SCHOOL OF NURSING AND MIDWIFERY

COLLEGE OF HEALTH SCIENCES

UNIVERSITY OF GHANA

EXPLORING THE SOCIO-CULTURAL DYNAMICS OF NEWLY DIAGNOSED PERSONS LIVING WITH DIABETES MELLITUS: A STUDY AT THE HOLY FAMILY HOSPITAL-NKAWKAW.

BY

MARGARET FRIMPOMAA NYAME

(10874796)

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

DECEMBER, 2022

DECLARATION

I, Margaret Frimpomaa Nyame, do hereby declare that except for references to other learned works which have been duly acknowledged, this thesis is the fruit of my own field investigation conducted under the supervision of Dr. Kwadwo Ameyaw Korsah and Dr. Gwendolyn Patience Mensah, of the Department of Adult Health, School of Nursing and Midwifery, University of Ghana, Legon for the award of Master of Philosophy in Nursing degree.

I also declare that, as far as I am concerned, this work has not been presented in whole or in part for another degree elsewhere.

Lastly, I declare that despite the rich knowledge gained from literature and my supervisors, I am responsible for any misinterpretation or misrepresentation of facts that may occur.

The undersigned supervisors endorse that they have perused the thesis and attest that it belongs to the student.

MARGARET FRIMPOMAA NYAME	.....	04/10/23
(STUDENT)	**SIGNATURE**	**DATE**
DR. KWADWO AMEYAW KORSAH	.....	12-10-23
(SUPERVISOR)	**SIGNATURE**	**DATE**
DR. GWENDOLYN MENSAH	.....	12/10/2023
(SUPERVISOR)	**SIGNATURE**	**DATE**

ABSTRACT

Diabetes mellitus is a growing public health concern that affects people universally both in developing and developed countries. The disease poses a serious threat to the lives of affected persons. Scientists and researchers despite their efforts, have not yet found a cure since its discovery. In Ghana, most affected persons have inappropriate thoughts about the condition which negatively affects the management. This study sought to explore the socio-cultural dynamics of newly diagnosed persons living with diabetes mellitus among individuals who attended Holy Family Hospital at Nkawkaw. An exploratory descriptive qualitative research design was used to purposively sample fourteen (14) participants for the study. The participants were interviewed using a semi-structured interview guide which was developed using the research objectives. All interviews were conducted in English language from 5th May 2022 to 10th July 2022, audio recorded and lasted between 30 to 45 minutes. The Data was then analyzed using thematic analysis approach, to identify themes and subthemes. These themes were; general perception on the disease, beliefs on the symptoms, emotional manifestations, coping strategies and perception on the management of diabetes mellitus. The study revealed that, many of the participants perceive the condition to be a medical illness and encouraged other persons to report to the hospital immediately they observe the signs and symptoms. Few of them also attributed the cause of the disease to evil spirits. Some of the participants shared that they failed to honor their appointment dates due to the fear of needle pricks. Some expressed their confusion about varied information they received from the public domain about the treatment of the illness. This study therefore recommends the Ministry of Health and Ghana Health Service in collaboration with Ghana Media Commission to strictly regulate health information before they are transmitted to the general public. Moreso, researchers can explore ways in which nurses can prick patients without causing pain or monitor blood glucose level without pricking patients.

DEDICATION

In grateful memory of my Father Mr. Edward Kennedy Nyame, to whom I owe the liveliness of my faith and perseverance, and to all persons living with Diabetes worldwide.

ACKNOWNLEDGEMENT

My endless appreciation goes to the Holy Triune God for His faithfulness and mercy, to Him all glory is ascribed. I am indebted to the Congregation of Missionary Sisters Servants of the Holy Spirit, (SSpS) Ghana Province for their support all these years, especially during my studies.

I would like to single out my supervisors Dr. Kwadwo Ameyaw Korsah and Dr. Gwendolyn Patience Mensah, for their invaluable contributions and suggestions.

In a special way, I thank the dean and all faculty members of the school of Nursing and Midwifery, University of Ghana, Legon for their rich input and direction.

Thanks to the participants of this study who were open to share their deep thoughts with me and to all the staff at the diabetic Clinic of the Holy Family Hospital, Nkawkaw who consciously contributed to the fruitful completion of this study.

All my friends who worked behind the scenes to support me, I am eternally grateful.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

AAs	AFRICAN AMERICANS
DRD	DIABETES RELATED DISTRESS
HBA1c	GLYCATED HAEMOGLOBIN
HBM	HEALTH BELIEF MODEL
IDF	INTERNATIONAL DIABETES FEDERATION
TA	THEMATIC ANALYSIS
WHO	WORLD HEALTH ORGANIZATION
CHAG	CHRISTIAN HEALTH ASSOCIATION OF GHANA

CHAPTER ONE

INTRODUCTION

This chapter centres on the background to the study of exploring the socio-cultural dynamics of newly diagnosed persons living with diabetes mellitus, statement of the problem, purpose of the study, objectives, research questions, significance of the findings, and operational definitions of key terms used in this study.

1.1 Background of the study

People living with diabetes are at risk of death as a result of the condition and its complications Abouammoh and Alshamrani (2020). No cure is available and measures to minimize the alarming rate of its complications which rob people of their livelihood have not yielded better outcomes since its discovery (Giri & Putra, 2020; Gopisetty et al., 2018). The World Health Organization (2019) estimated that diabetes mellitus caused 1.5 million deaths globally, making it the seventh leading cause of death. The risk of diabetes mellitus morbidity and mortality will increase if appropriate measures are not put in place to address these co‐ morbidities beyond glycaemic control, therefore comprehensive diabetes care is required for all newly diagnosed persons living with diabetes beyond mere glycaemic control (Edo & Edo, 2016).

According to the International Diabetes Federation (2019) the prevalence rate in adults with diabetes mellitus rose from 4.7% in 1980 to 8.5% in 2014, with the greatest rise in low- and middle-income countries. Without interventions to reduce the rapid rate of diabetes mellitus, there will be at least 700 million people living with diabetes mellitus by 2045 (IDF, 2019). These aforementioned statistics are confirmed by a cross-sectional study by Asamoah-Boaheng et al. (2018) who revealed that about 540,000 Ghanaians are living with diabetes mellitus. The effectiveness of treatment is achieved when patients understand and accept the treatment process. Therefore, knowing the perception of patients about their diagnosis helps

the health professionals to provide culturally sensitive care to achieve the desired outcome (Wah Oo et al., 2020). A recent study by Tominaga et al. (2021) depicted that persons living with diabetes who defaulted their pharmacotherapy had negative perceptions about the disease. Therefore, health care providers including nurses need to be sensitive to the cultural values and beliefs of patients. This will help to address the health needs of the patients based on their cultural demands and preferences (Alshmemri & Mohammad, 2021).

Cultural beliefs and practices including myths about diabetes mellitus play a key role in shaping self-management behaviours and practices. It has a significant influence on a person's understanding and choice of treatment (Omodara et al., 2021). This is supported by an ethnographical study in coastal Kenya which revealed participants' misconceptions about diabetes mellitus. Some believed that diabetes mellitus can be transmitted through sexual intercourse and from mosquito bites (Abdulrehman et al., 2016). Therefore, knowing their perception is imperative to demystify all myths and make them well-informed about their condition.

A study conducted by Abolghasemi and Sedaghat (2015) argued that the religious beliefs of an individual influences their acceptance of the disease and coping strategies. Similarly, Hjelm et al. (2010) revealed from their study that individual beliefs about health and illness, supernatural forces such as fate, God, spirits, and witchcraft influence their health-seeking behaviour. A causal belief revealed through a study by Patel et al. (2015) suggests that some participants attribute the disease to fatalism. This shows that people who believe diabetes to be their fate accept it as being genetic therefore ordained by God.

A similar study done to explore the illness perception of Ammatoa Kajang and Towani Tolotang communities shows their belief in various factors causing illness. Thus, either from the individual, environment, magical powers, or disobedience to cultural rules

and instructions given by the community leader. These perceptions influence their health-seeking behaviours (Juhannis et al., 2021).

In addition, a study by Shahin et al. (2019) noted from their findings that, the socio-cultural factors held by persons living with chronic conditions such as hypertension and diabetes influence their adherence to treatment regimen. The cultural beliefs held by patients about illness and treatment options are mostly influenced by the information they gather from people around them, their understanding and misunderstanding of education from health professionals, their observation of others who suffered from that illness, and their own physical and emotional status Leventhal et al. (2014)

It is argued by Berry et al. (2018) in their study that, when persons with diabetes mellitus hold diverging views more especially the negative ones from that of their family, especially their spouse, brings distress for the patient in managing the condition. The spouse's belief has a profound influence on the belief of the person living with the disease. A study done among patients with diabetes mellitus in Ghana by Afaya et al. (2020) shows that newly diagnosed patients had poor adherence to treatment modalities and unhealthy management.

1.2 Statement of the problem

Diabetes mellitus is a destructive illness that affects all ages and requires holistic management (Gopisetty et al., 2018). There are several misconceptions regarding the management of diabetes mellitus. For instance, a recent study by Chen et al. (2020) argued that patients, unfortunately, believe that insulin therapy destroys the kidneys. Due to this misconception, Alaofè et al. (2021) recommended effective health education targeting the newly diagnosed patients when they identified that persons living with diabetes mellitus had poor knowledge about their condition. Their study revealed that the participants perceived

diabetes mellitus as non-destructive and that people who do not take insulin for the management of diabetes mellitus may have better disease outcomes.

Leventhal and Brissette (2016) argued that diabetes-related illness, beliefs, and self-management seem to be shaped by the socio-cultural context. Therefore, a better understanding of the perception of people living with diabetes mellitus could assist in giving culturally appropriate interventions to support self-management of the condition. Korsah et al. (2018) also implied that, Africans, especially Ghanaians, seem to regard diabetes mellitus to be more than a biomedical condition. This is because persons living with diabetes mellitus have some health and illness beliefs and perceptions about the disorder irrespective of the scientifically proven causes and its management, and emphasized the need to explore the perceptions of this population in the Ghanaian context.

Practicing as a professional nurse for nine years, the researcher has observed at the Emergency Unit of the Holy Family Hospital, Nkawkaw (Eastern Region of Ghana) with anecdotal evidence. That is, most persons living with diabetes mellitus do not patronize health facilities after their initial diagnosis, but return only when they are experiencing complications of the disease such as nephropathy, foot ulcers, and in some cases, erectile dysfunction in men. From my brief interactions with some patients living with diabetes mellitus, it seems some of these patients have "inappropriate thoughts and beliefs" that negatively affect their treatment options. For instance, some believed that the disease is a spiritual illness that needs the care of a fetish priest or a person with "spiritual eyes". Therefore, it is imperative to know the socio-cultural dynamics of persons newly diagnosed with diabetes mellitus to establish their beliefs about the condition and give comprehensive intervention to manage the disease and decrease its complications.

1.3 Purpose of the study

The purpose of the study was to explore the socio-cultural dynamics of newly diagnosed persons living with diabetes mellitus at the Holy Family Hospital, Nkawkaw. This is to identify the beliefs of the study participants in order to offer them the appropriate culturally defined interventions to control the disease.

1.4 Objectives of the study

- To explore the general perception of newly diagnosed persons living with diabetes mellitus.
- To describe the beliefs of newly diagnosed persons living with diabetes on the signs and symptoms of diabetes mellitus.
- To explore the emotional response experienced by newly diagnosed persons living with diabetes mellitus.
- To describe the coping strategies of newly diagnosed persons living with diabetes mellitus.
- To explore the perception of newly diagnosed persons on the management of diabetes mellitus.

1.5 Research questions

- What are the general perceptions of newly diagnosed persons living with diabetes mellitus?
- What are the beliefs of newly diagnosed persons living with diabetes on the signs and symptoms of diabetes mellitus?
- What are the emotional issues experienced by newly diagnosed persons living with diabetes mellitus?

- What coping strategies are employed by newly diagnosed persons living with diabetes mellitus?
- What are the perceptions of newly diagnosed persons living with diabetes mellitus on the management of diabetes mellitus?

1.6 The significance of the findings

It is expected that knowledge gained from exploring the socio-cultural dynamics of newly diagnosed persons living with diabetes would guide nurses in providing appropriate care. The newly diagnosed persons living with diabetes mellitus may have unique needs and information overload which can negatively affect their health-seeking behaviour. Therefore, knowing and understanding these persons can help develop strategies to improve the management of the condition and reduce complications. The findings of this study can also empower patients through health education by nurses to avoid harmful socio-cultural practices that may yield untoward health outcomes.

In addition, it is anticipated that the findings of the study will help newly diagnosed persons to accept and cope with the diagnosis and in turn add to existing knowledge. More so, the outcome of the study will help suggest/recommend better ways of minimizing the complications of diabetes mellitus in Ghana. Additionally, it is anticipated that this study will unearth possible areas for future research.

1.7 Operational definition of terms

The operational definition of terms include the set of resolutions that guide the researcher's interpretive activity, the intellectual activity that is distinctive and differentiates it from other knowledge (Flick, 2017). Therefore, the operational definition of terms for the study are defined below:

- **Social:** the relationship between human beings and resources within the environment.

- **Cultural:** the way a group of people perceive and live their lives in a specific manner.
- **Dynamic:** the constant change in attitude, activity, or progress in the life of a group of people.
- **Newly diagnosed:** patients who have lived with diabetes for at least one year.
- **Persons living with diabetes mellitus:** male or female patient diagnosed as having diabetes mellitus.
- **Diabetes mellitus:** a metabolic disorder which is characterized by high plasma glucose level due to reduced or lack of insulin secretion and resistance or both.

The next section is on the pertinent literature review.

CHAPTER TWO

THEORETICAL FRAMEWORK/ LITERATURE REVIEW

2.1 Introduction

This chapter focuses on the theoretical framework, the common-sense model, and the literature reviewed that guided the research work. In other words, this chapter is organized specifically under the following headings, starting with the identification and the descriptions of the three theoretical frameworks proposed for this study and finally settling on the Common -Sense Model. The section on the description of the proposed frameworks and the final choice of the Common -sense model, followed by pertinent literature related to this study are organized under the following headings: (a) General perception of persons living with diabetes mellitus, (b) Beliefs of persons living with diabetes on the symptoms of diabetes mellitus, (c) Emotional responses experienced by persons living with diabetes mellitus, (d) Coping strategies of persons living with diabetes mellitus and (e) Perception of persons living with diabetes mellitus on the management of diabetes.

At the end of the section of the literature review, the summary of the literature is presented.

2.2 Description of the theoretical framework of the study

The researcher in selecting a framework to underpin this study, reviewed three frameworks to select the most suitable one. These are the bio-psychosocial model of health, health belief model (HBM), and the Common-sense model. After studying these related models, they were found to be informative, but the Common-sense model was identified to be the best suitable for this study. This is because the constructs clearly explain how an individual's perception of threat, their reaction to illness and their socio-cultural changes influences their health-seeking behaviours which this study seeks to explore.

2.3 The biopsychosocial model of health

The bio-psychosocial model is defined as an interdisciplinary model that looks at the interconnection between biology, psychology, and socio-environmental factors. It is asserted that bio-psychosocial model reveals the development of illness through the interaction of biological factors: genetic, biochemical; psychological factors: mood, personality, behaviour; and social factors: cultural, familial, socioeconomic, and medical. The model depicts the interaction of biological, psychological, and social factors in determining the health outcome of a condition Engel (1977).

Literature further revealed that Engel proposed the model by using the work of Urie Bronfenbrenner who believed that social factors play a role in developing illnesses and behaviours. Engel developed bio-psychosocial model as an alternative to biomedical model that was readily used by the physicians. He was of the view that bio-psychosocial model would make it easier for health professionals to understand patients' subjective view of their illness and suffering (Borrell-Carrió, Suchman & Epstein, 2004).

Among the strengths of bio-psychosocial model found in research in no order were: improved patient satisfaction, better adherence to prescriptions, more maintained behaviour change, better physical and psychological health and less of a tendency to initiate malpractice litigations. Reduced multiple visits and admission into hospitals, improvement of communication between health staff and the patients, lead to the development and application of psychosocial support for the terminally ill patients and their families, and the development of psychological techniques in the strengthening of immune reaction to illness. Also, the development of programs of life quality improvement for chronic patients, physically disabled individuals, and the elderly.

The bio-psychosocial model shows a great potential to improve patient satisfaction, better adherence to prescriptions and better physical and psychological health.

The constructs, biology, psychology, and social context relates to bring health to the individual. The concepts of these constructs seem not to be dealing with socio-cultural beliefs of illness. In this sense, the model appears to be limited to explore perceptions of patient illness which is the aim of this study.

2.4 The Health Belief Model (HBM)

The Health Belief Model (HBM) by Hochbaum (1958); (Rosenstock, 1974) is intrapersonal, which consists of knowledge, perception and beliefs and assesses the health behaviour of individuals by ascertaining their perception, attitudes and how these perceptions affect their health seeking- behaviour.

The Model assumes that behaviour change occurs with three ideas at the same time these are:

1. An individual recognizes that there is a tangible reason to see the relevance of a health concern (perceived susceptibility and severity).
2. A person understands he or she may be vulnerable to a particular disease (perceived threat).
3. A person realizes that behaviour change can be beneficial and the benefits of that change will offset any cost of doing so (perceived benefits and barriers).

It further explains the factors necessary for behaviour change which are in three main categories namely: (a) Individual Perceptions (b) Modifying Factors and (c) Likelihood of Action.

Individual's Perceptions

This is about the knowledge and beliefs that a person has about his/ her behaviour and the outcomes. Two main factors which are Perceived Susceptibility and Perceived Severity explain the individual perceptions and the action to be taken.

Modifying Factors

The model explains that when individual perceptions are presumed, the modifying factors exits the body to observe and use outside influences to affect how threatened a person feels by the outcomes of continuing the same behaviours that poses a health risk.

Perceived Threat

Susceptibility is about how a person accepts that his/ her behaviour could predispose him/ her to a specific disease condition. Threat as explained in the health belief model examines how likely a specific disease could be developed due to one's behaviour.

Environmental Factors

Environmental factors also have the tendency to compound the threat of disease. Demographic background such as race, sex, age, ethnicity, religion, socio-economic status, and family history can predispose an individual to be at a higher risk of getting a disease. In addition, lifestyle such as type of foods, time of eating and sleeping, smoking, and alcoholism can have great influence on the individual's susceptibility of contracting diseases.

Cues to Action

These are reasons why an individual realizes he could be threatened by serious disease or anything that triggers a decision to change behaviour. This could be an experience from a family member, friends, neighbor or loved one or through the social media. This can influence a person's decision in taking steps to address a health concern.

Likelihood of Action

When the individual becomes aware of the likelihood of developing a disease condition such as diabetes mellitus and hypertension after long period of time if the behaviour does not change, it becomes necessary for such an individual to weigh the benefits

and the barriers to acting and determine if it is worth it. In the model, the main objective is greater quality of life for an individual both mentally and physically.

Perceived benefit to change would be increased with health outcome but there could be other factors at the level of the individual which can serve as barriers.

Perceived barriers are the reasons why an individual would find it difficult to change his negative behaviour. Barriers could be financial challenges or even self-efficacy problems such as not believing in one 's self or not believing in the complications of the disease or a treatment option. The benefits must be stronger than the barriers to make change possible and effective.

The constructs of this model show how the individual perceive to be susceptible to a disease, how this disease is rated and the barriers preventing health seeking behaviour with the outcomes. In relation to my study, the means to explore lay ideas of the causes, what the disease is, the duration and how it is treated seems shallow and may not be able to bring about the true beliefs to arrive at an accurate finding. The next model to be discussed is the Common-sense model.

2.5 The Common-Sense model

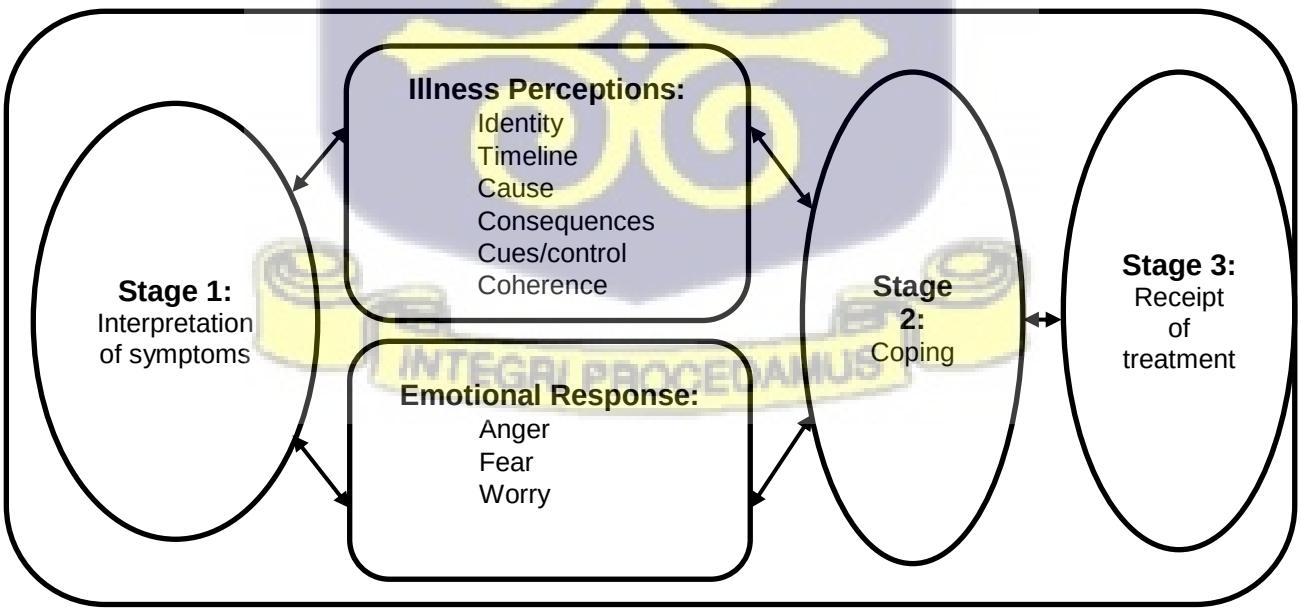


Figure 2.1: Showing the Common-Sense Model by Howard Leventhal et al., 1997

This study was guided by the Common-sense model which explains that every individual has a way of dealing with illness using common sense. Naturally, when a person is diagnosed as having a chronic disease, it poses a threat with many reactions and emotions arising. A person's perception affects their treatment options and coping mechanisms. According to the proponents of the model individuals living with chronic illnesses such as diabetes develop several perceptual components which influence how they interpret their illnesses (Leventhal et al., 1997). The Common-sense model of illness behaviour is a theoretical framework that has been used extensively to explore patients' perception of illness. This model gives a detailed explanation of illness perception which has five domains as follows:

1. Identity: the belief a person has regarding the label of their symptoms of the illness they are experiencing before and after diagnosis.
2. Timeline: beliefs about how long the illness will last and whether the illness is acute, cyclical, or chronic.
3. Cause: the person's beliefs about the causes/ aetiology of the illness.
4. Consequence: patients' perceived consequences as a result of their symptoms and perceived health threat reflect their judgment of the severity of the illness. These consequences might be immediate or long-term.
5. Cure/ control: beliefs about whether an illness can be cured or controlled based on personal efforts or the use of treatment.

Each of these domains helps the researcher to capture the views patients have about their illness, what it is, how it came about, how long it will last, treatment, and the complications. All these are a subset of illness perception that helps the researcher to explore patient perception about a condition using the five domains as questions. These illness perceptions (the five domains determine whether a person views his or her symptoms (Stage 1 of the model) as a health threat that needs medical or professional attention. Therefore, coping

strategies that a person develops (Stage 2 of the model) are related to one's symptoms, perceptions, and emotional responses. One possible coping strategy is to seek treatment from a primary care physician, whereas another coping strategy might be avoidance of the problem.

According to Leventhal et al. (2016), patient illness representations are shaped by the cultural context of an individual. For example, although the diagnosis of diabetes may pose a threat to the emotional and physical wellbeing of an individual, one could apply cultural protective measures to enhance coping and attain control of the condition. In Stage 3 of the model, the individual evaluates the effectiveness of the coping strategy and either continues the same course or opt for an alternative.

Emotional representations such as fear, anger, or anxiety are also integral to illness perceptions and develop simultaneously with other components of the model. Using this model to underpin this study, helped to meet the set objectives, asked the right questions which elicited the lay beliefs of the participants to get accurate findings. In other words, the research objectives were derived from the constructs of the model which served as an organizing framework for the study.

Value of the model

- It helps the researcher to derive objectives that serve as a guide to this study.
- It helps to understand how people's reactions and perception of illness influence their health-seeking behaviour.
- It gives insight to health professionals on how best to treat patients' illness holistically.

2.6 Literature review

According to Polit and Beck (2013) review of literature is the summary of studies already done on a specific topic of interest to ascertain what has been done on the topic, its

accuracy, trustworthiness, strengths and weaknesses. Therefore, the relevance of this literature review is to explore the socio-cultural dynamics of newly diagnosed persons living with diabetes mellitus. An extensive search was performed in 6 databases which are 'ScienceDirect', EBSCOhost 'PUBMED', 'CINAHL', Wiley and 'Google Scholar' for the literature. 5 themes emerged based on the constructs of the theoretical framework undergirding the study. The review is discussed under the following themes according to the constructs of the selected model: general perception of persons living with diabetes mellitus, beliefs of persons living with diabetes on the symptoms of diabetes mellitus, emotional response experienced by persons living with diabetes mellitus, coping strategies of persons living with diabetes mellitus, and perception of persons living with diabetes mellitus on the management of diabetes. The literature reviewed is then summarized to give a brief description of what is known about the phenomenon under study.

2.7 General perception of persons living with diabetes mellitus

Perception is an individual's recognition and interpretation of information and how one responds to this information received. The knowledge about the perception of persons living with diabetes is important due to the psychosocial discomfort and the difficulty of continuous taking of medication which becomes their new way of life. This helps the health team to plan the appropriate measures to control the disease and reduce the complications (da Silva et al., 2018). According to Nie et al. (2018) an individual's perception of his or her illness is an essential psychosocial construct that can positively or negatively influence their adherence to recommended self-care activities.

Kugbey et al. (2017) also argue that, when patients are well informed about their condition, they are likely to follow its management. Therefore, the deeper knowledge they have about their illness, the more likely they are to be responsible for their self–care behaviours such as exercise, diet, and daily blood glucose monitoring. It was revealed by

Qamar et al. (2017) that many persons living with diabetes have many false beliefs about the condition when 82.3% of their respondents had the belief that diabetes occur when the kidneys are unable to draw sugar from the urine and causing high sugar concentration in the urine and 81.7% also perceived polyuria and polydipsia as signs and symptoms of hypoglycaemia.

Similarly, Bayked et al. (2022) reported that the participants in their study ignored the physical symptoms because they estimated it to be matchless to the destructive complications of diabetes. Aweko et al. (2018) from their study, also argued that all the participants perceived that having diabetes at an advanced age is normal and thus though chronic, it was not regarded as dangerous as having cancer or hypertension. Another myth that the participants held was that they were not to sleep between 7 am and 11 am to prevent hyperglycaemia. In addition, they perceived that the blood glucose level of persons living with diabetes mellitus would be high if they slept in the morning.

Kasole et al. (2019) in their study opined that, diabetes mellitus is a multifaceted illness related with various risk factors and different treatment options. Most persons living with the condition have many myths and beliefs which does not enhance its management and control. This finding is supported by a study done by Goeke (2020) who also discovered that, since the discovery of diabetes, researchers and scientists have made efforts to give in-depth knowledge about the disease including its effective management to curb it. Currently, this intervention has been beneficial in managing the disease. However, the high prevalent rate is due to certain inappropriate beliefs and misconceptions held by persons living with the disease which affects the treatment modality.

Religion has a great influence on the management of diabetes as a study by Hassanein et al. (2021) shows that persons living with diabetes who were Muslims perceive Ramadan as the ultimate of their religious life. Therefore, they are obliged to fast and will not

compromise it despite the risk involved due to their condition and this makes the management of the condition very challenging. This study is in line with another study by Almansour et al. (2018) who reported that over half of the participants recruited in their study held the belief that from Allah, fasting is mandatory and must be strictly adhered to. Therefore, they rank religion above their health and they do not have time to follow the recommended diabetes management practices especially during the period of Ramadan.

Jones and Crowe (2017) also argue that person living with diabetes perceive the condition to be burdensome and difficult to manage. And thus, illness comes according to fate and God's will therefore it is more relevant to be faithful to their religious beliefs and practices and get completely healed rather than to slow down their healing process with self-management practices prescribed by health care personnels. This finding affirms a recent study by Korsah et al. (2022) who opined from their study that most of the participants recruited for their study attributed the cause of diabetes mellitus to a spirit and thus need a spiritual dimension of the management.

Another study by Onyishi et al. (2021) also confirms this perception when they also shared that the participants in their study believe diabetes mellitus is caused by a spirit and concluded that this perception has the ability to influence their acceptance and management of the disease. From the study of Eledrisi et al. (2021) it was revealed that cultural beliefs influence treatment options as participants of the study resorted to alternative treatment options such as herbal, rituals, and prayers to control and cope with the condition.

Diabetes mellitus self-management is highly influenced by the patient's involvement and interpersonal support from the family. Othman et al. (2020) described in their study that the family support is a necessary factor in diabetes self-management and this helps the patients to have a good glycaemic control and a positive outcome. This was consistent with a study by Hushie (2019) who reported that, patients described family support as essential to a

productive diabetic self- care. They thought that family support was especially important for their self- care behaviours and patients may not be able to adhere to their dietary recommendations if there is inadequate or lack of family support.

A study by Alexandre et al. (2021) also emphasized that the involvement of family and friends enhance the self-management practices of persons living with diabetes mellitus. the significant others assist, remind, and encourage them to be consistent in their self- care practices.

Further studies from Hushie (2019) postulated that provision of resources by family and significant others help persons living with diabetes mellitus manage their condition very well. In addition, family members will be very helpful when they have knowledge about diabetes mellitus to be more supportive and understanding in managing the disease.

On the contrary, a study by Albargawi and Moudi (2017) argued that some participants expressed their displeasure with their family members' uncooperative attitudes because it makes it very challenging to change their lifestyle and follow the recommended diet. Some of the participants shared that family support produced conflict and affected their self-care behaviour. This is because they live together and preparing different food from what the whole family eats is difficult. A study by Aweko et al. (2018) also shows that some men living with diabetes are of the view that in their culture illness was a personal problem which needs to be disclosed to only close relations and healthcare providers. So, they keep the condition to themselves because they believe no one can feel and understand the experience of living with diabetes mellitus better than themselves and this makes them more responsible in managing their own condition.

Mogre et al. (2019) revealed from their study that most patients living with diabetes mellitus believes the condition is caused by the excessive consumption of high carbohydrate diets and as a result they need to exclude such foods in their daily meals as a way of

effectively managing the condition. According to Easwar et al. (2018) participants in their study perceived too much intake of sugar as the cause of diabetes and therefore avoid sugar containing diets.

Similarly, a recent study by Michael et al. (2018) also reported that the participants had misconception about diabetes and believed that adding sugar to their meals is never allowed.

In addition, Chen et al. (2020) argued that most persons living with diabetes mellitus unfortunately, believe that insulin therapy destroys the kidneys and therefore, do not want to inject insulin. Some persons living with diabetes have poor attitudes towards self- care in general and some have a fatalistic belief that they will die whether they adhered to their diabetes self-care behaviours or not. Therefore, some even prefer to die with the condition rather than to make changes to their lifestyle as part of managing the condition (Hushie, 2019).

Due to this misconceptions, Alaofè et al. (2021) recommended effective health education, targeting the newly diagnosed patients when they identified that persons living with diabetes mellitus had poor knowledge about their condition. Their study revealed that the participants perceived diabetes mellitus as unserious illness and that people who do not take insulin for management have better disease outcome. According to Broder et al. (2014) participants in a study attributed the cause of diabetes to the use of fertilizer on food crops, spiritual forces, superstition, bad deeds, genetics, and poor diet.

This coincides with a study by Concha et al. (2016) who equally revealed that the participants attribute poor eating habit to the cause of diabetes. Hushie (2019) in his study reported that most Ghanaians link being overweight to wealth and a sense of good living. Overweight patients who begun to lose weight as a result of adhering to their self- care behaviours usually complained of their family and friends perceiving them be to be sick. This

perception usually resulted in patients defaulting their treatment, self- care practices and their appointment dates for review.

Food distinguishes one culture from others and serves as a tool for building strong social bonds and relationships. Some patients shared that they have been eating certain foods all their lives from their childhood and have developed a special taste for such foods due to the prolong exposure. As a result, they found it difficult to follow restrictions that required them to either avoid such foods altogether or reduce the quantity or frequency of its consumption. This sentiment hinders the complete management of the condition (Hushie, 2019).

In support of this perception Kasole et al. (2019) in their study revealed that some persons living with diabetes mellitus perceive that rice raises blood glucose level because it contains high-carbohydrate and that rinsing it severally or keeping it in water for some time before cooking can eliminate the carbohydrate content. In addition, another study by Arifin et al. (2020b) also confirms this finding when they showed that the participants perceived that recently boiled rice had high glucose level than rice which had been cooked the previous day therefore ,they would only consume rice that had been kept for a minimum of 24 hours after cooking.

The findings of a study conducted by Shiyanbola et al. (2018) shows that the participants had varied perceptions about the condition they had been living with. Most of them perceived that antidiabetic or hypoglycaemic agent caused diabetes mellitus and believed that their diabetes occurred because of curses and from their ancestors. The participants also had a firm believe that diabetes was a conspiracy by manufacturers and the government to evacuate African Americans and that the government and health care professionals concealing information about diabetes including the prevention from them led to the disease. Otherwise, they could have prevented themselves from getting the disease.

According to Arifin et al. (2020b) Some participants believed God caused their diabetes and perceived that diabetes is a gift from God and he himself will heal them. On the contrary, some participants in a study by Wah Oo et al. (2020) also believed that intentional harm caused to others are punished through diabetes so is a form of punishment for those who have done negative things against others in the past.

2.8 Beliefs of persons living with diabetes on the symptoms of diabetes mellitus

Beliefs are the convictions that things held in the mind are factual. These beliefs form the basis of human behaviour. According to Kamel et al. (2017) the knowledge of the symptoms of hypoglycaemia and hyperglycaemia was relatively good in the majority of patients while a quarter of the patients had no idea about the symptoms of hypoglycaemia and hyperglycaemia. A study by Alsubhi et al. (2016) also revealed that only 12 out of 29 patients in their study knew that heart disease is related to diabetes, 16 out of 29 patients perceived the symptoms of hyperglycemia, dizziness, sluggishness, weakness, polyuria, liver disease and overweight as complications of diabetes.

In addition, they had incorrect information and misconceptions about the condition. Wondimeneh Shibabaw Shiferaw et al. (2020) also argue that significant proportions of study participants (79.7% and 79.2%) reported excessive hunger and feeling of weakness as signs and symptoms of diabetes mellitus. From the findings of a study conducted by Shiyanbola et al. (2018) participants mentioned many signs and symptoms that they experienced before diagnosis which include feeling hot in cold weather, dry mouth, polydipsia, fatigue, tiredness, decreased mobility, sticky urine, boils, hair thinning and change in the taste of food. They also experienced the following symptoms after diagnosis, body odours, polyuria, weight loss and sugar craving with the belief that the condition would last for a moment.

Some of the participants also believed the symptoms of diabetes mellitus would vanish with exercise and weight loss. It is also believed that most persons living with diabetes

mellitus can identify the symptoms they experience and believe to have diabetes before and after their diagnosis. This is confirmed by a study conducted by García et al. (2019) which revealed that about (97.3%) respondents reported having at least one symptom in the previous week before the investigation that is likely to be related to diabetes and the most common reported symptoms were fatigability (67.6%), difficulty sleeping (59.2%) numbness or tingling in the extremities (57.7%), and dry mouth (56.3). According to Pennebaker (2020) many people are unable to sense the physiological changes in their body and most of those who identify these changes also misperceive it. Thus, leading to high medical expenses, preventable complications, and needless death. This supports a study by Asamoah-Boaheng et al. (2019) who revealed that many Ghanaians are ignorant of diabetes and continue to live with it without being diagnosed.

2.9 Emotional response experienced by persons living with diabetes mellitus

Emotional response is the term used to describe the conscious and unconscious measures that people apply to manage the emotional challenges they encounter in response to threats, burdens, anxiety, and fears (Fisher et al., 2018). According to Purewal et al. (2018) anxiety and depression are highly prevalent in persons living with diabetes and usually emotional control is very important in handling life challenges and this is not different from the management of diabetes. Therefore, the emotional distress experienced by persons living with diabetes should be explored to assist in good glycaemic control and reduce untoward complications (Wong et al., 2017).

This relates to the fact that persons living with diabetes encounter difficulties in their daily living, change in life style and feeling uncomfortable for burdening their loved ones with the demands of the condition (Tareen & Tareen, 2017). From the findings of Aweko et al. (2018) all the participants in the study accepted diabetes management was a lifetime commitment. They also felt that their lives were restricted due to the strict daily dietary

practices they are required to observe. This increases the level of their distress which thwarts the effective management of the condition.

Davies (2019) also opines that people diagnosed with diabetes mellitus are required to take on the challenge of understanding the nature and course of the condition and how best to manage it, this consistently involves them making unwanted changes to their lifestyle. Almost all persons living with diabetes mellitus experience understandable emotional distress when confronted with the continual demands of an on-going lifetime condition. Adjusting to the behavioural, intellectual, and emotional demands of diabetes leaves a significant burden on both patients and family members. Many of them struggle with loss of freedom, relentless decision-making, and seemingly decreased quality of life.

Gómez-Pimienta et al. (2019) also argue that persons living with diabetes show emotional distress as they strive to unlearn and learn how best to cope with the disease and this distress has the tendency to increase their risk of having complications associated with the condition. A study done by Aljuaid et al. (2018) on diabetes related distress of persons living with diabetes found that 25% of the screened respondents have moderate to high Diabetes Related Distress. Regarding the Diabetes Related Distress (DRD) components, emotional distress was the most prevalent followed by physician-related distress. HabA1c was significantly higher in those with high combined distress and high emotional distress compared to those with mild/moderate distress (p- 0.015 and 0.030, resp.) therefore, they concluded that diabetes related distress needs to be addressed to help manage the disease for better treatment outcome and reduction in complications.

Schinckus et al. (2018) also revealed from their study that when patients are experiencing depression and or diabetes-related distress, the positive impact of health intervention reduced. Meaning the emotional burden conflicts with the cognitive resources that are of importance to diabetes self-management. There is high rate of depressive

symptoms experienced by persons living with diabetes. In addition, Management of diabetes mellitus is known to be burdensome together with many physical and psychological consequences. Patients with diabetes mellitus deal with intense psychological complications due to diabetes management termed diabetes distress yet profound emphasis is placed on the physical complications of the disease to the neglect of psychological effects (Rariden, 2019).

A study by Arifin et al. (2020b) showed that males and females have different views concerning the coping strategies of diabetes. The female participants stated the challenges they encounter as women caring for themselves and their families. They felt torn between their roles and obligations as a mother or a wife, as well as being affected by the stigma and complications of diabetes mellitus. Their daily roles bring about the psychological fatigue they experience. The male participants also had a diverging view as they were not disturbed about the illness but rather used their time to visit friends and neighbors and engage in hobbies. Most persons living with diabetes mellitus felt worried about sharing the history of their condition repeatedly to different doctors including all the medication they had and currently taking. They expressed those different views from different doctors was a source of distress in living with diabetes mellitus.

da Silva et al. (2018) also revealed through a study that the participants receiving the news from the physician as having diabetes mellitus caused emotional distress such as despair, anxiety, preoccupation, unrest, and panics. Because diabetes is silent, it is sometimes discovered with complications and this leads to anger and rebellion when diagnosed. The emotional aspects battling by persons living with diabetes mellitus strongly influence the acceptance or denial of the illness including their adherence to physician' instructions.

According to Hoorsan et al. (2021) most of the participants in their study recounted that having diabetes mellitus decreased their sexual urge which sometimes causes emotional distress. Despite the feeling of sexual dissatisfaction, they do their best to have sexual

relations to meet their partners' sexual needs as a spousal or religious obligation to preserve their marriage. The finding of Cleal et al. (2019) shows that persons living with diabetes face some emotional challenges at the workplace. In some instances, discrimination was experienced through the absence of understanding the needs of persons living with diabetes mellitus by employers. Some also faced direct discrimination and denied employment just because they have diabetes mellitus. This makes them feel stigmatized, excluded, and discouraged.

Similarly, Sendhilkumar et al. (2017) reported from their study that persons living with diabetes mellitus experience high level of emotional stress and workplace related issues in addition to financial burden are contributory factors. According to Kirk and Hinton (2019) persons living with chronic illness have a conviction that there is a complete change in their entire human person. This is due to the persistent signs and symptoms which affect their activities of daily living, personality, and their relationship with others. This is confirms a study Gabre et al. (2019) who reported that persons newly diagnosed with diabetes mellitus go through grieve. The thought of the diagnosis brings about the feeling of regret of past dangerous lifestyle that may have caused the disease and the benefits of self- care they need to practice. This causes the feeling of despair and sometimes hope to forge on and this sometimes affects their identity.

Another study by Sadownik et al. (2020) also reported that persons battling with chronic illness go through grieving process where they feel angry and sad for losing their old healthy and strong self , difficulties with their treatment plan and the efforts they employ to cope with their new diagnosis. Though most persons living with diabetes mellitus have emotional distress due to the diagnosis, some also have no concern about the condition and are moving on with their life. Pikkemaat et al. (2019) narrated from their study that newly diagnosed persons living with diabetes mellitus reacted to the diagnosis without expressing

any emotional distress. They were concerned about the complications of the disease and the burden on the family as they support them in the management and not necessarily the diagnosis. Even though, they were determined to change their lifestyle, practicing it was demanding.

According to de Wit et al. (2020) diagnosis of diabetes mellitus can be traumatic, and living with the condition is challenging, not to mention the many serious comorbidities. Tabong et al. (2018) also reported from their study that most patients were emotionally hurt, they felt sad and hopeless when they were initially diagnosed as having diabetes mellitus. This is due to its chronicity, lifelong treatment, dietary recommendations, and lifestyle modification related with its management.

2.10 Coping strategies of persons living with diabetes mellitus

Persons living with diabetes mellitus have varied ways and means of coping with the condition (Tewahido & Berhane, 2017). Chiaranai et al. (2018) opined that most of the patients when diagnosed accepted the condition and are moving on with their lives. According to Petrie and Jones (2019) coping strategies are the cognitive, behavioural and emotional means by which individuals handle stressful life situations. They further argued that understanding how patients cope with chronic illness has become an essential aspect which needs full attention in health care delivery. This is because patients can manage their condition better to achieve a positive outcome when they have identified their individual coping strategies.

From a study by Choi et al. (2019) the participants became more closer to God after their diagnosis. Their faith in God made them hopeful and had positive mindset that God would heal them of the illness. This conviction increased their hope for better health outcomes. Their positive image of God appeared to increase their willingness to cope with the condition and they were convinced to overcome all difficulties through spiritual and

religious methods such as prayer and reading the holy bible. This is supported by a study conducted by Aweko et al. (2018) who also noted that one of the most significant coping strategies employed by persons living with diabetes mellitus is prayer when 52% of the participants expressed using prayer and reading the bible as their spiritual coping strategy.

Similarly, another study by Yilmaz et al. (2019) showed that the participants believe God created everything and thus their diabetes mellitus comes from God and therefore they will pray to Him for healing. Another study by Onyishi et al. (2021) affirms this results when they revealed that persons living with diabetes mellitus believe God gives them strength to manage the condition and therefore they have recourse to him daily. On the contrary Javanmardifard et al. (2020) reported that the perception about who God is in time of illness as expressed by many persons living with diabetes mellitus in their study may be inappropriate and can negatively influence the management of the condition.

The results of a study by Nishio and Chujo (2017) shows that persons living with diabetes mellitus devise various coping strategies to manage their life as the condition progresses. From the participants, they hide their disease, some also pretend to be healthy and eat whatever is served at social gatherings. Integrating these activities in controlling the condition had been helpful. Some also said that they limit their social life and apply for employment where disclosure of health condition was not required. Participants regard themselves as inferior and socially vulnerable and excluded because some people disrespect them due to their chronic condition. From this background, their strategy for coping is by underestimating the severity of diabetes mellitus and pretend not to care about it.

In addition, Hushie (2019) reported that some of the participants do not pay attention to their self- care needs in managing the disease. According to Shah and Kamdar (2018) patient illness representations are shaped by their cultural context. They cited an example that although a diagnosis of diabetes may pose a threat to the emotional and physical wellbeing of

African Americans, they could use cultural protective characteristics to enhance coping and attain control of the disease. Attitudes and beliefs about self-protective and self-enhancing motivations for AAs who live within the socio-cultural context of a legacy of racism may shape behavioural responses to an illness and these socio-cultural factors may also shape illness representations.

Widayanti et al. (2020) identified in their study three coping strategies of persons living with diabetes mellitus. These were, seeing the condition as beyond their control, normalizing their condition, and surrendering to God. Persons who adopted the first and second strategies had negative treatment outcome and those with staunch religious beliefs had positive treatment outcome. Most participants in a study conducted by Zajdel et al. (2018) expressed that they are able to cope with the condition when they are supported and understood by their spouses and this significantly increases their health behaviour in managing the disease.

2.11 Perception of persons living with diabetes on the management of diabetes mellitus

Management of diabetes requires a lifetime patient involvement and therefore can be very challenging due to various reasons including socio-cultural issues (Damtie et al., 2018).It is very essential for healthcare professionals to be attentive to the beliefs, attitude and lay understanding of patients and be aligned to help them improve healthy behaviours and adjust unhealthy ones in the management of diseases (Goins et al., 2018). Kasole et al. (2019) in their study also opined that, diabetes mellitus is a complex disease with multiple risk factors and several ways of management. It is associated with myths and unhealthy beliefs held by most persons living with the condition, which does not help in its management and control.

Complying with diabetes treatment regime is influenced by the perceptions and beliefs held by persons living with diabetes mellitus (Albargawi et al., 2016). A recent study

on medication adherence and self- care behaviours among patients with type 2 diabetes mellitus in Ghana recommended an aggressive intervention, to improve adherence to medication targeting younger and the newly diagnosed patients to address unhealthy self-management behaviour (Afaya et al., 2020).

Li-Geng et al. (2020) conducted a study on Cultural Influences on Dietary Self-Management of Type 2 Diabetes mellitus in East Asian Americans, and reported that the participants perceived that, health care professionals always instruct them to avoid refined carbohydrates in their meals, but it is very difficult to avoid such critical cultural staple food from their diets because it separates them from familiar shared cultural food habits and practices. This makes the dietary aspect of managing the condition difficult.

Food identifies many cultures and serves as a tool for building bonds in social relationships. Some patients expressed in a study by Hushie (2019) that they have been eating certain foods all their lives and have developed a taste for such foods. As a result, they found it difficult to follow restrictions that required them to either avoid altogether or reduce the quantity or frequency of consuming such foods. Mostly, patients' concerns were about changing well-established habits, a general dislike of many aspects of their recommended diets and this perception hinders the complete management of the condition. Management of diabetes is complex and requires understanding of the individual behaviour and needs and more importantly support of their families to achieve favourable health outcomes (Rogon et al., 2017).

Similar studies support this finding, (Alexandre et al., 2021; Berry et al., 2018; Bukhsh et al., 2020; Othman et al., 2020; Pamungkas et al., 2017; Subrata, 2021; Suglo & Evans, 2020) that most of the participants in their study commended the support such as financial, emotional, and psychological received from family members and friends that is assisting them to manage the condition better.

Another study also suggested that family members are known to play both a supportive and inhibitory role in diabetes self -management, especially in the areas of meal planning. In many African households, food is mostly prepared by the mother or sisters. This can have negative effect on self- management especially when the cook has no knowledge about the dietary requirement or not inclined to accommodate the persons living with diabetes mellitus (Iregbu & Iregbu, 2016).

A study done by Albargawi and Moudi (2017) on the relationship between a person's health beliefs and diabetes self-care management regime shows that the participants perceived that luck, their family, and friends would help them manage their condition better than their doctors. On the contrary, some of the respondents in a study by Mogre et al. (2019) hid their diagnosis from their family members and may not seek support for fear of being stigmatized. Also, women in polygamous marriages hid their diagnosis from their spouse for fear of rejection, especially if they were observed to be taking medication daily, making the control and management of the disease impossible.

Another study by Jones and Crowe (2017) also argue that participants expressed that they were ashamed of their diagnosis and felt a sense of failure and decided not to disclose it to others. They thought that other people may consider them to be irresponsible in their lifestyle and this affected their self-management behaviours. They therefore did not expect any support from others that may stigmatize them. Some persons living with diabetes mellitus manage their condition based on their spiritual beliefs and practices.

Wah Oo et al. (2020) revealed that most of the participants in the study prayed to Buddha and meditated more often after their initial diagnosis. They worshipped spirits and visited fortune tellers for their advice and guidance to help them manage their diabetes, though the magical powers did not relieve the condition, the participants felt emotionally secured following these practices.

Culture and religious beliefs were found in this study to influence participant's self-care management. They believe and trust in God to manage their condition and believe that the condition can be controlled by luck (Albargawi & Moudi, 2017). Jones and Crowe (2017) also argue that persons living with diabetes mellitus perceive that it is difficult to manage. And thus, illness is by fate and God's will therefore it is more relevant to adhere to their religious beliefs and get healed rather than delay with self-management practices prescribed my health professionals.

Shiyanbola et al. (2018) also argued that persons living with diabetes mellitus believe that medications, faith in God, and positive thinking about survival help to control the condition. Majority of the respondents interviewed in a study by Mugah and Muhati (2016) believed that certain cultural practices such as debatable religious beliefs, linking diabetes mellitus to witchcraft or attributing it as a reserve for the rich in the society also affects the control and management of the disease. 86% of the respondents indicated that their engagement in fasting to fulfill their religious obligation was a setback for the control of the disease. 81% confirmed that restriction of certain foods as a result of their religious doctrine is one of the major challenge in controlling the diabetes disease.

Sapkota et al. (2020) reported from their study that participants perceived insulin to be the last option for the management of diabetes and that antidiabetics are harmful. Therefore, they preferred alternative treatment such as herbal and traditional medicines. Another study conducted by Aljofan et al. (2019) shows that most of the participants living with diabetes were of the view that herbs is more beneficial than the standard medication because prolong use of antidiabetics is harmful. They also perceived that medication can be discontinued once the condition is controlled.

This view was confirmed in a study by Hushie (2019) where some participants recruited in a study perceive that the side effects of the antidiabetics are very harmful to their

health and this prevented them from adhering to their treatment regime. Some of these side effects as identified by the participants included hunger, nausea, dizziness, and shivers. Findings from the study of Albargawi and Moudi (2017) also shows that some persons living with diabetes mellitus have no confidence in the efficacy of diabetic treatment as the majority of the participants did not believe that treatment could help a person manage diabetes and 67% perceived that there was no need to take medication for diabetes management if the blood glucose level is within the normal range. Some patients found it difficult to follow the new routine of taking antidiabetics every day for the rest of their lives and are concerned about the chronic nature of diabetes (Mogre et al., 2019).

Adinortey et al. (2019) also argue that although many orthodox synthetic drugs have been developed to manage diabetes mellitus, most of these are not accessible to some patients therefore some prefer to use herbal medication which is readily available in the management of their condition. In addition , another study by Meresa et al. (2017) revealed that persons living with diabetes prefer herbal medication to conventional medicine due to the belief that herbal medications have low or no side effects.

According to Chinsembu (2019) herbal medication can be used effectively to manage diabetes if the right insight is gained about medicinal plants. They added that patients who have knowledge about herbs, natural extracts and foods that reduce blood glucose level have good glycemic control. Some patients have glucometers and can also afford glucose strips to self- test but are unable to perform Self-Monitoring Blood Glucose because of the pain of pricking themselves. This explains their choice for traditional and alternative medicine (Mogre et al., 2017).

2.12 Summary of the literature Reviewed

The reviewed literature shows that most persons living with diabetes mellitus have many misconceptions and negative perceptions about the condition. These beliefs can be

categorized under diet, spiritual, emotional, management and coping. These results are mainly centered on studies conducted in the high resourced countries. It appears that there is a gap in the prevailing data on the socio-cultural dynamics of the newly diagnosed persons living with diabetes in the Ghanaian context. This study therefore set off to explore the socio-cultural dynamics of newly diagnosed persons living with diabetes mellitus in Ghana.

The next major section is the methods chapter for this study.

CHAPTER THREE

METHODS

3.1 Introduction

This chapter centres on research design, research setting, target population, sample size, and sampling technique, and procedure. It also involves data gathering tool, data analysis, data management, methodological rigor, and ethical issues considered.

3.2 Paradigm underpinning this study

The interpretivist paradigm was used to underpin this study. Before beginning any research process, the researcher needs to reflect on the basic assumptions about how the world is perceived. This includes the nature of reality and knowledge which is finally revealed in our research philosophy. Specifically, the research philosophy is profoundly defined by the researcher's perceptions, values, and beliefs about knowledge creation. These perceptions will underpin the selected research strategy, method used, and the interpretation of the findings. The Interpretivist have a relativist worldview in which a particular phenomenon may have manifold interpretations rather than a truth that can be determined by a process of measurement (Pham, 2018).

According to Alharahsheh et al. (2020), the interpretivist paradigm helps the researcher to acquire further knowledge through seeking experiences and perceptions of a particular social context. The interpretivist explores and describes the phenomenon in the words of the people involved. Generally, studies based on the interpretive paradigm uses a qualitative approach (Romano et al., 2020). Hence the application of this paradigm to guide the study as the researcher aimed to explore and describe the dynamics of the participants in their own words.

3.3 Research design

This study employed qualitative exploratory descriptive design to explore, understand and document the socio-cultural dynamics of newly diagnosed persons living with diabetes mellitus. According to Speziale et al. (2011) the exploratory design explores an unknown research area to gain, discover, add or confirm existing knowledge concerning the phenomenon under discussion, whiles Burns and Grove (2009) opined that, the use of descriptive study aids the researcher to describe the specific phenomenon exactly in the words of the participants. This design was appropriate to capture the socio-cultural dynamics of living with diabetes mellitus which seems not to have been explored and described in Ghana, specifically among patients newly diagnosed with diabetes mellitus at the Holy Family Hospital, Nkawkaw.

3.4 Research Setting

The study was conducted at the diabetic clinic of the Holy Family Hospital, Nkawkaw in the Kwahu West District in Eastern Region of Ghana as shown in Figure: 3.0

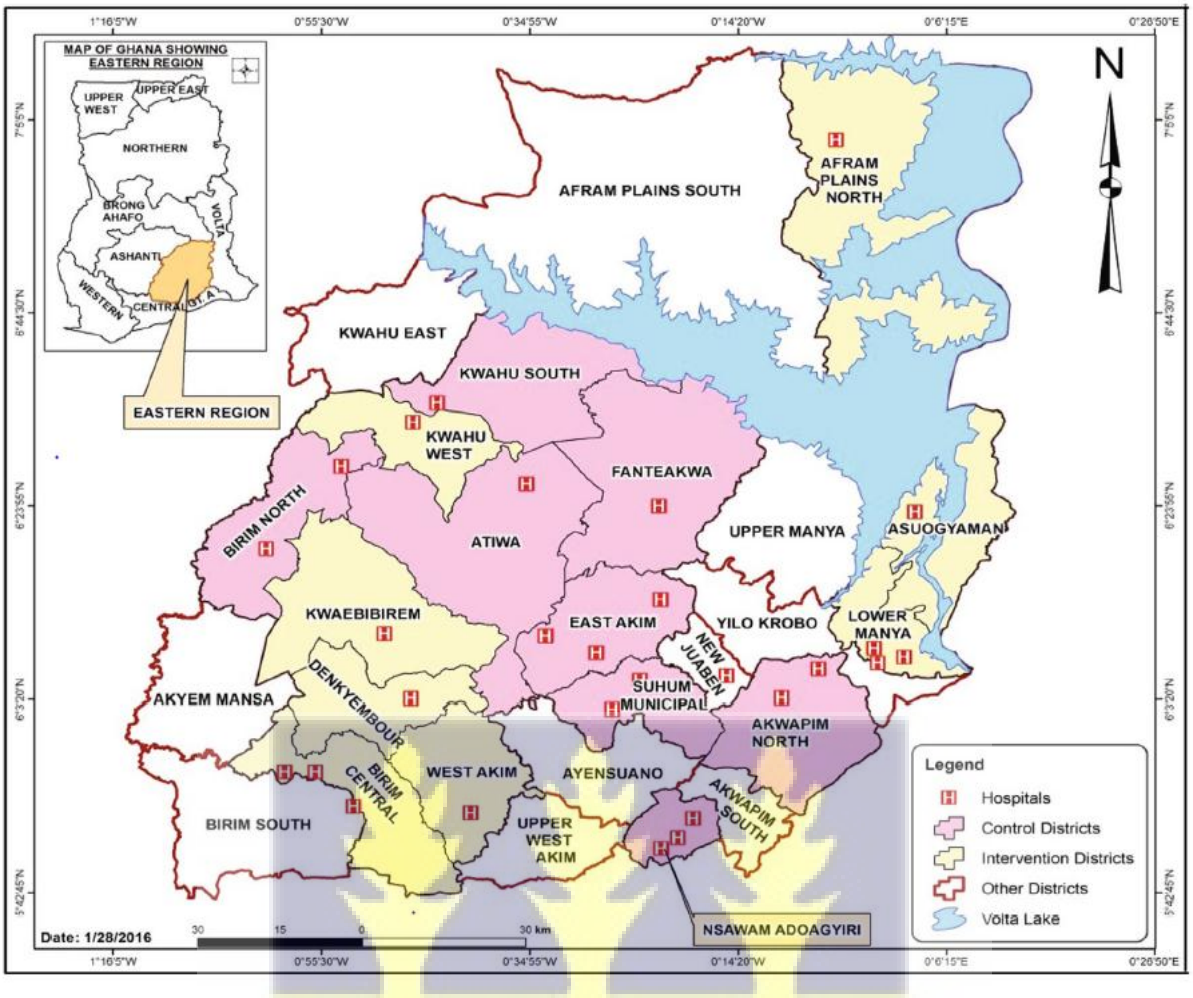


Figure 3.1: showing the map of the Eastern Region of Ghana, indicating Kwahu West District

Source: (Amoakoh et al., 2017)

Nkawkaw is a rapidly expanding town of about 114,000 residents. The Hospital was established by the Missionary Sisters Servants of the Holy Spirit (SSpS) in 1949. The hospital is part of the Christian Health Association network situated in the Kwahu West Municipality in the Eastern Region of Ghana. About 20 health facilities in the Eastern Region including private hospitals and clinics nearby use the hospital as a referral facility. The hospital has a bed capacity of 241with 14 cots. The hospital averagely attends to about 282 cases daily at the Out-Patient Department out of which about 10% are living with diabetes mellitus. Averagely the hospital admits up to 23 patients daily and it is graded as a District

Hospital (Level C) according to the Ghana Health Service. The various departments in the hospital are Medical, Surgical, Paediatric, Eye, Obstetrics, Gynaecology, Laboratory, X-ray, ENT (Ear, Nose, and Throat), Physiotherapy, Public health, Endoscopy, Ultrasound Scan, Dental, Cervical and breast screening and Mortuary.

3.5 Target population

The study population consisted of all persons who have been diagnosed as having diabetes mellitus by a qualified medical officer, and who visits the Holy Family Hospital. This prioritized only newly diagnosed persons with the disease.

3.6 Inclusion criteria

To be included in the study, the participants were:

- Above 18 years of age.
- Diagnosed by a medical doctor as having diabetes and have lived with the disease for at least one year.
- Mentally sound to express themselves and give voluntary consent to participate in the study through a signed informed consent.

3.7 Exclusion criteria

- Women who had gestational diabetes were exempted as the condition usually remits after childbirth.
- Persons who did not understand either English or Twi were excluded from the study. This is because the researcher is proficient only in these two languages.

3.8 Sample size and sampling technique

The sample size for the study followed the concept of data saturation, a major methodological principle of qualitative research. According to Saunders et al. (2018) new

data becomes redundant from data already gathered, when the qualitative researcher begins to hear the same statements repeatedly, which may indicate that data saturation has occurred and therefore becomes necessary to stop data gathering. Although there was an estimated sample size of 15 to 20 as an appropriate sample size for qualitative research to obtain and generate sufficient data as supported by Thomson (2011) the researcher stopped data gathering when data saturation was reached at the 12th participant and 2 more were added for confirmation.

Therefore, data was gathered from 14 participants. Sampling, data gathering, and preliminary data analysis continued until themes and data analysis were needless as argued by Saunders et al. (2018). The researcher used purposive sampling to deliberately select participants who met the inclusion criteria for the study. This helped the researcher to draw a credible conclusion from the study as argued by FitzPatrick and Learning (2019).

3.9 Data gathering Tool

A semi-structured in-depth interview guide (Appendix E) was employed for data gathering. The interview guide comprised open-ended questions that was developed according to the Common-sense model of illness representation and the objectives derived from the constructs of this model. A face-to-face thorough interview was conducted with each participant to create an avenue for participants to freely express their thoughts in their own words. The in-depth interview was done because it has the advantage of gathering detailed information from the research participants (Polit & Beck, 2013; Profetto-McGrath et al., 2010). It allowed the researcher to ask probing questions which helped to elicit a deeper understanding of the phenomenon under study and to clarify issues that needed extra explanation.

In addition, the flexibility of semi-structured interview guide allowed the researcher to interact extensively with the research participants for rich and informed data.

The first section of the interview guide obtained information on demographic characteristics of the participants such as age, gender, occupation, educational level, and duration of diagnosis. This section of the interview guide was intended to establish rapport with the research participants in order to get rich and thick data from them in the second section. The second section of the interview guide had open-ended questions with some probes relating to the perception, beliefs, emotional, and coping strategies of newly diagnosed persons living with diabetes mellitus. It also explored their perceptions on the management of diabetes mellitus. Field notes were also noted by the researcher during data gathering.

3.10 Piloting of the tool

Piloting the research tool is necessary before engaging in a major study (Duma & Sinegugu, 2006). This is done to test the tool and to know if the questions are clear enough to the participants' understanding to elicit all the needed information. It helps the researcher to practice how to conduct interviews and be conversant with the use of the audio recorder. Therefore, 3 participants who met the inclusion criteria from the Holy Family Hospital, Nkawkaw were recruited initially for the piloting of this study which helped in the modifications of the interview guide to make the questions more understandable, and helped the researcher to improve her interview skills for the main study.

3.11 Data Gathering Procedure

Permission was sought from the authorities of the Holy Family Hospital where the study was conducted (Appendix D) with ethical clearance (Appendix A) issued by the Institutional Review Board of Christian Health Association of Ghana, Labone and an introductory letter (Appendix D) from the School of Nursing and Midwifery. The nurses at the diabetic clinic assisted the researcher to recruit participants for the study after she explained the inclusion and exclusion criteria to them extensively to their understanding.

Each participant was interviewed using a semi-structured interview guide. Individual participants were briefed on the purpose of the study and the information sheet was presented to them for clarification.

The researcher again confirmed the inclusion and exclusion criteria before interviews were done. The researcher first established rapport and booked appointments with each participant to ascertain their preferred time and setting to make sure that they cooperate fully and to ensure minimal distractions during the data gathering process. Before the data gathering, the participants were taken through the study protocol explaining to them the potential benefits and risk of the research and obtaining their signatures or thumbprint on the consent form authorizing consent to be part of the study. Permission and approval were also sought to audio-record the data gathering process. The researcher made sure that the audio recorder was functioning well and had a back-up in case the audio recorder developed a problem.

Data was gathered using a semi-structured interview guide during which individual participants were encouraged to relax, feel free, and express their thoughts and feelings. The researcher used probing questions to help the participants contribute meaningfully to the discussions. Saturation was reached in the data gathering process with the twelve participants as no new information concerning the topic under study was forth coming. The researcher labelled each interview conducted at the end of each individual interview, and listened to the interview severally. Read and re-read the field diary and tried to align the notes written with each interview. All appropriate documents such as the signed consent forms, demographic data, transcribed interviews, and field notes were filed. The audio recordings have also been saved electronically on hard drives and external drives for safe keeping.

3.12 Field notes

Phillippi and Lauderdale (2018) asserted that field notes constitute data gathering and analysis which demands effective skills as face-to-face interviews, globally it is endorsed in qualitative research as a way of documenting the needed information contextually. Therefore, an exceptional writing pad was used to document the non -verbal cues observed about the participants during the interview. Taking field notes guided the researcher to ask probing questions to get rich and thick data.

3.13 Data Analysis

This study used Thematic Analysis (TA). According to Braun and Clarke (2006) thematic analysis is the basis for qualitative analysis which identified, analyzes and report themes that emerge from a data. It gives the researcher the essential skills needed to conduct further qualitative studies. Braun and Clarke (2012) as the years unfold and gaining enough knowledge in the area, again opined that thematic analysis is an accessible, flexible, and widely used method of qualitative data analysis. It is a method for capturing ‘’theme’’ in data and provides the qualitative researcher with a foundation of basic skills needed to engage with other approaches to qualitative data analysis. Therefore, the researcher used thematic analysis to be guided by the selected theoretical framework using its constructs as themes.

Data analysis was done concurrently with data gathering from the first interview. This allowed the researcher to reflect on and understand whether the right questions were asked or the right participants were recruited. Findings from the earlier interview informed changes to the semi-structured interview guide which was very helpful in the subsequent interviews.

The interview guide was reviewed by the supervisors before the interview began. The interviews were conducted in English language, audio-recorded, and transcribed verbatim. The transcribed data was read and re- read and the audio recordings were played severally to be familiar with the data and to ensure accuracy. The data was coded sentence by sentence

using colours to identify similar ideas and statements which was then re-examined and well grouped to form common file with sub- themes. Each of the individual transcript went through this process. The researcher grouped and extracted from the data a list of common themes to give expression to the commonality of voices across participants.

An attempt was made to name the themes from the actual words of the participants and grouped the themes in a manner that directly reflected the texts. Both the themes and the sub-themes were then related to the entire data and all the exemplars of the participants were coded with pseudonyms. The researcher again read through the themes and the sub-themes with their related extracts to ascertain if they were congruent with the study title, questions, and the purpose of the study. The accounts of the results were recorded with emphasis on the study findings and supporting them with the verbatim extracts from the study participants.

3.14 Data storage and management

The data is protected from physical damage as well as from tampering, loss, or theft by limiting access to the data. To maintain the integrity of stored data from the research the following measures were followed:

- Privacy and anonymity were ensured by replacing names and other information with encoded identifiers, with the encoding key kept in a different secure location.
- After analysis, the questions on the demographics and the interview notes were kept together in a safe, a locked file cabinet, a secured location from public access in the researcher's office.
- The electronic data was stored in its various formats on a computer with an encrypted password to prevent unauthorized access to the data. This was backed up to an external hard drive and kept in a secured and safe area with a lock to prevent data loss.

- Antiviruses on the computer was updated frequently to prevent corruption and damage to the data.

Data will be kept for five years according to University of Ghana and Institutional Review Board's policy for data storage. Then the electronic data will be deleted, and the hard copies will be shredded and buried.

3.15 Scientific rigor and trustworthiness of the study

Trustworthiness in qualitative research is a concept that was devised by Guba and Lincoln in 1989, as a substitute to the criteria of reliability and validity which is used in quantitative studies. It refers to the true value as well as the methodological accuracy and adequacy of the research, which is assessed through the criteria of credibility, transferability, dependability, and confirmability (Cohen et al., 2011). These strategies are imperative to researchers in planning ways of increasing the rigor of their qualitative studies and for readers to use to ascertain the value of the findings of a qualitative study. The strategies are discussed with the respective criteria as used by the researcher as follows;

3.16 Credibility

This is mostly referred to as the true value which focuses on the confidence in the truth of the findings. This is concerned with how the participants can identify the meaning they gave to the situation and how the researcher's interpretation of the data is consistent with the perceptions of the study participants (Grove et al., 2013). The credibility of the findings of the current study was ensured through member checking , using the direct exemplars of the participants to clearly express their perception ,and validation where the researcher took the findings to the field to determine whether the participants recognized the findings as true and accurate as endorsed by Tracy (2010).

3.17 Transferability

Transferability or Applicability-strategy has to do with external validity and findings that can be applied to other contexts or similar groups (Hanson et al., 2011). The researcher provided detailed background information about the participants, the research context, and the setting to allow others to make transferability judgments. In addition, significant events and observations were recorded in a reflective journal to help the supervisors guide the researcher's insights and opinions. All the data transcribed and the reflective notes were deliberately kept for audit trail. The author is convinced that this study will be important to others in similar settings.

3.18 Dependability

This refers to systematic consistency and accuracy in the implementation of the principles of qualitative methodology. It is also concerned with the clear and logical links between the research purpose and the research design to allow readers to evaluate the adequacy of analysis by following the researcher's decision-making processes and her detailed description of the research context (Cohen et al., 2011). Audit trail which involves outlining the decisions made throughout the research process to provide a rationale for the methodology and interpretative judgment of the researcher was ensured as recommended by Houghton et al. (2013). The supervisors of the study also reviewed the transcript and the themes that emerged from the data, through discussions the themes were analysed and the differences resolved.

3.19 Confirmability

Confirmability or Neutrality-strategy is the objectivity of the study, it refers to the researcher's ability to establish that the data represent the participants' responses and not the researcher's prejudices or perspectives (Cohen et al., 2009). Findings from the interviews

were presented to the supervisors at the School of Nursing and Midwifery of the University of Ghana reviewed the results and gave suggestions that enhanced confirmability. Peer debriefing was ensured and in addition, the researcher conducted member-checking with some of the study participants as recommended by (Connelly, 2016) to confirm the findings. Reflective memos were used to develop an audit trail of the research activities that was made throughout the research process to measure how well the findings supported the data gathered. The researcher also kept a reflexive journal and guarded against her perceptions, all of these were meant to maintain the confirmability of the findings.

3.20 Ethical consideration

According to (Flick, 2017) the contribution of research ethics, informed consent, and review by an ethics committee offer a valuable contribution to enhancing quality research and improving the responsibility of the researcher towards the intended participants. Therefore, the researcher applied for ethical clearance from the Christian Health Association of Ghana (CHAG) Institutional Review Board which is responsible to give ethical approval to researchers before they begin their study. An introductory letter was given from the School of Nursing and Midwifery, University of Ghana (Appendix D) and a copy of the ethical approval letter (Appendix A) were sent to the administrator of the Holy Family Hospital, Nkawkaw to seek for permission to conduct the study in the facility. The hospital administrator gave an approval (Appendix F) for the facility to be used as the setting for this study.

The purpose of the study, risk, and benefits was explained in detail to participants, and those who confirm their readiness to be part were given a consent form to sign as evidence of their willingness to participate in the study. A thumb pad was provided for those who could not sign to thumbprint. The potential participants were given the information sheet with the study details and those who can read were encouraged to read and understand. The

researcher verbally explained all relevant details of the study and asked for questions and clarifications from the potential participants. It was explained to the potential participants that they are not obliged to be part of the study and even if they give their consent at the initial stage, they can freely withdraw from the study at any point without attracting any penalty, such as failing to attend to them in the hospital.

Anonymity and confidentiality were ensured using pseudonyms when the participants were quoted verbatim. Participants were assured that their information will be secured through the given of identification codes with figures. This was based on their chronological enrolment into the study to hide their identity. In addition, the main data was disconnected from the biographic data of the participants to avoid any connection. The information gathered was only shared by the researcher and supervisors. When findings are to be published, the real names of the participants will not be mentioned.

Participants were informed that physical risks are not foreseen but slight emotional and social harm may be experienced as a result of revealing personal information. An arrangement was made with a clinical psychologist in the hospital to attend to participants who may experience situations such as emotional disturbances. In addition, the participants were assured that they are not under any obligation to disclose information that they were uncomfortable with. The researcher was optimistic that trust would have been built through prolonged engagement, therefore the emotional discomfort that occurred was handled accordingly.

The participants were made aware that there will be no compensation for patients who will participate in the study during their normal review appointments. However, a transportation fee of GH₵ 20.00 was given to recompense patients who came to participate from their homes outside their appointment date. All participants were refreshed with snacks at the end of the interaction.

3.21 Adherence to covid-19 protocol

The researcher knowing the upsurge of coronavirus and omicron at the time of the study, observed all Covid- 19 protocols as spelt out by the Ghana Health Service. Participants were provided with hand sanitizer and face mask and they were encouraged to wear and observe social distancing.

The next section is the presentation of findings.

CHAPTER FOUR

PRESENTATION OF FINDINGS

4.1 Introduction

This chapter centers on the data gathered from the participants of this study. The purpose of the study was to explore the socio-cultural dynamics of newly diagnosed persons living with diabetes mellitus at the Holy Family Hospital, Nkawkaw, in the Eastern Region of Ghana. This chapter focuses on the description of participants' demographic characteristics; description of the themes and sub-themes that emerged from the data gathered; and a summary of the data gathered.

4.2 Participants' Demographic Characteristics

In all, fourteen (14) participants were recruited and interviewed for the study. Five (5) of them were males and nine (9) of them were females. The participants were living with diabetes from three (3) months to one (1) year. Their ages also ranged from thirty-five (35) years to sixty-two (62) years. Out of the fourteen participants, eleven (11) were Christians and three (3) were Moslems. Eight (8) of them were married and living with their spouses, three (3) were divorced and three (3) were widows staying with their children. Additionally, two of them had completed primary school, eight (8) had completed standard 6 (current JHS), two had completed senior high school, two (2) of them had had up to tertiary education. On their occupation, one (1) was a teacher, one (1) was a pharmacy technician, one (1) was a farmer, one (1) was a baker, and ten (10) were traders. To ensure anonymity, the participants of the study were given pseudonyms to shield their identity. The demographic characteristics of the participants with their pseudonyms have been presented in the table (Table 4.1).

Table 4.1: Demographic Characteristics of Participants

Name	Age	Level of Education	Gender	Duration of Diagnosis	Occupation	Marital Status
Adom	35	Primary	Female	5 months	Trader	Widow
Asantewaa	39	Standard 6	Female	3 months	Trader	Widow
Asabea	42	Primary	Female	4 months	Trader	Married
Abayie	61	Standard 6	Female	2 months	Farmer	Married
Ankomaa	53	Standard 6	Female	7 months	Trader	Divorced
Afriyie	44	SHS	Female	1 year	Trader	Divorced
Agyapomaa	54	SHS	Female	5 months	Trader	Widow
Antwi	50	Standard 6	Male	3 months	Trader	Married
Asantewaa	49	Standard 6	Female	3 months	Trader	Married
Agyeman	60	Standard 6	Male	8 months	Trader	Married
Aboagye	45	Tertiary	Male	9 months	Teacher	Married
Amankwaa	49	Tertiary	Male	1 year	Pharmacy technician	Married
Agyeiwaa	37	Standard 6	Female	2 months	Trader	Divorced
Ansong	62	Standard 6	Male	1 year	Baker	Married

4.3 Themes and Sub-themes

Five (5) major themes and fifteen (15) sub-themes emerged from the data gathered using thematic analysis. The themes and sub-themes were generated in line with the constructs of the Common-sense model by Leventhal et al. (1997) which was employed as the organizing framework for this study. The major themes derived were general perception of newly diagnosed persons living with diabetes mellitus, beliefs of newly diagnosed persons on the symptoms of diabetes mellitus, emotional manifestations experienced by newly diagnosed persons living with diabetes mellitus, coping strategies of newly diagnosed persons living with diabetes mellitus and perception of newly diagnosed persons on the management of diabetes mellitus.

The themes and sub-themes generated from the data gathered were supported with verbatim quotes from the participants of this study. The themes and sub-themes have been presented in the table below (Table 4.2).

Table 4.*2*: Themes and Sub-themes

Themes	Sub-Themes
General perception of diabetes mellitus.	1. Perceived causes of diabetes mellitus. 2. Perceived signs and symptoms of diabetes mellitus before diagnosis. 3. Perceived challenges encountered by persons living with diabetes mellitus.
Beliefs of the signs and symptoms of diabetes mellitus.	1. Beliefs of observed manifestations associated with diabetes mellitus. 2. Perceived beliefs about the severity of diabetes mellitus. 3. Physical reaction to the symptoms of diabetes mellitus.
Emotional manifestations experienced by persons living with diabetes mellitus.	1. Internal reactions associated with diabetes mellitus. 2. Painful experience of living with diabetes mellitus.
Coping strategies of persons living with diabetes mellitus.	1. Lifestyle modification by persons living with diabetes mellitus. 2. Comparative solace approach 3. Psychological coping by persons living with diabetes mellitus. 4. Spiritual coping by persons living with diabetes mellitus.
Perception on the management of diabetes mellitus.	1. Perception of persons living with diabetes mellitus on medical care. 2. Social network supporting persons living with diabetes mellitus. 3. Self-care practices performed by persons living with diabetes mellitus.

4.4 General perception of diabetes mellitus

The first theme that emerged is the general perception of persons living with diabetes mellitus on diabetes. This theme had 3 sub-themes which are perceived causes of diabetes mellitus, perceived symptoms of diabetes mellitus before diagnosis and perceived challenges encountered by persons living with diabetes mellitus. The perception held by persons living with a chronic condition indicates their responsive measures and influences their treatment options.

During the interview, the participants shared their general perception of diabetes mellitus and it was deduced that majority of the participants had knowledge that diabetes is a disease that is due to high blood glucose or sugar level. Some perceive the cause to be spiritual and others a medical illness. Also, they indicated that high glucose or sugar level in the blood can result in death, hence, patients with the condition need to follow physicians' prescriptions to be able to control the disease. They mentioned that their main source of information was from health care professionals, friends, and the social media. Almost all the participants shared the difficulties they face with the management of the condition. They shared that restriction of diets and the cost of treatment was overwhelming and this does not facilitate their healing process.

4.4.1 Perceived causes of diabetes mellitus

The participants shared their views on the causes of diabetes mellitus. They had varied opinions on the causes of the condition. Most of the participants (11) attributed the cause of the disease to late night eating and poor eating habit. Some of them recounted:

> *"Now that I have gotten the disease, I know it comes as a result of our way of life, especially, our eating habit. It comes as a result of our poor eating habit."* **(Adom)**

"Eating late at night is a major cause of the disease." **(Asantewaa)**

"I will attribute diabetes to poor eating habit. I remember I was working in a pharmacy shop where I used to start work as early as 7am and close around 9pm for almost five good years. That didn't help me, it didn't help my health at all because I was eating late in the night. So I can attribute the cause of my sickness to my poor eating habits, especially eating at night, sometimes at 10pm." **(Asabea)**

Three participants however attributed the cause of the disease to excess sugar consumption, family history of diabetes, an evil spirit, alcoholism, smoking and high blood pressure. Their responses are as follows:

"Too much sugar causes it." **(Afriyie)**

"I see it as the devil's disease or a disease inherited from certain elderly people in the family who must have transmitted it through blood exchanges. According to my mother, one of her sisters had the disease which led to her untimely death. My mother is also currently battling with the same disease, I feel that the disease is in the family." **(Ankomaa)**

"High blood pressure brings about diabetes. Drinking and smoking can also cause it." ***(Asantewaa)***

From the above narratives, it was apparent the participants had inadequate knowledge on the causes of diabetes mellitus.

4.4.2 Perceived signs and symptoms of diabetes mellitus before diagnosis

The belief or perception that an individual has on the signs and symptoms of a disease influence their health seeking behaviour. More than half of the participants (8) opined that they were able to detect the signs and symptoms they were experiencing but were uncertain about the disease affecting them. They added that when the signs and symptoms were discussed with others, they got to know it could be diabetes but were afraid to be diagnosed because of its incurable nature. The signs and symptoms the participants cited included weight loss, tingling sensation, excessive urination, and excessive thirst amidst others. They remarked as follows:

> *"I couldn't sleep at all. I was growing lean and my urine was sweet. There is tingling in your fingers, your limbs, you feel some sensation, very sharp as if hot pepper has been rubbed at your feet or hands, and it is very painful. I discussed my persistent symptoms with someone who said it could be diabetes but because I have heard that it is a disease of the rich and have no cure, I was afraid of being diagnosed as such in the hospital."* **(Antwi)**

> *"For eight years, I had not fallen sick nor visited the hospital, but judging from how I frequently would thirst for water, urinate frequently and was drastically losing weight, I realized that I have a disease so I went to the hospital to check."* **(Asabea)**

However, two of them mistook the signs and symptoms to be that of high blood pressure which they had already been diagnosed with, whiles one participant perceived the signs and symptoms to be that of malaria. They remarked as follows:

> *"I thought the symptoms were due to high blood pressure until it was diagnosed as diabetes."* **(Asantewaa)**

> *"Before then I was having high blood pressure, so anytime there was something wrong with my system, I used to attribute it to it, until I was later diagnosed with diabetes."* **(Adom)**

> *"I couldn't sit and I was feeling uneasy so I thought it was malaria and people told me that, that is how diabetes is."* **(Agyeman)**

Form the narratives of the participants, it seemed persons newly diagnosed with diabetes could not identify the disease despite the persistent signs and symptoms they experienced initially. But the persistent signs and symptoms compelled them to report to the hospital for medical attention.

4.4.3 Perceived challenges encountered by persons living with diabetes mellitus

Persons living with diabetes face many challenges in their efforts to control the condition by following recommended prescription by health professionals. During the interview, it was ascertained that many of the participants encounter these difficulties daily and hinder the positive outcome of their treatment regimen. Most of them mentioned financial issues, dietary restrictions and physical disruptions as problems bothering them.

Most of the participants (9) were burdened with the financial aspect of managing the condition. One of them opined:

> *"Honestly, I was worried because I had heard that with diabetes you are always taking and buying medicines so I thought to myself that who would help me purchase medicines?" This makes me think a lot.* **(Agyeman).**

Three (3) of the participants were also much concerned about the symptoms, the long-lasting nature of the condition, and the dietary restrictions associated with managing the condition. The following are the exemplars of the participants:

> *"The frequent urination is worrying and that has become my biggest problem. I have grandchildren in Navrongo, but due to my condition, I cannot travel to them".* **(Ansong)**
>
> *"I must confess that; this disease troubles me. It has completely changed my dietary pattern and I cannot even eat certain preferred foods anymore."* **(Asantewaa)**

From the narrative it is deduced that the participants encounter many challenges as they strive to control the condition.

4.5 Beliefs of the symptoms of diabetes mellitus

The beliefs of persons living with a chronic disease is key in managing the illness. These beliefs influence their response to seek assistance. When explored, three sub-themes emerged which are beliefs of observed manifestations associated with diabetes mellitus, beliefs of symptoms of diabetes mellitus, perceived beliefs about the severity of diabetes mellitus, and physical reaction to symptoms of diabetes mellitus.

4.5.1 Beliefs of observed manifestations associated with diabetes mellitus

Majority of the participants (13) talked about the physiological changes that had occurred in their body as a result of the condition. They mentioned stiff legs, swollen legs, dry skin, sudden weight loss, bodily pains, high body temperature and fatigue as some of the changes that had occurred in their body. They added that the changes were making them uncomfortable and negatively affecting them in the performance of their daily activities. The following are exemplars from some of the participants:

> *"At times, I sleep and wake up only to realize that my legs are swollen, which is not something I had not experienced before. My left leg becomes stiff and difficult to move till I find a way around to get it back to normal. I also have dry skin making me look older than my age."* **(Aboagye)**

" I suddenly lost weight because of the condition." **(Ankomaa**)

"I easily get tired when I walk. I also feel bodily pains and heartache." **(Agyeiwaa)**

"Sometimes the body temperature is high, you can't even concentrate, then you will definitely know that your sugar level is up, otherwise you will feel normal." **(Antwi)**

It seemed the participants were aware of the changes that had occurred in their bodies as a result of the condition. One person shared that the symptoms are unbearable and unusual which make them think is from a spiritual source. He freely shared:

"Honestly, if you've never been told of diabetes and you believe in spiritual things, you will think someone is attacking you and you will not go to the hospital. Based on what happens to you especially in my case and how my feet raised up from a bucket, if you talk to someone about it who have no idea about the sickness, he might even advise you to seek help from the fetish. So, if you get diabetes, you might think someone is behind it." ***(Aboagye)***

One participant who is always in tune with his body shared that one needs to understand the mechanism of the body to be able to notice any unusual change and act accordingly.

"You can only notice these signs and symptoms when you understand your body." **(Antwi)**

From the narrations above, it seemed the newly diagnosed persons believe that the disease is a medical condition. Therefore, once diagnosed, one needs to be in tune with his or her body to always detect any deviation for prompt intervention.

4.5.2 Perceived beliefs about the severity of diabetes mellitus

The participants shared their views on the severity of diabetes mellitus. They indicated that diabetes is deadly, and the first point of contact should be the hospital when one starts experiencing the signs and symptoms of the condition. Most of the participants (8) perceived diabetes to be a serious condition which needs urgent medical attention. Some of them remarked:

> *"It wasn't easy. I was urinating frequently and was having erectile dysfunction so I took it seriously and reported to the hospital."* **(Ansong)**

> *"I was urinating frequently so it became needful for me to take steps, therefore, I went to the hospital".* **(Aboagye)**

> *"I learnt it is not curable and the fact that we have to live with it for the rest of our lives is bad".* **(Antwi)**

4.5.3 Physical reaction to the symptoms of diabetes mellitus

The participants had varied reactions to the symptoms of diabetes that they were experiencing. They also talked about how the symptoms influenced them to report to the hospital for medical care. One of the participants refused to initially accept that the symptoms he was having could be due to diabetes, but he later reported to the hospital when the symptoms became unbearable. He opined:

> *"I was conflicting with the truth. I knew from the symptoms that I had diabetes but now to accept it was very hard for me. I will say it will go. Sometimes I drink lot of water thinking I will be fine. I did all these things but it never worked and later reported to the hospital."* **(Antwi).**

However, some of the participants quickly reported to the hospital when they noticed the unusual change in their system. The following were some of their responses:

> *"How I was drinking too much water alarmed me. So, I willingly visited the hospital and have myself checked, and it was detected that I have diabetes."* **(Asabea).**

> *"I used to urinate quickly, so I went to the hospital."* **(Afriyie).**

From the above narration, it is clearly seen that newly diagnosed persons living with diabetes mellitus had internal struggle of accepting the diagnosis and delayed their response to seek medical care. However, when the symptoms persisted, they considered it unusual and sought for treatment to control it.

4.6 Emotional manifestations experienced by persons living with diabetes mellitus

Persons living with chronic illnesses have emotional disturbance which they struggle with each day of their illness. Exploring this emotional experience among newly diagnosed persons living with diabetes mellitus revealed the following sentiments when they were diagnosed, as expressed through these 2 sub- themes: Internal reactions associated with diabetes mellitus, and painful experience of living with diabetes mellitus.

4.6.1 Internal reactions associated with diabetes mellitus

Most of the participants reacted with anxiety and fear due to the unknown outcome of the condition. All the participants were emotionally stressed as people kept on questioning them about their sudden weight loss. Though they were aware that such people were showing concern for their well-being, they felt uncomfortable, sad, and distressed for being asked the same question repeatedly. Some of them also cried bitterly and had palpitations when they were informed of the diagnosis. Most of them expressed the difficulty and the struggle within

themselves to initially accept the diagnosis, but they later accepted it in order to manage the condition better. Some of them recounted:

> *"Sometimes when the symptoms are unbearable, the weight loss become so visible and people would come close to ask whether you are sick. So, for them coming back every day to ask whether you are you sick is some of the emotional stress you have to go through in dealing with the condition, even though they relate well with you."* **(Antwi)**

Adom was of the view that the knowledge of amputation of an extremity as a complication of diabetes made it very difficult for him to accept the diagnosis. He added that, it has already come and he is helpless. He recounted:

> *"It wasn't easy at all accepting it because it is a disease that can lead to the amputation of some parts of the body, and now I have been diagnosed with it, I got scared but after all it has come, so there is nothing I can do. The only thing I can do is to console myself and take care of the way I do my things and how I live."* **(Adom)**

> *"I was like I haven't even finished managing my high blood pressure and this has been added. My heart was beating fast but I just concluded that we are humans and susceptible to sickness, and forgot about it."* **(Agyeman)**

Another participant also shared that the thought of the diagnosis with its accompanying restrictions make her sad and shed tears. She remarked:

> *"In fact, I was very sad and I cried because I thought the disease is for the rich and you are restricted from eating a lot of things. This made me very sad".* ***(Aboagye)***

"When I received the new of my diagnosis, it was a great panic indeed" ***(Ansong)***

"To be honest, my heart was beating very fast because I was told diabetic wounds never heal and you become prone to many diseases and become blind and even get stroke" ***(Antwi)***

4.6.2 Painful experience of living with diabetes mellitus

Two of the participants expressed how painful it is to live with diabetes. One of them remarked:

"Living with the diabetes is very painful because it has put me in a fearful state." **(Asantewaa)**

From the description above, one can conclude that receiving news of having a chronic condition is very hard to take. It comes with pain and one needs courage to believe and accept the disease condition to be able to follow recommended instructions for better outcome. Therefore, persons living with chronic illness such as diabetes need emotional and psychological support.

4.7 Coping strategies of persons living with diabetes mellitus

The coping strategies which participants used in managing their condition was explored. And it was deduced that the participants used four main coping strategies which are lifestyle modification by persons living with diabetes mellitus, comparative solace approach, psychological coping by persons living with diabetes mellitus, and spiritual coping by persons living with diabetes mellitus.

4.7.1 Lifestyle modification by persons living with diabetes mellitus

Two of the participants indicated that they had changed their poor eating habits and were eating healthily now to be able to cope well with their condition. One of them remarked:

> *"Now I have changed my poor eating habit tremendously and it is not like before when I could even fry three eggs and eat. My bad eating habit was due to ignorance about the negative health implications I was incurring on myself."* **(Asabea)**

4.7.2 Comparative solace approach

Comparative solace seems to be one of the coping strategies of persons living with chronic conditions. One of the participants in the study compared herself with other patients battling with other chronic conditions. They perceive that diabetes is not HIV/AIDS and some people are battling with life threatening conditions like cancer so they are better with the diagnosis.

One of the participants said:

> *"Someone is living with the disease for ten years. Moreover, this is not HIV so why should I worry my head over it, and losing weight will not cause my body to deform. It seems I have forgotten about it because right after eating, I take my medication."* **(Asabea)**

From the narrative, the participants seemingly consider themselves better than persons living with HIV/ AIDS and cancer. They are inspired by others who have lived with the condition for years and have satisfactory outcome.

4.7.3 Psychological coping strategy by persons living with diabetes mellitus

Half of the participants (7) had mentally accepted the condition and were following the instructions given them by their health care providers in order to properly manage and/or control their condition. The quote below by one of the participants is an exemplar:

> *"Disease is part of human beings, so whatever you do, you will fall sick. Now that mine has come, what can I do for the disease to leave me? I only need to follow the doctor's instructions."* **(Agyapomaa)**

Similarly, another participant also said:

> "*I was worried because I have seen how people struggle with the disease. Some lose weight to the point that they cannot be recognized. Honestly speaking, I was saddened because I know that if I don't take precautions, it will take my life. That is why being diagnosed with it was scary to me. But I encouraged myself that I would adhere to anything that the doctors tell me. So, I am mentally prepared to face the challenges associated with the disease."* **(Asabea)**

4.7.4 Spiritual coping strategy by persons living with diabetes mellitus.

The participants had the belief that God creates disease and He is the only one who can bring absolute healing. Most of them (8) indicated that they were praying to God and relying on His power to receive healing for their condition. They commented as follows:

> *God is the only healer, so I look up to him.* **(Ansong).**
>
> *I pray God heals me of my illness."* **(Aboagye**).

With great conviction, this participant similarly expressed:

> *When I realized the sickness wasn't from an evil spirit, I pray as a Christian since God is a healer but I don't use that as an excuse to avoid my medication. I also must comply with medical instructions and treat it physically.* **(Amankwaa).**

From the narratives above, it can be inferred that newly diagnosed persons living with diabetes devise coping strategies that help them to deal with their condition. These strategies

give them encouragement and the will power to live with the disease despite its associated challenges.

4.8 Perception on the management of diabetes mellitus.

Effective management is key in controlling diabetes mellitus. The participants of this study shared their views on how to effectively manage their condition. The following sub-themes emerged from the data, these are perception of persons living with diabetes mellitus on medical care, social network supporting persons living with diabetes mellitus and self-care practices performed by persons living with diabetes mellitus.

4.8.1 Perception of persons living with diabetes mellitus on medical care

All the participants sought medical care in order to control their condition. They indicated their preference for orthodox medication to herbal medication due to its efficacy. Additionally, they preferred orthodox medication to herbal medication due to the side effects and adverse effects associated with it. Even though all of them sought medical care, some were still confused with the information they had received from social media concerning the ability of herbal preparation to cure diabetes. Some of them opined:

> *"I personally don't like herbal medicine because you never know the dosage to take. You will even get complications and be taken to the hospital; therefore, I prefer orthodox treatment."* **(Agyapomaa)**

> *"Now that I am on medication, I am seeing improvement. I believe that as I diligently follow the instructions from the hospital, the root cause of the illness will be completely removed."* **(Aboagye)**

> *"The disease will not kill you when you adhere to the prescribed medicines. Judging by how I was being*

> *tormented and controlled by the disease, it would have killed me if I had not taken the medications."* **(Amankwaa)**

Most of the participants were however not honoring their appointment or review dates not because they don't believe in the orthodox medication but the major reason is the fear of experiencing needle pricks when their blood glucose levels are being checked. One participant said:

> *"I am scared of the pricking associated with checking blood glucose levels. But once you get diabetes, it becomes part of you. However, to be frank, I don't normally come for check-up because of the fear of needle pricks."* **(Antwi)**

> *"The needle prick is painful and thought of it make me not come frequently for reviews"* ***(Aboagye)***

From the above narrative, most patients are afraid of the needle prick that comes with monitoring the blood glucose level whenever they are due for review. Researchers can explore for ways to monitor blood glucose level without pricking patients. This will assist adherence to treatment regimen.

Some participants were confused about information on the radio that conflicts with the health education they had received from health professionals concerning the duration of diabetes in their system. They were informed by the health professionals the disease is not curable but medications are available to minimize the symptoms, but some herbalists were saying otherwise. One participant recounted:

> *"Health personnel and those who have had diabetes before say it has no cure but there are drugs to reduce their effects on us. And when herbalists come on the radio, they say herbal medicine can cure it. Can we go for*

> *the herbal medicine since it can cure us once and for all?"* **(Amankwaa)**

One can conclude that some newly diagnosed persons living with diabetes get information overload which seems not to be helpful in making informed choices about the treatment available for the management of the condition.

4.8.2 Social network and support for persons living with diabetes mellitus

Most of the participants also talked about the varied forms of support including: encouragement, reminding them to take their medication, financial they had received from their parents, spouses, and friends after they were diagnosed with diabetes mellitus. One participant praised his wife for her unflinching support in managing his condition. He was very appreciative of the love and care he is receiving from the wife since his diagnosis and requested the researcher to thank her on his behalf.

With tears in his eyes, he remarked:

> *"Without my wife's support, I would have died. She is a great treasure and I honor her."* **(Antwi)**

Similarly, another participant remarked:

> *"I informed my dad about it and he told me I'm not the only one with the condition so I showed him my medications and he told me to be faithful to the medication and I will be fine."* **(Aboagye)**.

That notwithstanding, one participant stated that she kept her diagnosis as a secret from her family and friends due to unhealthy comments she sometimes hears from some people about the disease. She expressed this:

> *"People question my sudden weight loss and I tell them it is deliberate, and I want to slim down which they believe. Before God and man, I don't want anyone to know. When*

> *you are sick and you immediately tell people, they mostly discourage you. They can tell you it is an evil disease or someone is the cause of it like some members of my family told me. The advice doesn't help in any way so I don't tell people about my disease."* **(Agyapomaa)**

It is apparent that words of encouragement from other people in the community is essential in managing a chronic condition. The concern and love expressed by family members, friends and loved ones gave the participants of this study hope to move on in life amidst all the difficulties with diabetes management.

4.8.3 Self-care practices performed by persons living with diabetes mellitus

Most of the participants were engaging in self-care practices to control their condition. Some of the self-care practices they mentioned were exercise, healthy eating, avoiding alcoholism and smoking, decreased in food quantity, stopped adding sugar to meals and following treatment regimen prescribed by health professionals. Some of them recounted:

> *"I try to eat on time and not late in the night".* **(Agyeman)**
>
> *"Now that I have diabetes, I am managing it by doing what is good for the body, especially, exercising at least twice in a week. I used to drink a lot. Now I have stopped and rather taking good care of myself and not to get injured because, it will take a long time to heal so I am more careful".* **(Asantewaa)**
>
> *"I no longer add sugar to my porridge, and now I also consume only two slices of yam".* (**Afriyie)**

From the above narratives, the participants were engaging in conscious healthy self-care practices to effectively manage their condition which is commendable.

4.9 Researcher Reflexivity (Before and After the Study)

Before the study, the researcher had had personal interaction with most persons living with diabetes mellitus through nursing care and observed that most of them do not report to the hospital after their initial diagnosis. They were frequently hurried to the hospital when they have complications such as leg ulcer and kidney failure. These continuous experiences influenced her thought to assume that the patients have inappropriate thoughts, perceptions or beliefs about the condition which negatively influenced their choice of treatment.

After the study, the researcher appears to be a good communicator who used her skills to enhance her interaction with all the study participants. The participants openly shared their thoughts without any hesitation. This openness helped the researcher to get rich and thick data. The knowledge gained from this study has changed the perception of the researcher about persons living with diabetes mellitus. Most of them do not report to the hospital again after their diagnosis not just because they have inappropriate thoughts about diabetes but rather due to the fear of needle pricks that is done to monitor their blood glucose level. They also believe it is a medical condition and perceive the orthodox treatment as efficacious in managing their condition.

Nursing care thrives when patients understand their disease condition and adhere to medical prescriptions. Therefore, I am inspired to set aside quality time to give in-depth health education to patients, especially those living with diabetes and allow them to express their thoughts about living with the disease. This creates the enabling atmosphere to help them make an informed decision and to help me give quality, holistic and effective professional nursing care. As a practicing nurse, this study has enlightened me to take keen interest in learning the culture of the patients in my charge and give appropriate health

education and to give needle pricks at the side of the fingertips and rotate the pricking sites to reduce the pain associated with it.

In addition, to ensure they understand their diagnosis, allow them to ask questions, clarify issues, and explore their thoughts to know their beliefs about their condition and give the needed attention to promote health and reduce preventable complications. This study has also revealed the researcher's perception about newly diagnosed persons living with diabetes. As a nurse researcher, this study has taught me how to discard my biases and explore the views of others to understand their situation in their own context. I have learnt to listen to different views on the same issue before drawing conclusion. Exploring the thoughts of clients on their condition is important when good health is anticipated. Therefore, I resolve to take time to explain and actively listen to clients and give the needed assistance based on their sharing. I will also advocate for conducive space for nurses and midwives to be able to create that confidential atmosphere for clients to feel more secured and share their thoughts without fear.

4.10 Summary of Findings

In summary, this chapter is about the presentation of the findings of the study and it is also the basis for discussion in the ensuing chapter in relation to literature reviewed. Using the Common-Sense Model, five (5) major themes and fifteen (15) sub-themes were explored in this chapter. The result from the study showed that most newly diagnosed persons living with diabetes believe the disease to be a medical condition and encouraged persons who observe the signs and symptoms to report to the hospital for immediate medical attention. However, few of them also attributed the disease to evil spirit. In addition, it was revealed that most of them fail to honor their appointment dates due to the pain they experience through needle pricks when their blood glucose level is monitored in the health facility. They have little knowledge about the disease and are confused about the health education they

receive from health care personnels and the information they receive from the social media about the cure of diabetes mellitus. They emphasized family, friends and loved ones as the support systems they rely on in managing their condition.

The next chapter is the discussion of findings.

CHAPTER FIVE

DISCUSSION OF FINDINGS

5.1 Introduction

This chapter centres on the discussions of the main findings of the study in relation to literature reviewed. The discussion was done based on the specific objectives of the study which were derived from the constructs of the Common-Sense Model by Leventhal et al. (1997) that guided the study.

5.2 General perception of persons living with diabetes on diabetes mellitus

The study revealed that the participants had varied perceptions about diabetes, specifically, on the causes and the symptoms of diabetes mellitus experienced before diagnosis. The participants had varied opinions on the causes of diabetes. They had poor knowledge on the causes of diabetes mellitus. This is in line with a study by Tang and Gao (2020) who opined that most patients with diabetes do not understand the illness. They perceived it to be a stable condition without any sentiments which can be managed by themselves with treatment.

Most of the participants also attributed the disease to late night eating, poor eating habit, and excessive consumption of high sugar diets. This is similar to the findings of a study by Concha et al. (2016) which showed that the participants believed poor eating habit causes diabetes. The findings of the current study are also consistent with the findings of Michael et al. (2018) who revealed that 89% of the participants of their study who were living with diabetes held the belief that they needed a special diabetic diet and adding sugar to meals was forbidden.

Another study by Easwar et al. (2018) also posited that most patients with diabetes (77.69%) perceive high intake of sugar and sweets to be a cause of diabetes. This perception

is consistent with Gupta et al. (2018) who revealed through their study that excessive consumption of salt and sugar can have dire consequences on one's health and increasing one's risk of having diabetes and hypertension. Similarly, El-Sayed et al. (2018) also corroborated that high sugar containing diet was connected to overweight, abdominal obesity, diabetes, and hypertension. Some of the participants perceived diabetes to be caused by an evil spirit. This is in line with a study conducted by Korsah et al. (2022) who revealed that the participants in their study perceived diabetes to be a disease from the spiritual world, and a holistic management of the condition should include magico-religious and supernatural processes.

Similarly, a study by Onyishi et al. (2021) highlighted that persons living with diabetes are inclined to relate the disease to spiritual roots, and spirituality is linked with the acceptance and management of the condition. Some few participants of the present study were also of the view that diabetes is a disease created by God, and therefore cannot be attributed to witchcraft. This supports a study by Arifin et al. (2020a) which showed that the participants of that study believed diabetes is a gift from God that enables people to be closer to God.

The participants of the current study also perceived diabetes to be a disease which runs in families or is inherited from elderly people in one's family. Some of the participants had this perception because, they have observed that all their family members who are diagnosed of diabetes had parents who once lived with the condition. This finding is consistent with a study by de-Graft Aikins et al. (2019) who found that persons living with diabetes posits that if an older generation of a family had the disease, it is likely that the new generation will have the condition. Similar to this current study, Shiyanbola et al. (2018) reported that though some of the participants in their study were not sure of what caused

diabetes, most of them held the perception that diabetes is hereditary and others perceived that it comes about as a result of a curse or inherited from ancestors.

From this study, most of the participants could not identify the disease despite the persistent signs and symptoms they experienced at the onset. They reported to the hospital when the signs and symptoms were intolerable. This finding confirms a review conducted by Zimmermann et al. (2018) who stated that most patients in their study were unable to detect that the signs and symptoms they were having was indicative of diabetes mellitus. And their inability was due to lack of knowledge about diabetes and high rate of communicable diseases in their environment.

In this section, it appears that the similarities and differences in the studies used for the discussion may spring from the cultural as well as differences in perception and beliefs in general that influence behaviour of individuals living with chronicity of diseases such as diabetes mellitus. Again, the differences and similarities in the findings of other studies compared with the current study may be due to the caliber of participants including age, educational background, religion, profession and their general world outlook to mention a few.

5.3 Beliefs of persons living with diabetes on the symptoms of diabetes mellitus

The findings of the present study showed that the participants knew the symptoms of diabetes mellitus. The findings of the study also depicted that persons living with diabetes experience physiological changes in their body which affect the performance of their activities of daily living and make them feel uncomfortable. This finding is incongruent with a study by Bayked et al. (2022) who noted from their study that persons living with diabetes disregard the physical symptoms because it is incomparable to the complications of the condition. Additionally, the participants of the current study refused to accept that they had diabetes and were unwillingly to be diagnosed of having the condition by a physician. As a

result, they did not report to the hospital until the symptoms they were experiencing became uncontrollable.

This is partly in tandem with studies by Shiyanbola et al. (2018), Kamel et al. (2017); (W. S. Shiferaw et al., 2020) who revealed that the participants of those studies were able to recognize the signs and symptoms they were experiencing such as excessive hunger and weakness as manifestations of diabetes mellitus. Furthermore, the participants of this study noted that one needed to be conversant with the physiology of his or her body to be able to recognize the changes that result from diabetes mellitus and seek medical care accordingly.

The study participants echoed that they were in tune with their bodies and were therefore able to notice the changes or persistent symptoms of the disease that was disturbing them and sought for medical attention. Contrary to the current findings, Pennebaker (2020) reported that many people lack the ability to detect physiological changes in their body, and most of those who identify these changes also misperceive it, leading to unnecessary medical expenses, preventable complications, and needless death.

5.4 Emotional responses experienced by persons living with diabetes mellitus

This study revealed that newly diagnosed persons living with diabetes experience emotional disturbance due to the long-lasting nature of the disease and the dietary restrictions related to its management. This is in consonance with a study by Tabong et al. (2018) which showed that most patients become emotionally hurt when they are initially diagnosed with diabetes mellitus due to its chronicity and lifelong treatment, especially, the dietary recommendations and lifestyle modification associated with its management.

Similarly, a study by Aweko et al. (2018) indicated that patients with diabetes perceive its management as a lifetime obligation, and feel their lives are being restricted due to the strict dietary practices they need to engage in. These increase their distress, which does

not help in the management of the condition. The participants of the present study experienced fear, hurt, pain and anxiety when they were diagnosed with diabetes mellitus.

This finding corroborates the findings of a study by da Silva et al. (2018) who revealed that the participants of their study experienced emotional distress such as despair, anxiety, preoccupation, unrest and panics when they were diagnosed with diabetes mellitus. The emotional dynamics experienced by newly diagnosed persons living with diabetes influence their acceptance or denial of the condition which in turn affect their adherence to treatment. Denial is common among persons when diagnosed with diabetes. They refuse to believe and accept the diagnosis and this interferes with their ability to seek treatment and be committed to the treatment process which finally affect the disease outcome.

According to Kalra et al. (2018) persons living with diabetes have emotional challenges such as shock, denial, anger, guilt, anxiety, fear of needles, and distress. These emotional needs are likely to affect their coping strategies which consequently increase the disease burden. A study done by Rariden (2019) also indicated that persons living with diabetes suffer diabetes distress which is mostly unseen or misdiagnosed. Therefore, diabetes distress care should be part of the comprehensive diabetes management to reduce the percentage of this population who experience this emotional burden.

Another study by Schinckus et al. (2018) reported that patients adhere to treatment when they have enough information about their condition. however, when patients have diabetes distress, the anticipated impact of health education is not achieved. This implies that the emotional burden experienced by persons living with diabetes affects their reasoning which is essential for effective diabetes management. In addition, Sendhilkumar et al. (2017) reported from their study that persons living with diabetes have high level of emotional stress and workplace issues and financial burden are contributory factors. According to Kirk and Hinton (2019) persons living with chronic illness perceive a total change in their entire

human person. This is due to the persistent signs and symptoms which affect the normal flow of their life, personality, and their relationship with others.

This is in tandem with Gabre et al. (2019) who reported that persons newly diagnosed with diabetes go through grieving process The thought of the diagnosis resonates the feeling of regret of past unhealthy habits that might have caused the disease and the benefits of self-care they need to practice. This brings a feeling of hope and despair, joy and sorrow, striving and giving up and this affects their identity as they fight for self- determination and respect as noted by Kübler-Ross and Kessler (2005) many persons go through a process to accept a situation which make them feel they have lost something valuable in life. They go through denial, anger, bargaining, depression and finally accept the situation and find practicable ways of dealing with it.

Similarly, Sadownik et al. (2020) also reported that persons battling with chronic illness go through grieving process where they feel angry and sad for losing their old healthy self , the challenges with their treatment regimen and the efforts they make to cope with their new diagnosis. Pikkemaat et al. (2019) recounted from their study that newly diagnosed persons living with diabetes reacted to the diagnosis without any sentiments. They were concerned about the complications of the disease and the burden on the family as they support them in the management and not necessarily the diagnosis. Though they agreed to modify their lifestyle, it was difficult for them to practice.

5.5 Coping strategies of persons living with diabetes mellitus

The present study showed that most of the participants had accepted the condition and devised coping strategies to enable them control the disease and move on with their lives. This finding is partly consistent with the findings of Chiaranai et al. (2018) which found that persons living with chronic illnesses such as diabetes are capable of accepting the condition and moving on with their lives. Some of the participants of the current study also echoed the

need to modify their lifestyles such as eating healthily to be able to live long despite the destructive nature of diabetes.

This finding corroborates the findings of a study by Yilmaz et al. (2019) which revealed that the participants of their study made adjustments to improve diabetes self-care practices as a means of coping with the disease. These findings are however in contrast to the findings of Hushie (2019) who reported that persons living with diabetes have poor attitude towards self-care and hold the belief that they will die whether they adhere to diabetes self-care practices or not. The participants of that study therefore preferred to die with the condition than to engage in lifestyle modification as a result of their condition.

The findings of a study conducted by Zhu et al. (2021) also shows that participants deliberately ignore having been diagnosed with diabetes including self-care practices. They confessed that, even though they have their personal glucometer at home, they refuse to monitor their blood glucose daily as prescribed by their physicians. They do not want to be restricted by the treatment regimen recommended by health care providers.

Prayers and reliance on God were identified in the present study as the religious and spiritual coping mechanisms used by persons living with diabetes to enhance their physical, psychological, and emotional wellbeing. These findings corroborate the findings of a study by Onyishi et al. (2021) which found that persons living with diabetes resort to belief in God, reliance on God, prayer, meditation and fasting to cope with their condition and/or control their condition. In addition, Albargawi and Moudi (2017) also posit that many of the participants in their study perceived that it is God who solely manages their diabetes and if it deteriorates, He alone can tell if there can be healing. Therefore, they have faith and hope in God in relation to the management of their condition.

In contrast, a study by Javanmardifard et al. (2020) has established that patients' image of God in times of illness may be inappropriate and needs to be addressed to offer the necessary assistance required to enhance diabetes management.

5.6 Perception of persons living with diabetes on the management of diabetes mellitus

The findings of this study revealed that most of the participants had sought medical care and were adhering to the medications given them by professionals as well as the appointment or review dates. They had the belief that without the medications, they would not have been able to control or manage the disease. These findings appear to contradict the findings of a study by Afaya et al. (2020) which found that persons living with type 2 diabetes mellitus in Ghana had poor adherence to treatment modalities and optimal diabetes management.

Additionally, some of the participants of the present study expressed their fear of needle pricks that comes with monitoring their blood glucose, which sometimes makes them avoid keeping to their review dates. This is similar to a study by Mogre et al. (2019) where it was revealed that patients have glucometers and can also afford glucose strips to self- test but are unable to perform self-monitoring of blood glucose levels at home because of the pain of pricking themselves.

On the contrary, the findings of a study conducted by Zhu et al. (2021) shows that participants deliberately ignore having been diagnosed with diabetes including self-care practices. They confessed that, even though they have their personal glucometer at home, they refuse to monitor their blood glucose daily as prescribed by their physicians. They do not want to be restricted by the treatment regimen recommended by health care providers.

When persons living with diabetes hold diverging views more especially the negative ones from that of their family especially their spouse, it creates so much distress for the patient in managing the condition. The participants of this study also revealed the support,

love and care they had received from their spouses, family and friends in the care and management of their condition. This finding supports a study by Berry et al. (2018) who showed that a spouse's belief has a profound influence on the belief of a person living with a disease.

Similarly, Bukhsh et al. (2020) observed from their study that support from family and friends is one of the important measures to promote compliance as the participants in their study expressed that their family help them to select their daily tablets and can easily detect when they have hypoglycaemia. Another study by Othman et al. (2020), also affirms that family is an indispensable factor in diabetes self-management. The extent of diabetes self-management is highly influenced by the patient's involvement and interpersonal and support from the family. Hushie (2019) equally asserted in their study that, patients recognize family support as key to successful diabetic self- care.

Alexandre et al. (2021) also highlighted that the participation of family and friends in the care and self-management practices of persons living with diabetes mellitus improve diabetes management. Furthermore, the provision of resource by family and significant others helps persons living with diabetes mellitus to manage their condition very well. They added that family members will be very helpful when they know about diabetes mellitus in order to be more supportive and understanding in assisting to manage the disease. This finding is in consonance with a study by Pamungkas et al. (2017) who revealed that family support had a positive effect on the management of diabetes and suggested the involvement of the family in improving diabetes care.

In addition, Hu et al. (2021) also reported from their study that persons living with diabetes receive various support from their family which help them to control the disease. The family helps them to make informed choices about their diet and encourage them to exercise and there is an effective communication between them which is helpful in achieving

a good glycaemic control. This finding is also in conformity with Suglo and Evans (2020) who discovered from their study that family support and the acceptance of the condition are key factors that augment diabetes self-management.

Though many studies have revealed the participants' appreciation for the diverse support received from the family, Shiyanbola et al. (2018) reported a contrary view from their study when the participants expressed that living with diabetes mellitus has affected their relationship with their family members because they felt like infants because they feel controlled by the family because of their condition.

5.7 Effectiveness of the Common-Sense Model

The constructs of the model are general perception, beliefs, emotional response, coping strategies and perception on management. The objectives and the research questions were derived from the constructs of the model which guided the study. The model was appropriate with the selected title of the thesis and all the five constructs were explored. The model was useful because it linked the researcher to new ideas and determined the most appropriate research method to be used to achieve the desired results.

The model centres on how individuals' beliefs and perception of illness affect their health- seeking behaviour and that is exactly what the researcher desired to explore about persons living with diabetes mellitus. Though the model guided the researcher to explore, it identified the limitation through the constructs from which the study objectives and questions were derived. It helped the researcher to ask the right questions and meaningful responses were elicited from participants of the study which has led to the accurate findings of this study.

5.8 Summary of Discussion Section

In summary, the socio-cultural dynamics of a person truly influence their health seeking behaviour. This current study shows that newly diagnosed persons living with diabetes perceive diabetes mellitus to be a medical condition and are poised to modify their lifestyle and adhere to physicians' recommendations. Though most of them do not have in-depth knowledge about the disease, they encouraged others living with the condition to report first to the hospital for better glycaemic control. The information that some received from herbalists on some social media platforms confused them. They are in a dilemma either to follow the medical directives or resort to herbal preparations which they were told could cure the disease.

The next section is chapter six which centres on summary, implications, limitations, conclusion

and recommendations of the study.

CHAPTER SIX

SUMMARY, IMPLICATIONS, LIMITATIONS, CONCLUSION AND RECOMMENDATIONS

6.1 Introduction

This chapter focuses on the summary of the study, implications of the study, implications for policy formulation, implication for nursing practice, implications for future research, as well as highlights the limitations of the study, how the study has influenced me as a nurse and as a Ghanaian, conclusion, and recommendations.

6.2 Summary of the study

In order to meet the set objectives of the study, the researcher shared in the views of the interpretivist's orientation of research to make it possible to explore and describe the perception of the participants in their own words. As argued by Alharahsheh et al. (2020), the interpretivist paradigm helps the researcher to acquire deeper insight through seeking experiences and perceptions of a particular population in a specified social context. The interpretivist explores and describes the phenomenon in the words of the people involved and this helps to get the accurate and unbiased information.

According to Pham (2018) the interpretivist have a relativist worldview in which a specific phenomenon may have multiple meanings rather than a truth that can be ascertained through measurement. Thus, the application of this paradigm to guide the study as the researcher aimed to explore and describe the different views of the participants in their context.

The first objective was to explore the general perception of newly diagnosed persons living with diabetes mellitus. The general knowledge about the condition was poor. The participants had diverging views on the causes of diabetes. Some attributed it to poor eating

habit, late eating, and excessive intake of sugar containing meals. It was shown from the findings that persons living with diabetes perceive it to be a medical condition, which is hereditary and thus encourage others to seek medical attention immediately they observe the signs and symptoms.

The second objective was to describe the beliefs of newly diagnosed persons living with diabetes on the symptoms of diabetes mellitus. From the findings, the participants described the persistent symptoms to be burdensome as it interrupted their activities of daily living and thus took it seriously and reported to the hospital for physician assistance.

With the third objective, the emotional response experienced by newly diagnosed persons living with diabetes mellitus was explored. It was revealed that most of the participants were sad and disappointed when they were diagnosed. Most of them accepted the condition and rather sought better ways of coping with it. The fourth objective described the coping strategies of newly diagnosed persons living with diabetes mellitus. It was revealed that they had devised coping strategies to control the disease after accepting it as their fate. Some mentioned the immense support they receive from their spouses, family, and friends. Others had also modified their lifestyles to promote positive self-care practices.

The last objective explored the perception of newly diagnosed persons on the management of diabetes mellitus. The findings showed that most of them prefer orthodox medication and adhere to it to be able to control the disease and prevent the complications. Finally, it was discovered that persons living with diabetes do not often go for their reviews because of the fear of needle pricks, which is done to monitor their plasma glucose level.

6.3 Implications of the study

The findings of this study have noted some implications for policy formulations, nursing practice, and for future nursing research into the subject.

6.3.1 Implications for policy formulation

- Quality health care delivery and controlling of disease thrives on effective health education. Therefore, educating newly diagnosed persons living with diabetes should be viewed as an urgent intervention that requires prompt intervention. Nurses should intensify public health education programmes through seminars and workshops and it should be supported by the Ministry of Health, Ghana Health Service, and other related agencies to educate the general population on this destructive illness to decrease the spread and reduce the complications.
- Policy should be formulated by the Ministry of Health, Ghana Health Service in collaboration with the Ghana Media Commission. In this regard, investigation committee constituting these bodies should vet and validate advertisement on television and radios by herbalists that has the tendency to mislead the populace about curing chronic conditions such as diabetes before being aired. Media houses that refuse to adhere to this instruction should be punished together with the herbalists and the presenter that host such programmes to deter others from indulging in that act. This policy implication builds on a strategy proposed by Korsah and Domfeh (2020) who after their study stated that policy should be formulated by the Ministry of Health, Ghana Health Service in connection with the Christian Council of Ghana, Pentecostal Council of Ghana, and the Charismatic Churches Association so that they can regulate television and radio advertisement. They added that television and radio advertisement that has the tendency to promote unhealthy practices of spiritual and faith healers should be rejected. Moreso, media houses which violate the policy should be punished to deter them from subsequent unwholesome health advertisement. In addition, all advertisement about spiritual healing of chronic illness

specifically diabetes should be examined and endorsed by regulatory body before they are disseminated (Korsah & Domfeh, 2020).

6.3.2 Implications for nursing practice

- Most of the participants did not report to the hospital not because they did not accept the diagnosis but due to the fear of needle pricks. This highlights the need for nurses to creatively find ways of minimizing the pain that comes from needle pricks. A study by Ullah and Pienaar (2021) reported that patients living with diabetes mellitus desire a prick at the side of the fingertip rather than the pad of the fingertip due to the intense pain at the pad. Therefore, a gentle prick at the lateral of the fingertip is highly recommended to reduce the pain. Diversional therapy can be employed as the nurse pricks a patient. For example, the nurse can engage the patient in an interesting chat that will distract their attention from the pain they would be anticipating from the needle prick. In addition, a sharp lancet should be used with the depth adjusted and the site alternated.
- Nurses need to be more sensitive to the cultural values and beliefs of patients to be able to give appropriate, culturally sensitive care, and holistic nursing interventions. Nurses should learn about the culture of the people in the setting where they work in order to have a better understanding of how to care for the patients. For example, if nurses understand the beliefs and perceptions of individuals living diabetes, these may offer the nurses a better understanding of how to develop tailored or personalized as well as individualized health education for the patients. In addition, improve on their communication skills to help patients share their thoughts about their diagnosis and educate them accordingly.

6.3.3 Implications for future research

The study has identified further areas that can be researched into in the future. The current study explored patients' socio-cultural dynamics of living with diabetes mellitus. Future studies can be conducted on a larger sample using quantitative research method to explore the socio-cultural dynamics of persons living with diabetes across different contexts and to compare the socio-cultural beliefs between male and female patients living with diabetes mellitus.

In addition, further work may be done to bring about a reliable measuring tool to measure the health belief and perception of persons living with diabetes mellitus. Moreso, a study may be done on the influence of family support on the management and coping strategies of persons living with diabetes mellitus to know the effects family support have on management and coping skills of diabetes. Researchers can also explore more suitable ways to monitor blood glucose level with minimal pain or without pricking patients.

6.4 Limitations of the study

Even though the study has revealed insight that is beneficial, it has some limitations that is worth noting. That is, only newly diagnosed patients who are within one year after being diagnosed were recruited for the study at only one selected hospital where they receive care. Thus, the finding cannot be generalized to the entire population of all persons living with diabetes mellitus. However, the study findings and implications which are insightful may be utilized in practical sense for newly diagnosed persons living with diabetes in similar contexts or multiple sites.

6.5 Conclusion

The outcome of the study depicted that most of the participants did not have in-depth knowledge about the condition and some related the cause to late night eating. Some believed

it is caused by an evil spirit though most of them perceived it to be a medical condition. Others also believed it is God who has given it to them and will cure them. Therefore, even though they were sad and anxious about the diagnosis and the signs and symptoms unbearable, they are hopeful that God will heal them. Notable among the findings is that most of them are unfaithful to their appointment dates because of the fear of needle pricks during the monitoring of their blood glucose level.

The participants had also modified their lifestyle such as avoiding eating late in the night, and eating their meals without adding sugar to be able to control the condition.

They acknowledged the constant support they receive from their family in managing the condition without which they would have died. Most of them have accepted the condition and are striving to follow the treatment regimen to live longer and encouraged others to make the hospital their first point of contact when they experience the signs and symptoms and not to attribute them to witchcraft and similar forces. Some of them were confused about the information from herbalists on the social media that claim to cure diabetes. There is therefore the need to advance the public education in general about diabetes mellitus, and particularly among patients newly diagnosed with the condition.

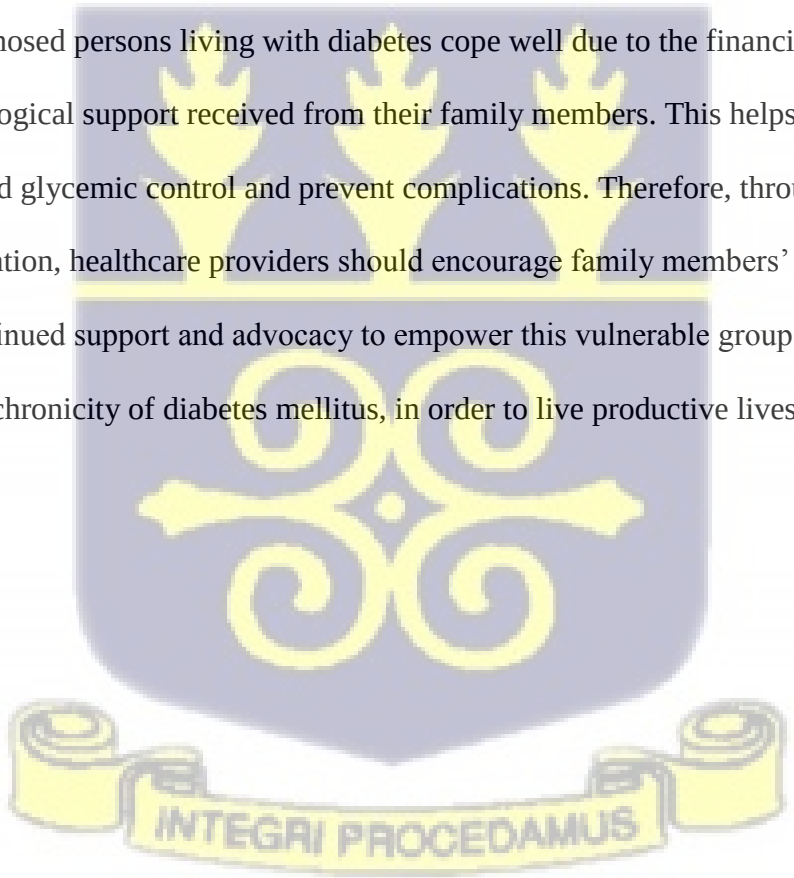
6.6 Recommendations

Based on the discussions and the findings of the study, the researcher identified the following recommendations in addressing the gap in the management and control of diabetes in Ghana:

- Accurate and reliable source of information is important to promoting the coping strategies of persons living with diabetes. Their inability to grasp the right health information can be detrimental to their condition. Therefore, after patients' diagnosis, nurses should spend quality time with patients to give detailed information about their disease condition. The causes, management and complications should be made known

and allow them to express their thoughts and ask questions bothering them. The patients should be encouraged to approach the nurses at any time they have questions and need clarifications. This will help them to obtain the necessary information needed at the initial phase of their diagnosis. In addition, the health care team will understand the perspective of the patient on the condition and intervene accordingly to promote health and minimize complications.

- Health care providers especially nurses should intensify following up on patients newly diagnosed with diabetes mellitus through telephone calls, text messaging or home visits to ascertain their adherence to treatment regimen and to encourage their relatives to support them in the management of the condition.
- Newly diagnosed persons living with diabetes cope well due to the financial, emotional, and psychological support received from their family members. This helps them to achieve good glycemic control and prevent complications. Therefore, through public health education, healthcare providers should encourage family members' and significant others' continued support and advocacy to empower this vulnerable group of individuals living with chronicity of diabetes mellitus, in order to live productive lives.



REFERENCE

Abdulrehman, M. S., Woith, W., Jenkins, S., Kossman, S., & Hunter, G. L. (2016). Exploring cultural influences of self-management of diabetes in coastal Kenya: an ethnography. *Global qualitative nursing research*, *3*, 2333393616641825.

Abolghasemi, R., & Sedaghat, M. (2015). The Patient's Attitude Toward Type 2 Diabetes Mellitus, a Qualitative Study. *Journal of Religion and Health*, *54*(4), 1191-1205. https://doi.org/10.1007/s10943-014-9848-9

Abouammoh, N. A., & Alshamrani, M. A. J. J. o. d. r. (2020). Knowledge about diabetes and glycemic control among diabetic patients in Saudi Arabia. *2020*.

Adinortey, M. B., Agbeko, R., Boison, D., Ekloh, W., Kuatsienu, L. E., Biney, E. E., . . . Nyarko, A. K. (2019). Phytomedicines Used for Diabetes Mellitus in Ghana: A Systematic Search and Review of Preclinical and Clinical Evidence. *Evidence-based Complementary & Alternative Medicine (eCAM)*, 1-23. https://doi.org/10.1155/2019/6021209

Afaya, Adongo, R., Bam, V., Azongo, T. B., Afaya, A., Kusi-Amponsah, A., . . . Abdul Hamid, T. (2020). Medication adherence and self-care behaviours among patients with type 2 diabetes mellitus in Ghana. *PLoS One*, *15*(8), e0237710-e0237710. https://doi.org/10.1371/journal.pone.0237710

Alaofè, H., Hounkpatin, W. A., Djrolo, F., Ehiri, J., & Rosales, C. (2021). Knowledge, attitude, practice and associated factors among patients with type 2 diabetes in Cotonou, Southern Benin [Article]. *BMC Public Health*, *21*(1), Article 339. https://doi.org/10.1186/s12889-021-10289-8

Albargawi, & Moudi. (2017). Influence of Health Beliefs on Diabetes Self-Care in Saudi Adults. *Influence of Health Beliefs on Diabetes Self-Care in Saudi Adults*, 1-1. https://search.ebscohost.com/login.aspx?direct=true&db=ccm&AN=124662398&site=ehost-live

Albargawi, Moudi, Snethen, Julia, Gannass, L., A. A., & Kelber, S. (2016). Perception of persons with type 2 diabetes mellitus in Saudi Arabia. *International Journal of*

Nursing Sciences, *3*(1), 39-44. https://doi.org/https://doi.org/10.1016/j.ijnss.2016.02.007

Alexandre, K., Campbell, J., Bugnon, M., Henry, C., Schaub, C., Serex, M., . . . Peytremann-Bridevaux, I. (2021). Factors influencing diabetes self-management in adults: an umbrella review of systematic reviews. *JBI Evidence Synthesis*, *19*(5), 1003-1118. https://doi.org/10.11124/JBIES-20-00020

Alharahsheh, H. H., Pius, A. J. G. A. J. o. H., & Sciences, S. (2020). A review of key paradigms: Positivism VS interpretivism. *2*(3), 39-43.

Aljofan, M., Altebainawi, A., & Alrashidi, M. N. (2019). Public knowledge, attitude and practice toward diabetes mellitus in Hail region, Saudi Arabia. *International journal of general medicine*, *12*, 255-262. https://doi.org/10.2147/IJGM.S214441

Aljuaid, M. O., Almutairi, A. M., Assiri, M. A., Almalki, D. M., & Alswat, K. J. J. o. D. R. (2018). Diabetes-related distress assessment among type 2 diabetes patients. *2018*.

Almansour, H. A., Chaar, B., & Saini, B. (2018). Perspectives and experiences of patients with type 2 diabetes observing the Ramadan fast. *Ethnicity & health*, *23*(4), 380-396. https://doi.org/10.1080/13557858.2016.1269156

Alshmemri, & Mohammad. (2021). Exploring the cultural competency of Expatriate Nurses working in Saudi Arabia. *Indian Journal of Science and Technology*, *14*(17), 1347-1353. https://doi.org/10.17485/IJST/v14i17.437

Alsubhi, L., Kendall, P., Al-Shafaee, M., & AlAdawi, S. (2016). Health Beliefs of People with Type 2 Diabetes in Primary Health Care in Muscat, Oman: A Qualitative Approach. *International Journal of Clinical Nutrition & Dietetics*, *2*. https://doi.org/10.15344/2456-8171/2016/106

Amoakoh, H. B., Klipstein-Grobusch, K., Amoakoh-Coleman, M., Agyepong, I. A., Kayode, G. A., Sarpong, C., . . . Ansah, E. K. J. T. (2017). The effect of a clinical decision-making mHealth support system on maternal and neonatal mortality and morbidity in Ghana: study protocol for a cluster randomized controlled trial. *18*(1), 1-11.

Arifin, B., Probandari, A., Purba, A. K. R., Perwitasari, D. A., Schuiling-Veninga, C., Atthobari, J., . . . Postma, M. J. J. Q. o. L. R. (2020a). 'Diabetes is a gift from god'a qualitative study coping with diabetes distress by Indonesian outpatients. *29*(1), 109-125.

Arifin, B., Probandari, A., Purba, A. K. R., Perwitasari, D. A., Schuiling-Veninga, C. C., Atthobari, J., . . . Postma, M. J. J. Q. o. L. R. (2020b). 'Diabetes is a gift from god'a qualitative study coping with diabetes distress by Indonesian outpatients. *29*(1), 109-125.

Asamoah-Boaheng, M., Sarfo-Kantanka, O., Tuffour, A. B., Eghan, B., & Mbanya, J. C. (2018). Prevalence and risk factors for diabetes mellitus among adults in Ghana: a systematic review and meta-analysis. *International Health*, *11*(2), 83-92. https://doi.org/10.1093/inthealth/ihy067

Asamoah-Boaheng, M., Sarfo-Kantanka, O., Tuffour, A. B., Eghan, B., & Mbanya, J. C. (2019). Prevalence and risk factors for diabetes mellitus among adults in Ghana: a systematic review and meta-analysis. *Int Health*, *11*(2), 83-92. https://doi.org/10.1093/inthealth/ihy067

Aweko, J., De Man, J., Absetz, P., Östenson, C.-G., Swartling Peterson, S., Mölsted Alvesson, H., . . . health, p. (2018). Patient and provider dilemmas of type 2 diabetes self-management: a qualitative study in socioeconomically disadvantaged communities in Stockholm. *15*(9), 1810.

Bayked, E. M., Workneh, B. D., & Kahissay, M. H. (2022). Sufferings of its consequences; patients with Type 2 diabetes mellitus in North-East Ethiopia, A qualitative investigation. *Heliyon*, *8*(2), e08871. https://doi.org/https://doi.org/10.1016/j.heliyon.2022.e08871

Berry, E., Davies, M., & Dempster, M. (2018). Managing Type 2 diabetes as a couple: The influence of partners' beliefs on diabetes distress over time. *Diabetes research and clinical practice*, *141*, 244-255. https://doi.org/https://doi.org/10.1016/j.diabres.2018.05.020

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative research in psychology*, *3*(2), 77-101.

Braun, V., & Clarke, V. (2012). Thematic analysis. In *APA handbook of research methods in psychology, Vol 2: Research designs: Quantitative, qualitative, neuropsychological, and biological.* (pp. 57-71). American Psychological Association. https://doi.org/10.1037/13620-004

Broder, H. L., Tormeti, D., Kurtz, A. L., Baah-Odoom, D., Hill, R. M., Hirsch, S. M., . . . Sischo, L. (2014). Type II diabetes and oral health: perceptions among adults with diabetes and oral/health care providers in Ghana. *Community Dental Health*, *31*(3), 158-162. https://doi.org/10.1922/CDH_3329Broder05

Bukhsh, A., Goh, B.-H., Zimbudzi, E., Lo, C., Zoungas, S., Chan, K.-G., & Khan, T. M. (2020). Type 2 Diabetes Patients' Perspectives, Experiences, and Barriers Toward Diabetes-Related Self-Care: A Qualitative Study From Pakistan. *Frontiers in endocrinology*, *11*, 534873-534873. https://doi.org/10.3389/fendo.2020.534873

Burns, N., & Grove, S. K. (2009). The Practice of Nursing Research. St. Louis. In: WB Saunders, Elsevier.

Chen, C.-C., Chen, C.-L., & Ko, Y. J. J. o. D. R. (2020). The Misconceptions and Determinants of Diabetes Knowledge in Patients with Diabetes in Taiwan. *2020*.

Chiaranai, C., Chularee, S., & Srithongluang, S. J. G. N. (2018). Older people living with chronic illness. *39*(5), 513-520.

Chinsembu, K. C. (2019). Diabetes mellitus and nature's pharmacy of putative antidiabetic plants. *Journal of Herbal Medicine*, *15*, 100230. https://doi.org/https://doi.org/10.1016/j.hermed.2018.09.001

Choi, S. A., Hastings, J. F. J. J. o. R., & Thought, S. i. S. W. S. (2019). Religion, spirituality, coping, and resilience among African Americans with diabetes. *38*(1), 93-114.

Cleal, B., Willaing, I., Stuckey, H., Peyrot, M. J. D. r., & practice, c. (2019). Work matters: Diabetes and worklife in the second diabetes attitudes, wishes and needs (DAWN2) study. *150*, 90-98.

Cohen, L, Manion, L., & Morisson, K. (2011). Research Methods in Education. . In. London ; New York :Rutledge.

Cohen, RM, E., O'neill, J. M., Joffres, M., Upshur, R. E., & Mills, E. J. D. w. b. (2009). Reporting of informed consent, standard of care and post- trial obligations in global randomized intervention trials: a systematic survey of registered trials. *9*(2), 74-80.

Concha, J. B., Mayer, S. D., Mezuk, B. R., & Avula, D. J. T. D. E. (2016). Diabetes causation beliefs among Spanish-speaking patients. *42*(1), 116-125.

Connelly, L. M. J. M. N. (2016). Trustworthiness in qualitative research. *25*(6), 435.

da Silva, J. A., de Souza, E. C. F., Böschemeier, A. G. E., da Costa, C. C. M., Bezerra, H. S., & Feitosa, E. E. L. C. J. B. P. H. (2018). Diagnosis of diabetes mellitus and living with a chronic condition: participatory study. *18*(1), 1-8.

Damtie, S., Biadgo, B., Baynes, H. W., Ambachew, S., Melak, T., Asmelash, D., & Abebe, M. (2018). Chronic Kidney Disease and Associated Risk Factors Assessment among Diabetes Mellitus Patients at A Tertiary Hospital, Northwest Ethiopia. *Ethiop J Health Sci*, *28*(6), 691-700. https://doi.org/10.4314/ejhs.v28i6.3

Davies, M. J. M. (2019). Psychological aspects of diabetes management. *47*(2), 131-134.

de-Graft Aikins, A., Dodoo, F., Awuah, R. B., Owusu-Dabo, E., Addo, J., Nicolaou, M., . . . Bahendeka, S. J. P. o. (2019). Knowledge and perceptions of type 2 diabetes among Ghanaian migrants in three European countries and Ghanaians in rural and urban Ghana: The RODAM qualitative study. *14*(4), e0214501.

de Wit, M., Trief, P., Huber, J., & Willaing, I. J. D. M. (2020). State of the art: understanding and integration of the social context in diabetes care. *37*(3), 473-482.

Dictionary, M.-W. J. A. o. w. m.-w. c. d. v. r. (2021). Definition of virtual reality.

Duma, & Sinegugu. (2006). Women's journey of recovery from sexual assault trauma: a grounded theory

University of Cape Town.

Easwar, A., Gaudani, A., Gandhi, A., Patel, M., & Christian, D. S. J. G. J. M. S. (2018). A study on the myths and misconceptions of Diabetes Mellitus among diabetic patients attending tertiary care institute of Ahmedabad City, Gujarat. *7*, 22-27.

Edo, A. E., & Edo, G. O. (2016). Clinical and biochemical characteristics of newly diagnosed diabetics in South-South Nigeria [Article]. *Nigerian Journal of Basic & Clinical Sciences*, *13*(1), 19-22. https://doi.org/10.4103/0331-8540.172146

El-Sayed, E. F., Awadalla, H., Noor, S. K., Elmadhoun, W. M., Sulaiman, A. A., Almobarak, A. O., & Ahmed, M. H. (2018). Sugar intake in Sudanese individuals was associated with some features of the metabolic syndrome: population based study. *Diabetes & Metabolic Syndrome: Clinical Research & Reviews*, *12*(3), 245-250.

Eledrisi, M. S., Beshyah, S. A., & Malik, R. A. (2021). Management of diabetic ketoacidosis in special populations. *Diabetes research and clinical practice*, *174*, 108744. https://doi.org/https://doi.org/10.1016/j.diabres.2021.108744

Engel, G. L. (1977). The need for a new medical model: a challenge for biomedicine. *Science*, *196*(4286), 129-136.

Fisher, L., Hessler, D., Polonsky, W., Strycker, L., Guzman, S., Bowyer, V., . . . Masharani, U. (2018). Emotion regulation contributes to the development of diabetes distress among adults with type 1 diabetes. *Patient Education and Counseling*, *101*(1), 124-131. https://doi.org/https://doi.org/10.1016/j.pec.2017.06.036

FitzPatrick, B. J. C. i. P. T., & Learning. (2019). Validity in qualitative health education research. *11*(2), 211-217.

Flick, U. (2017). *The Sage handbook of qualitative data collection*. Sage.

Gabre, M., Wireklint Sundström, B., & Olausson, S. (2019). 'A little good with the bad': Newly diagnosed type 2 diabetes patients' perspectives on self-care: A phenomenological approach. *Nordic Journal of Nursing Research*, *39*(1), 20-28.

García, A. A., Bose, E., Zuñiga, J. A., & Zhang, W. (2019). Mexican Americans' diabetes symptom prevalence, burden, and clusters. *Applied Nursing Research*, *46*, 37-42. https://doi.org/10.1016/j.apnr.2019.02.002

Giri, M., & Putra, A. (2020). *Perceptions and Needs Among Diabetes Patients: A Qualitative Study*. https://doi.org/10.2991/assehr.k.200115.033

Goeke, B. J. B., Gesundheitsforschung, Gesundheitsschutz. (2020). The treatment of diabetes mellitus: myths and evidence.

Goins, R. T., Jones, J., Schure, M. B., Winchester, B., & Bradley, V. (2018). Type 2 diabetes management among older American Indians: Beliefs, attitudes, and practices [article in journal/newspaper]. http://ezproxy.ug.edu.gh:2048/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=edsbas&AN=edsbas.D4D920AA&site=eds-live

Gómez-Pimienta, E., González-Castro, T. B., Fresan, A., Juárez-Rojop, I. E., Martínez-López, M. C., Barjau-Madrigal, H. A., . . . health, p. (2019). Decreased quality of life in individuals with type 2 diabetes mellitus is associated with emotional distress. *16*(15), 2652.

Gopisetty, D., Levine, B., Liu, N., Younge, P., Brown, A., Close, K. L., & Wood, R. (2018). How Does Diabetes Affect Daily Life? A Beyond-A1C Perspective on Unmet Needs. *Clinical diabetes : a publication of the American Diabetes Association*, *36*(2), 133-137. https://doi.org/10.2337/cd17-0093

Grove, S. K., Burns, N., & Gray, J. (2013). *The practice of nursing research : appraisal, synthesis, and generation of evidence*. Elsevier/Saunders.

Gupta, L., Khandelwal, D., Dutta, D., Kalra, S., Lal, P. R., & Gupta, Y. (2018). The Twin White Herrings: Salt and Sugar. *Indian journal of endocrinology and metabolism*, *22*(4), 542-551. https://doi.org/10.4103/ijem.IJEM_117_18

Hanson, J. L., Balmer, D. F., & Giardino, A. P. (2011). Qualitative research methods for medical educators. *Academic Pediatrics*, *11*(5), 375-386. http://ac.els-cdn.com/S1876285911001318/1-s2.0-S1876285911001318-main.pdf?_tid=1a832dcc-f07c-11e5-ba67-00000aab0f6c&acdnat=1458685331_1249ddbfe62ba67efc5b0dff1d226f9c

http://ac.els-cdn.com/S1876285911001318/1-s2.0-S1876285911001318-main.pdf?_tid=c8ee242a-7cdb-11e6-91e7-00000aacb361&acdnat=1474119589_ebb5c1afeddcf7fe6f48c3d31fd92175

Hassanein, M. M., Hanif, W., Malek, R., & Jabbar, A. (2021). Changes in fasting patterns during Ramadan, and associated clinical outcomes in adults with type 2 diabetes: A narrative review of epidemiological studies over the last 20 years. *Diabetes research and clinical practice*, *172*, 108584. https://doi.org/https://doi.org/10.1016/j.diabres.2020.108584

Hjelm, Katarina, & Mufunda, E. (2010). Zimbabwean diabetics' beliefs about health and illness: an interview study. *BMC International Health and Human Rights*, *10*(1), 7. https://doi.org/10.1186/1472-698X-10-7

Hochbaum, G. M. (1958). *Public participation in medical screening programs: A socio-psychological study*. US Department of Health, Education, and Welfare, Public Health Service ….

Hoorsan, R., Lamyian, M., Ahmadi, F., & Azin, S. A. (2021). Quality of Sexual Life in Iranian Women with Diabetes: Psychosocial and Cultural Aspects. *Sexuality & Disability*, *39*(2), 261-274. https://doi.org/10.1007/s11195-021-09683-2

Houghton, C., Casey, D., Shaw, D., & Murphy, K. (2013). Rigour in qualitative case-study research. *Nurse Researcher*, *20*(4), 12-17.

Hu, J., Mion, L. C., Tan, A., Du, Y., Chang, M.-W., Miller, C., & Joseph, J. J. (2021). Perceptions of African American adults with type 2 diabetes on family support: Type, quality, and recommendations. *The Science of Diabetes Self-Management and Care*, *47*(4), 302-311.

Hushie, M. (2019). Exploring the barriers and facilitators of dietary self-care for type 2 diabetes: a qualitative study in Ghana. *Health promotion perspectives*, *9*(3), 223-232. https://doi.org/10.15171/hpp.2019.31

International Diabetes Federation. (2019). *IDF Diabetes Atlas* (9th ed.). https://www.idf.org/e-library/epidemiology-research/diabetes-atlas/159-idf-diabetes-atlas-ninth-edition-2019.html

Iregbu, S., & Iregbu, F. (2016). A review of self-management of diabetes in Africa. *Afr J Diabetes Med*, *24*(2).

Javanmardifard, S., Heidari, S., Sanjari, M., Yazdanmehr, M., Shirazi, F. J. J. o. D., & Disorders, M. (2020). The relationship between spiritual well-being and hope, and adherence to treatment regimen in patients with diabetes. *19*(2), 941-950.

Jones, V., & Crowe, M. (2017). How people from ethnic minorities describe their experiences of managing type-2 diabetes mellitus: A qualitative meta-synthesis. *International journal of nursing studies*, *76*, 78-91. https://doi.org/https://doi.org/10.1016/j.ijnurstu.2017.08.016

Juhannis, H., Nildawati, Habibi, Satrianegara, M. F., Amansyah, M., & Syarifuddin, N. (2021). Community beliefs toward causes of illness: cross cultural studies in Tolotang and Ammatoa Ethnics in Indonesia. *Gaceta Sanitaria*, *35*, S19-S22. https://doi.org/https://doi.org/10.1016/j.gaceta.2020.12.006

Kalra, S., Jena, B. N., & Yeravdekar, R. (2018). Emotional and Psychological Needs of People with Diabetes. *Indian journal of endocrinology and metabolism*, *22*(5), 696-704. https://doi.org/10.4103/ijem.IJEM_579_17

Kamel, F. O., Magadmi, R. M., Hagras, M. M., Magadmi, B., & AlAhmad, R. A. J. C. t. i. c. p. (2017). Knowledge, attitude, and beliefs toward traditional herbal medicine use among diabetics in Jeddah Saudi Arabia. *29*, 207-212.

Kasole, R., Martin, H. D., & Kimiywe, J. (2019). Traditional Medicine and Its Role in the Management of Diabetes Mellitus: "Patients' and Herbalists' Perspectives". *Evidence-Based Complementary and Alternative Medicine*, *2019*, 2835691. https://doi.org/10.1155/2019/2835691

Kirk, S., & Hinton, D. (2019). "I'm not what I used to be": A qualitative study exploring how young people experience being diagnosed with a chronic illness. *Child: care, health and development*, *45*(2), 216-226.

Korsah, KA, & Mensah, D. (2018). Are we doing enough in Diabetes Care? Lessons from a Hermeneutic Phenomenological Investigation.

Korsah, K. A., & Domfeh, K. A. (2020). Research Topic: The realities of religious coping experiences of patients with diabetes mellitus: Implications for policy formulation in Ghana. *International Journal of Africa Nursing Sciences*, *13*, 100245.

Korsah, K. A., Dyson, S., & Anthony, D. (2022). Experiences and cultural beliefs of patients with diabetes: Lessons for nursing practice, education and policy. *International Journal of Africa Nursing Sciences*, *16*, 100392. https://doi.org/https://doi.org/10.1016/j.ijans.2021.100392

Kübler-Ross, E., & Kessler, D. (2005). *On grief and grieving: Finding the meaning of grief through the five stages of loss*. Simon and Schuster.

Kugbey, N., Asante, K. O., & Adulai, K. J. B. r. n. (2017). Illness perception, diabetes knowledge and self-care practices among type-2 diabetes patients: a cross-sectional study. *10*(1), 1-7.

Leventhal, Howard, Benyamini, Y., & Shafer, C. (2014). Lay beliefs about health and illness. In *Cambridge Handbook of Psychology, Health and Medicine, Second Edition* (pp. 124-128). Cambridge University Press.

Leventhal, Howard, & harwood, Y. (1997). H, Brownlee S, Diefenbach M, Leventhal EA, Patrick-Miller L, Robitaille C. 19-46.

Leventhal, Phillips, L. A., & Burns, E. J. J. o. b. m. (2016). The Common-Sense Model of Self-Regulation (CSM): a dynamic framework for understanding illness self-management. *39*(6), 935-946.

Li-Geng, T., Kilham, J., & McLeod, K. M. (2020). Cultural Influences on Dietary Self-Management of Type 2 Diabetes in East Asian Americans: A Mixed-Methods Systematic Review. *Health Equity*, *4*(1), 31-42. https://doi.org/10.1089/heq.2019.0087

Meresa, A., Gemechu, W., Basha, H., Fekadu, N., Teka, F., Ashebir, R., & Tadele, A. J. A. J. o. A. D. D. (2017). Herbal medicines for the management of diabetic mellitus in Ethiopia and Eretria including their phytochemical constituents. *5*(1), 40-58.

Michael, O. A., Gbadebo, A. O., Akinlade, A. J. A. o. M., & Research, H. S. (2018). Prevalence, pattern and determinants of myths and misconceptions among patients with diabetes mellitus in south West Nigeria. *8*(2).

Mogre, Victor, Johnson, A., N., Tzelepis, Flora, . . . Christine. (2019). Barriers to diabetic self-care: A qualitative study of patients' and healthcare providers' perspectives. *28*(11-12), 2296-2308. https://doi.org/https://doi.org/10.1111/jocn.14835

Mogre, V., Abanga, Z. O., Tzelepis, F., Johnson, N. A., & Paul, C. (2017). Adherence to and factors associated with self-care behaviours in type 2 diabetes patients in Ghana. *BMC Endocrine Disorders*, *17*, 1-8. https://doi.org/10.1186/s12902-017-0169-3

Mugah, M. S., & Muhati, C. (2016). Socio-cultural dynamics influencing diabetes control: a case study of Vihiga District Hospital, Kenya. *Int J Sci Res Innov Technol*, *3*(2), 139-159.

Nie, R., Han, Y., Xu, J., Huang, Q., & Mao, J. (2018). Illness perception, risk perception and health promotion self-care behaviors among Chinese patient with type 2 diabetes: A cross-sectional survey. *Applied Nursing Research*, *39*, 89-96. https://doi.org/https://doi.org/10.1016/j.apnr.2017.11.010

Nishio, I., & Chujo, M. J. Y. a. m. (2017). Self-stigma of Patients with Type 1 Diabetes and Their Coping Strategies Self-stigma of patients with type 1 diabetes. *60*(3), 167-173.

Omodara, D. A., Gibson, L., & Bowpitt, G. (2021). Exploring the impact of cultural beliefs in the self-management of type 2 diabetes among Black sub-Saharan Africans in the UK - a qualitative study informed by the PEN-3 cultural model. *Ethn Health*, 1-19. https://doi.org/10.1080/13557858.2021.1881764

Onyishi, Ilechukwu, L. C., Victor-Aigbodion, V., & Eseadi, C. (2021). Impact of spiritual beliefs and faith-based interventions on diabetes management. *World journal of diabetes*, *12*(5), 630-641. https://doi.org/10.4239/wjd.v12.i5.630

Othman, N., Wong, Y. Y., Lean, Q. Y., Mohd Noor, N., & Neoh, C. F. (2020). Factors affecting self-management among adolescents and youths with type 2 diabetes mellitus: A meta-synthesis. *European Journal of Integrative Medicine*, *40*, 101228. https://doi.org/https://doi.org/10.1016/j.eujim.2020.101228

Pamungkas, R. A., Chamroonsawasdi, K., & Vatanasomboon, P. J. B. S. (2017). A systematic review: family support integrated with diabetes self-management among uncontrolled type II diabetes mellitus patients. *7*(3), 62.

Patel, N. R., Chew-Graham, C., Bundy, C., Kennedy, A., Blickem, C., & Reeves, D. (2015). Illness beliefs and the sociocultural context of diabetes self-management in British South Asians: a mixed methods study. *BMC Fam Pract*, *16*, 58. https://doi.org/10.1186/s12875-015-0269-y

Pennebaker, J. W. (2020). Accuracy of symptom perception. In *Handbook of Psychology and Health (Volume IV)* (pp. 189-217). Routledge.

Petrie, K. J., & Jones, A. S. (2019). Coping with chronic illness.

Pham, L. (2018). *A Review of key paradigms: positivism, interpretivism and critical inquiry*. https://doi.org/10.13140/RG.2.2.13995.54569

Phillippi, J., & Lauderdale, J. (2018). A Guide to Field Notes for Qualitative Research: Context and Conversation. *28*(3), 381-388. https://doi.org/10.1177/1049732317697102

Pikkemaat, M., Boström, K. B., & Strandberg, E. L. (2019). "I have got diabetes!" – interviews of patients newly diagnosed with type 2 diabetes. *BMC endocrine disorders*, *19*(1), 53. https://doi.org/10.1186/s12902-019-0380-5

Polit, D. F., & Beck, C. T. (2013). *Essentials of nursing research: Appraising evidence for nursing practice*. Lippincott Williams & Wilkins.

Profetto-McGrath, J., Polit, D. F., & Beck, C. T. (2010). *Canadian essentials of nursing research*. Lippincott Williams & Wilkins.

Purewal, R., Fisher, P. L. J. D. r., & practice, c. (2018). The contribution of illness perceptions and metacognitive beliefs to anxiety and depression in adults with diabetes. *136*, 16-22.

Qamar, MUHAMMAD, IQUBAL, R. R. M., AHMAD, S., SHAIKH, F. A., & ISMAIL, N. E. J. A. J. P. C. R. (2017). Awareness of diabetes mellitus among general public in Shah Alam, Malaysia: A cross-sectional study. *10*(9), 192-196.

Rariden, C. (2019). Diabetes Distress: Assessment and Management of the Emotional Aspect of Diabetes Mellitus. *The Journal for Nurse Practitioners*, *15*(9), 653-656. https://doi.org/https://doi.org/10.1016/j.nurpra.2019.06.020

Rogon, I., Kasprzak, Z., & Szcześniak, Ł. J. P. m. M. r. (2017). Perceived quality of life and acceptance of illness in people with type 2 diabetes mellitus. *16*(3), 79.

Romano, M., Tandberg, J., & Pørksen, L. S. (2020). IS DOING GOOD EQUIVALENT TO DOING WELL?

Rosenstock, I. M. (1974). Historical origins of the health belief model. *Health education monographs*, *2*(4), 328-335.

Sadownik, L. A., Koert, E., Maher, C., & Smith, K. B. (2020). A qualitative exploration of women's experiences of living with chronic vulvar dermatoses. *The Journal of Sexual Medicine*, *17*(9), 1740-1750.

Sapkota, S., Jo-Brien, a. E., & Aslani, P. (2020). Nepalese patients' perceptions of treatment modalities for type 2 diabetes. *Patient Preference and Adherence*, 1777. https://doi.org/10.2147/PPA.S113467

Sasso, L., Bagnasco, A., Catania, G., Zanini, M., Aleo, G., Watson, R., & Management, R. C. I. W. G. J. J. o. N. (2019). Push and pull factors of nurses' intention to leave. *27*(5), 946-954.

Saunders, B., Sim, J., Kingstone, T., Baker, S., Waterfield, J., Bartlam, B., . . . Jinks, C. (2018). Saturation in qualitative research: exploring its conceptualization and operationalization. *Quality & Quantity*, *52*(4), 1893-1907. https://doi.org/10.1007/s11135-017-0574-8

Schinckus, L., Dangoisse, F., Van den Broucke, S., & Mikolajczak, M. (2018). When knowing is not enough: Emotional distress and depression reduce the positive effects of health literacy on diabetes self-management. *Patient Education and Counseling*, *101*(2), 324-330. https://doi.org/https://doi.org/10.1016/j.pec.2017.08.006

Sendhilkumar, M., Tripathy, J. P., Harries, A. D., Dongre, A. R., Deepa, M., Vidyulatha, A., . . . metabolism. (2017). Factors associated with high stress levels in adults with

diabetes mellitus attending a tertiary diabetes care center, Chennai, Tamil Nadu, India. *21*(1), 56.

Shah, & Kamdar. (2018). Assessing the knowledge, attitudes and practice of type 2 diabetes among patients of Saurashtra region, . *International Journal of Diabetes Care*, 145-166.

Shahin, W., Kennedy, G. A., & Stupans, I. (2019). The impact of personal and cultural beliefs on medication adherence of patients with chronic illnesses: a systematic review. *Patient Preference and Adherence*, 1019-1035.

Shiferaw, W. S., Gatew, A., Afessa, G., Asebu, T., Petrucka, P. M., & Aynalem, Y. A. (2020). Assessment of knowledge and perceptions towards diabetes mellitus and its associated factors among people in Debre Berhan town, northeast Ethiopia [Article]. *PLoS One*, *15*(10), 1-13. https://doi.org/10.1371/journal.pone.0240850

Shiferaw, W. S., Gatew, A., Afessa, G., Asebu, T., Petrucka, P. M., & Aynalem, Y. A. (2020). Assessment of knowledge and perceptions towards diabetes mellitus and its associated factors among people in Debre Berhan town, northeast Ethiopia. *PLoS One*, *15*(10), e0240850. https://doi.org/10.1371/journal.pone.0240850

Shiyanbola, O. O., Ward, E. C., & Brown, C. M. (2018). Utilizing the common sense model to explore African Americans' perception of type 2 diabetes: a qualitative study. *PLoS One*, *13*(11), e0207692. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6248983/pdf/pone.0207692.pdf

Speziale, H. S., Streubert, H. J., & Carpenter, D. R. (2011). *Qualitative research in nursing: Advancing the humanistic imperative*. Lippincott Williams & Wilkins.

Subrata, S. A. (2021). The nursing outlook of the self- and family management support programs among Indonesian with diabetes: An umbrella review. *Diabetes & Metabolic Syndrome: Clinical Research & Reviews*, *15*(1), 109-119. https://doi.org/https://doi.org/10.1016/j.dsx.2020.12.018

Suglo, J. N., & Evans, C. J. P. o. (2020). Factors influencing self-management in relation to type 2 diabetes in Africa: A qualitative systematic review. *15*(10), e0240938.

Tabong, P. T.-N., Bawontuo, V., Dumah, D. N., Kyilleh, J. M., & Yempabe, T. J. P. o. (2018). Premorbid risk perception, lifestyle, adherence and coping strategies of people with diabetes mellitus: A phenomenological study in the Brong Ahafo Region of Ghana. *13*(6), e0198915.

Tang, J., & Gao, L. (2020). Illness perceptions among patients with type 2 diabetes mellitus: A cross- sectional study. *International journal of nursing practice*, *26*(5), e12801.

Tareen, R. S., & Tareen, K. (2017). Psychosocial aspects of diabetes management: dilemma of diabetes distress. *Translational pediatrics*, *6*(4), 383-396. https://doi.org/10.21037/tp.2017.10.04

Tewahido, D., & Berhane, Y. J. P. o. (2017). Self-care practices among diabetes patients in Addis Ababa: a qualitative study. *12*(1), e0169062.

Thomson, S. B. (2011). Sample size and grounded theory. *Journal of Administration and Governance*, *5*(1), 45-52.

Tominaga, Y., Morisky, D. E., & Mochizuki, M. (2021). A cross-sectional study clarifying profiles of patients with diabetes who discontinued pharmacotherapy: reasons and consequences [Article]. *BMC Endocrine Disorders*, *21*(1), Article 117. https://doi.org/10.1186/s12902-021-00778-7

Tracy, S. J. (2010). Qualitative quality: Eight "big-tent" criteria for excellent qualitative research. *Qualitative inquiry*, *16*(10), 837-851.

Ullah, Z., & Pienaar, A. J. (2021). Correct site on fingertip for checking blood glucose level and their impact on patient. *Journal of Rehman Medical Institute*, *7*(4), 18-20.

Wah Oo, H. S., Nau, K., & Kyi, K. M. (2020). The cultural practices of Bamar diabetic patients: An ethnographic study. *Heliyon*, *6*(2), e03267. https://doi.org/10.1016/j.heliyon.2020.e03267

Widayanti, A. W., Heydon, S., Norris, P., Green, J. A. J. H. P., & Medicine, B. (2020). Lay perceptions and illness experiences of people with type 2 diabetes in Indonesia: a qualitative study. *8*(1), 1-15.

Wong, E. M., Afshar, R., Qian, H., Zhang, M., Elliott, T. G., & Tang, T. S. (2017). Diabetes Distress, Depression and Glycemic Control in a Canadian-Based Specialty Care Setting. *Canadian Journal of Diabetes*, *41*(4), 362-365. https://doi.org/https://doi.org/10.1016/j.jcjd.2016.11.006

World Health Organization. (2019). *Classification of diabetes mellitus*. https://apps.who.int/iris/rest/bitstreams/1233344/retrieve

Yilmaz, M., Gun, M., & Yaman, Z. J. I. J. o. C. S. (2019). Emotions, Thoughts and Experiences of Diabetes Patients: A Qualitative Study. *12*(3), 1806.

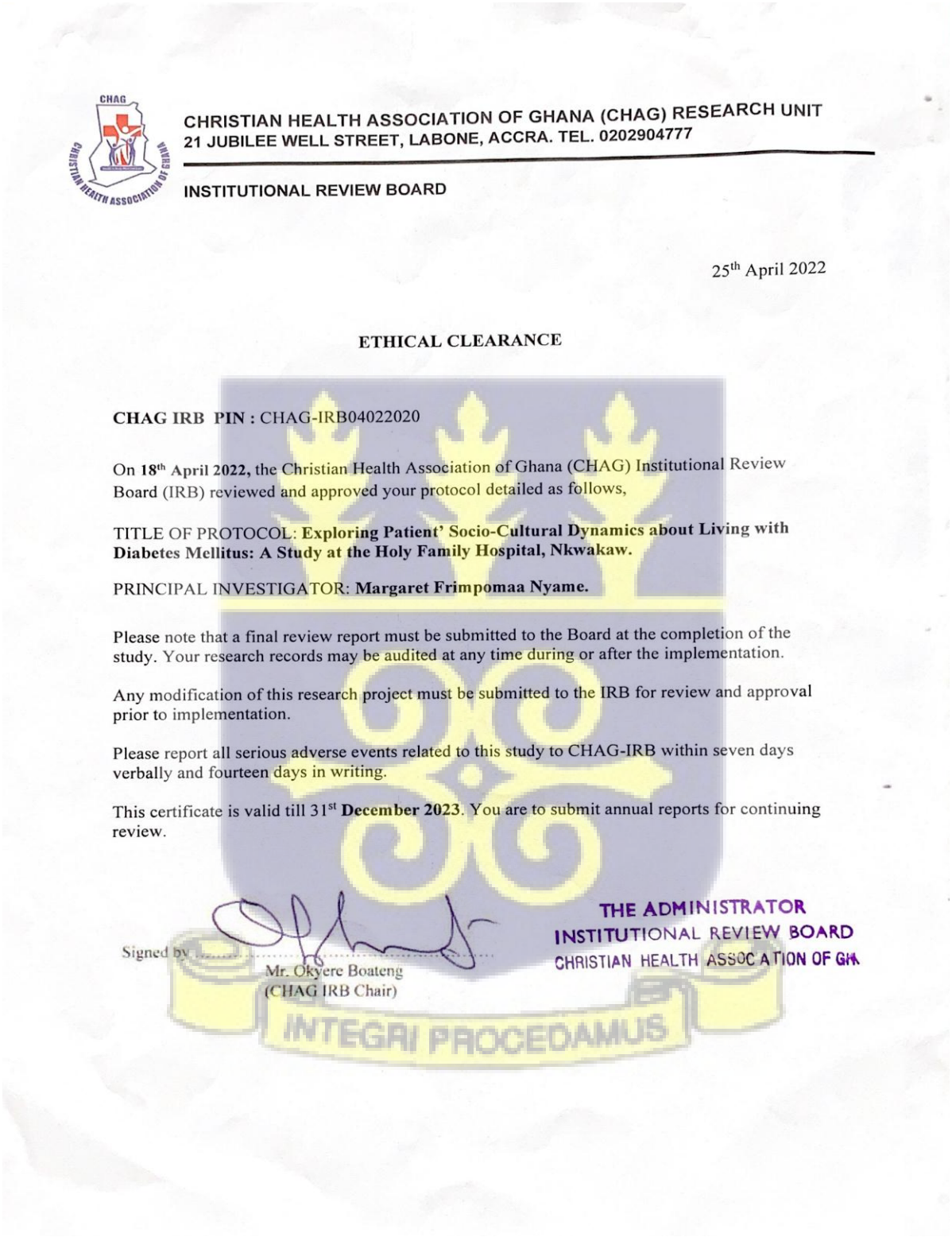
Zajdel, M., Helgeson, V. S., Seltman, H. J., Korytkowski, M. T., & Hausmann, L. R. J. A. o. B. M. (2018). Daily communal coping in couples with type 2 diabetes: Links to mood and self-care. *52*(3), 228-238.

Zhu, X., Lee, M., Chew, E. A. L., Goh, L. J., Dong, L., & Bartlam, B. (2021). "When nothing happens, nobody is afraid!" beliefs and perceptions around self-care and health-seeking behaviours: Voices of patients living with diabetic lower extremity amputation in primary care [https://doi.org/10.1111/iwj.13587]. *Int Wound J*, *n/a*(n/a). https://doi.org/https://doi.org/10.1111/iwj.13587

Zimmermann, M., Bunn, C., Namadingo, H., Gray, C. M., & Lwanda, J. (2018). Experiences of type 2 diabetes in sub-Saharan Africa: a scoping review. *Glob Health Res Policy*, *3*, 25. https://doi.org/10.1186/s41256-018-0082-y

APPENDICES

Appendix A: Ethical Clearance (Christian Health Association of Ghana Institutional Review Board)



CHRISTIAN HEALTH ASSOCIATION OF GHANA (CHAG) RESEARCH UNIT
21 JUBILEE WELL STREET, LABONE, ACCRA. TEL. 0202904777

INSTITUTIONAL REVIEW BOARD

25th April 2022

ETHICAL CLEARANCE

CHAG IRB PIN : CHAG-IRB04022020

On **18th April 2022,** the Christian Health Association of Ghana (CHAG) Institutional Review Board (IRB) reviewed and approved your protocol detailed as follows,

TITLE OF PROTOCOL: **Exploring Patient' Socio-Cultural Dynamics about Living with Diabetes Mellitus: A Study at the Holy Family Hospital, Nkwakaw.**

PRINCIPAL INVESTIGATOR: **Margaret Frimpomaa Nyame.**

Please note that a final review report must be submitted to the Board at the completion of the study. Your research records may be audited at any time during or after the implementation.

Any modification of this research project must be submitted to the IRB for review and approval prior to implementation.

Please report all serious adverse events related to this study to CHAG-IRB within seven days verbally and fourteen days in writing.

This certificate is valid till 31st **December 2023**. You are to submit annual reports for continuing review.

Signed by .....
Mr. Okyere Boateng
(CHAG IRB Chair)

THE ADMINISTRATOR
INSTITUTIONAL REVIEW BOARD
CHRISTIAN HEALTH ASSOCIATION OF GH

INTEGRI PROCEDAMUS

Appendix B: Individual Consent Form

CHAG CONSENT FORM TEMPLATE

Information sheet for newly diagnosed persons living with diabetes.

Title of Study: Exploring patients' socio-cultural dynamics about living with diabetes mellitus:

A study at the Holy Family Hospital, Nkawkaw.

Principal investigator: Margaret Frimpomaa Nyame

Address: School of Nursing, College of Health Sciences, University of Ghana, Legon.

Dear Participant,

I am a graduate nursing student from the School of Nursing and Midwifery, University of Ghana, Legon. I am conducting a study and would like you to take part. Please take time to read through this document and decide whether you would like to take part in this research study. If you agree to take part in this research study, you will be given a consent form to sign and keep a copy for your records. The study is carried out for qualification purposes.

Purpose of study

The primary purpose of this study is to explore and describe the socio-cultural beliefs of newly diagnosed persons living with diabetes in Ghana. The researcher desires to use your information to improve the care given to newly diagnosed persons living with diabetes and to give the appropriate health education on the condition.

Procedures

Participation in the study will require answering questions about yourself. I will have a one-on-one conversation with you based on your preferential language either in English or Twi. There is no right or wrong answer and you can answer in your own words based on your opinion. The duration of the interview will be between 30 to 60 minutes. A second interview will be arranged when necessary. The conversation will be about what you think diabetes is

and how you felt after the diagnosis. You will be asked to either sign or thumbprint a consent form. The conversation will be audio recorded with your permission and later written in words exactly as you have said.

Your name will not be recorded and a unique number or pseudo name will be given to your conversation. Those who will be aware of our conversation will be my supervisors. All information will be kept under lock and key for about five years after the study and thereafter destroyed. At the end of the study, I will return to share with you what I have discovered.

Possible Risks and Discomforts

The study is not expected to pose any risk to you as a participant, but if any emotional discomfort occurs as you describe your personal experiences, it will be taken care of. The researcher has arranged with a professional Psychologist for support without you paying anything (Psychologist, Rev. Sr. Theresah Tawiah, SSpS. Telephone 0595284875, taamat@yahoo.com. The findings of this research will be published in academic journals and presented at research conferences. However, data will always be presented as group data hence no individual participants will be identified.

Possible benefits

There is no direct benefit to you personally for participating in this study. The potential benefits of this study are to add to the present literature concerning newly diagnosed persons living with diabetes in Ghana. The results of this study also have the potential to provide some insight into how health care personnel give appropriate care to persons newly diagnosed with diabetes.

Confidentiality

The information you will give about yourself will be protected. Your name will neither be written on the interview guide nor appear in the report of the study. All information you will give in this study will be stored in a cupboard under lock and key at the School of Nursing.

The transcripts, audiotapes, and field notes will only be accessible to the researcher and her supervisors.

Compensation

You will not be given any monetary compensation for participating in this study. However, refreshments will be provided as well as a GH¢20.00 transport refund for individuals that would travel purposely to come for the interview.

Voluntary Participation and Right to Leave the Research

You have the right to take part in this study or refuse to take part or withdraw from the study at any stage. If you decide not to participate in this research or withdraw, it will not attract any penalty. You are free to leave the study at any point during the study even after you have consented to be part of the study without affecting anything you require from the health care providers.

Questions

If you have any ethics-related questions about this research and your rights to participate, please contact:

CHAG IRB Administrator

Mrs. Sarah Sackey Martei-Olletey

Phone number: 0202904777

chagirb@chag.org.gh

Dr. Kwadwo Ameyaw Korsah

kakorsah@ug.edu.gh, korsahtalktalk@yahoo.com

Phone number: 0243547317

Dr. Gwendolyn Patience Mensah

gpmensah@ug.edu.gh

Phone number: 0208127756

Any other inquiry, kindly contact the Principal investigator

(Margaret Frimpomaa Nyame)

megnyame@gmail.com

Phone number: 0244082738

Thank you.

Your right as a participant

VOLUNTEER AGREEMENT

The above document describing the benefits, risks, and procedures for the research title: socio-cultural beliefs of newly diagnosed persons living with diabetes has been read and explained to me. I have been allowed to have any questions about the research answered to my satisfaction. I agree to participate in the study as a volunteer.

_____ _____

Date Name and signature or mark of volunteer

If volunteers cannot read the form themselves, a witness must sign here:

I was present while the benefits, risks, and procedures were read to the volunteer. All questions were answered and the volunteer agreed to take part in the research.

_____ _____

Date Name and signature of the witness

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

_____ _____

Date Name and signature of the person who obtained the consent

Appendix C: Signature of Compliance

SIGNATURE TO COMPLY WITH ETHICAL PRINCIPLES

CHRISTIAN HEALTH ASSOCIATION OF GHANA (CHAG) RESEARCH UNIT
21 JUBILEE WELL STREET, LABONE , ACCRA

INSTITUTIONAL REVIEW BOARD

SECTION C – SIGNATURE

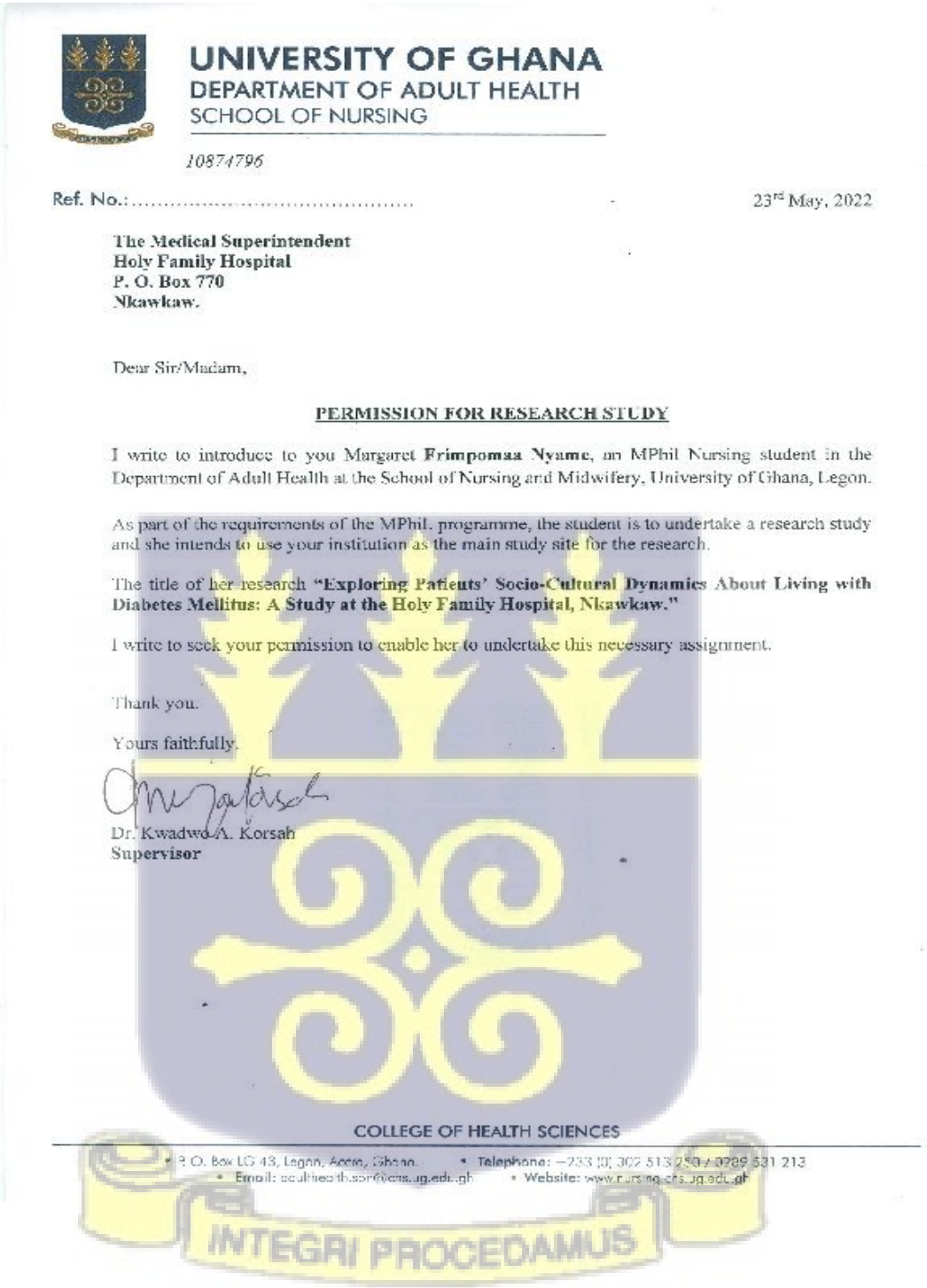
As the **Principal Investigator / Co-investigator** on this project, my signature confirms that:

1. I will ensure that all procedures performed under the study will be conducted in accordance with all relevant policies and regulations that govern research involving human participants.
2. I understand that if there is any change from the project as originally approved I must submit an amendment to the CHAG- IRB for review and approval prior to its implementation. Where I fail to do so, the amended aspect of the study is invalid.
3. I understand that I will report all serious adverse events associated with the study within seven days verbally and fourteen days in writing.
4. I understand that I will submit progress reports each year for review and renewal. Where I fail to do so, the CHAG-IRB is mandated to terminate the study upon expiry.
5. I agree that I will submit a final report to the CHAG-IRB at the end of the study.

Name & Signature of Principal Investigator / Co-investigator: MARGARET FRIMPOMAA NYAME

Date: 12TH JANUARY 2022

Appendix D: Introductory Letter from University of Ghana Legon to Holy Family Hospital, Nkawkaw



UNIVERSITY OF GHANA
DEPARTMENT OF ADULT HEALTH
SCHOOL OF NURSING

10874796

Ref. No.:..... 23rd May, 2022

The Medical Superintendent
Holy Family Hospital
P. O. Box 770
Nkawkaw.

Dear Sir/Madam,

PERMISSION FOR RESEARCH STUDY

I write to introduce to you Margaret **Frimpomaa Nyame**, an MPhil Nursing student in the Department of Adult Health at the School of Nursing and Midwifery, University of Ghana, Legon.

As part of the requirements of the MPhil. programme, the student is to undertake a research study and she intends to use your institution as the main study site for the research.

The title of her research **"Exploring Patients' Socio-Cultural Dynamics About Living with Diabetes Mellitus: A Study at the Holy Family Hospital, Nkawkaw."**

I write to seek your permission to enable her to undertake this necessary assignment.

Thank you.

Yours faithfully,

Dr. Kwadwo A. Korsah
Supervisor

COLLEGE OF HEALTH SCIENCES
P. O. Box LG 43, Legon, Accra, Ghana. • Telephone: +233 [0] 302 513 250 / 0209 531 213
• Email: adultheath.son@cms.ug.edu.gh • Website: www.nursing.cms.ug.edu.gh

INTEGRI PROCEDAMUS

Appendix E: Interview Guide

SEMI- STRUCTURED INTERVIEW

I appreciate your acceptance to meet with me. My name is Margaret Frimpomaa Nyame, a graduate nursing student. This interview is scheduled to help me gain insight and obtain information about your socio-cultural beliefs about the condition you are living with. As you have lived with the condition for a year, I believe that you are best suited to help me to gain the insight that I need to complete this study. The duration of the interview may last between 30 to 60 minutes and it will be audio recorded. You may refuse to answer any questions and/or withdraw from the study at any time. Do you have any questions before we begin? I have listed a few questions below: For this study, we are discussing socio-cultural dynamics about diabetes. Socio-cultural dynamics are the changes, beliefs, perceptions, views, or opinions held about diabetes mellitus by persons living with the condition.

Guiding Questions

Section A: Demographic data

Code Number.....

1. Age.....
2. Sex.....
3. Indicate the number of years of living with the condition.....
4. Religious affiliation.....
5. Level of education.....
6. Place of residence.....
7. Marital Status.....
8. Number of children.....
9. Profession.....

SECTION B

10. Tell me about all that you know regarding diabetes mellitus.

Probe

- ✓ What do you perceive about the causes, spiritual disease, evil cause, curable?

11. How would you explain your beliefs with regards to the signs and symptoms of the disease you are living with?

Probe

✓What are the symptoms you were experiencing before and after the diagnosis?

- ✓ How do you feel about these symptoms?
- ✓ How do you perceive the symptoms to be? Do you think these symptoms are serious?

12. What were some of the emotional issues you experienced when you were diagnosed?

Probe

- ✓ What thought came to your mind?
- ✓ Please tell me how people relate to you after your diagnosis.
- ✓ Partner?

13. To what extent do you think what you know about diabetes mellitus has helped you to manage the condition?

Probe

- ✓ How are you managing to live with the symptoms?
- ✓ Work
- ✓ Family

14. How are you managing the condition?

Probe

- ✓ Why the chosen treatment option and how effective is it?

What else will you want to add apart from what we have discussed?
Thanks for your time.

Appendix F: Approval Letter from Study Site

NATIONAL CATHOLIC HEALTH SERVICE
(KOFORIDUA CATHOLIC DIOCESE)
HOLY FAMILY HOSPITAL, NKAWKAW
P.O. Box 770, Nkawkaw, E/R, GHANA
Tel. 0544353020
E-mail: hfhnkawkaw@nchs.org.gh
Digital Address: EJ-0007-7531 www.hfhnkawkaw.org

16th February, 2022

OUR REF: HFH/ADM/16/22

MARGARET FRIMPOMAA NYAME
HOLY FAMILY HOSPITAL
NKAWKAW

Dear Madam,

RE: PERMISSION TO CONDUCT RESEARCH PROJECT AT HOLY FAMILY HOSPITAL NKAWKAW

In reference to your letter dated February 15, 2022, this letter gives you permission to conduct the research project titled "Exploring Patients' Socio-cultural dynamics about living with diabetes mellitus: A Study at the Holy Family Hospital, Nkawkaw".

The facility will make available to you the data needed for your research and grant you the opportunity to interview some of our clients.

It would be very much appreciated if the confidentiality and anonymity of the clients are secured.

Thank you.

Yours faithfully,

REV. FR. DERICK MAWULI
(HOSPITAL ADMINISTRATOR)