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COLLEGE OF HEALTH SCIENCES

SCHOOL OF NURSING AND MIDWIFERY



**EXPLORING SELF-MANAGEMENT PRACTICES AMONG PEOPLE WITH
COMORBIDITY OF TYPE 2 DIABETES MELLITUS AND METABOLIC SYNDROME AT**

ATUA GOVERNMENT HOSPITAL

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**THIS THESIS IS SUBMITTED TO THE UNIVERSITY OF
GHANA, LEGON, IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR
THE AWARD OF MPhil NURSING DEGREE**

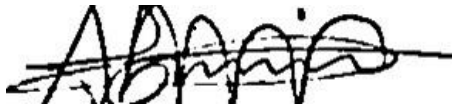
DEPARTMENT OF ADULT HEALTH

JUNE, 2025.

INTEGRI PROCEEDAMUS

DECLARATION

I, Abigail Ibrahim, declare that this thesis is a record of my research work. No material of this same write-up has been presented either in whole or in part to any other institution for the award of any degree or certificate. References used from other researchers and authors have been duly acknowledged.

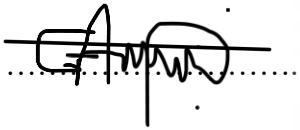


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DEDICATION

I dedicate this work to the Almighty God for His loving kindness toward me and then to my family, colleagues, and superiors at work for their unwavering support.



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I give glory to the Almighty God for His love and protection throughout my studies and for completing the programme. My heartfelt appreciation goes to my supervisors, Dr. Gloria Achempim-Ansong and Prof. Kwadwo Ameyaw Korsah, for their guidance, constructive criticisms, and support in getting this work done well. God richly bless them. I also sincerely thank the Dean of the School of Nursing and Midwifery, Professor Florence Naab, the head of the Adult Health Department, Dr. Cecilia Eliason, and the entire teaching and non-teaching staff of the School of Nursing and Midwifery for their unwavering support throughout my study. To the University of Ghana-Legon, my sincere thanks for the opportunity given to me.

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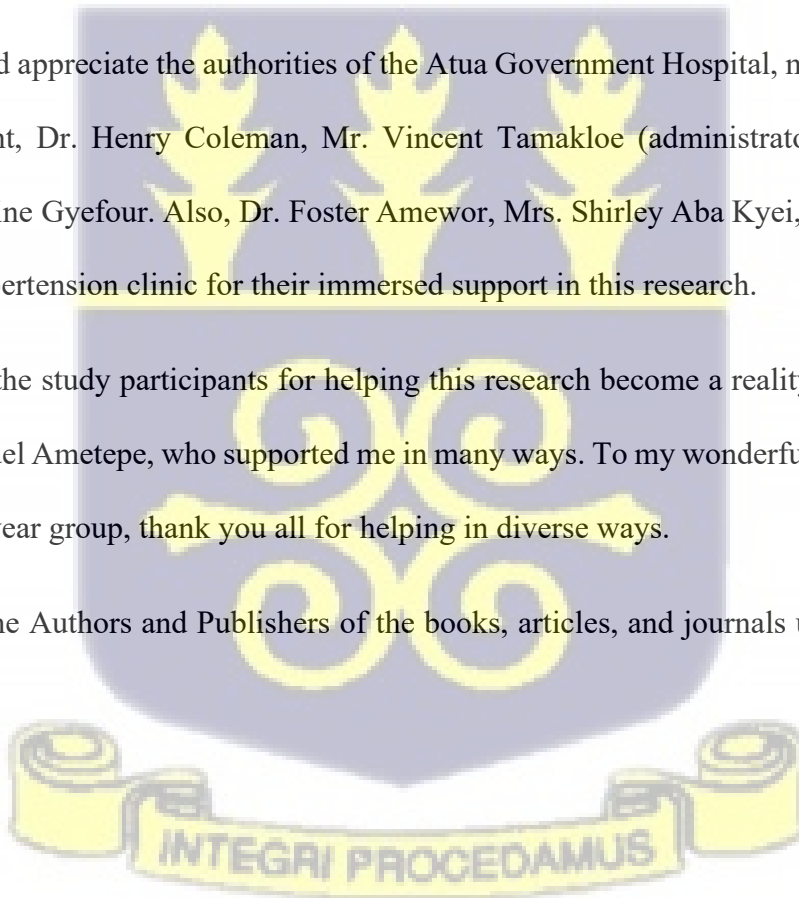


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LIST OF ABBREVIATIONS

- | | |
|------------|--|
| 1. NCEP | National Cholesterol Education Programme |
| 2. ATP III | Adult Treatment Panel III |
| 3. IDF | International Diabetic Federation |
| 4. CVD | Cardiovascular Disease |
| 5. BP | Blood Pressure |
| 6. FBS | Fasting blood sugar |
| 7. HDL | High-density lipoprotein |
| 8. LDL | Low-density lipoprotein |
| 9. METS | Metabolic Syndrome |
| 10. MOH | Ministry of Health |
| 11. BP | Blood Pressure |
| 12. T2DM | Type 2 diabetes mellitus |
| 13. TG | Triglyceride |
| 14. WHO | World Health Organization |
| 15. SMP | Self-Management Practices |
| 16. HBM | Health Belief Model |
| 17. SRM | Self-Regulatory Model |
| 18. CCM | Chronic Care Model |



ABSTRACT

Background: Type 2 Diabetes Mellitus (T2DM) and metabolic syndrome (MetS) are interrelated chronic conditions that pose significant public health challenges, particularly in sub-Saharan Africa, where obesity and sedentary lifestyles are prevalent. Limited research has holistically explored self-management practices for people living with T2DM and MetS.

Aim: The study aimed to explore the self-management practices of people living with the comorbidity of T2DM and MetS.

Methods: This study adopted a qualitative exploratory-descriptive design grounded in interpretivism. Conducted at Atua Government Hospital, the study purposively sampled 17 participants aged 35–70. Data were collected through semi-structured interviews, audio-recorded, and transcribed verbatim. Thematic analysis, which the Health Belief Model guided, identified six key themes: Knowledge Acquisition and Interpretation of T2DM and MetS, (2) perceived benefits and ambivalence towards self-management, Perceived challenges of managing T2DM and MetS, Self-efficacy in managing T2DM and MetS, Adaptive Strategies and Coping Mechanisms for Managing T2DM and MetS, and Expected clinical interventions to manage conditions better.

Results: The study found varied understanding of T2DM and MetS among participants, ranging from poor knowledge to a clear understanding of the conditions. Self-management strategies, including medication adherence and lifestyle changes, were hindered by financial constraints, physical limitations, and insufficient clinician support. Social and family support, faith, and the NHIS aided coping; the study supported the assertion that effective self-management is vital in the prevention of metabolic complications, as was expressed by participants to improve glycaemic control and psychological well-being.

Conclusion: There is a clear indication for extensive patient education, culturally customised healthcare practices, and policy support to improve access, affordability, and quality care for people with T2DM and MetS. Future research should investigate the role of culturally recognised traditional medicines and dietary behaviours. The impact of improved communication and customised care on treatment adherence and health outcomes also needs further exploration.

Keywords: *Type 2 diabetes mellitus, metabolic syndrome, comorbidity, self-management practices, knowledge, perceived benefits, perceived challenges, self-efficacy*



CHAPTER ONE

18.0 INTRODUCTION

18.1 Background

Type 2 Diabetes Mellitus (T2DM) and Metabolic Syndrome (MetS) are among the most prevalent non-communicable diseases (NCDs) globally and have been recognized as significant contributors to morbidity and mortality (Regufe et al., 2020). T2DM accounts for over 90% of all diabetes cases and is characterized by insulin resistance and impaired insulin secretion, resulting in chronic hyperglycemia (Galicia-Garcia et al., 2020). MetS is defined as a cluster of metabolic abnormalities including central obesity, elevated fasting blood glucose, hypertension, elevated triglycerides, and low high-density lipoprotein (HDL) cholesterol, which increases the risk of cardiovascular disease (CVD) and T2DM (Alberti et al., 2006). The most widely used diagnostic criteria are from the NCEP ATP III, which defines MetS as the presence of at least three risk factors. Other bodies, such as the IDF and WHO, offer slightly different criteria, emphasizing abdominal obesity and insulin resistance (Grundy, 2002; Gupta & Gupta, 2010; Roglic, 2016).

The global burden of T2DM and MetS is increasing, with 424.9 million adults (8.8%) having diabetes in 2017, and projected to reach 628.6 million (9.9%) by 2045 (Agyemang-Yeboah et al., 2019). Approximately 20–25% of these individuals also meet the criteria for MetS, placing them at significantly higher risk of adverse cardiovascular outcomes and early mortality (Rasheed et al., 2019; Regufe et al., 2020; Standl et al., 2019). Globally, MetS affects up to 25% of adults and is found in 70–80% of individuals with T2DM (Achempim-Ansong et al., 2022; Christian et al., 2021; Osei-Yeboah et al., 2017).

In Sub-Saharan Africa, the rising incidence of these lifestyle-related chronic diseases is fueled by rapid urbanization, sedentary behaviors, and dietary transitions (Nanditha et al., 2016; Saeedi et al., 2020). A recent systematic review reported a 71.7% prevalence of MetS among individuals with T2DM in the region (Hellebo et al., 2024; Musilanga et al., 2024). In Ghana, the prevalence of MetS among people with T2DM ranges between 58% and 90%, depending on the diagnostic criteria used (Agyemang-Yeboah et al., 2019; Osei-Yeboah et al., 2017). Mortality from diabetes-related complications is also rising, particularly in low-resource and peri-urban areas, similar to that of the Atua Government Hospital (Bossman et al., 2021; Ziblim et al., 2025).

Despite the growing burden, there is insufficient evidence on how Ghanaians, especially those with comorbid T2DM and MetS, manage their conditions daily. Studies have shown that self-management behaviors, such as dietary control, physical activity, medication adherence, and blood glucose monitoring, are associated with improved outcomes (Aschner et al., 2014; Davies et al., 2018; Reisi et al., 2016). However, similar research done in Ghana has focused on T2DM alone, predominantly in urban centers like Accra, Kumasi, and Tamale, and has relied mainly on quantitative methods (Afaya et al., 2020; Obirikorang et al., 2016). Therefore, patients' lived experiences are not adequately captured in these previous studies, including psychosocial, cultural, and infrastructural challenges that influence how self-management is practiced, especially in rural and peri-urban settings (Turner & Larkin, 2023). Moreover, patients with both T2DM and MetS face intersecting challenges, such as limited disease-specific knowledge, low self-efficacy, and healthcare access constraints. These challenges demand a nuanced understanding of how individuals perceive, adapt to, and manage dual chronic conditions (Cuda et al., 2022; Mikhael et al., 2019; Pesantes et al., 2019).

Although Ghana's Standard Treatment Guidelines (STG) emphasize integrated care approaches, including pharmacological therapy, dietary counseling, physical activity, and patient education (Swaray

et al., 2023; Yorke et al., 2024). The extent to which patients in semi-urban communities understand and apply these recommendations remains underexplored. The Eastern Region, where Atua Government Hospital is located, is underrepresented in literature regarding diabetes self-management despite having unique socio-cultural and healthcare delivery dynamics that likely influence patient behavior and outcomes (Amon & Aikins, 2017; Dowou et al., 2023).

18.2 Problem Statement

Type 2 Diabetes Mellitus (T2DM) and Metabolic Syndrome (MetS) are increasingly prevalent in Ghana and contribute significantly to the country's non-communicable disease (NCD) burden. According to the 2018 World Health Organization report, an estimated 94,400 people in Ghana died from NCDs in 2016, with cardiovascular diseases (CVDs) being a major contributor (Abdul, 2020; Christian et al., 2021; Hashim, 2020). The Ghana Health Service reported a rise in outpatient cases of diabetes from 189,672 in 2011 to 214,357 in 2014, and adult prevalence is projected to increase from 3.6% in 2017 to 5.1% by 2045 (Agyemang-Yeboah et al., 2019; Kodom et al., 2022). Among individuals diagnosed with T2DM, the prevalence of MetS ranges from 58% to 90%, indicating a growing burden of dual chronic conditions (Agyemang-Yeboah et al., 2019; Osei-Yeboah et al., 2017). Despite the documented benefits of self-management in preventing complications such as neuropathy, cardiovascular events, foot ulcers, and premature death (Kumar & Mohammadnezhad, 2022; Mishra, 2022). Many individuals in Ghana demonstrate low adherence to recommended treatment and lifestyle practices (Mobula et al., 2018; Weller et al., 2017). Poor health literacy and limited understanding of T2DM and MetS have been reported, particularly among vulnerable populations (Achempim-Ansong et al., 2022; Obirikorang, Obirikorang, Anto et al., 2016). Furthermore, even when individuals recognize the value of self-care, they often face significant barriers, including financial constraints, limited social support, and

inadequate access to culturally relevant health education (Mogre et al., 2019). Self-efficacy, the confidence to engage in effective self-management, varies widely and is influenced by personal experiences, interactions with healthcare providers, and available resources (Bezerra et al., 2023).

Existing studies in Ghana have primarily focused on T2DM and MetS as separate entities, using predominantly quantitative approaches that overlook the complex, psychosocial, and contextual factors influencing self-management. Moreover, most of these studies have focused on urban settings, leaving a gap in understanding the lived experiences of individuals managing both conditions in semi-urban or rural contexts (Amon et al., 2024; Amu et al., 2021).

This study seeks to address these gaps by exploring how individuals living with comorbid T2DM and MetS at Atua Government Hospital in the Eastern Region of Ghana perceive their health conditions, understand the benefits and challenges of self-management, and assess their self-efficacy in managing these conditions. This hospital serves a semi-urban population with limited access to specialist care, making it a relevant context for examining these issues. Findings from this study will contribute to the development of more effective, context-sensitive, and patient-centered interventions to improve chronic disease outcomes in resource-limited settings.

18.3 Purpose of the Study

The purpose of the study was to explore the self-management practices of people living with comorbidity of type 2 diabetes mellitus and metabolic syndrome.

18.4 Research Objectives

These research objectives were developed based on a thorough analysis of the existing literature and an observed gap in understanding how individuals with comorbidity of type 2 diabetes (T2DM) and metabolic syndrome (MetS) perceive and manage their condition. The objectives were informed by the

need to capture the multidimensional aspects of patient knowledge, the benefits and challenges of self-management practices, and the role of self-efficacy in disease management. These objectives were formulated using the constructs of the Health Belief Model, the study's theoretical model, and include:

To;

1. Explore the knowledge and sources of information among individuals with comorbidity of type 2 diabetes and metabolic syndrome regarding the condition and its management.
2. Explore the perceived benefits of self-management practices among individuals with comorbidity of T2DM and MetS.
3. Explore the perceived challenges of individual participants in adopting and maintaining self-management behaviours for T2DM and MetS.
4. Explore the individuals' self-efficacy and coping strategies in managing type 2 diabetes and metabolic syndrome comorbidities.

18.5 Research Questions

1. What is the knowledge and sources of information of individuals with comorbidity of type 2 diabetes mellitus and metabolic syndrome regarding the conditions and management?
2. What are the perceived benefits of self-management practices for T2DM and MetS?
3. What are the perceived challenges of individuals with comorbidity of type 2 diabetes mellitus and metabolic syndrome in adopting and maintaining self-management behaviours?
4. What are the self-efficacy and coping strategies of people managing type 2 diabetes and metabolic syndrome comorbidities?

18.6 Significance of the Study

The findings from this study would play a crucial role in empowering patients to self-manage their health through targeted education and support programs. This would thereby impact nursing practice by

promoting the creation of integrated care models tailored to address the needs of patients with multiple chronic conditions. Additionally, these findings are expected to inform public policy decisions related to preventing and managing Type 2 Diabetes Mellitus and Metabolic Syndrome while also serving as a foundation for future researchers to develop other research questions.

18.7 Operational Definition of Terms

Self-management Practices: Intentional and systematic activities, behaviours, or strategies undertaken by individuals with comorbid Type 2 Diabetes Mellitus (T2DM) and Metabolic Syndrome to manage and control their health conditions.

Knowledge: The awareness or information acquired by individuals with T2DM and Metabolic syndrome by experience or education.

Perceived Benefits: The subjective understanding by individuals with comorbid Type 2 Diabetes Mellitus (T2DM) and Metabolic Syndrome of positive outcomes and advantages resulting from self-management practices. These may include improvements in physical health, psychological well-being, or overall quality of life as subjectively perceived by the individuals themselves.

Perceived Challenges refer to the difficulties, obstacles, or barriers encountered by individuals with comorbid Type 2 Diabetes Mellitus (T2DM) and Metabolic Syndrome in implementing and sustaining self-management practices. These may include treatment burden, psychological impact, and poor social support systems that the individuals subjectively perceive as barriers to effective self-management.

Self-efficacy refers to an individual's belief in their ability to manage and control the various aspects of their health conditions, thus, the confidence in performing specific behaviours and tasks related to managing type 2 diabetes mellitus and metabolic syndrome.

Comorbidity refers to two or more chronic conditions in an individual.

Fasting blood sugar/glucose is the concentration of sugar in the blood following an eight-hour fast. It is checked by a Fasting or Random sugar test with a glucometer machine.

High-density lipoprotein cholesterol: Complex protein particles that remove and transport fat molecules from body cells. It is normally referred to as good cholesterol.

Low-density lipoprotein cholesterol, also known as bad cholesterol, tends to be deposited on the walls of the blood vessels.

Triglycerides: They are compounds of fats and oils, and they are the major form of fat store

Hyperglycemia: Elevated blood sugar above 6.1 mmol/L after 8 hours of fasting or greater than 7.8 mmol/L post-prandial.

Overweight/obesity: Excessive accumulation of fat that is considered an unhealthy weight for the given height.



CHAPTER TWO

THEORETICAL FRAMEWORK AND LITERATURE REVIEW

2.0 Introduction

The chapter is organized into two sections. The first section discusses the various theoretical models reviewed and the justification for the choice of the study's theoretical framework. The second section is a comprehensive literature review.

2.1 Review of Theoretical Models

Three theoretical models were considered, drawing on the concept of comparative analysis while searching for an appropriate theoretical model for this research, which includes the Self-Regulatory Model, the Chronic Care Model, and the Health Belief Model. However, the Health Belief Model was adopted as the theoretical framework for this study. The three models and rationale for choosing the HBM for this study are discussed below.

2.1.1 Self-regulation Model

The Self-Regulating Model (SRM), the Common-Sense Model (CSM) of self-regulation, is a psychological framework that explains how individuals manage their health and illness-related thoughts, emotions, and behaviours. Developed by Leventhal and colleagues in the 1980s, it is useful in understanding how people respond to health threats or chronic conditions (Leventhal et al., 1998; Phillips et al., 2012). It explains how individuals manage health threats by developing personal models or representations of illness and using these models to guide their coping behaviours. The model suggests that people are active problem-solvers who self-regulate when facing health challenges, aiming to reduce health threats and restore normality.

Leventhal and his colleagues proposed that individuals go through three key stages when responding to health threats: interpretation, coping, and appraisal (Leventhal et al., 1998; Phillips et al., 2012).

Interpretation: In the first stage, individuals form cognitive representations of the health threat based on five components (Leventhal et al., 1998; Phillips et al., 2012): identity, cause, timeline, consequences, and control/cure. In the second stage, thus coping, once a person has interpreted the illness, they move to the coping phase, where they implement behaviours or strategies to manage the health threat. This might involve seeking medical help, self-care behaviours, avoidance, or denial.

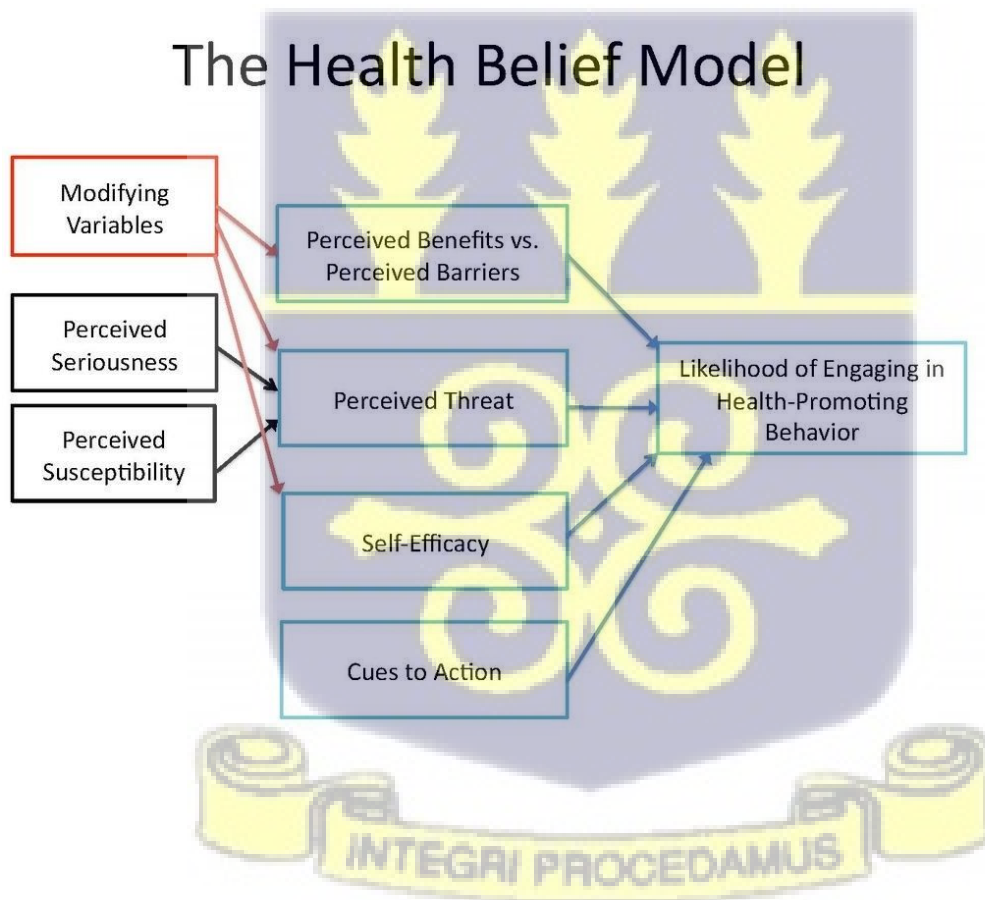
The third and last stage is appraisal. The individuals assess the effectiveness of their coping strategies by comparing their progress with the goals they have set based on their cognitive representations. If the coping strategy is ineffective, they may modify their approach or illness perceptions (Leventhal et al., 1998; Phillips et al., 2012). The SRM highlights that these processes are ongoing and dynamic, and individuals constantly update their illness representations based on new information, experiences, and outcomes (Leventhal et al., 1998). However, it is important to know that the SRM, while a useful framework, has limitations. It struggles to address the complexity of comorbid conditions, the interconnectedness of illnesses, the social context of self-management, and the demands of long-term disease adaptation. This makes it an unsuitable model for studying self-management practices in a population with Type 2 diabetes and metabolic syndrome.

2.1.2 Chronic Care Model (CCM)

The Chronic Care Model (CCM) is a comprehensive framework designed to improve care for individuals with chronic diseases by fostering interactions between informed, engaged patients and proactive, prepared healthcare teams. Developed by Wagner and colleagues at the MacColl Institute, the CCM seeks to address the limitations of traditional acute care systems, which are often inadequate for managing long-term conditions (Wagner et al., 2001). Edward Wagner, in 1996, propounded the model,

providing a framework for improving chronic disease management. It emphasises a patient-centred approach, self-management support, and the integration of healthcare systems. The CCM strongly emphasises that healthcare systems should be redesigned and assigns a crucial role to healthcare professionals. However, it was not able to explicitly address individuals' unique perspectives and experiences with chronic conditions. This aspect, in particular, limited its suitability as a theoretical framework to investigate self-management practices in the comorbidity of T2DM and MetS.

Figure 2.1 Health Belief Model by; Hochbaum, Rosenstock, and Kegels



2.1.3 Health Belief Model

The Health Belief Model (HBM) is a psychological model developed in the 1950s by social psychologists such as Hochbaum, Rosenstock, and Kegels in the U.S. Public Health Service. It was designed to understand and predict how individuals would behave concerning their health, particularly concerning the uptake of health services. It has the following constructs:

Modifying Variables: These are individual characteristics, such as age, gender, ethnicity, education, and socio-economic status, that can influence perceptions of health-related behaviours. They shape how a person views the severity of a health threat and the benefits of preventive actions (Becker et al., 1974).

Perceived Susceptibility: This refers to an individual's assessment of their risk of getting a condition or disease. The more susceptible they feel, the more likely they are to take preventive action (Rosenstock & Ph, 1960) .

Perceived Seriousness/Severity: This is the belief about the seriousness of contracting an illness or leaving it untreated. It includes evaluations of medical and social consequences (e.g., pain, disability, death, and impact on family and work) (Janz & Becker, 1984).

Perceived Threat: This is a combination of perceived susceptibility and perceived seriousness. Together, they create a perceived threat, which can drive an individual to take action (Becker et al., 1974).

Perceived Benefits: This involves an individual's assessment of the positive consequences of adopting healthy behaviour. Even if a person believes they are susceptible to a severe condition, they will not necessarily act unless the behaviour will be beneficial in reducing the threat they perceive (Rosenstock, 2005).

Perceived Barriers are individuals' perceptions of the obstacles to performing a recommended health action. Barriers can include financial costs, time, inconvenience, and psychological costs such as fear or embarrassment (Janz & Becker, 1984).

Cues to Action: These are triggers that prompt the individual to act. They can be internal (e.g., disease symptoms) or external (e.g., advice from others, media campaigns, or reminder postcards from healthcare providers) (Rosenstock & Ph, 1960).

Self-efficacy: This is the confidence in one's ability to take action. Even if all other components favour a particular health behaviour, an individual must believe they can successfully act before they adopt it (Bandura, 1978).

Likelihood of Engaging in Health-Promoting Behaviour: This outcome results from the interplay between perceived threat, perceived benefits, perceived barriers, and self-efficacy. If an individual perceives a high risk, believes in the benefits, faces few challenges, and has high self-efficacy, they are more likely to engage in health-promoting behaviour (Glanz et al., 2008).

2.1.4 Justification for Adopting the Health Belief Model for the Study

The HBM adds key psychological constructs that are particularly relevant in researching self-management practices among individuals with comorbidity of T2DM and metabolic syndrome. The HBM offers a comprehensive framework, assuring the model's validity and considering various factors influencing health behaviours or self-management practices (Glanz et al., 2008). It considers not only individual perceptions, but also modifying variables such as demographics, socio-cultural factors, perceived susceptibility and severity, perceived benefits to action, perceived barriers to action, self-knowledge, cues to action, and self-efficacy, which assesses an individual's confidence in their ability to engage in health-related practices or behaviours (Glanz et al., 2008).

In the context of T2DM and MetS comorbidity, the HBM helped determine individuals' knowledge of their condition and sources of the knowledge formation, how they perceive the benefits and barriers associated with self-management activities such as medication adherence, diet control, and physical activity (Carpenter, 2010). Besides, exploring self-efficacy in managing the conditions enables the researcher to uncover potential barriers to future interventions to enhance individuals' belief in their capacity to take effective actions. The model's constructs helped adequately investigate the complex subject of self-management in these comorbidities. Due to the multifactorial approach of the model, it was the best theoretical model to understand this population's unique views and challenges. The HBM was the theoretical framework that guided the research's design, analysis, and interpretation.

2.1.5 Mapping of Health Belief Model Constructs to Study Objectives and Themes

The Health Belief Model provided a comprehensive framework for exploring the self-management practices of individuals with comorbidity of T2DM and MetS. The model's constructs, perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cues to action, and self-efficacy, were used to inform the development of the study objectives and guide the thematic analysis of the data. The table below illustrates how each study objective and the corresponding emergent themes align with the model's specific constructs.

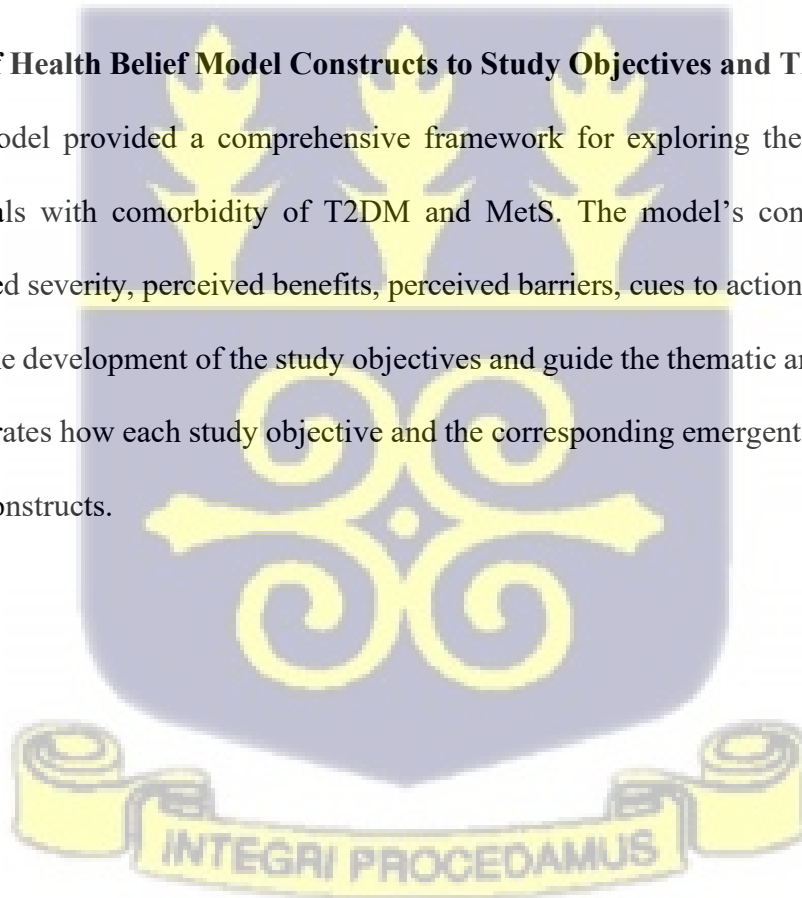


Table 2.1: Research Objectives and Corresponding Emergent Themes Aligned with the Health Belief Model (HBM).

HBM Construct	Study Objective	Major Theme	Sub-Themes
Modifying Variables	Embedded in demographic data and participant characteristics	–	Age, gender, education, and socio-economic status
Perceived Susceptibility	Explored indirectly through knowledge and awareness	Knowledge Acquisition and Interpretation of T2DM and MetS	• General understanding and medical interpretations • Recognition and interpretation of symptoms • Sources of knowledge formation
Perceived Severity	Explored through the perceived seriousness of the condition and its implications	Knowledge Acquisition and Interpretation of T2DM and MetS	• Applying knowledge in self-management
Perceived Benefits	To investigate the perceived benefits of self-management practices	Perceived Benefits and Ambivalence Toward Self-Management	• Perceived health gains • Habitual reinforcements • Absence of observable benefits
Perceived Barriers (Challenges)	To identify the perceived challenges in adopting and maintaining self-management behaviours	Perceived Challenges and Barriers of Managing T2DM and MetS	• Personal-level barriers • Systemic barriers • Environmental and social barriers
Cues to Action	Captured through factors that triggered participants to begin self-care or seek information	Adaptive Strategies and Coping Mechanisms	• Behavioural adjustments and adaptation • Role of social and family support
Self-Efficacy	To explore individuals' confidence in managing T2DM and MetS comorbidities	Self-Efficacy in Managing T2DM and MetS	• High to moderate self-efficacy • Low self-efficacy and passive management
Likelihood of Action	Derived from overall analysis of perceived threat, benefits, barriers, and self-efficacy	Expected Clinical Interventions to Improve Condition Management	• Knowledge acquisition, interpretation, and clinical expectations • Patients' approach to managing T2DM and MetS and clinical expectations

			• Perceived barriers to self-management and clinical expectations • Perceived benefits, self-efficacy, and clinical expectations
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2.2 Literature Review

The literature search for this study was conducted using databases including PubMed, SAGE, Science Direct, and Google Scholar to search for studies published. The literature was written based on the theoretical model (Health Belief Model) guiding the study and specific objectives of the study under the following headings:

- Knowledge and source of information of individuals with comorbidity of type 2 diabetes and metabolic syndrome of the condition and its management.
- Perceived benefits of self-management practices among individual participants.
- Perceived challenges faced by individual participants in adopting and maintaining self-management behaviors.
- Self-efficacy and coping strategies in managing type 2 diabetes and metabolic syndrome comorbidities.

2.2.1 Knowledge of Participants in Type 2 Diabetes Mellitus and Metabolic Syndrome

Adequate knowledge and education about diabetes are essential for effective disease management and reducing complications (Aschner et al., 2014; Kassahun et al., 2016). Knowledge supports self-care behaviours and treatment adherence among patients. However, disparities in knowledge exist based on education levels and access to structured diabetes education. For example, Ploeg et al. (2017) found that

healthcare professionals have a more comprehensive understanding of chronic conditions, reflecting the impact of education and experience.

While individuals with comorbid T2DM and MetS may show varying levels of understanding, limited knowledge remains a common concern. Khasal et al. (2020) reported that most participants lacked awareness of the causes, symptoms, and complications of diabetes, including an understanding of normal blood glucose ranges, critical for effective self-management. This aligns with Amarasekara et al. (2016), who observed that although patients in Sri Lanka demonstrated general awareness of MetS and cardiovascular risk factors, 97% were unaware of the normal BMI range, reflecting limited practical knowledge.

Contrastingly, (Kittithaworn & Rangsin (2021) reported that Thai participants recognised MetS as a serious health concern. Yet, in Southern India, Kurnia et al. (2020) observed misconceptions about diabetes, with some patients expecting a drug-free cure and expressing anxiety over treatment complexity and its impact on daily life. These contrasting findings highlight knowledge variability and cultural influences on disease perception. Several studies underscore the importance of understanding self-management practices; for instance, Mikhael et al. (2019) revealed that Iraqi participants identified key diabetes management elements such as healthy eating, medication adherence, and physical activity. However, Kassahun et al. (2016) found that in Ethiopia, knowledge levels directly influenced adherence, self-care behaviours, and glycaemic control. Patients with low knowledge demonstrated higher rates of poor management outcomes.

Complementary studies in West Africa reflect similar trends. Ogundele et al. (2016), noted that over half of Nigerian participants were unaware of the disease's causes, with a third using herbal treatments alongside prescribed medications. Similarly, in Ghana, Obirikorang et al. (2016) found that only 13.1% of participants had adequate knowledge of diabetes complications, while 26.9% showed insufficient

awareness. These findings are corroborated by Afaya et al. (2020) who reported that while many participants in the northern part of Ghana recognised the importance of medication adherence, knowledge of lifestyle modifications, such as diet and physical activity, was lacking.

Further evidence from Ghanaian studies points to significant knowledge gaps regarding MetS. Achempim-Ansong et al. (2022) found that female market traders had poor knowledge levels, with average scores below 50%. Similarly, Obirikorang et al. (2016) highlighted a lack of detailed understanding of diabetes complications among their study participants. Adu et al. (2019) argued that therapy failure often stems from inadequate patient comprehension of disease mechanisms and management strategies.

In synthesising these studies, it is evident that knowledge gaps persist across diverse populations and settings. While general awareness may be present, specific and actionable knowledge necessary for effective self-management is often lacking. These inconsistencies underscore the need for context-specific patient education interventions, particularly for those managing multiple chronic conditions such as T2DM and MetS. The reviewed literature reveals limited depth in patients' knowledge of lifestyle modifications, challenges in translating knowledge into practice, and inconsistent educational outreach, which collectively justify the current study's focus on exploring self-management practices in the Ghanaian context.

2.2.2 Perceived Benefits of Self-management Practices

Self-management practices such as regular blood glucose monitoring, dietary modifications, foot care, and eye examinations have been widely recognized for their role in reducing complications associated with T2DM and MetS (Aschner et al., 2014). Central to effective management is the adoption of long-term lifestyle modifications, especially in diet and physical activity, which are instrumental in improving metabolic parameters and delaying disease progression (Dempsey et al., 2020).

These self-care behaviours significantly enhance treatment adherence, promote better glycaemic control, and contribute to improved health outcomes, including reduced complications and enhanced quality of life. Mikhael et al. (2019) affirm that tight glycaemic control, achieved through practices such as regular medication use and blood glucose monitoring, is key to preventing or delaying complications like retinopathy, nephropathy, and neuropathy. This view is supported by Karunarathna and Jayathilaka (2024), who emphasized that patients who adhere to self-management practices, including a balanced diet, exercise, and effective coping strategies, are more likely to achieve and maintain target glycaemic levels.

Perceptions of self-management benefits extend beyond clinical outcomes. In a physical activity intervention among nurses, Elsayed et al. (2023) found that key motivations for participation included reducing risk for T2DM and related conditions (25%), adopting healthier lifestyles (18%), and improving physical appearance (15%). Other reported benefits included improved mindset, general health, and fitness. Similarly, in Saudi Arabia, Albargawi et al. (2016) reported that 90% of individuals with T2DM acknowledged the importance of adhering to self-care routines, including medication adherence and glucose monitoring, for effective disease control. Notably, 83% believed such routines helped prevent complications.

These findings underscore the widely perceived value of self-management in mitigating disease burden, enhancing psychological well-being, and promoting a sense of control over one's health trajectory.

2.2.3 Perceived Challenges in Adopting and Maintaining Self-management Practices.

Despite the recognized benefits, individuals with comorbid T2DM and MetS face several challenges in adopting and sustaining self-management behaviours. These include dietary control, physical activity, medication adherence, and maintaining regular foot care routines. Key barriers identified include limited

knowledge, poor communication between patients and healthcare providers, and inadequate support systems (Rani & Shriraam, 2019; Samya et al., 2019).

Socioeconomic factors remain a critical determinant. Financial constraints often hinder access to healthy food, medications, and routine clinical appointments, leading to suboptimal glycaemic control and increased risk of (Boima et al., 2015; Kumar & Mohammadnezhad, 2022; Odusola et al., 2014). High medication costs and insufficient welfare provisions further compound these challenges, particularly when multiple prescriptions are required to manage coexisting conditions (Amon et al., 2024; Basu & Sharma, 2019). Age-related physical and cognitive decline can also interfere with self-care adherence. Impaired vision, hearing, dexterity, and memory, as noted by Shi & Li (2019) may reduce a person's ability to follow treatment protocols. Moreover, implementing dietary changes remains a significant hurdle, often requiring sustained motivation and behavioural support (Ahola & Groop, 2013).

Lack of social support further impedes self-management. Individuals without strong family or community networks may struggle with treatment adherence and emotional resilience, increasing their vulnerability to poor outcomes (Jeffrey et al., 2016; Ishak et al., 2017). Organisational barriers, including inadequate access to quality healthcare and poor patient-provider communication, exacerbate these difficulties (Tiedt & Sloan, 2015).

Psychologically, the burden of managing dual chronic conditions can lead to increased stress, anxiety, and depressive symptoms. Lloyd et al. (2018) reported that comorbid depression and T2DM are associated with reduced physical activity, suboptimal self-management, and elevated risk of both microvascular and macrovascular complications. The emotional toll of frequent medical appointments, fear of disease progression, and complex treatment regimens can further diminish motivation and engagement in self-care activities.

Managing T2DM with coexisting MetS necessitates a multifaceted treatment approach. Patients must simultaneously adhere to dietary guidelines, monitor blood glucose, maintain physical activity, and manage additional conditions such as hypertension and dyslipidaemia (Srikanth & Deedwania, 2016; Worswick et al., 2013). This complexity is often intensified by polypharmacy, which increases the risk of non-adherence due to confusion, side effects, or pill burden (Wander et al., 2024).

Ultimately, comorbid T2DM and MetS increase healthcare utilisation and costs. Coordinated care from multiple providers is often required, placing a significant logistical and financial burden on patients (Ummah, 2019). These intersecting challenges underscore the need for integrated, patient-centred interventions that address both medical and psychosocial aspects of self-management.

2.2.4 Self-efficacy in adopting and maintaining Self-management Practices

Self-efficacy, an individual's belief in their ability to perform specific health-related tasks, plays a central role in chronic disease self-management. According to Hu et al. (2023), individuals with high self-efficacy are more likely to adhere to treatment regimens and actively engage in self-care practices. Conversely, low self-efficacy often results in inconsistent self-management, increasing the risk of complications. Drawing on Bandura's (2013) theory, there is an assertion that individuals' confidence in their capacity to manage their condition positively influences their motivation and engagement in health-promoting behaviours (Brooks et al., 2018).

Several qualitative studies have explored the interplay between self-efficacy, beliefs, and lifestyle behaviours among individuals with T2DM and MetS. For instance, (Friis et al., 2016; Schmitt, 2022) found that misconceptions about physical activity led some participants to adopt sedentary lifestyles, undermining their motivation for effective self-care. Similarly, Esmaeili et al. (2016) reported that participants often perceived MetS as non-threatening, viewing symptoms like visceral fat as normal due

to the absence of obvious impairments. This misperception reduced the perceived urgency for lifestyle changes.

However, increased awareness and education appeared to enhance self-efficacy in some cases Deenan and Wacharasin (2020) observed that individuals who were educated about the dangers of poor dietary habits began recognising the need for behaviour change. Additionally, their study among Iranian adults with MetS highlighted that while some participants held unhealthy attitudes toward fats, salt, and sugary drinks, others began to acknowledge the value of annual health check-ups and nutritional adjustments, indicating emerging self-awareness and potential for improved self-efficacy.

Attitudes toward self-management were also influenced by emotional and cognitive factors. Participants in Lowe's (2017) study, expressed frustration and hopelessness due to the challenges of sustaining lifestyle changes. Many believed their conditions were genetically determined, diminishing their drive for behavioural change. Similarly, Borba et al. (2019), found that some individuals resisted anti-diabetic medications due to fears of harm, contributing to poor adherence.

Nevertheless, positive attitudes were observed in other studies. Deenan & Wacharasin (2020) found that individuals with comorbid T2DM and MetS often believed in the effectiveness of lifestyle modification in improving glycaemic control and reducing cardiovascular risks. This belief was linked to increased self-efficacy and a sense of empowerment. Kurnia et al. (2020) reported similar findings; participants trusted their healthcare providers and recognised the importance of medication adherence. However, Zhu & Hollis (2016), highlighted ongoing concerns about side effects and the long-term use of medications, which led some participants to seek alternative treatments.

Mixed perceptions were also noted regarding self-management routines. While some participants in Esmaeili et al. (2016), felt overwhelmed by the complexity of managing multiple conditions, while

others adopted a proactive stance, Ekoru et al. (2019) found that frustration coexisted with a recognition of the necessity of self-care. Positive self-management attitudes were often tied to a sense of control and belief in the long-term benefits of adherence. An illustrative example of self-management attitudes comes from Smoorenburg et al. (2019), where participants described managing diabetes not as a deliberate, conscious act but rather as an integrated part of daily life. Similarly, Albargawi et al. (2016), found that while over half of the participants believed they could adhere to treatment plans and monitor their blood glucose levels, many struggled with regular exercise and resisting food temptations, indicating gaps between awareness and actual practice.

Furthermore, proficiency in certain self-management tasks did not always translate into effective long-term control. Basu & Sharma (2019) reported high competency in blood glucose monitoring among participants, but only moderate ability to interpret trends over time. Nevertheless, most participants valued routine practices like medication adherence and glucose checks, viewing them as crucial for avoiding complications (Basu & Sharma, 2019). Finally, Hu et al. (2023), revealed that while patients acknowledged their diagnosis, they often questioned treatment efficacy, particularly when outcomes were not immediately observable. This led to dissatisfaction and uncertainty, which may negatively influence self-efficacy and commitment to long-term management.

2.2.5 Summary of Literature Review

The reviewed literature, comprising both quantitative and qualitative studies from various regions, including Asia, Europe, and Africa, provides critical insights into the self-management behaviours of individuals with comorbid Type 2 Diabetes Mellitus (T2DM) and Metabolic Syndrome (MetS). Guided by the Health Belief Model, the review focused on four key constructs: knowledge, perceived benefits, perceived challenges, and self-efficacy in self-management.

Globally, studies reveal varied levels of awareness and attitudes. In Sri Lanka, for instance, patients showed high knowledge of MetS, while in parts of India and Indonesia, patients harboured misconceptions or expressed scepticism about biomedical treatment, indicating the influence of cultural and contextual factors. In African countries such as Nigeria and Ethiopia, cultural beliefs and reliance on traditional medicine often shape the understanding and management of diabetes. Specifically, Nigerian studies highlighted the use of local herbs and limited knowledge of diabetes causation.

In Ghana, findings suggest that many individuals with T2DM and MetS have insufficient understanding of their conditions. While these studies contribute to the broader discourse, most were conducted in regions such as Greater Accra, Ashanti, Bono, and Northern Regions, and often focused on either T2DM or MetS, not their co-occurrence. Furthermore, prior research has primarily employed quantitative methodologies, limiting in-depth exploration of lived experiences and contextual factors influencing self-management.

Another critical gap lies in the limited investigation of self-efficacy key determinant of sustained health behaviour change. Although global studies have examined how self-efficacy shapes dietary habits, physical activity, and medication adherence, there is little evidence from Ghana on how individuals perceive their capacity to self-manage these coexisting chronic conditions. Studies from countries like Iran, Thailand, and Saudi Arabia reveal that self-efficacy is shaped by knowledge, emotional responses, beliefs about treatment efficacy, and support from healthcare providers, insights that remain underexplored in the Ghanaian context. Moreover, no study was found from the Eastern Region of Ghana specifically targeting individuals with both T2DM and MetS. This highlights a significant geographical and methodological gap. Understanding self-management practices in this region is essential, given the potential influence of local sociocultural, economic, and health system factors that may differ from those in previously studied areas.

In conclusion, while the existing body of literature enhances understanding of self-management in comorbid T2DM and MetS, it remains globally dispersed and contextually limited within Ghana. There is a clear need for qualitative, region-specific research in the Eastern Region of Ghana to explore the nuanced experiences, beliefs, and challenges faced by individuals managing these chronic multiple conditions. Such research will not only address existing knowledge gaps but also inform culturally appropriate interventions and policies to support self-management in similar settings.



CHAPTER THREE

METHODS

3.0 Introduction

This chapter focuses on the research design and the method used in conducting the study. It also has the study setting and the various techniques used to select the sample size, collect, and analyze the data. The strategies used to adhere to rigour and obtain ethical clearance for using human participants in the study are also specified.

3.1 Study Design

Creswell (2017) defines research design as a strategy of inquiry that encompasses the specific procedures involved in collecting, analyzing, and interpreting data. It serves as a roadmap that aligns with research objectives and ensures that all research questions are appropriately addressed. Asenahabi (2019) asserts that a well-chosen design helps reduce ambiguity and enhances coherence across the study's components. Given the nature of this study, a qualitative exploratory-descriptive design was employed, grounded in interpretivist philosophy. This paradigm supports the understanding of subjective meanings, perceptions, and lived experiences through dialogue and interaction (Carminati, 2018).

This approach was particularly relevant for exploring how adults with comorbidity of Type 2 Diabetes Mellitus (T2DM) and Metabolic Syndrome (MetS) understand and engage in self-management. As Bhushan and Alok (2019) explain, exploratory-descriptive qualitative research is suitable for investigating areas where knowledge is limited or underexplored, especially in complex conditions like chronic comorbidities. It addresses the "what," "how," and "why" of phenomena rather than quantifying

outcomes (Flick, 2018). In this context, it enabled a deep and context-specific understanding of patients' knowledge, perceived benefits, perceived challenges, and self-efficacy related to self-management.

3.1.1 Justification and Alternative Study Designs

While a quantitative design could have measured the prevalence or statistical association between variables, it would not have captured the nuanced beliefs, motivations, and sociocultural influences shaping self-management practices. A mixed-methods design could have provided breadth and depth, but it was beyond the scope and resources of this study. Therefore, the qualitative exploratory-descriptive approach was deemed most appropriate, as it aligns with the interpretivist worldview and research objectives focused on exploring individual experiences and meaningful processes.

3.2 Philosophical underpinning of the study and Researcher Positionality

This study is anchored in the interpretivist paradigm, which asserts that reality is socially constructed, and meaning is context-dependent and subjective (Schwan, 2005). Interpretivism values the lived experiences and perspectives of individuals, particularly how they make sense of and respond to phenomena in their lives. This aligns with the qualitative exploratory-descriptive design of the study, which seeks to understand the nuanced experiences of individuals living with comorbid Type 2 Diabetes Mellitus (T2DM) and Metabolic Syndrome (MetS) in their real-life context.

Therefore, the researcher situated herself within this interpretivist framework by acknowledging that her own experiences, background, and worldview could influence how she approached and interpreted the data. As a nurse and a Ghanaian, she brought both professional knowledge and cultural familiarity with the sociocultural dynamics of chronic illness in Ghana. This insider-outsider perspective allows her to engage deeply with participants' narratives while maintaining reflexivity to avoid imposing her assumptions on their lived experiences.

The researcher recognized she was not a neutral observer but an active co-constructor of knowledge in this study. Her belief that individual health behaviours are shaped by context, including access to care, health literacy, cultural beliefs, and socio-economic conditions, informed her decision to adopt an interpretivist stance. This belief interacts with the study by guiding how to design the interview questions, how to engage participants during data collection, and how to interpret their responses with sensitivity to their socio-cultural environments. During data collection, the researcher maintained a non-judgmental and empathetic posture, allowing participants to share their lived experiences freely without being influenced by her professional background. She employed active listening, neutrality in questioning, and iterative clarification to ensure that the participants' meanings were accurately captured. Through reflexive journaling and critical engagement, the researcher remained conscious of how her presence, beliefs, and interpretations could influence the research process. By embracing subjectivity researcher was able to uncover deeper meanings and ensure that participants' voices remained central throughout the research.

3.3 Study Setting

The study was conducted at Atua Government Hospital in the Eastern Region of Ghana, where there is a bi-weekly clinic for patients diagnosed with T2DM and MetS. The target population was adults aged 35–70 years who were diagnosed with both conditions for at least six months to ensure they had sufficient experience with self-management practices. The hospital is located in the Lower Manya Krobo Municipality. In Ghana's eastern region, the municipality is one of 26 administrative districts. With Odumase Krobo as its capital, it became a municipality in 2012 after being divided from the Manya Krobo district in 2008 by Legislative Instrument (L.I.) 4026. (Laweh & Manortey, 2021). Odumase Krobo is the main town and is surrounded by Atua, Agormanya, Nuoso, Akuse, and Kpong, as its principal settlements. The municipality's borders are shared by Asuogyaman District to the east, Yilo

Krobo Municipal to the west, Dangme West to the south, and Upper Manya Krobo District to the north. The estimated 2,917,039 residents of the municipality make up 4.2% of the total population of 2,917,039 people, representing 4.2% of the total population of the eastern region, Ghana Statistical Service (2024).

The hospital was established in 1977 and is one of Ghana's oldest, which covers 253 localities, catering to an average of 120 cases in the General Outpatient Department (OPD) on a given day. The 120-bed capacity hospital has 187 total nurses of different specialties and midwives. There are 28 nurses at the OPD, where hypertension and diabetes special clinics are held every Tuesday and Thursday. The total number of people with type diabetes and hypertension cases served on each clinic day is about 40-50 cases. The hospital has more than 20 different departments/units, including The Out Patient Department, Emergency, Psychiatry, Maternity, Antenatal, Theatre, Children's ward, Public Health, Child Welfare Clinic, Family planning, Medical and surgical wards, Wellness clinic, Physiotherapy, Eye clinic, Ear Nose Throat Clinic, Infectious disease centre, Voluntary Counselling, and Testing unit aside others like Revenue, Laboratory, Pharmacy, Kitchen Administration and Mortuary. This facility was chosen because no such research about self-management practices in the comorbidity of T2DM and MetS has been done there before. The researcher also has familiarity with the hospital environment and staff, which has facilitated the smooth collection of research data. The number of diabetes and hypertension (40-50) cases recorded on clinic days also facilitated participants' recruitment.

3.4 Study population

Polit & Beck (2010) refer to a population as individuals with the same or similar qualities sought in a particular situation. This study recruited Adults aged 35-70 years living with comorbidity of type 2 diabetes mellitus and metabolic syndrome in the Atua Government Hospital. The researcher chose this age range because type 2 diabetes mellitus is common among people aged 35 years and above. Also, most people above 70 years old were likely to engage poorly in a meaningful conversation.

3.5 Sampling technique and size

Sampling is the process of choosing participants who are representative of the population under study (Souza et al., 2010). To find people who could offer comprehensive and detailed information about T2DM and MetS, convenient purposeful sampling was employed. This approach ensured a wide range of perspectives and experiences related to self-management and diversity in terms of age, gender, and socioeconomic status of participants (Palinkas et al., 2015). Participants were recruited through the hospital's diabetes and hypertension clinics, with assistance from the nurses who identified eligible individuals based on the inclusion criteria Polit & Beck (2010). Interested participants were approached, briefed about the study, and invited to participate voluntarily. Informed consent was obtained before each interview. Data collection continued until data saturation was attained at 17 participants. This is the point at which no new themes, insights, or codes were emerging from additional interviews (Konstantina et al., 2018). Saturation was determined through an iterative process of simultaneous data collection and analysis. After 15 interviews, it became evident that themes were repeating and no novel data were surfacing. Two additional interviews were conducted to confirm saturation, bringing the total to 17. The decision to stop at 17 participants was therefore justified based on methodological rigour, not pre-set sample size.(Vasileiou et al., 2018).

3.6 Inclusion criteria

This study included:

1. Persons between the ages of 35-70 years living with a confirmed diagnosis of type 2 diabetes mellitus and any other two (2) risk factors of cardiovascular complications (metabolic syndrome).
2. Individuals who had managed comorbidity of type 2 diabetes mellitus and metabolic syndrome for at least one (1) year and more.
3. Persons who were able to communicate in English and Twi Languages

3.7 Exclusion criteria

The study excluded:

1. Clients who live with type 2 diabetes mellitus but have less than 2 of the other risk factors of metabolic syndrome
2. Individuals with significant cognitive impairment or psychiatric disorders that could interfere with their ability to provide meaningful insights.

3.8 Data Collection Tool

Data collection tools refer to devices used to gather data, such as case studies, checklists, interviews, interview guides, observations, surveys, and questionnaires (Carminati, 2018). In this study, the researcher used the research questions to develop conversation starters called interview guides. The researcher designed the tool using the health belief model constructs and relevant information from existing literature. It was modelled in line with the objectives of the study. Section A focused on the demographic and professional background of participants. Section B focused on knowledge of T2DM and MetS and their management. Section C investigated the perceived benefits of self-management practices, Section D identified perceived challenges to self-management practices, and Section E explored self-efficacy in adopting and maintaining self-management practices. Key interview questions explored under sections B to E were as follows:

“What is your understanding of type 2 diabetes mellitus and metabolic syndrome, and their management?

What are the benefits you perceive from these self-management practices?

What challenges do you face in adopting and maintaining self-management behaviours for type 2 diabetes mellitus and metabolic syndrome?

How confident do you feel in your ability to manage both T2DM and MetS?”

3.9 Data Collection Procedure

In keeping with the interpretivist philosophical orientation and the qualitative exploratory-descriptive design, data collection was conducted using semi-structured, in-depth interviews. This approach was appropriate for capturing the rich, personal experiences and meanings that participants ascribe to self-management practices in the context of T2DM and MetS. Semi-structured interviews provided a flexible yet focused structure, allowing the researcher to probe for depth while maintaining consistency across interviews (Flick, 2018). An interview guide was developed based on the Health Belief Model (HBM), focusing on four key constructs: knowledge, perceived benefits, perceived challenges, and self-efficacy (Appendix B). The guide was reviewed by two qualitative research experts and pre-tested with three patients who were not included in the final study. Feedback from the pilot helped refine the wording, sequence, and clarity of questions to ensure they were culturally appropriate and comprehensible to the participants. Participants were recruited from the diabetes and hypertension clinics at Atua Government Hospital through purposive sampling from March to May 2024. The nurses helped identify eligible participants based on the inclusion criteria, which had been explained to them. This included patients aged between 35 and 70 years, diagnosed with both T2DM and MetS for at least six months, willing and able to provide informed consent, and share their experiences. Eligible participants were approached in person and given detailed information about the study's purpose, confidentiality, and their rights, and written informed consent was obtained before participation. Also, ethical clearance was obtained from the institutional review board of the Dodowa Research Centre (Ghana Health Service), and permission was obtained from the Management of the Atua Government Hospital before the commencement of data collection.

Interviews were conducted face-to-face in a quiet and private space within the hospital premises to ensure comfort and confidentiality. All interviews were conducted in the local dialect (Twi) or English, depending on participants' preference, and were audio-recorded with permission. Non-verbal cues and observations were documented in a field notebook. Each interview lasted between 30 and 60 minutes, guided by open-ended questions, with prompts and follow-up probes to explore responses more deeply (Flick, 2018). Interviews continued until data saturation was reached, that is, when no new themes or insights were emerging from additional interviews (Flick, 2018). Data analysis occurred concurrently with data collection, which helped monitor saturation in real time. Saturation was initially observed at the 15th interview; however, two additional interviews were conducted to confirm consistency in the emerging themes. As such, the final sample comprised 17 participants, which aligns with the principle of sufficiency rather than statistical representation in qualitative research (Bitsch, 2014).

3.10 Piloting of Interview Guide

Piloting of the interview guide is a lead study or a pre-test used in a particular research instrument, such as an interview guide or questionnaire (Carminati, 2018). This is done to check the feasibility of a study. It helps identify defects early for correction and increases the chances of successful research. A month before the main research, the researcher piloted semi-structured interviews with four participants of similar traits at the Shai-Osudoku District Hospital, Dodowa, to check the feasibility, validity, and reliability of the interview guides and the whole research process. The main research conclusions do not include data gathered from the pilot project.

3.11 Data Analysis

Thematic analysis was conducted using the six-phase approach outlined by Braun & Clarke (2022), which provided a flexible yet rigorous method for identifying patterns and generating themes from the qualitative data. The Health Belief Model (HBM) served as a guiding theoretical framework, allowing

the analysis to explore participants' perceptions and behaviours related to managing comorbid Type 2 Diabetes Mellitus (T2DM) and Metabolic Syndrome (MetS). The process combined both deductive and inductive approaches to ensure that analysis remained theory-informed yet open to emerging insights. NVivo software was used to manage and organise the data. The analysis in Braun and Clarke's six-step approach was as follows:

Phase 1: Familiarisation with the Data

The first phase involved becoming immersed in the data. Audio recordings from all interviews were listened to multiple times and transcribed verbatim by the researcher. This deep engagement allowed for early identification of initial ideas and patterns. Notes were taken during this process to document early observations. For instance, several participants frequently mentioned "*difficulty with food choices*," which became early analytic prompts. This step helped sensitise the researcher to the content and emotional tone of the narratives.

Phase 2: Generating Initial Codes

In this phase, the researcher undertook systematic coding across the entire dataset. Coding was initially deductive, based on the constructs of the Health Belief Model, such as perceived susceptibility, severity, benefits, barriers, cues to action, and self-efficacy. For example, statements like:

"I know I could get a stroke if I don't take care" was coded under perceived severity, while

"I eat vegetables because it helps my sugar" was coded under perceived benefits. Simultaneously, inductive coding allowed additional data-driven insights to emerge, such as emotional coping, spirituality, and family support, which did not neatly fit into the predefined categories. Codes were created manually and refined using NVivo, and attention was paid to both semantic and latent meanings.

Phase 3: Searching for Themes

After generating initial codes, the researcher began clustering them into potential subthemes and themes. Codes such as *“difficulty affording medications,” “family support,”* and *“temptation to eat local foods”* were grouped under the broader theme of perceived barriers. Similarly, codes describing confidence in managing diet, physical activity, and medication adherence formed the theme of self-efficacy. At this stage, a coding matrix was developed to visually track how raw data were distilled into codes, subthemes, and overarching themes. This added clarity and supported analytic transparency.

Phase 4: Reviewing Themes

The themes were reviewed iteratively to ensure internal coherence within themes and distinctiveness between themes. During this phase, the researcher revisited the original transcripts to check whether the themes accurately reflected the data and to eliminate redundancy. For example, overlaps between challenges and barriers were identified and resolved by subsuming both under perceived barriers, which was more consistent with the HBM framework. Member checking was conducted with selected participants to confirm the accuracy of certain interpretations, thereby enhancing trustworthiness.

Phase 5: Defining and Naming Themes

Themes were clearly defined and named to reflect their scope and focus. Each theme was aligned with an HBM construct, and subthemes were named to capture specific patterns. For example, under self-efficacy, subthemes such as *“confidence through education”* and *“confidence through experience”* were identified. A narrative was developed for each theme, explaining its significance and how it related to the broader research question. This step ensured conceptual clarity and helped establish analytic depth.

Phase 6: Producing the Report

The final phase involved integrating the analysis into a coherent narrative that addressed the study objectives. Direct quotes from participants were selected to illustrate each theme, preserving the authenticity of their voices. For instance, a participant stated, *“I pray every day and believe God will heal me,”* reflecting a tension between faith and biomedical management, which was incorporated into a cross-cutting theme on spirituality and coping. The write-up connected the themes to the existing literature and theoretical framework, drawing meaningful conclusions about patients’ self-management behaviours and experiences. Throughout the analysis, reflexivity was maintained. The researcher kept a reflexive journal to document personal assumptions and potential biases, particularly as a healthcare professional interviewing patients in a clinical setting. This practice allowed critical examination of the influence of the researcher's positionality on interpretation, thus supporting the credibility and confirmability of the findings.

3.12 Ethical Considerations

Ethics is a set of moral values aimed at doing good and preventing any form of harm to study participants (Ishtiaq, 2019). Ethical approval was sought from the Institutional Review Board of Dodowa Research Centre, Ghana Health Service (GHS), with ID: DHRCIRB/017/01/24 (Appendix F) before commencing the study. To protect the participants, this study abided by all ethical guidelines relating to using human participants. This includes informed consent (Appendix C), confidentiality, privacy, voluntary involvement, right to withdraw, avoidance of damage, infection prevention, and respect for human dignity.

Measures to ensure the above will include but are not limited to conducting interviews in places where the participants feel comfortable and COVID-19 protocols are observed, coding participants instead of using identifiers (patients' name or contact address), and ensuring professional conduct and

awareness sensitivities on the part of the researcher. Participants who agreed to participate in the study were provided with an informed consent form that contained all the ethical guidelines to conduct scientific research, and participants appended their signatures before data was collected.

The participants were told the study is entirely voluntary and has no direct or indirect effects on the medical services they receive as hospital patients. This was to safeguard both the researcher and participants. However, the consent form highlighted potential advantages for patients and the healthcare system. Participants were also informed that they could opt out of the study. For anonymity, pseudonyms were used during data analysis and reporting. Participants willing to partake in the study were given a consent form (appendix C) to study, asked questions for clarification, and asked to indicate that they joined the study willingly.

3.13 Methodological Rigour

The degree to which a researcher intends to reach perfection and adhere to correctness and precision is called rigour. Researchers want their findings to reflect the phenomenon they are examining accurately and to contribute to information that is useful to others, even though rigour can be challenging to assess in qualitative research. To ensure rigour, the researcher used the framework developed by Tobin & Begley (2004), which was referenced by Carminati (2018). This framework considers four factors, such as credibility, dependability, transferability, and confirmability, when determining whether a qualitative study is trustworthy.

3.13.1 Credibility

It entails the accuracy and significance of the study's findings and how they are presented (Carminati, 2018). The researcher strengthened the accuracy of the descriptions of the participant's responses to increase the credibility of the findings by using semi-structured interview techniques, tape recordings of the interviews, and transcriptions of verbatim quotes. To ensure credibility, the researcher selected the

appropriate research methodology and design (Mouton et al., 2011). The researcher extensively reads current literature to develop the right interview guide that elicits accurate answers to the research questions. The researcher introduced herself well to the participants and was more friendly throughout the data collection process to establish rapport and trust. This was to help the researcher get more information about their self-management practices in the comorbidity of type 2 diabetes mellitus and metabolic syndrome.

Again, triangulation was carried out using several strategies, including member checks, audit trails, and extended participant participation. The researcher and the research supervisor had regular debriefing sessions about the data-gathering process and research technique. This made it easier for the researcher to spot errors in the study and fix them. Additionally, the researcher shared the work with peers and colleagues, who evaluated it and helped to improve its quality. To increase the study's trustworthiness, member checking was used. Before conclusions were made, the participants were shown the preliminary research findings and interpretations to make sure they represented their opinions and experiences (Polit & Beck, 2010).

3.13.2 Dependability

It refers to how stable the data can be over a long period and whether the study's findings might be repeated with similar individuals under similar circumstances (Bitsch, 2014). Ensuring dependability comes with the credibility of the research findings. The researcher used an audit trail to increase the study's trustworthiness. It requires tracking and documenting every choice that could impact the study so that someone else can review the results. The researcher will keep All recordings, choices, and materials used in the analysis under lock and key. We ensured reliability in this study by using the same interview guide for all respondents and consistently following the same process with similar participants.

A detailed description and recording of all stages and methods in the research process were provided to allow readers to follow the guidelines to replicate the study.

3.13.3 Transferability

The extent to which the findings of a qualitative study can be useful to similar groups or situations. It is the third measure to ensure the study's trustworthiness. According to Ishtiaq (2019), transferability broadly refers to the likelihood that the study's findings have implications for others in similar circumstances. In this study, we accomplish transferability by vividly describing the setting, methodology, and participant characteristics.

3.1.3.4 confirmability

The researcher observed the principle of confirmability, which is the ability of the data to back up the details that participants provided. This principle guarantees the authenticity of the study, thus free of subjectivity and biases, and ensures results are accurate and reflect the exact opinions of the participants (Carminati, 2018). The researcher ensured confirmability by reflexivity and bracketing her experiences, knowledge, biases, and views.

3.1.3.5 Reflexivity

According to Jootun et al. (2009), it is an invaluable tool that increases the rigour of a research process by promoting the understanding of the phenomenon under study and the researcher's role. Meanwhile, according to Clancy (2013), bracketing is an active process in which the researcher becomes aware of his or her biases, beliefs, assumptions, and experiences and consciously prevents the influence these might have on the research process. The researcher consciously ignored her previous knowledge, approached the research process with an open mind, and took notes of experiences to determine what it meant to each participant.

3.1.4 Data Management

The researcher has kept custody of the interview materials; only her two supervisors can access them. They have been segregated to ensure no connections between the demographic and interview data. After the study, the transcripts will be maintained for at least five years. Participants were given pseudonyms to reduce any chances of a traced connection to their demographic data. All electronic data would be deleted, and all manual data would be destroyed after five years.



CHAPTER FOUR

PRESENTATION OF FINDINGS

4.0 Introduction

This chapter focused on the data gathered from the study participants that explored self-management practices among people with comorbidity of type 2 diabetes mellitus (T2DM) and metabolic syndrome (MetS) at the Atua Government Hospital in the Eastern Region. The study, which involved 17 participants, had four goals: to explore participants' knowledge of T2DM and MetS, the perceived benefits of self-management practices, the perceived challenges in adopting and sustaining self-management practices, and their self-efficacy in managing T2DM and MetS. The chapter included a summary of the data collected, a description of the derived themes and sub-themes from the data collected, and an inclusive demographic description of the study participants, ensuring all aspects were considered.

4.1 Sociodemographic profile of study participants

The participants' sociodemographic characteristics indicate that out of the 17 participants, seven (7) were males and ten (10) were females; fewer males than females were interviewed. The study participants included diverse age groups ranging from 44 to 70. Most participants were within the older adult age group, with six (6) participants aged 70 and four (4) participants in their 60s. Five (5) participants were in their 50s, while two (2) were in their mid-40s. Regarding educational background, most participants had received a middle school education, with several having completed Form 4 or Form 5. Two (2) participants had obtained tertiary education, while seven (7) others had a Junior Secondary School (JSS) background. The remaining participants had attained a middle school level of education. This reflects a mix of formal educational experiences, with a significant portion receiving basic education. In terms of marital status, the participants represented various stages of life. Seven (7) were married, while three (3)

were widowed, two (2) were separated, and three (3) were divorced. Two (2) participants were single. Most of those who were married were still actively in their relationships, while others were experiencing life after the loss of their partners or separation and divorce. Regarding occupation, most participants were retired, especially those aged 60 and above, who had previously worked as nurses, midwives, soldiers, traders, police officers, farmers, and supervisors. Among those still employed, many were self-employed or engaged in trading, with a notable representation of traders, seven (7). The duration of diagnosis varied widely, with the longest being twenty-six (26) years and the shortest being 2 years. On average, most participants lived with their conditions for about 10 to 16 years, indicating a long-term engagement with health management. When the participants' religions were checked, Christianity was the dominant faith, with fifteen (15) participants identifying as Christians, while two (2) participants were Muslims. This demonstrates a predominantly Christian demographic among the study group. Each participant was given a pseudonym, such as P1 through P17, to maintain anonymity.

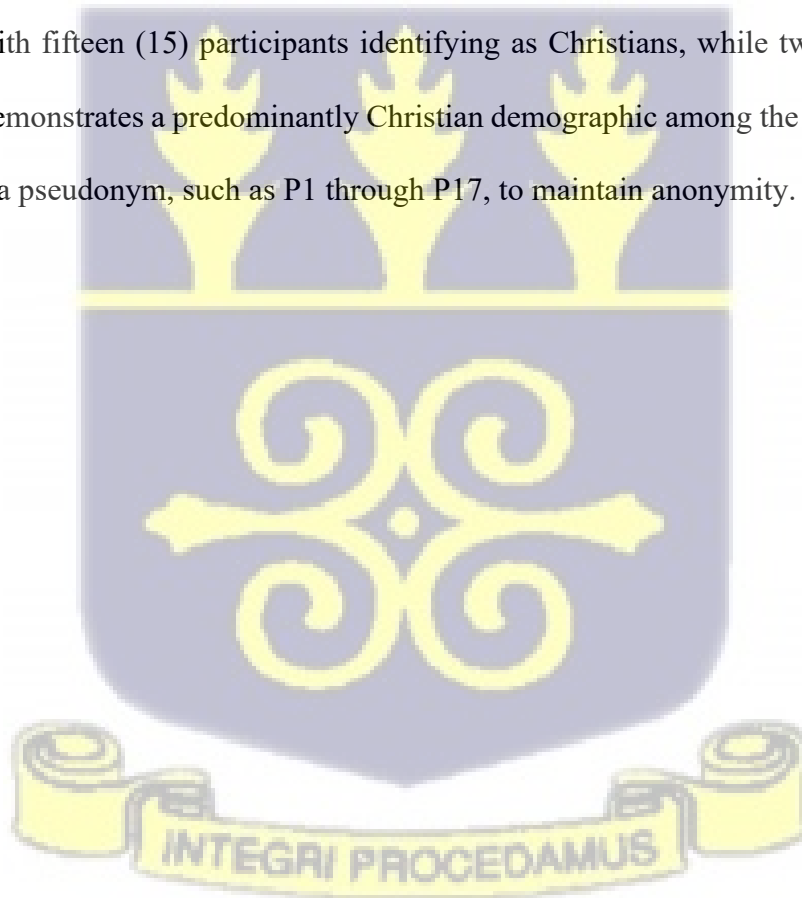


Table 4.1 Demographic Characteristics of the Study Participants.

Pseudonyms	Age	Gender	Level of Education	Marital Status	Occupation	Duration of Diagnoses	Religion
P1	67years	Female	Tertiary	Married	Retired nurse	16years	Christian
P2	70years	Female	Tertiary	Widow	Retired midwife	20years	Christian
P3	70years	Male	Middle form 4	Married	Retired soldier	19years	Christian
P4	45years	Male	JSS	Married	Self-employed	4years	Christian
P5	61years	Female	Middle form 4	Separated	Retired trader	26years	Christian
P6	50years	Female	JSS	Widow	Trader	2years	Christian
P7	63years	Male	Middle form 5	Married	Retired foreman	10years	Christian
P8	63years	Female	Middle form 5	Divorced	Retired trader	17years	Christian
P9	60years	Male	Middle form 5	Divorced	Self-employed	13years	Christian
P10	62years	Male	Middle form 4	Married	Retired farmer	3years	Christian
P11	70years	Male	Middle form 4	Married	Retired police officer	3years	Muslim
P12	56years	Female	JSS	Divorced	Retired trader	4years	Muslim
P13	50years	Female	JSS	Single	Trader	10years	Christian
P14	54years	Male	Middle form 4	married	Farmer	5years	Christian
P15	45years	Female	JSS	Single	Trader	4years	Christian
P16	44years	Female	Middle form 4	Widow	Trader	5years	Christian
P17	50years	Female	JSS	Widow	Trader	2yerar	Christian

4.2 Themes and Sub-themes

The data were analysed using a reflexive approach to Braun and Clarke's thematic analysis involving deductive and inductive coding. This is an easily accessible and theoretically flexible interpretative approach to qualitative data analysis that facilitates the identification and analysis of patterns or themes

in a given data set (Braun & Clarke, 2022). The study's main objectives formed the first four themes generated and two additional themes from inductive data analyses, making six (6) major themes and eighteen (18) sub-themes. The themes and subthemes were derived based on the constructs of the selected health belief model, which is used as an organising framework for this thesis. These major themes are presented below:

Table 4.2 Themes and Subthemes

Themes	Sub-themes
Knowledge Acquisition and Interpretation of T2DM and MetS	• General understanding and medical interpretations • Recognition and interpretation of symptoms • Applying knowledge in self-management • Sources of knowledge formation
Perceived benefits and ambivalence towards self-management	• Perceived Health Gains • Habitual Reinforcements • Absence of observable benefits
Perceived challenges of managing T2DM and MetS	• Personal-Level Barriers • Systemic Barriers • Environmental and Social Barriers
Self-efficacy in managing T2DM and MetS	• High to moderate Self-efficacy • Low self-efficacy and passive management
Adaptive Strategies and Coping Mechanisms for Managing T2DM and MetS	• Behavioural adjustments and adaptation • Role of social and family support
Expected clinical interventions to make the condition better	• Knowledge Acquisition, Interpretation, and Clinical Expectations • Patients' Approach to Managing T2DM and MetS and Clinical Expectations • Perceived Barriers to Self-Management and Clinical Expectations • Perceived Benefits, Self-Efficacy, and Clinical Expectations

4.3 Theme 1: Knowledge Acquisition and Interpretation of T2DM and MetS

This theme explores how individuals with comorbid Type 2 Diabetes Mellitus (T2DM) and Metabolic Syndrome (MetS) acquire, interpret, and apply knowledge about their conditions. Rather than treating knowledge as fixed or uniform, this theme reflects on the dynamic ways in which knowledge is shaped by lived experience, education, social interactions, and cultural interpretations. The subthemes include general understanding, symptom recognition, management knowledge, and sources of information, but are now reframed to highlight how participants construct meaning and apply it to self-care.

4.3.1 General Understandings and Medical Interpretations (subtheme 1)

Participants demonstrated varying levels of knowledge, ranging from superficial awareness to more in-depth, biomedical understanding, often shaped by educational or professional background. For many, initial knowledge was rooted in commonly held beliefs or social narratives about

"sugar" and "anger" causing diabetes or hypertension. For example, one participant said:

"What I can say is that diabetes is about someone eating much-refined sugar. If you do, you are likely to get diabetes. With BP, if you get angry more frequently, you can have your BP rising" (P17).

"Hypertension is your heart beating hard and fast, fast. I do not know anything else to say, can you help me explain? Diabetes too, when they check and your sugar level is high" (P16).

These interpretations, while not medically precise, reflect attempts to make sense of illness through culturally familiar explanations. Conversely, participants with professional health backgrounds (nurses) were able to articulate more clinical explanations of disease processes:

"Diabetes affects my sugar use by the body, and hypertension is about the heart struggling to get blood pumped into the system..." (P1).

"With hypertension, I know it is at times caused by fat, which blocks the veins and prevents blood from getting to the heart. However, with diabetes, I know there is insulin which cannot absorb glucose, and therefore, the glucose comes into the blood in plenty" (P2).

This contrast suggests that knowledge is not static; it evolves depending on exposure to credible sources, experience with illness, and the ability to interpret and apply information.

4.3.2 Recognition and Interpretation of Symptoms (subtheme 2)

Participants frequently described how personal bodily experiences shaped their understanding of the illness. Symptoms like frequent urination, thirst, and blurred vision became anchors for interpreting the severity and progression of the conditions. These experiences were not only physical but also informational, serving as catalysts for care-seeking and self-awareness:

"I was urinating frequently... I checked my BP... and I was told I have diabetes." (P15)

"Your mouth is dry... I drink more than 15 sachets of water daily... it attracts food too because you get hungry not long after eating." (P3)

These symptomatic interpretations suggest that lived experience functions as an essential form of knowledge acquisition. Yet, without timely professional interpretation, such embodied awareness may remain isolated or misinterpreted. These accounts also show how people engage in lay diagnostics, linking bodily changes to disease narratives: In many cases, the recognition of symptoms was a turning point for seeking care. These interpretations were influenced by both past experiences and advice from family or peers, highlighting the social embeddedness of health knowledge.

4.3.3 Applying Knowledge Through Self-Management (subtheme 3)

Understanding of management strategies varied widely. While five participants emphasized adherence to medication and exercise as crucial, others preferred dietary control or expressed distrust in medication, revealing tensions between biomedical guidance and personal beliefs:

"I think with these conditions, at least you have to take good care of yourself. It is a very bad situation if you do not take your drugs on time. It will affect you a lot. So, with these conditions, whatever has been put in place to take care of yourself concerning medication and exercise, you have to try and be doing it" (P4).

Participants applied their knowledge in varied ways, some focused on medication and exercise adherence, while others emphasized dietary regulation as more effective. This divergence reveals not just different levels of knowledge but also how individuals prioritize and experiment with strategies based on perceived effectiveness:

"Until I started taking drugs before my disease became worse, I was still strong, just managing with food..." (P9).

Such accounts demonstrate that knowledge is not only acquired but actively negotiated; participants often weigh medical advice against personal experience and perceived outcomes. In this way, management becomes an ongoing process of learning and adaptation.

4.3.4 Sources of Knowledge Formation (subtheme 4)

The sources of participants' knowledge were multifaceted, including health professionals, mass media, peer support, and lived experiences. Notably, four participants each cited healthcare professionals and media (radio, TV) as key sources, while three learned from peers or experiential learning. Two participants emphasized how their professional backgrounds informed their understanding:

"I learned some things at home as I experienced the disease. I have noticed that whatever I eat or do how it treats me now. Like today, I had a bad night, and this morning they checked to notice my BP is high; I know I have to rest to combat stress because I have not rested well for some time now" (P14).

"Because of my nursing background (LAUGHING), I learned little from it. It is helping now. Moreover, most of the time, I also pay particular attention when there is health education on television. I do not joke with it. So, I picked some information too from there" (P1).

"As I said, I am a retired midwife; I had some experiences from my profession and my colleagues too, who were diagnosed with these conditions before me, and I acquired some information from them" (P2)

This multiplicity of sources reveals how health knowledge is constructed dynamically, blending formal instruction with informal and embodied learning. It also underscores the importance of consistent, culturally relevant public health messaging across diverse platforms.

Participants' knowledge of T2DM and MetS was not uniform, nor was it passively received. Instead, knowledge was actively formed, contested, and applied based on personal experiences, education, and cultural frameworks. The fragmentation between symptom recognition, management practices, and information sources reveals a need for integrative health education strategies that honor local understandings while reinforcing biomedical principles. By treating knowledge as a process rather than

a product, this theme illustrates how individuals navigate chronic illness within complex informational and social landscapes.

4.4 Theme 2: Perceived Benefits and Ambivalence Toward Self-Management

This theme explores how participants living with comorbid Type 2 Diabetes Mellitus (T2DM) and Metabolic Syndrome (MetS) interpret the outcomes of their self-management efforts. It sheds light on how perceived benefits, ranging from improved physiological markers to changes in personal habits, influence motivation, adherence, and overall self-efficacy. The findings reflect a continuum of experiences: some participants recognize clear improvements in health, others acknowledge behavioural transformation, while a few remain ambivalent or doubtful about the effectiveness of self-management. The theme is explored through three interrelated subthemes: (1) Perceived Health Gains, (2) Habitual Reinforcements, and (3) Absence of Observable Benefits.

4.4.1 Perceived Health Gains (subtheme 1)

Several participants (n=6) articulated tangible health benefits arising from their self-management practices, especially in terms of symptom control, stability in biochemical markers such as blood pressure and glucose levels, weight loss, and avoidance of complications. These participants highlighted how active engagement with self-care routines, such as diet modification, medication adherence, and stress management, resulted in noticeable improvements. For instance:

“It helps you get a long life and prevents you from getting complications” (P2).

“If you are managing yourself well...you avoid all these things so that your BP and sugar levels are in the normal range” (P8).

These reflections reveal that perceived physiological benefits are central motivators for ongoing self-care. Participants felt empowered by their ability to influence their disease trajectory and avoid feared outcomes like stroke or diabetic foot ulcers. Improvements in energy levels, weight reduction, and improved sleep were also seen as markers of progress:

“I used to be very fat...since the diseases were diagnosed, I have lost a lot of weight...I think it is helpful” (P17).

For these individuals, health gains were more than clinical, they represented restored control over one's body and life course.

4.4.2 Habitual Reinforcements (subtheme 2)

Another group of participants (n=4) emphasized the behavioural or lifestyle benefits of self-management. These individuals discussed how consistent engagement in routines such as regular check-ups, healthier eating, exercise, and medication adherence had not only improved disease control but had also transformed their overall orientation to health. For example:

“Now...every two months we are here (hospital). If you have symptoms...it is easy to report. We now strive to eat a balanced diet...formally, we did things haphazardly” (P4).

“Regular exercise helps a lot in controlling my condition...I feel fine now” (P6).

These habitual changes were seen as sustainable, practical, and reflective of increased self-awareness and discipline. The process of developing these new habits, especially when reinforced by positive health feedback, suggested a deeper internalization of health behaviours. However, one participant highlighted the trial-and-error nature of this process:

“Sometimes...I stop the medicine and my sickness always rises...when I check my sugar, it is okay. Only the BP goes high, but when I rest small, it goes down” (P11).

This narrative illustrates the ongoing negotiation between personal beliefs, bodily feedback, and medical guidance in shaping self-management.

4.4.3 Absence of Observable Benefits (subtheme 3)

A notable minority (n=3) expressed dissatisfaction or uncertainty regarding the benefits of self-management. These participants appeared demotivated by a lack of perceived improvement, questioning the value of routine medication and lifestyle changes. Their experiences suggest either a disconnect

between expectations and outcomes or a lack of understanding of the chronic and preventive nature of disease management. For instance:

“If there is a benefit, I will not come to this hospital...I take this medication because we have to take it” (P9).

“As for the benefits, I do not know...It is left to me to be careful...they say it needs exercise...but I want to be fine, which is not the case” (P3).

These narratives point to a more fatalistic view of chronic illness, where self-management becomes an obligatory task rather than an empowering tool. For such individuals, the absence of dramatic or immediate improvement undermined motivation, leading to a perception of futility in their health efforts. This group also raises important questions about the adequacy of patient education, the framing of realistic expectations, and the need for continuous support.

This theme reveals a nuanced spectrum of perceived benefits among people living with T2DM and MetS. While some view self-management as a life-affirming practice yielding physiological stability and improved quality of life, others derive value from habit formation and behavioural consistency. However, a few remain ambivalent, managing their conditions without experiencing meaningful improvement, which may contribute to lower adherence and reduced self-efficacy.

The findings underscore that perceived benefit is a key driver of sustained self-management. Yet, the divergence in experiences also highlights the need for tailored support systems, improved communication from health providers, and reinforcement of the long-term nature of chronic disease control. Empowering patients to recognize small, incremental gains may help bridge the gap between effort and outcome, especially for those who struggle to see immediate results.

4.5 Theme 3: Perceived Challenges in Managing Type 2 Diabetes Mellitus and Metabolic Syndrome

This theme explores the barriers that participants encountered in adopting and maintaining self-management behaviours for Type 2 Diabetes Mellitus (T2DM) and Metabolic Syndrome (MetS). These challenges were multifaceted and often overlapping and are categorised into three interconnected layers: Personal-Level Barriers, Systemic-Level Barriers, and Environmental/Structural Barriers.

4.5.1 Personal-Level Barriers (subtheme 1)

These include individual experiences and behavioural factors that hindered adherence to prescribed self-management practices such as medication, diet, and exercise.

Medication Side Effects and Adherence Difficulties: Several participants struggled with medication adherence, citing side effects such as dizziness, gastrointestinal discomfort, and sexual dysfunction. These adverse effects discouraged consistent use and contributed to emotional and social strain.

"I do not even go there at all because the drugs they give at the hospital, I react to it, so for about 4 or 5 years I have never taken medicine from the hospital." (P1)

"The challenge is concerning sexual issues. The thing (penis) is dead completely; how? What medicine can erect it again?" (P3)

Such experiences were particularly distressing for male participants, some of whom faced marital breakdowns due to medication-related sexual dysfunction.

Behavioural and Dietary Preferences: Some participants found it difficult to adopt the recommended dietary practices. Resistance stemmed from personal taste preferences and ingrained habits.

"As for foods like a vegetable diet, I do not like it. So, I do not eat those things... I would rather eat the soup diet." (P13)

"I cannot stay away without tea (laughing), and taking it raw too, I cannot, so I normally add a small quantity of sugar." (P1)

These narratives show the complexity of behavioural change and selective adherence based on perceived feasibility or convenience.

Physical Limitations to exercise were a big challenge due to age-related conditions, obesity, previous injuries, and chronic pain (particularly in the knees and waist) posed significant barriers to engaging in regular physical activity.

"Exercise weakens me of late... my knee bones rub on themselves in recent years and cause pain." (P14)

"I had an accident two times... when I did exercise, it would go down and then it came back... all these exercise things are impossible for me." (P11)

These limitations created a cycle of inactivity, worsening their condition and sense of helplessness.

4.5.2 Systemic-Level Barriers (subtheme 2)

These refer to issues stemming from healthcare delivery systems, insurance policies, and access to necessary medical resources.

Financial Cost of Medication and Medical Equipment: Participants frequently mentioned the high cost of prescribed medications, particularly when hospital-supplied alternatives were ineffective or unavailable.

"Metformin, when I take the hospital one, it worries me. So, I bought the Denk, and the Denk was very expensive... The stripes pack is ₵100." (P1)

Additionally, self-monitoring tools such as glucose strips and machines were financially burdensome, affecting their ability to monitor and manage their condition regularly.

Inadequacies in National Health Insurance Coverage: Several participants highlighted that the National Health Insurance Scheme (NHIS) did not fully cover the necessary drugs and lab tests, requiring them to pay out of pocket.

"The only challenge is finance. I sometimes have to pay for some things in the hospital because the National Health Insurance does not pay all..." (P9)

Such partial coverage created care gaps, often leading to delays in diagnosis and treatment, further complicating their conditions.

4.5.3 Environmental/Social Barriers (subtheme 3)

These include broader economic and infrastructural issues that intersect with both personal and systemic factors.

Food Insecurity and Economic Constraints: Healthy food options necessary for effective management of T2DM and MetS (fresh vegetables, high-fibre foods) were described as unaffordable.

"As for the food, it is not easy keeping to prescribed food at all because it is expensive for us. Due to that, whatever we find, we mostly eat." (P15)

"Buying medication and these special foods is not easy at all. It is hard." (P5)

The lack of economic means to follow dietary recommendations directly contributed to suboptimal health outcomes.

Transportation and Distance to Healthcare Facilities: Participants living far from health facilities faced transportation barriers, making regular hospital visits difficult and expensive.

"My challenge is money because anytime I have to come, I should have at least GH¢50.00 – 100.00, which is sometimes difficult... My coming to the hospital is not as regular as instructed." (P17)

Distance and cost discouraged consistent monitoring and follow-ups, impeding timely care and progress monitoring.

The challenges reported by participants were deeply interconnected. Financial difficulties, a recurring theme, emerged as a cross-cutting constraint underpinning other challenges such as medication non-adherence, dietary limitations, and infrequent healthcare visits. Similarly, personal-level constraints (like age-related issues or cultural food preferences) were often compounded by systemic shortfalls (medication unavailability) and structural inadequacies (food insecurity and transport barriers)

4.6 Theme 4: Self-Efficacy in the Management of Type 2 Diabetes Mellitus and Metabolic Syndrome

This theme explores participants' perceived self-efficacy in managing their comorbid conditions and their confidence in performing necessary self-care tasks to maintain or improve their health. Rather than a binary construct, self-efficacy emerged along a continuum, ranging from proactive and confident management to feelings of despair and spiritual resignation. Participants' beliefs about their ability to manage T2DM and MetS were shaped by personal experiences, interactions with healthcare providers, social support systems, and spiritual orientations.

4.6.1 High to Moderate Self-Efficacy (Subtheme 1)

Eleven (11) participants expressed moderate to high levels of self-efficacy, characterized by confidence in adhering to medical and lifestyle advice, sustained engagement with healthcare services, and adaptive coping strategies. These individuals often cited past successes, such as stabilized blood glucose levels or improved symptoms, as reinforcing their belief in their capacity to manage the condition.

Three (3) participants specifically reported strict adherence to physician instructions and self-care routines. For example:

"I adhere to their advice, so I do anything that will let me live. I am careful myself." (P7)

Others (7 participants) demonstrated lifestyle modifications such as dietary restraint and physical activity:

"I have stopped eating sugary foods, including ripe plantains, bananas, and watermelon. I do not eat what they say is not good for the conditions." (P16)

Interestingly, two participants used complementary therapies like herbal remedies alongside biomedical treatment. While this might raise concerns about treatment interaction, it also indicates a belief in multi-pronged, self-directed management:

“I come to the hospital whenever I am told to. I also take herbs to boost my immunity.” (P13)

Supportive family environments also appeared to bolster self-efficacy. For these participants, self-efficacy was not merely personal confidence but was embedded within a broader social and relational context.

Participants with formal education, active employment, or prior experience managing chronic illness tended to report stronger self-efficacy beliefs. These patterns suggest a link between self-efficacy and demographic variables, such as education level and socioeconomic status.

4.6.2 Low Self-Efficacy and Passive Management (subtheme 2)

Twelve (12) participants expressed low or fluctuating self-efficacy, often feeling resigned, helpless, or disengaged. Despite following some aspects of treatment (e.g., medication adherence), these individuals often lacked confidence in their ability to influence health outcomes.

“No, it has come, and I can do nothing. So, the only thing is to get my drugs, and then frequently, I come for medical checkups. If there should be any challenge, I call the doctor.” (P1)

Physical limitations, such as being house-bound, exacerbated feelings of helplessness and reduced engagement in self-care:

“I do not do any work, and because of that, my condition sometimes worsens. All these could contribute to my waist pain.” (P2)

Spiritual fatalism was a strong feature in several narratives. Participants often deferred health outcomes to divine intervention, reflecting a low internal health locus of control:

“I believe that my healing comes from God. I do not have personal plans, but I look up to God.” (P17)

Others expressed treatment dissatisfaction or a desire for alternative solutions, often linked to unmet expectations or a lack of perceived improvement:

“If I get any other medication and my condition improves, I will go for that one.” (P7)

Low self-efficacy in these narratives was often tied to long illness duration, limited social support, complex regimens, or negative prior experiences with the health system. Participants described these factors as barriers to sustained motivation, leading to a passive or dependent approach to disease management.

4.7 Theme 5: Adaptive Strategies and Coping Mechanisms for Managing Type 2 Diabetes Mellitus and Metabolic Syndrome

This theme emerged inductively and sheds light on the adaptive strategies and coping mechanisms participants employed to navigate the complexities of living with T2DM and MetS. Rather than treating these behaviours as isolated efforts, they are better understood as manifestations of self-efficacy and resilience, grounded in participants' determination to take control of their health despite multiple constraints. These coping mechanisms were both behavioural and relational, reflecting a dynamic interplay between individual agency and external support. Two interrelated subthemes are discussed: (1) Behavioural adaptations and (2) Leveraging support systems.

4.7.1 Behavioural Adjustments and Adaptations (Subtheme 1)

Nine (9) participants described deliberate lifestyle modifications as integral to their self-management approach, with an emphasis on physical activity and diet. These behaviours were not only motivated by clinical advice but also sustained by a belief in personal capacity to influence health outcomes, a hallmark of self-efficacy.

For instance, walking was adopted by several participants as a cost-effective and sustainable strategy:

“As of now, I am feeling fine because of my walking, the exercise I always do. Early morning, I always do some walking.” (P10)

However, the adoption of such routines was tempered by challenges like time constraints and environmental limitations, indicating a constant negotiation between intention and reality.

In terms of dietary adaptations, financial limitations often influenced food choices. Participants demonstrated a practical approach to balancing nutritional goals with affordability:

“You cut your coat according to the size of your cloth... For instance, with the protein diet, we have the less priced ones and the higher ones, so you choose any... so that at the end of the month, you are okay.” (P8)

These adaptations illustrate pragmatic coping and resource-conscious decision-making, reinforcing the concept of health agency even in resource-limited settings.

4.7.2 The Role of Social and Family Support (Subtheme 2)

Participants’ coping was also facilitated by interpersonal and institutional support systems, particularly family and the National Health Insurance Scheme (NHIS). Ten participants highlighted the critical role of children in providing emotional, physical, and financial assistance:

“One of my children and his wife are with me in the house... They support me financially... This morning, he dropped me here before going to his workplace.” (P2)

Such involvement fostered emotional reassurance and reduced logistical burdens, especially during healthcare visits. Similarly, financial support from children was cited as a buffer against the high costs of disease management:

“My children are supporting me financially and easing some of the burden.” (P10)

The NHIS was also recognized by seventeen participants as a facilitator of care access. While it eased some financial strain, its limitations were evident:

“It can cover some of my costs while I pay some... I think it is not bad, but it could have been better.” (P6)

These accounts reflect a broader coping system, where individual behaviours are interwoven with structural supports. The presence or absence of such systems influenced participants’ ability to sustain

their health strategies, reinforcing the importance of a supportive environment in chronic disease management.

4.8 Theme 6: Expected Clinical Interventions to Manage Conditions Better

This theme explores the intricate relationship between patients' understanding of their conditions (T2DM and MetS) and the clinical environments within which such knowledge is acquired, interpreted, and acted upon. It highlights how knowledge acquisition among patients is not solely an individual endeavor but is deeply influenced by the quality and consistency of clinical interactions, the availability of tailored guidance, and the responsiveness of healthcare systems to patients' evolving needs.

4.8.1 Knowledge Acquisition, Interpretation, and Clinical Expectations (subtheme 1)

Participants' knowledge about T2DM and MetS was often influenced by the quality of clinical interactions and support they received. Several participants indicated that gaps in dietary knowledge were a result of insufficient education from healthcare providers. One participant expressed a strong desire for personalized dietary guidance:

“I want them to educate me on the food, especially. Whether I am supposed to eat more of something I am not eating, or maybe I am eating something I do not know I am not supposed to consume. I want them to tell me more” (P12).

This highlights that knowledge acquisition is dependent not only on patients' initiative but also on clinicians' proactive communication. It suggests that enhanced provider-patient education is essential for improving patients' understanding and ability to self-manage their condition. It also illustrates that knowledge acquisition is significantly influenced by the adequacy and clarity of information provided by healthcare professionals. The expressed demand for personalized dietary guidance and clarification of management routines indicates that patient education remains suboptimal. This gap suggests that without deliberate and sustained health literacy support from clinicians, patients may struggle with incomplete or misapplied knowledge in their self-care practices.

4.8.2 Patients' Approach to Managing T2DM and MetS and Clinical Expectations (subtheme 2)

Participants emphasized that continuous clinical support shaped how they applied knowledge in self-management. Some expressed a desire for a personal doctor who understands their medical history and can offer tailored advice. One participant said:

"I wish I had a doctor. I could call my doctor... When we come to the hospital, we notice that the doctors do not spend much time... I think if I had my doctor, he could listen to my explanation..." (P14).

This suggests that the presence of a consistent medical relationship could positively influence patients' self-management motivation and decision-making.

Similarly, counseling services by trained clinicians were identified as instrumental in helping participants interpret and act on health information. One participant noted:

"Oooh, if... the hospital could get someone trained for diabetes and hypertension management so that... the person can counsel me. It will be better and help a lot" (P8).

Such expectations reinforce the need for a more structured and supportive clinical environment that empowers patients to better manage their health. This also reinforces the importance of continuity in care. The participants' preference for having a familiar and accessible clinician underscores the value of relational continuity, which has been shown in the literature to improve chronic disease outcomes. The call for specialized counseling also reflects a perceived need for nuanced, condition-specific education and emotional support, which can significantly enhance adherence and psychosocial adjustment.

4.8.3 Perceived Barriers to Self-Management and Clinical Expectations (subtheme 3)

Participants identified brief, impersonal consultations as a barrier to effective management. They criticized the lack of engagement during appointments, which affected their ability to seek clarification or receive individualized care. One participant said:

“The Doctors are not helping us. Do they take even two minutes to take care of a patient?... They ask you what you came for... That is all. They do not ask... ‘Is your sugar going down?’... but nobody cares for anybody; we are all chasing money” (P9).

This reflects a barrier not just of system inefficiencies but of interpersonal disconnects, suggesting that poor clinician-patient interactions hinder patients' understanding, confidence, and motivation.

Additionally, neglected concerns like sexual health were also perceived as barriers to holistic care. One participant highlighted:

“If I get any drug that will supplement or quicken my sexual weakness, that’s the only solution I need now... I will be happy” (P3).

This reveals how unmet psychosocial and physiological needs may undermine overall health and motivation for self-care, indicating a need for more holistic, person-centred interventions. It highlights systemic and interpersonal barriers that compromise effective disease management. Participants’ frustration with brief, impersonal consultations reveals a healthcare delivery gap where the quantity of care overshadows its quality. More striking is the perceived neglect of sensitive issues such as sexual health, which demonstrates the insufficiency of a purely biomedical model and the need for holistic, biopsychosocial care approaches that respect patients’ comprehensive health needs.

4.8.4 Perceived Benefits, Self-Efficacy, and Clinical Expectations (subtheme 4)

Expectations for respectful and informed care were also linked to patients' sense of self-efficacy. When patients felt heard, educated, and supported, they expressed higher confidence in managing their condition. The desire for empathic listening and comprehensive guidance demonstrates how clinical interactions influence not only patients’ knowledge but also their belief in their ability to manage their condition:

“If clinicians take time to ask me questions like you are doing now... it would help me to also learn and do better with my condition” (implied across participant narratives).

This connects the quality of clinical engagement with patients' self-efficacy. When participants felt heard, respected, and informed, they reported greater confidence in managing their condition. This aligns with Bandura's theory of self-efficacy, which posits that mastery experiences and verbal persuasion, often facilitated through clinician support, enhance self-belief and motivation for behavior change.

The findings under the theme underscore the critical role of patient-clinician interactions in shaping the self-management capabilities of individuals living with Type 2 Diabetes Mellitus (T2DM) and Metabolic Syndrome (MetS). The narratives reveal a dynamic interplay between patients' clinical expectations and their perceived capacity to manage their condition, highlighting the necessity of a person-centred, communicative, and responsive healthcare environment.

4.9 Researcher's Reflexivity: The extent to which this study has influenced the perception of the researcher (Before and After the Study)

4.9.1 Before conducting the research

The researcher embarked on this study with an open, non-judgmental mindset and a genuine interest in exploring the "what," "how," and "why" of self-management practices among individuals with T2DM and MetS. Drawing from her experience as a nurse in the outpatient department of a district hospital, where she managed numerous cases of T2DM and MetS over three years, variations in patient health outcomes were observed, and the researcher wanted to understand the underlying factors. Initially, it was assumed that participants with healthcare education or professional backgrounds would comprehensively understand their conditions and engage more proactively in lifestyle management. It was also anticipated that barriers such as financial limitations, healthcare access, and educational gaps would pose challenges for others in fully managing their conditions. They expressed dissatisfaction with the time and attention received from clinicians, especially given the healthcare limitations of the particular setting due to staff shortages and resource constraints.

4.9.2 After conducting the research

Analysing the data reshaped my perspective, enhancing my empathy for patients who face significant challenges in self-managing complex chronic conditions. The researcher has realised that participants' knowledge levels were generally lower than anticipated and that knowledge alone did not necessarily translate into effective self-management practices, but involved other social and environmental factors. This finding underscored the importance of personalised support tailored to patients' unique circumstances. Participants' struggles with dietary modifications highlighted the limitations of prescriptive nutritional advice, which often fails to align with patients' cultural and lifestyle contexts. This feedback highlighted the need for culturally sensitive approaches, such as incorporating local foods in dietary recommendations, to improve the practicality and acceptability of self-management advice. Additionally, the researcher gained a deeper appreciation for the role of cultural and social beliefs in managing chronic illnesses, which underscored the importance of addressing these factors when designing effective interventions and educational programs.

Notably, the researcher has become more attuned to the gender-specific impacts of T2DM and MetS treatment, especially in response to male participants' concerns regarding medication side effects on sexual performance. This insight highlighted the importance of gender-sensitive counselling and the need to offer options in medication management that address such concerns. The researcher is committed to aligning her practice more closely with the lived realities of individuals managing T2DM and MetS to ensure that interventions are evidence-based and culturally, socially, and personally relevant to her patients.

4.10 Summary of Chapter Four

In summary, this chapter presents the study's findings, establishes a foundation for the upcoming discussion, and compares these results with the literature previously reviewed. Six themes, along with

eighteen (18) subthemes, emerged from the data collected. Participants displayed varied understanding and interpretations of knowledge in T2DM and MetS. While some had basic knowledge, others were unfamiliar with MetS, especially or who lacked detailed knowledge of diabetes biochemistry. Most knowledge came from healthcare providers, while some relied on prior health-related experience, media, and colleagues. Participants expressed that self-management, including lifestyle changes such as diet and exercise, improved their health, and some still preferred medication as the primary management method. Positive outcomes were reported, including longevity and stable health markers. Others could not perceive any associated benefits to self-management practices and thereby thought they were managing their condition out of compulsion. Financial difficulties, drug side effects, and limited exercise capabilities were some barriers cited. Dietary restrictions and medication adherence were challenging as well, and some participants reported drug-related side effects impacting their sexual health. Their self-efficacy in disease management varied.

While some expressed confidence in managing their conditions through adherence to medical advice, diet, and exercise, others departed from such and leaned on faith for improvement, indicating a mix of proactive and passive attitudes toward health management. Behavioral adjustments according to their socio-economic level, social support, and the National Health Insurance Scheme (NHIS) aided participants' management of T2DM and MetS. Many adjusted their diet, exercise regularly, and received family support, which helped manage expenses and maintain stability. Participants requested enhanced medical support, including counselling, personal doctor availability, and dietary education. Many felt that clinicians did not spend enough time interacting with them so they could provide detailed information concerning their conditions any time they visited the hospital.

CHAPTER FIVE

DISCUSSION OF FINDINGS

5.0 Introduction

This chapter discusses the key findings of the study using the Health Belief Model (HBM) constructs, perceived susceptibility and severity, perceived benefits, perceived barriers, self-efficacy, cues to action, and emerging concerns. The model provides a useful lens to examine the motivations and constraints that influence self-management behaviours among individuals living with Type 2 Diabetes Mellitus (T2DM) and Metabolic Syndrome (MetS).

5.1 Perceived Susceptibility and Severity (knowledge)

Participants demonstrated wide variations in their understanding of T2DM and MetS. While some linked diabetes to excessive sugar intake and hypertension to stress, others had not even heard of MetS despite being diagnosed. This limited or superficial knowledge suggests low perceived susceptibility and underestimation of the seriousness of these chronic conditions. This aligns with studies in Ghana by Achempim-Ansong et al. (2022) and Obirikorang, et al. (2016) showing poor public awareness and misconceptions about MetS. The absence of condition-specific health education and a tendency to treat chronic diseases in isolation likely contribute to these knowledge gaps.

The current finding adds depth by illustrating that patients' conceptual gaps are not merely due to a lack of information but also reflect how health education is delivered, often fragmented, reactive, and lacking contextual relevance. This suggests that improving perceived susceptibility requires not only increased awareness but also narrative-based, culturally grounded education that addresses existing misconceptions and beliefs. Misconceptions about disease trajectories further weakened perceived severity. For instance, some participants believed that long-term medication should "cure" the condition,

fostering disappointment, therapeutic fatigue, and eventual disengagement, a trend also noted by Brundisini et al. (2015). Inaccurate beliefs about the reversibility of chronic illness compromise long-term commitment to self-management.

Practice Implication: Nurses and primary care providers should routinely assess patients' perceptions and provide individualized education that emphasizes the chronic, controllable nature of T2DM and MetS.

5.2 Perceived Benefits and Tangible Outcomes

Many participants acknowledged the benefits of lifestyle changes, including dietary adjustments, exercise, and medication adherence. Those with healthcare backgrounds demonstrated better comprehension of the biomedical rationale behind these practices. Tangible improvements such as reduced blood glucose levels, weight loss, and improved mental well-being reinforced the perceived utility of self-management. These findings align with previous work by Kumar & Mohammadnezhad, (2022) and Mikhael et al. (2018), supporting the HBM premise that belief in the effectiveness of health actions fosters adherence. However, some participants perceived self-management as burdensome, especially when results were delayed or imperceptible. This diverges from Elsayed et al. (2023), who suggested perceived benefits are essential for maintaining behaviour, and may reflect unmet expectations, low health literacy, or asymptomatic disease progression. The divergence identified here highlights a critical nuance in the HBM's application in low-resource settings. The findings suggest that perceived benefits must be framed within achievable and culturally valued outcomes. Unlike prior studies that emphasise biomedical metrics, this finding shows that psychosocial and family-related outcomes may be equally important motivators. This recontextualization is important for designing more resonant and enduring interventions.

Practice Implication: Healthcare providers should ensure that patients understand both the short- and long-term benefits of self-care, using realistic counselling to avoid discouragement when immediate results are not visible.

5.3 Perceived Barriers: Personal, Systemic, and Socio-cultural Constraints

Understanding the barriers to effective self-management of Type 2 Diabetes Mellitus (T2DM) and Metabolic Syndrome (MetS) is critical for improving health outcomes, particularly in low-resource settings like Ghana. This section explores the multifaceted nature of these barriers as experienced and articulated by participants, categorizing them into personal, systemic, and socio-cultural constraints. These perceived barriers, ranging from structural and financial hardship to healthcare system inefficiencies and deeply rooted cultural beliefs, reflect not only individual struggles but also broader contextual realities that shape health behaviour and decision-making.

5.3.1 Structural and Financial Barriers

Participants frequently cited financial hardship, polypharmacy, medication side effects, and limited access to healthy food as major obstacles to effective self-management. These structural constraints mirror those identified in other low- and middle-income country contexts (Boima et al., 2015; Campbell et al., 2017; Hernandez-Tejada et al., 2012). Dietary adherence, in particular, was challenged by the affordability of recommended foods, while medication non-adherence was often attributed to cost or side effects. While earlier studies have reported structural barriers, this study offers a contextual layering of these issues by showing how food insecurity, cost of care, and medication burden converge to create a compounded experience of health inequity. This triangulated view provides a more realistic foundation for policy and practice responses.

5.3.2 Healthcare System Challenges

Short consultation times and a lack of empathetic engagement from providers hindered participants from asking questions or receiving psychosocial support. This is consistent with Doyle et al. (2013) and Roglic et al. (2016), who emphasized the need for more patient-centred care. In contrast, patient satisfaction tends to be higher in systems that integrate nurse-led consultations and task-sharing models (Guastello & Jay, 2019). The current findings further reveal that the lack of empathetic care often leads patients to seek informal or spiritual support systems, a phenomenon that calls for more integrative, culturally congruent care models. This contribution nuances the discourse on health system inefficiencies by connecting them to patients' adaptive but potentially misaligned coping strategies.

Alternative Interpretation: It is plausible that some participants may have cited structural or cultural barriers, such as financial hardship, limited access to healthy foods, spiritual beliefs, or social norms, not solely because these were the most pressing obstacles, but as a way to rationalize or externalize their non-adherence to self-management practices. In this context, these explanations may function as psychological defence mechanisms, allowing individuals to protect themselves from feelings of guilt, inadequacy, or perceived personal failure. By attributing non-adherence to external, socially acceptable factors, participants might be shielding themselves from the internalized stigma associated with chronic illness mismanagement or the sense of losing control over their health condition.

5.3.3 Spiritual Fatalism and Cultural Norms

A unique and prominent barrier was spiritual fatalism. Many participants substituted faith-based coping for biomedical care, leading to passive health behaviours. While this reflects the role of religion in emotional support as reported by Peprah & Gyasi. (2018), it can displace personal responsibility for self-care. Male participants, in particular, noted medication-related sexual dysfunction as both a side effect and a culturally sensitive deterrent to adherence, a barrier underreported in earlier Ghanaian

studies but confirmed in Mohebi et al. (2018) and Khan et al. (2008). Unlike earlier studies that isolate faith as either supportive or detrimental, this study presents spiritual fatalism as a dynamic continuum, sometimes helpful, sometimes harmful, depending on how it is mediated by health literacy and provider engagement. This perspective expands the understanding of spirituality's dual role in chronic disease management.

Practice Implication: Addressing these complex barriers requires integrated strategies that include culturally sensitive communication, financial support mechanisms, and expanded consultation formats.

5.4 Self-Efficacy: Confidence, Mastery, and Spiritual Mediation

Self-efficacy levels were variable. Participants who experienced tangible health improvements from lifestyle changes reported increased confidence in their ability to manage their condition. These "mastery experiences," central to Bandura's self-efficacy theory (1978), were key enablers of sustained behaviour change.

However, those who failed to see results expressed frustration and hopelessness, especially when managing multiple conditions, which created emotional fatigue, a finding echoed by Pamungkas et al. (2020). High reliance on divine intervention further diluted personal responsibility, hindering self-efficacy. Nonetheless, evidence from Davis (2021) suggests that faith-based health engagement can be productive if reframed to support self-care as a spiritual responsibility. This contributes a contextual dimension by revealing how emotional fatigue from managing comorbidities, combined with spiritual over-reliance, erodes self-efficacy. Unlike existing literature that treats self-efficacy as largely individualistic, this study positions it within a web of relational and spiritual influences, suggesting that self-efficacy interventions must extend beyond personal coaching to include faith leaders and family support.

Practice Implication: Faith leaders should be integrated into health promotion efforts to reinforce self-management as a form of spiritual stewardship. Health workers should set realistic goals and provide consistent follow-ups to reinforce patient confidence.

5.5 Cues to Action: Informal Networks and Missed Opportunities

Participants mostly relied on health workers and peer narratives for health cues. Mass media, structured health campaigns, and community programmes were minimally cited. This indicates an underutilization of broader health communication platforms, as noted in Obirikorang et al. (2016). Informal cues, such as advice from friends or family, often filled the gap, with variable accuracy.

Family, particularly children, emerged as strong motivators. This aligns with culturally embedded caregiving roles in Ghana and parts of Sub-Saharan Africa (Asante, 2021). However, peer or support group participation was nearly absent, possibly due to limited access or awareness. Ghana's National Health Insurance Scheme (NHIS) was cited as a positive structural cue, reducing cost barriers and prompting treatment continuity. This finding advances the discourse by showing that while informal networks are frequently used, they are not systematically leveraged for accurate information dissemination. This suggests an untapped potential for integrating informal networks into structured health communication strategies, particularly in settings where formal cues are weak.

Practice Implication: Community-based interventions must be family-inclusive and culturally tailored. Leveraging media platforms and peer education models can expand the reach and reliability of cues to action.

5.6 Emerging Concerns: Sexual Health and Psychosocial Wellbeing

A notable yet underexplored theme was male participants' concern about sexual dysfunction related to diabetes and its treatment. This concern had significant psychosocial consequences, including marital

strain and reduced self-worth. As Maiorino et al. (2014) argue, addressing sexual health is crucial to holistic diabetes care, yet it is often overlooked in clinical practice. While sexual health is underexplored in diabetes literature in Ghana, this study grounds it as both a barrier and a potential entry point for more holistic care. The willingness of men to discuss these issues signals a shift in patient-provider expectations, urging a redefinition of "chronic disease care" to include intimate and emotional well-being.

Nursing Education Implication: Training for healthcare providers should include communication on sensitive topics like sexual and mental health. Clinics should offer confidential, non-judgmental support spaces to address the full spectrum of patients' needs.

5.7 Perceived Challenges: An Integrative Perspective

Barriers to self-management, financial hardship, polypharmacy, diet, side effects, spiritual beliefs, and physical limitations were deeply interwoven. Many participants experienced overlapping burdens that reinforced disengagement. For example, economic insecurity intersected with poor dietary access and spiritual resignation, especially among men. This finding underscores the need to view barriers not in isolation but as intersecting systems that shape behaviour, supporting (Woodward et al., 2023). This study makes an integrative contribution by illustrating how intersecting barriers function not merely as additive stressors but as compounding systems of disadvantage. This layered understanding of patient experience calls for health interventions to be co-designed with patients and embedded in local realities.

Policy Implication: Chronic disease interventions must be multisectoral, incorporating economic, spiritual, and psychosocial dimensions. Nursing curricula should emphasize chronic disease coaching and cultural competency. National policy must elevate T2DM and MetS as public health priorities, demanding coordinated responses.

The Health Belief Model, as a guiding framework to this study, reveals that self-management behaviours among individuals with T2DM and MetS are shaped by a complex interplay of personal perceptions, cultural beliefs, systemic limitations, and spiritual worldviews. While the model's constructs were generally supported, emerging insights such as spiritual disengagement, unaddressed sexual health, and the critical role of family and financial context provide a more nuanced understanding of health behaviour in this population.

5.8 Identified Knowledge Gap Filled by This Study

Despite growing global attention to chronic disease management, particularly Type 2 Diabetes Mellitus T2DM and MetS, limited research in Ghana has explored how individuals with comorbid T2DM and MetS perceive and engage in self-management within their specific sociocultural and economic context. While previous studies in Ghana have addressed general knowledge levels or adherence to treatment in either T2DM or hypertension, they often treat these conditions in isolation and fail to explore the syndromic complexity of MetS or the interaction between biomedical, spiritual, psychosocial, and economic factors influencing self-care behaviour.

This study fills a key knowledge gap by:

- **Contextualising Self-Management Within a Dual-Disease Framework:** It uniquely investigates how individuals experience, understand, and manage the co-occurrence of T2DM and MetS, rather than focusing on each condition in isolation. This approach reflects real-world clinical complexity and enhances understanding of compounded management burdens.
- **Illuminating the Influence of Cultural and Spiritual Beliefs on Health Behaviour:** It reveals how spiritual fatalism and religious coping, while offering psychological comfort, can diminish perceived self-efficacy and reduce engagement with biomedical interventions. This nuanced insight is largely absent from existing literature on self-management in Ghana.

- **Highlighting Unspoken Concerns in Chronic Disease Care:** It identifies underreported issues such as sexual dysfunction and its influence on medication adherence and quality of life, an area often neglected in both research and clinical practice in sub-Saharan Africa.
- **Demonstrating the Interaction of Personal, Structural, and Cultural Barriers:** Rather than listing barriers in isolation, the study shows how financial hardship, healthcare system constraints, social norms, and religious ideologies intersect to shape health behaviour. This intersectional view offers a more realistic basis for designing interventions.
- **Critiquing the Underutilization of Cues to Action:** It exposes the limited role of mass media, community health campaigns, and peer networks in prompting self-care, suggesting a missed opportunity in Ghana's public health communication strategy.
- **Applying the Health Belief Model (HBM) to a Ghanaian Context:** The study operationalises the HBM constructs (perceived susceptibility, severity, benefits, barriers, cues to action, and self-efficacy) in a culturally grounded way, providing a validated framework for understanding chronic disease behaviour in low-resource, religiously devout settings.

Therefore, this study contributes novel, context-specific insight into how Ghanaian individuals with T2DM and MetS perceive and practice self-management, revealing an urgent need for culturally tailored, spiritually sensitive, and economically feasible interventions that address both biomedical and psychosocial dimensions of care.

This knowledge is vital for informing health promotion, nursing education, and policy reforms aimed at improving chronic disease outcomes in Ghana and similar low- and middle-income contexts.

5.9 Effectiveness of the Model Used in the Study

According to the health belief model, people were more likely to engage in health-promoting activities if they believed they had a risk of a serious condition (perceived Susceptibility and severity), believed the benefits of taking action outweigh the costs (perceived benefits), felt capable of taking action (self-efficacy), and saw fewer barriers to adopting the behaviour (perceived barriers) (Li et al., 2022). It has also incorporated cues to action as triggers for behavioral change. The model was particularly effective as a guiding framework for this study due to its constructs that resonate with the research objectives in the following ways: Perceived Susceptibility and cues to action helped explore participants' knowledge about their comorbidities. Individuals who understood the complexities and seriousness of T2DM and MetS and had access to accurate information were more likely to engage in self-management behaviors. Perceived benefits as a construct directly relates to assessing how individuals view the effectiveness of self-management practices, such as regular exercise, dietary control, and medication adherence. It enabled the researcher to examine how participants believed these practices would improve their health outcomes, giving insights into what motivated or supported their commitment to their health behaviors.

The model also aided in understanding individuals' perceived barriers in managing T2DM and MetS. The health belief model suggests that participants might be less likely to engage in self-management if they viewed barriers as significant. For instance, financial cost, lack of social support, and resource constraints. Examining these barriers that prevent individuals from changing their behaviour was made simpler by this framework. The self-efficacy construct was used to gauge people's confidence in their capacity to carry out self-management tasks. The model also made it possible to investigate how perception affects behaviour, which aligns with the qualitative method of the study that considered individual experiences. Its flexibility also enabled the researcher to explore self-management components, such as diet, exercise, medication adherence, and coping mechanisms used to manage their

challenges. The HBM provided a structured way to understand the dynamics between knowledge, perception, and behaviours, hence highly effective for exploring self-management in individuals with comorbidity of T2DM and MetS. The constructs of the model influenced the thematic areas of the findings, except for the fifth and sixth themes, which are not directly linked to any constructs of the model. These are patients' approaches to managing T2DM, metabolic syndrome (MetS), and clinical interventions expected by participants to manage conditions better, respectively.



CHAPTER SIX

SUMMARY, IMPLICATION, LIMITATION, CONCLUSION

AND RECOMMENDATIONS

6.0 Introduction

The sixth and last chapter summarised the study's findings and discussed the implications for nursing education, practice, management, and research. Furthermore, it addressed the study's shortcomings and gave recommendations.

6.1 Summary

This study employed an interpretive qualitative paradigm to explore the self-management practices of individuals living with the comorbidity of Type 2 Diabetes Mellitus (T2DM) and Metabolic Syndrome (MetS) at Atua Government Hospital in the Eastern Region of Ghana. Guided by a descriptive, exploratory design, the study involved 17 purposively selected participants aged 35 to 70 years. Data were gathered through semi-structured, in-depth interviews that explored participants' sociodemographic profiles, knowledge of T2DM and MetS, perceived benefits and challenges of self-management, and levels of self-efficacy.

The findings revealed wide disparities in participants' knowledge of their conditions. While some had acquired adequate information, often due to professional exposure or repeated clinical interactions, many others held fragmented, inaccurate, or superficial understandings, especially regarding MetS, which was frequently unheard of despite formal diagnosis. Health education was often perceived as fragmented, overly biomedical, and disconnected from patients' lived realities, contributing to low perceived susceptibility and severity of the conditions.

In terms of self-management practices, participants described varying degrees of adherence to recommended behaviours such as medication use, dietary modifications, physical activity, and lifestyle adjustments. However, these efforts were frequently undermined by multiple intersecting barriers. Personal challenges included limited financial resources, medication-related side effects, and emotional fatigue. Systemic barriers included short consultation times, perceived lack of empathy from healthcare providers, inadequate individualized support, and insufficient culturally relevant health communication. Dissatisfaction with the health system led some participants to seek alternative forms of support, including informal networks and spiritual interventions.

Spiritual beliefs played a significant role in shaping health behaviours. While faith provided emotional comfort, a tendency toward spiritual fatalism at times displaced proactive self-management. This dynamic was particularly strong among male participants, some of whom also cited medication-induced sexual dysfunction as a culturally sensitive yet unaddressed concern that deterred adherence.

Despite these challenges, participants identified sources of strength, including social support from family, especially children, and the financial relief provided by the National Health Insurance Scheme (NHIS). However, many still expressed feelings of powerlessness and placed hope in divine intervention, reflecting a complex interplay between agency, faith, and health literacy.

Overall, the study highlighted the urgent need for more holistic, patient-centred, and culturally competent interventions. These should include context-specific education delivered through trusted channels, targeted financial support mechanisms, continuity of care through personalized clinical relationships, and strategies to enhance self-efficacy, including peer-led support and integration of spiritual care into biomedical management frameworks.

6.2 Implications of the study

The findings have implications for the nursing and healthcare systems. These consequences were classified as nursing practice, nursing education, nursing research, and policymaking.

6.2.1 Implications for Nursing Practice

- The results showed that to manage metabolic syndrome and type 2 diabetes effectively, more patient-centred treatment is required. Many participants depended significantly on their healthcare practitioners for support and education because they lacked a thorough understanding of their diseases.
- To enhance self-management, nurses should give more education to patients, particularly regarding dietary and exercise changes, and improve nurse-patient interactions. Complete assessments and personalised treatment plans are also necessary in response to complaints about insufficient clinical time and personal attention.

6.2.2 Implications for Nursing Education

- Participants' levels of knowledge point to gaps in health literacy that could be filled if nursing education is improved. Nurses should be given more training on how to convey complicated medical information clearly and patiently.
- Training nurses to deliver continuous patient education, especially about chronic disease management such as type 2 diabetes and metabolic syndrome, should be prioritised. To assist nurses to comprehend patients' socioeconomic constraints and taking them into account when developing their care plans, nursing education should also emphasise cultural competency.

6.2.3 Implications for Nursing Research

- Managing T2DM and MetS in low-resource settings remains a challenge due to limited access to treatment and education. Nursing research should explore cost-effective, context-specific interventions that enhance self-management and reduce healthcare costs.
- Older adults and those with financial constraints face mobility and access barriers. Future studies should investigate adaptable care models, such as mobile or community-based services, to improve outcomes for these vulnerable groups.
- The integration of traditional treatments and dietary practices into care plans may enhance adherence. Research should examine how culturally appropriate approaches and improved nurse-patient communication influence self-management and health outcomes.

6.3 Limitations of the Study

Participants in the Study were selected from people with diabetes mellitus who had been diagnosed for a year or more, rather than those who had just received a diagnosis. Furthermore, the results cannot be applied to the whole population of people with diabetes because this study only included people with type 2 diabetes mellitus. Furthermore, because the Study was conducted in a specific region, its conclusions cannot be applied to other locations where healthcare systems, cultural norms, and practices may differ. Additionally, the majority of participants were from low socioeconomic backgrounds, which probably impacted how they self-managed their T2DM and MetS. In other ways, with more access to healthcare services, drugs, and healthier dietary options, people from higher socioeconomic backgrounds may have different opinions and practices. Consequently, the present results could not accurately represent the experiences of all individuals with metabolic syndrome and type 2 diabetes mellitus.

6.4 Conclusion

This study aimed to explore the knowledge, self-management practices, perceived benefits and challenges, and self-efficacy of individuals with T2DM and MetS at the Atua Government Hospital in Ghana. Employing a qualitative approach, the study generated rich insights into how individuals manage these comorbid chronic conditions in a low-resource context. The conclusions drawn herein are directly aligned with the study objectives and contribute meaningfully to the literature on chronic disease self-management in resource-constrained settings.

To explore the knowledge of individuals with T2DM and MetS regarding their condition, participants exhibited basic awareness of T2DM but demonstrated limited or fragmented knowledge about MetS. Understanding of the causes, complications, and synergistic effects of these co-occurring conditions was generally poor. Information sources were predominantly health professionals, though these interactions often lacked depth and personalization. This finding underscores the need for comprehensive and structured education tailored to both T2DM and MetS, reinforcing the theoretical perspective of the Health Belief Model, which posits that knowledge significantly influences self-care behaviors.

To describe the self-management practices adopted by individuals with comorbid T2DM and MetS While participants engaged in various self-care activities such as dietary modifications, physical activity, and medication adherence, these practices were often inconsistent and not well-integrated. Cultural beliefs, economic challenges, and insufficient understanding hindered the development of effective self-management routines. This highlights the applicability of the Self-Management Framework, which emphasizes the importance of informed decision-making, healthcare partnerships, and environmental support in chronic disease care.

To assess perceived benefits and challenges of self-management, participants acknowledged benefits such as improved symptom control and increased sense of personal control over their health. However,

they encountered multiple challenges: personal (low motivation), systemic (inadequate clinical attention), and environmental (lack of community resources). These findings reinforce the need for systemic support, as emphasized in the Chronic Care Model, which advocates for integrated care and community-based interventions.

To explore patients' self-efficacy in managing their comorbid condition, self-efficacy levels varied widely among participants. Those with prior success and support from family or healthcare providers reported higher confidence, while others struggled with doubts and frustration, particularly when managing lifestyle changes. Bandura's theory of self-efficacy offers a relevant framework here, highlighting the importance of building confidence through mastery experiences and consistent support. In summary, this study offers a nuanced understanding of the self-management experiences of individuals living with comorbid T2DM and MetS in a resource-limited Ghanaian context. The findings reveal significant gaps in knowledge, fragmented self-care practices, and varying levels of self-efficacy, all shaped by cultural, socioeconomic, and systemic influences. The study underscores the critical need for patient-centered education, integrated healthcare support, and context-sensitive interventions to enhance chronic disease self-management. These insights contribute to the broader discourse on non-communicable disease care in low-resource settings and provide direction for future nursing practice, policy development, and research.

6.5 Recommendations

Grounded in the study's empirical findings, the following targeted recommendations are proposed to enhance self-management among individuals with comorbid T2DM and MetS:

Structured Patient Education: Given participants' limited knowledge of MetS and fragmented understanding of T2DM, health educators should develop integrated, culturally sensitive education

programmes. These programs should emphasize the pathophysiology, complications, and interplay between the two conditions and be delivered through tailored, low-literacy-friendly approaches.

Individualized Nurse-Led Consultations: The lack of depth in clinical interactions calls for strengthened nurse-patient engagement. Nurses should be trained in person-centred counselling and empowered to deliver ongoing self-management support, consistent with best practices in chronic care models.

Context-Specific Lifestyle Interventions: Inconsistencies in diet, physical activity, and medication adherence, largely shaped by socioeconomic and cultural factors, highlight the need for accessible, community-based interventions. Interdisciplinary teams should support patients in adapting and sustaining realistic health behaviours within their resource constraints.

Addressing Health System Barriers: Participants' experiences of inadequate clinical support and irregular drug access necessitate systemic reforms. Ensuring consistent medication supply, improving appointment follow-up, and extending outreach services, particularly for older adults, are critical to improving continuity of care.

Leveraging Psychosocial and Faith-Based Support: Findings underscore the role of family and spiritual beliefs in coping. Interventions should incorporate family engagement and collaborate with faith-based organizations to enhance adherence and emotional well-being.

Future Research on Equity in Self-Management: The predominance of low-income participants suggests a socioeconomic gradient in self-management capacities. Further research should examine differentiated strategies for marginalized groups, particularly the elderly and financially vulnerable.

6.5.1 Ministry of Health (MoH) and Ghana Health Service (GHS)

- The Ministry of Health and Ghana Health Service should develop targeted policy interventions that address the economic burden of chronic disease management by expanding the National

Health Insurance Scheme (NHIS) coverage. This should include full or subsidized access to essential medications and laboratory services for individuals living with comorbid T2DM and MetS, reflecting participants' concerns about financial constraints limiting treatment adherence.

- In response to the demonstrated gaps in public awareness and misconceptions about MetS and its link with T2DM, the MoH/GHS should design and implement culturally relevant health promotion campaigns. These should dispel prevalent myths, clarify the distinct yet interconnected nature of T2DM and MetS, and emphasize the importance of proactive self-management, using community radio, local dialects, and visual aids.

6.5.2 Hospital Management

- Health managers should review and revise consultation practices by allocating adequate time for chronic care reviews. This addresses participants' concerns about rushed interactions and allows clinicians to offer personalized counseling that incorporates patients' cultural, spiritual, and psychosocial contexts, ultimately boosting their self-efficacy and trust in the care process.
- Hospital management should prioritize the development of structured self-management education programs. These programs must focus on practical, low-cost strategies and be tailored to the literacy levels, lifestyles, and cultural settings of the target population.

6.5.3 Nurses/Clinicians

- Nurses and clinicians should adopt integrated, patient-centered care models that go beyond biomedical management to identify and address barriers to adherence, including fears, beliefs, and misinformation. Through ongoing, contextually appropriate health education and motivational support, providers can enhance patients' confidence and competence in managing both T2DM and MetS.

- Clinical staff should also acknowledge and respectfully engage with patients' cultural and spiritual worldviews, using these as entry points to reinforce the importance of lifestyle modification, medication adherence, and symptom monitoring. This approach was highlighted in participants' feedback on culturally insensitive care.

6.5.4 People with comorbidity of type 2 diabetes mellitus and metabolic syndrome

- Individuals living with T2DM and MetS are encouraged to actively participate in their care by staying informed about their conditions, adhering to medical advice, and regularly engaging in recommended self-care behaviors, including healthy eating, physical activity, and medication adherence.
- Based on participants' expressed challenges, patients need to build and maintain a support network of family members, peers, and healthcare providers. These support systems enhance emotional well-being, reduce isolation, and promote consistent self-management behavior.
- To manage the economic demands of care, individuals should be guided to enroll in NHIS and explore available financial support services, while seeking professional guidance when facing challenges such as side effects, dietary dilemmas, or emotional fatigue.

6.5.5 Recommendations for Health Policy and System Strengthening

- Integrate MetS education into existing chronic disease programs.
Given the limited knowledge of MetS among participants, the Ghana Health Service (GHS) should revise non-communicable disease (NCD) guidelines to include MetS education, screening, and management protocols at the primary care level.
- Enhance provider capacity for patient-centered self-management support.

Participants expressed dissatisfaction with brief and generalized consultations. Training programs should include modules on chronic disease coaching, motivational interviewing, and culturally appropriate communication.

- Establish community-based self-management support programs.

Many participants lacked social support in managing their conditions. Community health nurses and peer educators can be mobilized to facilitate chronic disease support groups and education sessions at the community level.



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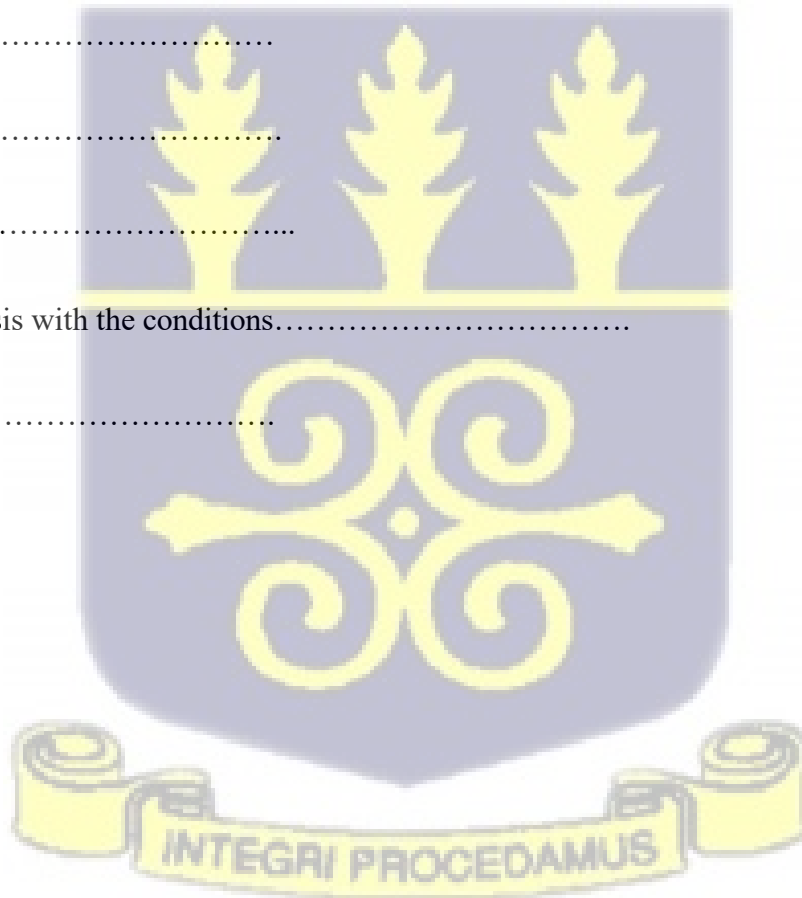
APPENDICES

APPENDIX A: BACKGROUND INFORMATION FORM

Section A

Demographic Information

1. Pseudonym.....
2. Age.....
3. Gender.....
4. Level of Education.....
5. Marital Status.....
6. Occupation.....
7. Duration of diagnosis with the conditions.....
8. Religion.....



APPENDIX B - INTERVIEW GUIDE

INTERVIEW GUIDE ON SELF-MANAGEMENT PRACTICES IN COMORBIDITY OF TYPE2 DIABETES AND METABOLIC SYNDROME

Explore Knowledge on Management of T2DM and MetS

1. Briefly share your experiences living with comorbid type 2 diabetes mellitus and metabolic syndrome.
3. What is your understanding of type 2 diabetes mellitus and metabolic syndrome?
4. What are the management strategies for the conditions?

Probe

1. How do you personally manage T2DM and MetS?
2. How did you acquire this knowledge? (e.g., healthcare professionals, personal research, support groups, media)

Investigate Perceived Benefits of Self-Management Practices

1. Kindly describe the self-management practices you engage in for managing type 2 diabetes mellitus and metabolic syndrome?
2. In your opinion, what are the benefits you perceive from these self-management practices?

Probe

1. How regular do you take your medication? Any reason?
2. How beneficial is dieting in managing these conditions
3. How important is exercise to you?
4. How does these contribute to your personal wellbeing

Identify Perceived Challenges in Self-Management Behaviours:

7. What challenges do you face in adopting and maintaining self-management behaviours for type 2 diabetes mellitus and metabolic syndrome?

Probe:

Discuss any specific barriers that make it difficult for you to adhere to recommended self-management practices? Financial? Distance to health facility? too many drugs? Explain

1. Talk about any support from somewhere like reliable source of income or financial support from friends and family?
2. Do you have a good health insurance scheme to cater for medical bills?

Explore Self-efficacy in self-management behaviours

1. How confident do you feel in your ability to manage both conditions? Please share instances where you felt particularly effective or challenged?

Probe:

1. How do you describe your compliance to treatment guidelines?
2. How often do you visit the health facility? By invitation or self-initiative?
3. Discuss your plans to improve upon your achievements



APPENDIX C – CONSENT FORM

INTERVIEW CONSENT FORM FOR PEOPLE WITH COMORBIDITY OF TYPE 2 DIABETES AND METABOLIC SYNDROME

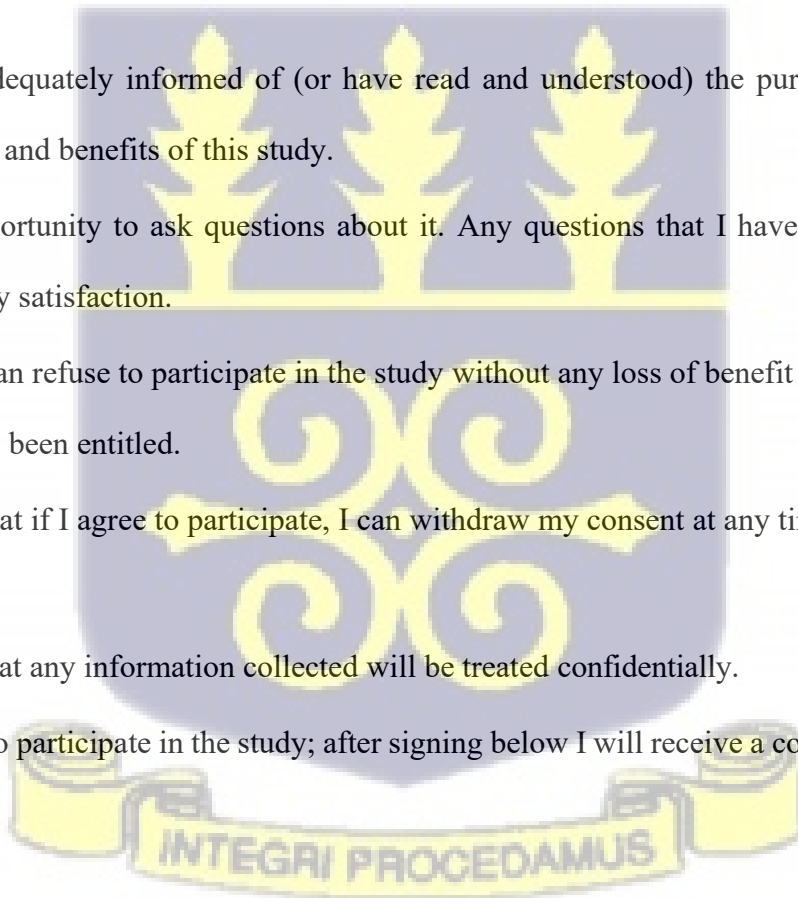
Study Title: EXPLORING SELF-MANAGEMENT PRACTICES AMONG PEOPLE WITH COMORBIDITY OF TYPE 2 DIABETES MELLITUS AND METABOLIC SYNDROME

Principal Investigator: ABIGAIL IBRAHIM

Institution: SCHOOL OF NURSING AND MIDWIFERY, UNIVERSITY OF GHANA

Informed Consent

- I have been adequately informed of (or have read and understood) the purpose, procedures, potential risks, and benefits of this study.
- I have the opportunity to ask questions about it. Any questions that I have asked have been answered to my satisfaction.
- I know that I can refuse to participate in the study without any loss of benefit to which I would have otherwise been entitled.
- I understand that if I agree to participate, I can withdraw my consent at any time without any problem.
- I understand that any information collected will be treated confidentially.
- I freely agree to participate in the study; after signing below I will receive a copy of this consent form.



For Participant

Name of Participant

Signature/ Thumbprint Participant..... Date: /... /....

For Study Staff

I have adequately informed the participant of the purpose, procedures, potential risks, and benefits of this study.

I have answered all questions to the best of my ability.

Name of study personnel.....

Signature..... Date:/...../.....



APPENDIX D- Demographic Characteristics of the Study Participants.

Pseudonyms	Age	Gender	Level of Education	Marital Status	Occupation	Duration of Diagnoses	Religion
P1	67years	Female	Tertiary	Married	Retiree nurse	16years	Christian
P2	70years	Female	Tertiary	Widow	Retired midwife	20years	Christian
P3	70years	Male	Middle form 4	Married	Retired soldier	19years	Christian
P4	45years	Male	JSS	Married	Self-employed	4years	Christian
P5	61years	Female	Middle form 4	Separated	Retired trader	26years	Christian
P6	50years	Female	JSS	Widow	Trader	2years	Christian
P7	63years	Male	Middle form 5	Married	Retired foreman	10years	Christian
P8	63years	Female	Middle form 5	Divorced	Retired trader	17years	Christian
P9	60years	Male	Middle form 5	Divorced	Self employed	13years	Christian
P10	62years	Male	Middle form 4	Married	Retired farmer	3years	Christian
P11	70years	Male	Middle form 4	Married	Retired police officer	3years	Muslim
P12	56years	Female	JSS	Divorced	Retired trader	4years	Muslim
P13	50years	Female	JSS	Single	Trader	10years	Christian
P14	54years	Male	Middle form 4	married	Farmer	5years	Christian
P15	45years	Female	JSS	Single	Trader	4years	Christian
P16	44years	Female	Middle form 4	Widow	Trader	5years	Christian
P17	50years	Female	JSS	Widow	Trader	2yerars	Christian

APPENDIX E- Themes and Subthemes

Table 4.2 Themes and Subthemes

Themes	Sub-themes
Knowledge Acquisition and Interpretation of T2DM and MetS	• General understanding and medical interpretations • Recognition and interpretation of symptoms • Applying knowledge in self-management • Sources of knowledge formation
Perceived benefits and ambivalence towards self-management	• Perceived Health Gains • Habitual Reinforcements • Absence of observable benefits
Perceived challenges of managing T2DM and MetS	• Personal-Level Barriers • Systemic Barriers • Environmental and Social Barriers
Self-efficacy in managing T2DM and MetS	• High to moderate Self-efficacy • Low self-efficacy and passive management
Adaptive Strategies and Coping Mechanisms for Managing T2DM and MetS	• Behavioural adjustments and adaptation • Role of social and family support
Expected clinical interventions to make the condition better	• Knowledge Acquisition, Interpretation, and Clinical Expectations • Patients' Approach to Managing T2DM and MetS and Clinical Expectations • Perceived Barriers to Self-Management and Clinical Expectations • Perceived Benefits, Self-Efficacy, and Clinical Expectations



APPENDIX F- LETTER OF ETHICAL APPROVAL

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



Dodowa Health Research
Centre Ghana Health
Service
P. O. Box
DD1
Dodowa

My Ref.
DHRC/IRB/029/02/24
Your Ref. No.

Email:
irbdodowa@gmail.com
8th February, 2024

Abigail Ibrahim
University of Ghana
School of Nursing and Midwifery
P.O Box LG 143
Legon-Accra
Dear Madam,

ETHICAL CLEARANCE

**TITLE OF PROTOCOL: SELF-MANAGEMENT PRACTICES IN COMORBID TYPE2
DIABETES MELLITUS AND METABOLIC SYNDROME AT ATUA GOVERNMENT
HOSPITAL**

Protocol ID: DHRCIRB/017/01/24

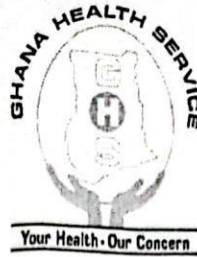
Principal Investigator: Abigail Ibrahim

Upon addressing the comments raised, the IRB has approved your proposal.

The approval requires that you submit a periodic report on the progress of the project during the implementation period and a final full report to the Institutional Review Board (IRB) on completion of the study.

The IRB may observe or cause to be observed procedures and records of the study during and

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



Atua Government Hospital
P. O. BOX 147.
Lower Manya-Krobo

My Ref. No: GHS/NTGH/GF-278

27th February, 2024

Your Ref. No.

ABIGAIL IBRAHIM
UNIVERSITY OF GHANA
COLLEGE OF HEALTH SCIENCES
P.O BOX LG 143

Dear Madam,

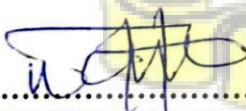
RE: PERMISSION TO CARRY OUT RESEARCH

Reference is made to your letter dated 20th February, 2024 on the above-mentioned subject matter.

We write to inform you that Management of Atua Government Hospital has granted approval for the said second year student offering MPhil Nursing of the University of Ghana, School of Nursing and Midwifery, Adult Health Department to conduct her research in the Hospital which entails collection of data.

Thank you.

Yours faithfully,


.....
MR. VINCENT TAMEKLO
HEAD OF ADMINISTRATION
FOR AND ON BEHALF OF MEDICAL SUPERINTENDENT

INTEGRITY PROCEDAMUS

APPENDIX H – LETTER OF SUPPORT

APPENDIX H- LETTER OF SUPPORT



UNIVERSITY OF GHANA
DEPARTMENT OF ADULT HEALTH
SCHOOL OF NURSING

16th January 2024.

Ref. No.:.....

The Chairman,
Institutional Review Board,
Dodowa Health Research Centre,
P.O. Box DD1,
Dodowa Accra.

Dear Sir/Madam,

SUPPORT LETTER – ABIGAIL IBRAHIM

I write in support of the application for ethical clearance for Ms. Abigail Ibrahim, an MPhil Nursing student in the Department of Adult Health Nursing, School of Nursing and Midwifery, University of Ghana, Legon.

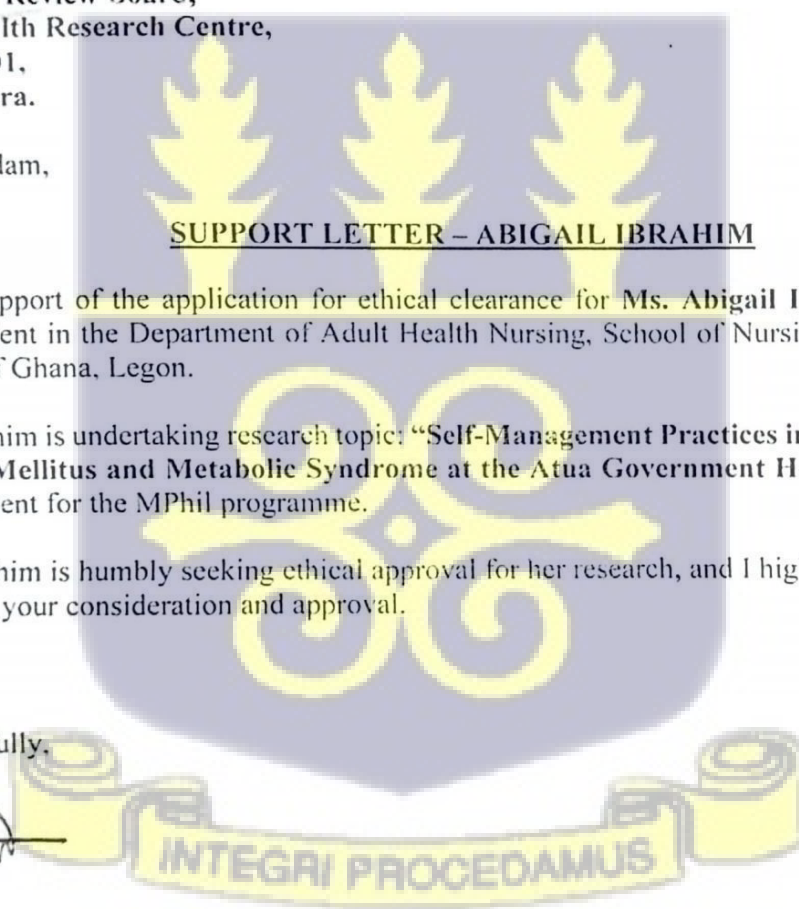
Abigail Ibrahim is undertaking research topic: “Self-Management Practices in Co-morbid Type 2 Diabetes Mellitus and Metabolic Syndrome at the Atua Government Hospital”, as part of the requirement for the MPhil programme.

Abigail Ibrahim is humbly seeking ethical approval for her research, and I highly recommend her proposal for your consideration and approval.

Thank you.

Yours faithfully,

Dr. Gloria Achempim-Ansong
Supervisor



APPENDIX I – INTRODUCTORY LETTER



SCHOOL OF NURSING AND MIDWIFERY
COLLEGE OF HEALTH SCIENCES

16th January, 2024.

The Chairman,
Institutional Review Board,
Dodowa Health Research Centre,
P.O. Box DD1,
Dodowa Accra.

Dear Sir/Madam,

LETTER OF INTRODUCTION – ABIGAIL IBRAHIM

I write to introduce to you **Ms. Abigail Ibrahim**, an MPhil Nursing student in the Department of Adult Health Nursing, School of Nursing and Midwifery, University of Ghana, Legon.

The Scientific Review Committee of the School has approved the thesis topic: **“Self-Management Practices in Co-morbid Type 2 Diabetes Mellitus and Metabolic Syndrome at the Atua Government Hospital”**.

As part of the School’s requirement, Abigail Ibrahim is required to obtain ethical clearance before embarking on the data collection.

I hope the committee will consider its approval and grant her ethical clearance to enable her to undertake her study.

Thank you.

Yours faithfully,

Charles Klutse
School Administrator

INTEGRI PROCEDAMUS