Level (ref: No formal educ.)				
Primary	0.46 (0.22–0.98)	0.845	0.46 (0.22–0.98)	0.845
Secondary	0.23 (0.09–0.69)	0.009	0.23 (0.09–0.69)	0.009
Tertiary	0.27 (0.09–0.82)	0.019	0.27 (0.09–0.82)	0.019
Occupation (ref: Govt/Public)				
Self-employed	1.35 (0.86–2.13)	0.200	1.35 (0.86–2.13)	0.200
Trader	1.59 (0.92–2.76)	0.096	1.59 (0.92–2.76)	0.096
Unemployed	1.79 (1.01–3.19)	0.046	2.28 (1.01–5.14)	0.047
Monthly Income (ref: <500 GHc)				
500–999 GHc	2.97 (1.48 – 5.95)	0.002	2.28 (1.13 – 4.59)	0.002
1000–1499 GHc	2.18 (1.18 – 4.03)	0.012	2.67 (1.29 – 5.56)	0.012
≥1500 GHc	3.05 (1.30 – 7.15)	0.247	2.91 (1.26 – 6.74)	0.013
Nearest Facility (ref: <1 km)				

1–5 km	0.83 (0.44–1.61)	0.590	0.83 (0.44–1.61)	0.590
≥5 km	0.92 (0.56–1.52)	0.706	0.92 (0.56–1.52)	0.706

CHAPTER FIVE

5.0 DISCUSSIONS

5.1 Prevalence of Non-Adherence Among Patients Diagnosed with Hypertension in the Lower Manya Krobo Municipality

The present study revealed that non-adherence to hypertension treatment was high in the Lower Manya Krobo Municipality, with 60.8 % of respondents classified as non-adherent and 39.2 % adherent. This finding underscores that adherence remains one of the most pressing challenges in hypertension management, not only in Ghana but also globally.

The behavioural reasons captured in this study help explain these patterns. Forgetfulness was the single most common barrier, with nearly four in ten respondents (37.6%) admitting they sometimes forgot to take their medication. This aligns with global evidence that forgetfulness is a leading behavioural determinant of non-adherence (WHO, 2023; Mills et al., 2020). In peri-urban settings such as Lower Manya Krobo, competing livelihood demands and the absence of structured reminder systems likely compound this problem, making medication-taking difficult to prioritise in daily routines.

Stopping medication prematurely was another major reason. About one-quarter of respondents (23.8%) reported that they sometimes discontinued treatment once they felt better, while a smaller proportion admitted to stopping rarely or often. This reflects the chronic and largely asymptomatic nature of hypertension, where patients perceive little benefit from continuous medication when symptoms are absent. Burnier and Egan (2019) and Vrijens et al. (2017) describe this as the “silent illness” problem, where symptom-driven adherence dominates patient behaviour. In Ghana, Boima

et al. (2015) similarly reported that many patients stopped medication once blood pressure appeared stable.

Even more concerning was the tendency to discontinue treatment when feeling worse. In this study, over 80% of the respondents admitted to sometimes abandoning medication due to side effects or perceived worsening of their condition. Side effects in particular were highly influential, with more than three-quarters (76.4%) reporting they sometimes discontinued treatment because of them, and around one in ten doing so often or always.

This highlights the role of negative treatment experiences in shaping adherence behaviour, consistent with findings from Atinga et al., (2018) and Ibrahim et al. (2024), where adverse drug reactions were cited as common reasons for defaulting. The data suggests that without effective counselling and follow-up, side effects may lead patients to mistrust therapy and abandon treatment altogether.

Cultural perceptions also shaped adherence. Although most respondents strongly disagreed with the statement that hypertension is not serious, a small but notable minority either remained neutral (11.1%) or agreed (0.7%), suggesting that misconceptions persist. This echoes previous Ghanaian studies, where hypertension has often been perceived as a temporary or even spiritual condition (Lamptey et al., 2017; Atinga et al., 2018). Herbal medicine preferences further complicated adherence: nearly half of respondents (46.2%) were undecided, while 15.6% expressed preference for herbal remedies over prescribed drugs. Such findings mirror those from Adidja et al., (2018) in Cameroon and Ibrahim et al., (2024) in Nigeria, where traditional alternatives competed with conventional therapy, particularly when systemic or financial barriers made continued pharmaceutical treatment less appealing.

Economic and structural barriers also reinforce these patterns. Even though most participants were covered under the NHIS, persistent drug stockouts, out-of-pocket expenses, and indirect costs such as transport and time away from work may have discouraged continuity of care. Bosu and Bosu (2021) observed that despite insurance coverage, many hypertensive patients in Ghana pay for drugs themselves, undermining treatment sustainability. Similar cost-related barriers have been highlighted across sub-Saharan Africa (Shin & Konlan, 2023; Mutua et al., 2023).

Comparatively, the prevalence reported here is even higher than national and regional averages. While Ghanaian studies have estimated adherence rates between 9.4% and 33% (Awuah et al., 2014; Boima et al., 2015; Bosu & Bosu, 2021), this study found 80.5% of respondents in the low adherence category. Comparable figures elsewhere include nearly 50% non-adherence in Kenya (Mutua et al., 2023) and over 90% uncontrolled hypertension in Nigeria (Ibrahim et al., 2024). Thus, the Lower Manya Krobo results reflect an especially severe adherence challenge, amplifying the urgency for localised, context-driven interventions.

Taken together, these findings demonstrate that non-adherence in Lower Manya Krobo is not driven by one single factor but by the interplay of behavioural barriers (forgetfulness, stopping medication when better or worse, side effects), cultural perceptions, and systemic weaknesses. The extraordinarily high prevalence observed underscores both the systemic constraints in health service delivery and the lived realities of patients managing a chronic but symptomless condition amid pressing economic and social demands.

5.2 Sociodemographic Associated with Non-Adherence To Hypertensive Treatment Among Residents in the Lower Manya Krobo Municipality.

This study found that certain sociodemographic characteristics, particularly age, education, and occupation had a significant association with adherence to antihypertensive treatment, whereas

sex, marital status, income, health insurance status, and distance to health facility showed no statistically significant effect. These results suggest that while individual background characteristics may shape treatment behaviour, adherence in the Lower Manya Krobo Municipality is largely influenced by how these factors interact with daily realities, rather than by demographic attributes alone.

Adherence was generally poorer among younger and middle-aged adults compared with older respondents. Participants aged between 36 and 45 years recorded the highest level of nonadherence (69.8 %), while those aged 55 years and above demonstrated better consistency with medication. This pattern reinforces the notion that as people grow older, their awareness of the risks associated with uncontrolled hypertension increases, prompting them to take treatment more seriously. Younger adults, on the other hand, often face competing social and occupational priorities and may underestimate their vulnerability to complications, leading to irregular use of medication. Burnier and Egan (2019) similarly observed that adherence to antihypertensive therapy improves with age due to heightened risk perception, while the WHO (2023) notes that younger populations tend to deprioritise long-term treatment for chronic, symptomless diseases.

Educational level also emerged as a significant predictor of adherence. Respondents with secondary and tertiary education were more likely to comply with treatment compared with those with no formal or only basic education. Education enhances comprehension of medical instructions and fosters a clearer understanding of hypertension as a lifelong condition requiring continuous management, even in the absence of symptoms. However, the persistence of non-adherence among some educated respondents points to the limits of knowledge when broader structural barriers— such as financial strain, stockouts of antihypertensive drugs, or long waiting times—remain unaddressed. Similar patterns have been reported by Lamptey *et al.,* (2017) and

Adidja *et al.,* (2018), who found that while health literacy facilitates adherence, systemic barriers often erode its positive effect.

Occupation also showed a statistically significant relationship with adherence. Traders and selfemployed individuals were less adherent compared with those employed in the public sector. The irregular schedules typical of informal work, coupled with the absence of paid leave or workplace flexibility, may restrict opportunities for routine clinic attendance or timely medication refills. Conversely, unemployed respondents recorded relatively better adherence, possibly because of fewer time conflicts despite financial limitations. These findings echo those of Ibrahim et al., (2024) and Mutua et al., (2023), who observed that work-related time pressure and unstable income streams contribute substantially to poor treatment continuity in sub-Saharan African contexts. In contrast, other demographic variables including sex, marital status, income, health insurance status, and proximity to health facilities did not significantly influence adherence. Male and female respondents exhibited nearly identical adherence levels, indicating that both groups experience similar systemic constraints that overshadow gendered behaviour patterns. Marital status showed some descriptive variation, with divorced participants reporting slightly lower adherence than widowed or single respondents, but this difference was not statistically meaningful. While social support from family or partners can encourage adherence, as Atinga et al., (2018) noted, its protective influence appears secondary to the structural and economic challenges that cut across all groups.

Income and health insurance were likewise not decisive. Even though most participants were registered under the NHIS, coverage gaps and recurrent medicine shortages meant that insured and uninsured patients faced comparable financial barriers. Bosu and Bosu (2021) similarly highlighted that in Ghana, the promise of universal coverage is undermined when essential drugs are unavailable, forcing patients to purchase medicines out-of-pocket. Distance to the nearest

facility also lacked a significant effect, suggesting that for residents of peri-urban areas like Lower Manya Krobo, the affordability and reliability of services weigh more heavily on adherence than sheer physical access. As Mutua et al., (2023) argue, proximity alone offers little advantage when health systems fail to guarantee continuous supply or responsive care.

Taken together, these findings portray a complex picture in which sociodemographic factors influence adherence not in isolation, but through their intersection with broader social and systemic realities. Age, education, and occupation highlight how awareness, capability, and livelihood constraints interact to shape health behaviour, while other demographic characteristics exert limited direct impact. This reinforces the World Health Organization's (2023) position that adherence is a multidimensional phenomenon determined by intertwined behavioural, social, and health-system factors. Strengthening adherence, therefore, requires integrated strategies that combine patient education, occupationally sensitive clinic scheduling, and systemic reliability in medicine supply, rather than focusing solely on demographic profiles.

5.3 Determinants of Treatment Non-Adherence to Hypertensive Treatment Among

The analysis of socio-economic determinants revealed that non-adherence to hypertension treatment in the Lower Manya Krobo Municipality is shaped by various factors rather than by any single, isolated cause. This pattern illustrates the complex social environment within which patients attempt to manage chronic illness, where financial hardship, livelihood constraints, and system inefficiencies reinforce one another to undermine adherence.

Among these barriers, the cost of medication stood out as one of the most persistent concerns. Nearly half of respondents admitted skipping treatment because they could not afford their prescribed drugs, and the chi-square test confirmed a significant bivariate association between cost and adherence. Such findings are consistent with a wide body of evidence from Ghana and the

wider sub-Saharan region showing that affordability remains a major determinant of treatment discontinuation. Bosu and Bosu (2021) observed that even with national insurance coverage, many hypertensive patients continue to pay out-of-pocket for essential medicines, while Boima et al., (2015) and Mutua et al., (2023) likewise emphasised that high cost of drug prices and low income patterns frequently interrupt therapy. Yet in the adjusted regression model, cost lost statistical significance, suggesting that its effect is inseparable from other factors such as employment instability and transport expenses. In practice, the financial strain operates with these related burdens, meaning that income constraints alone do not fully explain non-adherence.

Understanding of treatment instructions and patient–provider communication introduced another dimension to the problem. Although only a small proportion of participants reported language or comprehension barriers, those who did so were consistently less adherent, and the chi-square analysis showed a strong association between misunderstanding instructions and non-adherence. This finding highlights how the ability to comprehend medical guidance underpins the success of long-term treatment. As Lamptey et al., (2017) and Atinga et al., (2018) argue, effective communication and culturally responsive health education can strengthen patient trust and encourage medication persistence.

A further barrier identified was occupational pressure. Many respondents, especially traders and self-employed individuals, reported that their work schedules interfered with consistent medication use or clinic attendance. This observation mirrors findings from Ibrahim et al., (2024) in Nigeria and Mutua et al., (2023) in Kenya, where long working hours, informal employment patterns, and the absence of workplace health support contribute to irregular adherence. In the present study, the effect of work schedules diminished in the regression model, indicating that

employment-related constraints often coincide with financial strain and transport issues. For many residents, missing work to attend clinic appointments can directly translate into lost income.

These findings support the World Health Organization's (2023) position that medication adherence is a multidimensional process shaped by intertwined economic, social, and behavioural determinants rather than by single variables. In contexts where poverty, occupational instability, and health-system limitations converge, the effect of one factor cannot be disentangled from the others.

The socio-economic analysis paints a picture of patients navigating an environment of persistent financial vulnerability and constrained access to reliable care. Non-adherence in Lower Manya Krobo is therefore not simply a matter of forgetfulness or lack of will but a reflection of structural hardship that limits patients' capacity to maintain lifelong therapy. Effective policy responses must address these overlapping realities through integrated strategies that combine financial protection, accessible and affordable medication supply, workplace-friendly clinic hours, and continuous patient education. Only by approaching adherence as both a behavioural and socio-economic challenge can health systems ensure sustained control of hypertension in communities such as Lower Manya Krobo.

CHAPTER SIX

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction:

This chapter presents the conclusion of the study which includes a summary of the key findings from the data analyzed. The chapter further presents recommendations that are based on the findings from the study. The recommendations are presented to stakeholders and interested parties as well as recommendations for future studies.

6.2 Conclusions

The findings revealed a high prevalence of non-adherence, with 60.8% of respondents classified as non-adherent and 39.2% adhering to their prescribed medication. The study also revealed that age, education, and occupation were significantly associated with adherence, while other sociodemographic factors such as sex, marital status, income, health insurance status, and distance to health facilities were not statistically significant. Although descriptive variations were observed across these groups, the differences were not strong enough to influence adherence behaviour independently. This suggests that in the Lower Manya Krobo Municipality, non-adherence cuts across various categories of patients and reflects broader structural and behavioural barriers rather than purely individual characteristics.

Chi-square analyses revealed that cost of medication, work schedules, and language or education barriers were significantly associated with non-adherence. In addition, behavioural factors such as forgetfulness, lack of confidence in medication, and the perception that treatment was unnecessary once symptoms subsided further undermined long-term adherence.

The study concludes that the high prevalence of non-adherence is driven by overlapping systemic, economic, and behavioural challenges that collectively weaken continuity of care. Tackling nonadherence therefore requires integrated and context-sensitive interventions that address financial, occupational, and communication barriers simultaneously to improve treatment outcomes for hypertensive patients in the municipality.

6.3 Recommendations

1. The Ghana Health Service (GHS) should enhance financial protection by expanding NHIS coverage for antihypertensive drugs and ensuring timely reimbursement to health facilities. This will reduce out-of-pocket expenses and encourage sustained treatment among patients.
2. Health facilities should adopt simplified, culturally appropriate communication strategies, including the use of local languages and visual aids, to help patients fully understand the nature of hypertension and the importance of consistent medication adherence.
3. Healthcare Administrators or Head Directorates should strengthen the role of Community Health Workers (CHWs) in patient follow-up and adherence monitoring, particularly for individuals identified as being at high risk of defaulting. Regular home visits and mobile reminders could improve continuity of care and reduce default rates.
4. There should be community healthcare advocacy through the media, churches, communities, market squares and mosques for clients on the negative effects of nonadherence of hypertension medications.
5. Routine clinic visit: Assess medication effectiveness, adherence, and help clients understand what hypertension is and why it matters to adhere to medications.

6. Address mental health: Stress management techniques like mindfulness or counselling may also help regular adherence.
7. **Future Academic work:** Future research work on the subject matter should consider using a Qualitative approach to help explore in-depth feedback to the identified factors resulting into the level of non-adherence on hypertension treatment among the study participants in the Lower Manya Krobo Municipality.

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APPENDIX

QUESTIONNAIRE

QUESTIONNAIRE

Section A: Socio-Demographic Information

1. Age: _____ years
2. Sex: ☐ Male ☐ Female
3. Marital status: ☐ Single ☐ Married ☐ Divorced ☐ Widowed
4. Educational level: ○ ☐ No formal education ○ ☐ Basic education ○ ☐ Secondary education ○ ☐ Tertiary education
5. Occupation: _____
6. Monthly income (GHS): ○ ☐ <500 ○ ☐ 500–999 ○ ☐ 1000–1499 ○ ☐ ≥1500
7. Do you have health insurance (NHIS)? ☐ Yes ☐ No
8. Distance to nearest health facility:
   ○ ☐ <1 km ○
   ☐ 1–5 km ○
   ☐ >5 km

Section B: Prevalence and Primary Reasons for Non-Adherence

9. I forget to take my medication.

☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always 10.

I stop taking medication when I feel better.

☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

11. I stop taking medication when I feel worse after taking it.

☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

12. I do not believe hypertension is a serious condition.

☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree 13.

I prefer traditional or herbal medicine over hospital drugs.

☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree

14. I experience side effects that discourage me from continuing treatment.

☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree

Section C: Determinants of Non-Adherence

Socioeconomic Determinants

15. I sometimes skip taking medication due to cost.

☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree

16. I miss clinic appointments because of transportation costs or distance.

☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree

17. I do not fully understand the doctor's instructions due to language or education barriers.

☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree

18. My work schedule prevents me from taking medication regularly or attending clinic.

☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree

Psychological and Behavioural Determinants

19. I do not feel I am at risk of serious complications from hypertension.

☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree

20. I feel healthy even when I don't take my medication.

☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree 21. I am afraid of becoming dependent on medication.

☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree

22. I do not have confidence in my ability to follow the treatment consistently.

☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree

23. I sometimes forget to take medication unless reminded.

☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always

24. My family supports me in managing my condition.

☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree

INFORMED CONSENT FORM

GENERAL INFORMATION ABOUT THE RESEARCH

I am Antonio Kojo Fuleamenu, a Master of Public Health student at Ensign Global College, Kpong. I am conducting a study titled: **"**Determinants of Non-Adherence to Hypertension Treatment Among Adult Patients in the Lower Manya Krobo Municipality of the Eastern Region of Ghana." You have been selected to take part in this study because you are currently receiving treatment for hypertension at a health facility within the municipality.

In this study, you will be asked to answer some questions by choosing the responses that best describe your experiences and views. The questionnaire covers areas such as your background information, understanding of hypertension, treatment experiences, and the reasons why you may or may not follow your prescribed treatment. It will take about 15 minutes to complete the questionnaire.

Benefits and Risks of the Study

There are no known risks associated with participating in this study. However, the time spent answering the questions may be slightly inconvenient. There is no direct personal benefit from taking part, but your participation will contribute to research that may help improve hypertension care and support services in Ghana and beyond.

Confidentiality

All information you provide will be kept private and anonymous. Your name and personal identity will not appear in any report or publication based on this study. Data will be securely stored in password-protected files that only the researcher and research supervisor can access.

Compensation

Participation in this study is completely voluntary. There will be no monetary reward or payment for your time. However, we are very grateful for your contribution to this important research.

Right to Withdraw

You have the right to decline participation or stop answering questions at any point without facing any consequences or losing any healthcare benefits. You may also ask questions now or at any time during the study.

PARTICIPANT AGREEMENT

If you are willing to take part in this study, please sign below.

I have read (or have had read to me) the information above. I understand what the study is about and what I am being asked to do. I have had the chance to ask questions and my questions have been answered clearly. I know I can choose not to take part or stop participating at any time. I voluntarily agree to take part in this study.

_____

Name of Participant

_____

Signature of Participant

_____

Date

I certify that the nature and purpose, the potential benefits, and possible risks associated with participating in this research have been explained to the above individual.

_____

Name of Person who Obtained Consent

_____

Signature of Person Who Obtained Consent

_____ Date

22416504:ANTONIO_KOJO_FULEAMENU.pdf

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