

SCHOOL OF NURSING AND MIDWIFERY

COLLEGE OF HEALTH SCIENCES

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THE USE OF COMPLEMENTARY AND ALTERNATIVE MEDICINE

AMONG PATIENTS DIAGNOSED WITH TYPE 2 DIABETES

MELLITUS AT LEKMA HOSPITAL

BY

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DECLARATION

I, Augustina Amoah hereby affirm that the study presented in this thesis is the findings of my own investigation and that with the exception of other people's study which I have appropriately cited at the reference section, this thesis has not been presented to this university or elsewhere for the award of any degree.

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ALTERNATIVE MEDICINE USE AMONG PATIENTS WITH DIABETES

ABSTRACT

The use of complementary and alternative medicine for the management of type 2 diabetes mellitus stems from the experiences, beliefs, and its efficacy. This study was intended to explore the use of complementary and alternative medicine among patients with type 2 diabetes mellitus and to find ways of improving patient -centered care in managing type 2 diabetes successfully. The study used an exploratory descriptive research design and purposive sampling was used to recruit 13 respondents from all the patients diagnosed with type 2 diabetes mellitus who seek health service at the facility. The study was conducted at the Ledzokuku-Krowor Municipal Assembly (LEKMA) Hospital situated at Teshie Nungua in the Greater Accra Region. Semi-structured interview guide was used to conduct in-depth interviews. All interviews were audio recorded and transcribed word for word. Data were analyzed using thematic content analysis. The key findings were; people diagnosed with type 2 diabetes use complementary and alternative medicine due to convincing information from family and friends, the belief in alternative medicine and media influence. Negative attitudes of health professionals in the mainstream health care was found to be a driving force to alternative medicine use. Marketing of herbal medicine, overdose of herbal medicine and possible kidney failure were identified as some risk associated with herbal medicine use. It is recommended that curriculum developers include customer care in the nursing curriculum to enhance clients care. Again, the Ministry of Health need to collaborate with the National Insurance Authority to integrate the cost of complementary and alternative medicine.

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DEDICATION

This thesis is dedicated to God Almighty whose grace and mercy has brought me this far.

Again, to my parents Mr. Louis Amoah and Mrs. Martha Amoah all of the blessed memory for teaching me the value of gentleness and resilience. Special and profound gratitude to Isabel Igone and Asa Miquel Youri who were always a great source of inspiration in achieving this goal.

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LIST OF ABBREVIATIONS

CAM:	Complementary and Alternative Medicine
IDF:	International Diabetes Federation
WHO:	World Health Organization
MOH:	Ministry of Health
LEKMA:	Ledzokuku Krowor Municipal Assembly
CINAHL:	Cumulative Index to Nursing Allied Health Literature
NHIS:	National Health Insurance Scheme
NHIA:	National Health Insurance Authority
OPD:	Out Patient Department
UN:	United Nations
ADA:	American Diabetes Association
FDA:	Food and Drugs Authority
CSRPM:	Centre for Scientific Research into Plant Medicine.

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

The popularity of complementary and alternative medicine use has brought attention to the existing communication gaps and knowledge for health care professionals in relation to their ability to counsel clients properly on available treatment options for their diseases. A study by Sheikhrabori, Dehghan, Ghaedi, & Khademi (2017) shows that complementary and alternative medicine use has increased in the European Union by 98%. Again, it is estimated that almost 23% of American citizens have used complementary and alternative medicine before. In China, 40% of their therapeutic regimen includes complementary and alternative medicine whilst 80% of Africans use herbal medicine for therapeutic needs (Aziato & Antwi, 2016; Sheikhrabori et al., 2017). A report by the World Health Organization WHO (2016) indicates that the quest for traditional medicine from the populace and the upsurge of the economic benefit of traditional medicine has motivated governments and academia globally. Prevailing figures show that more than 100 million Europeans are using traditional, complementary or alternative medicine coupled with the preference of health providers that integrate traditional and complementary medicine (WHO, 2016).

The use of complementary and alternative medicine outside conventional medicine has always been an important aspect of Public Health Care in middle income countries. The innate urge of human beings to try new and alternate means of relieving suffering is illustrated by the population of complementary and alternative medicine users.

Diabetes is associated with life-threatening events and empirical evidenced has been stated that long-standing hyperglycaemia can result in malfunctioning of several organs including the nerves, eyes, and kidney (Bron, Marynchenko, Yang, Yu, & Wu, 2012; Lind et al., 2014; Miller et al., 2015). Diabetes is classically evaluated by presenting hyperglycaemia with increased thirst, urination, hunger, and hypoglycaemias (Jacobson et al., 2013; Ozougwu, Obimba, Belonwu, & Unakalamba, 2013; Patel, Kumar, Laloo, & Hemalatha, 2012).

The incidence of diabetes has assumed an alarming rate due to its occurrence in both high income, low, and middle-income countries. Morbidity and mortality rate associated with non-communicable diseases such as diabetes makes it a disease of public health importance due to the effects on national and the health of the public (Atlas, 2017; Cho et al., 2018; Korsah, 2015).

It is estimated globally by the International Diabetes Federation, Atlas (2017), that, 425 million people are diagnosed with diabetes of which one-third are people older than 65years. Additionally, it is projected that 629 million cases of diabetes will be recorded in 2045, of which 98 million will be between 65-79 years and 327 million between the ages of 20- 64 years (Atlas, 2017). Likewise, the global diabetes burden by UN (2011) indicates that diabetes is one of the major non-communicable diseases targeted by World Leaders in the 2011 Political Declaration on Prevention and Control of non-communicable diseases. It was stated that middle-income countries recorded the highest death toll after age 50 of which death is associated with high blood sugar in both men and women (UN, 2011). It is further estimated by the International Diabetes Federation that 5 million of all death aged 20-79 globally in 2017 were attributed to diabetes and this is equivalent to 1 death per every eight seconds. Globally 84.5% of all undiagnosed diabetes cases are in the

low- and middle-income countries with Africa having 69.2% of its population being undiagnosed with diabetes (Atlas, 2017). Report by the International Federation of Diabetes Atlas (2017) indicates that the prevalence rate of diabetes in Ghana is 3.6% of the total adult population of 14,586,000. Again 518,400 cases of adults with diabetes were recorded in 2017. Ghana is located in West Africa with a total surface area of 238,533km with Greater Accra being the densely populated city with a population of 1.6million (Amoah et al., 2000; Amoah, Owusu, & Adjei, 2002).

People with type 2 diabetes are challenged daily to live with a chronic condition in their lifetime. The surge in type 2 diabetes and its ailments has led to the use of various treatment regimen. Diabetes is managed through a multidisciplinary approach when diagnosed. However, some individuals with diabetes prefer complementary and alternative medicine as a form of treatment. Complementary and alternative medicine is defined as the various means undertaken to maintain and restore health (Sheikhrabori et al., 2017).

According to an executive board meeting report by the World Health Organization Atlanta (2013), traditional medicine can be defined as ‘knowledge, skills and practices of holistic health care recognized and accepted for its role in the maintenance of health and treatment of diseases. Again, complementary and alternative medicine can be defined as the sum total of the knowledge, skill, and practices based on the theories, beliefs, and experiences indigenous to different cultures, whether explicable or not, used in the maintenance of health as well as in the prevention, diagnosis, improvement or treatment of physical and mental illness’ (IDF, 2012). In other words, it is referred to as a group of varied medical, health delivery means treatment regimen and practices not currently measured as to be part of biomedicine (Shaikh, Malik, James, & Abdul, 2009).

The use of traditional medicine stems from the experiences, beliefs, and theories of the natives transferred from ancestral generations (Aziato & Antwi, 2016; Gyasi, Mensah, & Agyemang, 2011; WHO, 2000). Although modern treatment has achieved much progress in blood sugar control in recent years, using traditional medicine is still the main focus for some people diagnosed with diabetes. The primary line of management of type 2 diabetes include taking oral medications such as oral hypoglycaemics as well as insulin injections, diet and regular exercise (Atlas, 2017; Chamberlain, 2016; Hatun et al., 2016; Patel et al., 2016). There is adequate evidence that suggests that using the above-mentioned therapies can decrease the risk of developing complications as well as reducing the blood sugar level amidst challenges associated with the medications (Cunha, André, Granado, Albuquerque, & Madureira, 2015; Ena et al., 2016; Porqueddu, 2017). For instance, some reported side effects of these medications include body weakness and abdominal disturbances. The use of complementary and alternative medicine is on the rise due to some of these reasons such as ineffectiveness of medications, belief in traditional medicine and side effects of conventional medications (Lotfi, Adib, Shahsavarlo, & Gandomani, 2016; Sammons et al., 2016). Hence many people diagnosed with diabetes use CAM which is suggested to relief these symptoms. Although complementary and alternative medicine is said to be used to relief side effect of conventional medicine, the issue of its safety and efficacy comes into play because CAM can be purchased in the open market without prescription (Alzubaidi, Mc Narmara, Kilmartin, Kilmartin, & Marriott, 2015; Meijun, Zhicheng, Bin, Wei, & Jianwei, 2016).

Complementary and alternative medicine can be categorized into various forms adopted from the National Centre for Complementary and Alternative Medicine classification of CAM.

Table 1.1: Classification of CAM

Domain	Characteristics	Examples
Mind-body therapies	Behavioural, social, psychological and spiritual approaches to health	Yoga, Tai, Meditation, Prayer, and Hypnosis
Biological -based therapies	Natural and biologically based products, practices and interventions	Herbs, supplements, diets therapies
Manipulative and body-based therapies	Based on the manipulative or movement of the body	Massage
Energy therapies	Systems that use energy fields	Healing, touch acupuncture
Alternative medicinal systems	Other systems that differ from conventional medicine	Chinese traditional medicine, homeopathy, Ayurveda, and Naturopathy

The forms of complementary and alternative medicine used by people diagnosed with diabetes depend mostly on the availability, cultural background and the belief of the people diagnosed with diabetes. Research indicates that it is generally accepted for most ethnic groups in Zimbabwe to use one form of traditional and complementary medicine including spiritual healing (Baldé et al., 2006; Chingwaru & Vidmar, 2016; Koley et al., 2016).

In as much as there is a rise in the use of traditional medicine across the continent, various forms of alternative medicine are used. Before the inception of orthodox medicine in Africa, traditional medicine was being used as the basic line of management of most chronic diseases including diabetes (Aziato & Antwi, 2016; Balde et al., 2006; Chingwaru & Vidmar, 2016). Several plants derivatives exist on the African market as traditional medicine and studies indicate that some antidiabetic effect is exhibited by some medicinal plants that include improve insulin secretion, decrease insulin resistance and a decrease in cholesterol levels with its use. Again, it is prevalent in Africa to use plants of medicinal value due to the transfer of these practices orally from generation to generation (Baldé et al., 2006; Diallo et al., 2012; Komlaga et al., 2015; Lien et al., 2016; Popović, Matic, Bojović, Stefanović, & Vidaković, 2016). Furthermore, research work by Aziato & Antwi (2016) and Baldé et al. (2006) revealed that diabetes patients, as well as patients with other chronic diseases, use herbal medicine as a result of several motivating factors such as affirmative testimony from family and friends and the affordable cost of herbal medicines. Other studies attributed the use of complementary and alternative medicine to factors such as age, having higher education, use of over the counter drugs and being female as gender (Gardiner et al., 2007; Nissen, 2010). Other research work indicates that most people who use complementary and alternative medicine are affected by chronic disease such as diabetes, cancers, hypertensive and it can be suggested that conventional medicine cannot offer them cure (Kim, Shin, Moon, & Cho, 2016; Mbizo, Okafor, Sutton, Burkhart, & Stone, 2016; Merger et al., 2016).

The Government of Ghana established the Traditional and Alternative Medicine Bill in 2010 and hence set up a Traditional and Alternative Medicine Council. This council is mandated by the Traditional and Alternative Medicine Act 2013 to work in partnership with the Health Ministry to set up traditional and alternative medical centres

within the mainstream health delivery system. In view of this, the herbal unit was set up at Ledzokuku-Krowor Municipal Assembly (LEKMA) Hospital in 2010 as a pilot in administering herbal treatment in a mainstream health facility. The Centre for Scientific Research into Plant Medicine (CSRPM), Mampong, Ghana which was established in 1975 mandated by Act 833 to foster and conduct scientific research into plant medicine. In Ghana, the CSRPM is to ensure the potency and safety of herbal treatment before approval by the Food and Drugs Authority (FDA). Since the inception of CSRPM, no hospital in Ghana was equipped to prescribe herbal medicine until the establishment of the herbal unit at LEKMA Hospital in 2010, in partnership with the Chinese Government. The funding of LEKMA Hospital includes support from the Chinese government in terms of providing the Ghanaian community with experts in the field of acupuncture. Again, these staff work as volunteers and they are rotated for a period of one year. The Chinese government also provide the LEKMA hospital with yearly donation of medical equipment such as hospital beds, Zimmer frames, commodes and drip stands. Notwithstanding, the salaries of the rest of the hospital staff is by the government of Ghana.

Interacting with clients diagnosed with type 2 diabetes in the clinical setting, some mentioned using CAM in managing some symptoms associated with the condition. The believe that CAM is more efficacious motivated their action. In some instances, they get warned by nurses about the dangers of using such remedies. As a clinical nurse, there have been instances whereby people diagnosed with type 2 diabetes have raised concerns about side effects of their medications such as the feeling of general weakness, bodily pains and visual impairment some of these patients resort to using herbal medicine and do not discuss this with their healthcare professionals. They attribute the use of herbal medicine to various reasons such efficacy of herbal medicine, delay in seeking care at the mainstream facility, high cost of medications among others. Therefore, the present thesis

aims to explore the factors that lead to the use of complementary and alternative medicine and the challenges faced with its use among people diagnosed with type 2 diabetes. The subsequent sessions focus on the problem statement, the purpose of the study and research questions for the study.

1.2 Statement of the problem

International Diabetes Federation report indicates that more than 15.9million people in Africa affected with diabetes and if care is not taken, this figure will rise by 162% in 2045. Again, 3 out of 4 deaths due to diabetes were people below the age of 60 years and was the highest among the regions (Atlas, 2017). Perhaps it could be due to the treatment options, complications or ineffectiveness of the medications that need to be researched on. Management of diabetes is a multi-disciplinary approach that outlines the pharmacological approach, self-care management, health education and lifestyle changes. Studies indicate that although complex conventional medicine has significant changes in the management of chronic conditions such as diabetes, people diagnosed with diabetes turn to use CAM (Farooqui et al., 2016). A study by Bahall (2017), shows that the most commonly use CAM is herbs which forms about 93.4%. According to literature, there is the use of CAM in managing type 2 diabetes. Korsah (2015), noted that type 2 diabetes patients combine both hospital and traditional medicine with the belief that traditional medicine takes care of the problems associated with diabetes.

Notwithstanding, the anecdotal perspective of the researcher as a clinical nurse comes with a submission that perhaps people diagnosed with diabetes use herbal medicine because there is the belief of cure, as well its affordability. A personal observation as a practice Community Health Nurse for five years during home visits revealed that some

people diagnosed with type2 diabetes do not solely depend on conventional medicine. Additionally, in my practice as a Registered General Nurse since 2009 in the medical ward, my interaction with some patients with type 2 diabetes discovered that they use CAM without discussion with their health professionals. Most of these studies were done in other parts of the world, not in Ghana, and many were not guided by theoretical model. Base on the ethnic and cultural variation as discussed, it is imperative to explore the use of complementary and alternative medicine among patients with type 2 diabetes.

1.3 Purpose of the study

The purpose of the study was to explore the use of complementary and alternative medicine among patients diagnosed with type 2 diabetes.

1.4 Specific Objectives

1. To explore the factors (predisposing and enabling) that account for the use of complementary and alternative medicine (CAM) among patients with type 2 diabetes.
2. To explore the challenges (need factors) that patients with type 2 diabetes go through in using complementary and alternative medicine.
3. To find out what needs to be done to improve the use of complementary and alternative medicine among patients with type 2 diabetes.
4. To explore the outcome of care using complementary and alternative medicine.

1.5 Research questions

1. What are the factors that account for the use of complementary and alternative medicine among type 2 diabetes?
2. What measures can be undertaken to improve complementary and alternative medicine use among patients with type 2 diabetes.
3. How can the use of complementary and alternative medicine be incorporated into our health care system?
4. What are the effects of using complementary and alternative medicine in managing type 2 diabetes.

1.6 The significance of the study

This study seeks to inform nursing practice so that patients will be adequately informed about treatment choices. It will help in redirecting policy in providing integrated health care to patients based on their treatment choice. This could be achieved by strengthening the existing facilities that provide herbal treatment and extending such to other facilities. Additionally, it will inform nursing education by facilitating the development of the curriculum to train diabetes nurses to provide expert care in the future.

1.7 Operational definitions

- **Complementary and Alternative Medicine (CAM):** It is the total sum of practices based on the beliefs and experiences indigenous to various cultures used in the maintenance of health.

- **Herbal medicine:** A natural native drug from various parts of a plant which includes leaves, bark, roots or the entire plant which may come in different forms such as liquids, tablets, capsules, powder or the original form of the plant
- **Hyperglycaemia:** Refers to an increased blood glucose level due to diabetes.
- **Facilitators:** Factors that will make it easy for a patient to use complementary and alternative medicine.
- **Challenges:** Implies the factors that predispose a patient to the consequences of CAM.

CHAPTER TWO

LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

2.0 Introduction

This chapter entails a review of the literature which was extracted from books, journals, dissertations and articles that are pertinent to the study objectives. Databases such as EBSCOhost, Cumulative Index to Nursing and Allied Health Literature (CINAHL), SAGE, Science Direct, Biomed Central Taylor and Francis, Wiley were the search engines used in retrieving articles, abstract and PDF full tests and articles. These were used since articles were readily available by using the university's library. In addition, Google Scholar was also used by the researcher because it was easily accessible off campus. More so, most articles in Ghana on Diabetes were accessible at the website. In search of articles, abstracts, journal, and dissertations, both qualitative and quantitative research full PDF tests and articles written in the English Language were considered. Diverse studies have been researched on in relation to complementary and alternative medicine use in treating different conditions depending on the pivot of the research. In search of the literature, the researcher used words such as diabetes mellitus diabetes in Ghana, type 2 diabetes and herbal medicine, diabetes and CAM use, type 2 diabetes and challenges, diabetes and its burden, type 2 diabetes and long-term drug use and diabetes and models. The literature review was organized under the under listed subheadings.

- Factors (predisposing and enabling) associated with complementary and alternative medicine use.
- Challenges (need factors) that facilitates the use of complementary and alternative medicine among patients with a diagnosis of type 2 diabetes.
- Complementary and alternative medicine use among patients with type 2 diabetes.

- The outcome of care for complementary and alternative medicine use.

This chapter ends with a literature search on a proposed theoretical framework that seeks to address the research questions.

2.1 Predisposing and Enabling Factors Influencing the use of Complementary and Alternative Medicine

The use of complementary and alternative medicine is moderated by different factors which include decision making in choosing CAM influenced by family and friends, access to herbal medicine, qualified personnel, affordability and availability of information through the media. In a quantitative study by Wazaify, Afifi, El-Khateeb, & Ajlouni (2011) to explore the prevalence, types, frequency, purpose, and pattern of herbal preparation use in a cohort study in Jordan among patients with diabetes; the researchers indicated that complementary and alternative medicine is used among patients with diabetes. The findings demonstrate that family and friends recommend its use to the patients. A cross-sectional survey was used to collect this data with most of the participants being in the age group of 51-60 years. Perhaps some family members and friends may even get a supply of herbal drugs to their loved ones who are diagnosed with diabetes.

This finding by Wazaify et al. (2011) corroborates with a study finding by Aziato & Antwi (2016) to explore the facilitators and barriers to herbal medicine use, which shows the influence of family and friends in the decision on the use of CAM. The researcher gave a detailed description of the setting and indicated that convincing information from family and friends leads to the use of complementary and alternative

medicine. Likewise, other studies by (Gyasi, Siaw, & Mensah, 2015; Matheka, 2013; Natan, Perelman, & Naftali, 2016) also discovered that family and friends are of greater influence in the decision to CAM use.

This is in agreement with a cross-sectional study to investigate the characteristics and implications for CAM use in cancer patients in Ghana by Yarney et al. (2013) that also identified friends as influencing factor to complementary and alternative use. It can be concluded that there are a great family and social ties exhibited in these communities which may have led to such an influence of a treatment choice of a disease condition. It is interesting to note that respondents of both studies Matheka (2013) and Yarney et al. (2013) stated dissatisfaction with conventional medicine use as a driving force to use CAM. It is suggestive that the dissatisfaction may be due to poor patient practitioner relationship, concerns about side effects of the drugs, perceived ineffectiveness of conventional medicine.

The use of complementary and alternative medicine stems from the ancient days and its use has increased both locally and globally depending on the beliefs and the socio-cultural perspective of the populace concerned (Baldé et al., 2006; Fennell, Liberato, & Zsembik, 2009; Gaboury, April, & Verhoef, 2012). Other studies indicate that people from all walks of life with diverse background engage in the use of traditional medicine as a means of treatment for all class of diseases (Gyasi, Mensah, & Agyemang, 2011; Sen & Chakraborty, 2017; Shaikh et al., 2009). Diabetes, hypertension, stroke, malaria, arthritis, infertility and piles Buor (1993) as cited in Gyasi, Mensah, & Agyemang (2011) are some of the diseases stated as being treated with alternative medicine.

Furthermore, most of the researchers attributed the use of alternative and traditional medicine to the belief in the cultural and social background (Aikins, 2004; Ausanee, Armer, & Stewart, 2016; Aziato & Antwi, 2016; Gyasi, Mensah, & Agyemang, 2011; Natan et al., 2016; Warren, Canaway, Unantenne, & Manderson, 2013). This agrees with research findings in Ghana that shows that CAM use is embedded in our way of life and motivated by traditional thought and the pattern of diseases (Yarney et al., 2013).

It is expedient to note that, all the three studies Aziato & Antwi (2016), Natan et al. (2016) and Wazaify et al. (2011) were conducted among various cultures and nationalities and, there is a peculiar belief in alternative medicine use among these cultures. The essence is that these distinctive beliefs, perceptions, practices and experiences exist in most societies and these influences the choices and decisions they make relating to the treatment of their disease condition.

Additionally, studies show that media influence is said to impact on the use of complementary and alternative medicine through the use of convincing words and enticing advertisements. The media includes print media, broadcast media, and out of home media and the internet. This is could be due to the recent proliferation of media that promote the use of all forms of CAM. Although the provision of healthcare is backed by law, regulation of activities in the mainstream healthcare is easier because practitioners are licensed but some of the CAM providers are not licensed and as such cannot be traced (Aziato & Antwi, 2016; Matheka, 2013; Wazaify et al., 2011; Yarney et al., 2013).

Furthermore, research findings by Matheka (2013) show that the degree of complications and the duration of diabetes and age of the clients were motivating factors to CAM use. Perhaps due to the side effects associated with conventional medicine and chronicity of the condition of diabetes, they tend to use herbal medicine. According to

Rutebemberwa et al. (2013), herbal medicine can delay in the development of complications in diabetes.

According to a study by Bahall (2017), complementary and alternative medicine use is considered as efficacious by its users. This is consistent with research findings that show that herbal medicine is efficient in managing diseases (Aziato & Antwi, 2016; Farooqui et al., 2016; Pumthong et al., 2015). Perhaps, the relieve of symptoms the patients experience is what is interpreted as being efficacious.

Furthermore, the findings of the study Wazaify et al. (2011) indicated that one out of five persons diagnosed with diabetes use alternative medicine because there is easy accessibility. It is easily accessible possibly because herbal medicine is mostly found in the open market, backyard peddlers and over the counter. Some studies agree with the findings that herbal medicine is highly accessible (Gyasi et al., 2016; Gyasi, Mensah, & Siaw, 2015; Gyasi, Mensah, & Agyemang, 2011; Korsah, 2015).

A contrary finding by Kretchy, Owusu-Daaku, & Danquah (2014) shows that financial burden is the most common influencing factor to the use of complementary and alternative medicine. This agrees with findings by (Ausanee et al., 2016; Wazaify et al., 2011) which indicated that the social status and the economic status of individuals influence the decision to use complementary and herbal medicine. Although study findings by Wazaify et al. (2011) indicated affordability as a source of influence on herbal medicine use, this finding is divergent among Ghanaians respondents according to study results by Aziato & Antwi (2016) where cost of herbal products is noted to be high at herbal clinics and hence hinders others from using herbal drugs. Considering the setting of the study, it can be said that the high cost may be due to the fact that the herbal

medicine is being sold at a private health facility where cost of healthcare is comparatively higher than the public health facility.

In the researcher's view as a practice nurse who interacts with clients from a varied religious, social and cultural background, I am highly persuaded in this study that people diagnosed with type 2 diabetes are more likely to be influenced to use CAM based on their beliefs, practices, perceptions and convincing information from family and friends.

Secondly, my opinion in this study is that easy accessibility, affordability and the influence by the mass media has the likelihood to incline people diagnosed with type 2 diabetes to CAM use. Nonetheless, it is necessary for health care providers to appreciate what motivates clients to make treatment choices and take decisions related to their disease condition.

The literature review in this section looked at predisposing and enabling factors that account for complementary and alternative medicine use. Factors such as convincing information by family and friends, media influence, practices, and cultural beliefs were noted to inform decision and choices of patients. Hence nurses need to be aware of these factors in order to offer appropriate care to meet clients' needs. Because, belief, experiences, perception and culture of the society to an extent influences the choices and decision one make in relation to health.

The next section looks at some challenges associated with the use of complementary and alternative medicine.

2.2 Need factors (Challenges) Associated with CAM use among Patients

Diagnosed with type 2 Diabetes

Living with chronic conditions such as diabetes means making lifetime modifications to adapt to the changes related to the diagnosis. This brings about some challenges to an individual being diagnosed with diabetes and going through this process. The quality of health education given on the condition will also determine whether the response of the individual to living with the condition will be positive or negative. The fundamental aim of treatment regimen is of beneficial effect to the recipient; however, evidence shows that some treatment modalities in turn cause morbidity and mortality. Complementary and alternative medicine is perceived as natural and as such considered as a safe drug without side effect. Patients are less likely to report adverse effects following herbal medicine use because they do not consider the possibility of having any adverse reaction as compared to conventional medicine which is suggestive of the predetermined knowledge of the characteristic safety of natural products (Silvanathan & Low, 2015; White et al., 2014).

Studies indicate that people diagnosed with type 2 diabetes mellitus have other comorbid conditions and hence, turn to go in for herbal medicine because they want a cure for their condition and its effects on their life. It is suggestive that they seek for the herbal medication because they may be taking so many different medications for diabetes and other conditions such as hypertension, fatty liver, and neuropathy which results in the need to seek for fewer medications that will cure all the condition at a time and most herbal medications claim that one medication can cure a lot of ailments. This is often discussed in various studies as the illness experiences of people. How the individual diagnosed expresses the symptoms he or she experiences may lead to the use of CAM which is

believed to be effective in managing the disease (Choi, Han, Na, & Lim, 2017; Karl, Supa, Apa, Siyan, & Le Vu, 2016; Merger et al., 2016).

Presently, the major concern associated with the use of complementary and alternative medicine includes drug-drug interaction. This interaction can be found between the active ingredients within the herbal formulation and this may lead to synergistic or incompatible effect on the efficacy of the herbal medicine. In other words, this interaction can lead to changes in the efficacy of herbal medicine. In effect, herbal medicine can affect one's metabolic activity, absorption, because these preparations may contain active ingredients that may be toxic to consumers. Adverse effect such as bleeding is recorded as one of the interactions between CAM use and conventional medicine (De Souza Silva, Santos Souza, & Da Silva, 2014; Enioutina et al., 2017).

A similar study by Kavanagh (2017), on medication governance; preventing errors and promoting patient safety shows that an integrated approach to weight loss include a range of exercises, diet, acupuncture, and complementary and alternative medicine. However, self-prescribed CAM weight loss medicines and overdose can lead to serious side effects such as renal damage. The researcher reiterated that adverse effect such as bleeding and bruising can occur with concomitant use of complementary and alternative medicine and conventional medicine. Some significant adverse effects that can occur with CAM use include electrolyte imbalance, renal and liver damage as well as ketoacidosis due to stoppage of insulin. Again, variation of dose, adulteration with potentially toxic substances such as heavy metals, animal parts, and unsubstantial claims about herbal products (Bellanger, Seeger, & Smith, 2017, 2018; Kavanagh, 2017).

The study by Kavanagh (2017) and Enioutina et al. (2017) both agrees to the fact that there is some level of risk associated with complementary and alternative medicine use. And one of the vital organs that is the kidney which is involved with the metabolic activity of the body was mentioned as the main target of the effect. Both studies noted that there is a significant level of interactions that could be either CAM-CAM interactions or concomitant CAM and conventional medicine use. Perhaps the adverse effect such as bleeding that was stated by both studies could be due to the fact that some of the conventional medicines are derived from plants so concomitant use with herbal medicine can cause drug interactions that may lead to bleeding.

A study by Masand, Madan, & Balian (2014) on the modern concept of storage and packaging of raw herbs used in Ayurveda stated that there is percentage variation in active ingredients of plants depending on environmental factors and this affect the therapeutic efficacy of herbal medicine. It was discovered that oxygen, exposure of light and microbes have a direct effect on the shelf life of herds. This corroborates with findings by Sadhu et al. (2015) on quantitative analysis of heavy metals in medicinal plants collected from environmentally diverse locations in India for use in a novel phytopharmaceutical product that posited that microbial load, pesticide residue, aflatoxins, and heavy metals may decrease the efficacy of herbal medicine. The implication of the above findings is that, for herbal preparations to be efficacious, the environmental conditions must be taken into consideration. Possibly, if the environment is contaminated with any chemicals or microbes, it tends to affect the quality of herds produced. Again, it can be said that air oxidizes raw herds whereas light decomposes the herds thereby reducing the quality because these environmental factors decompose the nutritive value.

On the contrary, in a study on natural radioactivity levels of some medicinal plants commonly used in Ghana by Tettey-Larbi, Darko, Schandorf, & Appiah (2013) some plants were selected from the Centre for Scientific Research into Plant Medicine (CSRPM) which were investigated to determine the activity concentration and the annual committed effective dose due to naturally occurring radionuclides. The finding shows that the average number of effective radioactive dose was far below the world recommended dose and hence insignificant radiological hazard is associated with consumption of the selected medicinal plants.

Considering the environmental conditions under which the study by Tettey-Larbi et al. (2013) occurred, it can be said that the plants in the environment were controlled because the Centre for Scientific Research into Plant Medicine (CSRPM) in Ghana research into herbal medicines and conducts efficacy and safety analysis on herbal medicines to be approved by Food and Drugs Authority. Arguably, once the Centre is to ensure the purity of drugs extracted from herbs, the environmental conditions for these plants will be suitable. Relatively, the study by Sadhu et al. (2015) and Masand et al. (2014) the researchers did not specify the environment where the plants were harvested. This could account for the difference in the findings.

Furthermore, there is a belief that herbal medicines are safe because they are natural, however, the diversity of the of its chemical nature cannot be overemphasized. An active ingredient in herbal medicine is known to be intrinsically toxic. This ingredient is toxic to the liver and has been found to be carcinogenic in animals as well (Sammons et al., 2016). This study by Sammons et al. (2016), stated that some adverse effects reported from herbal medicine use include liver and kidney damage, carcinoma, coma, and even death. The study revealed some risk factors that contributed to these problems as

inadequate quality control, contamination with toxic substances and mismatch between actual contents and labelling. Another interesting finding from this study is that most many shops in the market advertised the herbal medicines as effective for a range of conditions.

A study by Quiroz et al. (2014) corroborates with the finding of marketing herbal medicines where 22 market stalls of 16 markets in Benin were quantitatively surveyed. About three hundred and seven medicinal products were found on the market. The market women, when interviewed in the rural markets, mentioned that apart from the seeds and the barks they collect the rest themselves. In a similar study by Andel, Byren, & Onselen (2015) in Ghana, 27 market stalls were surveyed quantitatively and results revealed two hundred and forty-four medicinal plants also gathered by market women themselves. Although both studies were looking at the economic value of herbal medicine, availability of these herbal medicines in the open market reflects the health concerns in the locality. Again, one cannot tell the environmental conditions under which these herbal medicines were taken from and hence the safety of consumers be compromised.

Some of the risk identified according to the literature review include bleeding, kidney problems, liver problems, contamination with heavy metals, exposure to sunlight, wrong labelling, and selling in open market as well as drug-drug interaction. It is expected that, some of these risks will be identified in the current thesis. The ensuing section looks at some of the complementary and alternative medicine use among people with diabetes.

2.3 Complementary and Alternative Medicine use in type 2 Diabetes Mellitus

This section talks about the forms of complementary and alternative medicine use among individuals diagnosed with diabetes.

According to a quantitative research study by Sheikhrabari et al. (2017) on complementary and alternative medicine use and its determinants among diabetes in Iran, convenient sampling method was employed to enroll 294 participants with the age range 18 years to 55 years. Their findings centered on the type of medicinal plants used, their type of occupation, and the use of CAM among individuals with diabetes. The study posits that approximately 89% of the participants had lived with diabetes for less than 10 years and most of them (53.4 %) were on prescribed medication either insulin or oral hypoglycaemics (Sheikhrabari et al., 2017). In addition, 88.4% of the participants used a minimum of one form of CAM in the past. Out of the above statistics, 84.9 % declared that they use medicinal plants (Sheikhrabari et al., 2017).

This is in agreement with a study by Wazaify et al. (2011) where 93.4% of the participants also mentioned the use of herbal medicine for the management of diabetes. The participants gave various reasons such as for cure and to relieve them of symptoms to the use. Most of them did not disclose to their health professionals that they were using herbal medicine as well. Nevertheless, the variation in the percentage use of herbal medicine can be attributed to the different methods used in carrying out the research work. The reasons for not informing healthcare providers is an area that be researched on.

Research work demonstrated that the use of medicinal plants is different from different countries because of easy accessibility and availability (Korsah, 2015; Wazaify et al., 2011; Yarney et al., 2013). In the findings by Sheikhrabari et al. (2017), participants

mentioned chamomite as the most used medicinal plant whilst a similar research work in Jordan revealed green tea which forms about 93.4 % as the major medicinal herbal drug use (Wazaify et al., 2011). This is buttressing the suggestion that the type of complementary and alternative medicine use is dependent on the herbs available and accessible in the locality of the study.

According to a study by Thirthalli et al. (2016) that examined the traditional, complementary, and alternative medicine approaches to mental health care and psychological wellbeing in India and China, clinical control trial was conducted on the effectiveness and safety of drugs. The various forms of complementary and alternative medicine identified were classified as follows. The use of herbal and other natural products such as Ayurveda, homeopathy and traditional Chinese medicine, physical therapy such as acupuncture and traditional Chinese massage, mind-body therapies such as yoga and tai- chi as well as other methods that incorporate faith-based healing. The finding is consistent with, a study by Lotfi et al. (2016) and Pumthong et al. (2015) that revealed a number of complementary and alternative medicine use such as aromatherapy, hypnosis, meditation, yoga, energy therapy, acupuncture with the use of herbal medicine being the highest percentage.

Comparing the studies conducted in various countries, it is suggestive that the complementary and alternative medicine used is equally related to the forms available and the culture of the people involved. In the study by Sheikhrabori et al. (2017) and Wazaify et al. (2011), it is recorded that respondents were being managed on conventional medicine, however they engaged in the use of herbal medicine as well this is inconsistent with findings by Thirthalli et al. (2016) where no record of conventional medicine use by any of the respondents was made. The higher percentage of herbal medicine use

posited by Lotfi et al. (2016) may be due to cultural difference because the use of herbs forms a great foundation to the traditional medicine in Iran.

The above findings substantiate with findings of similar studies in Ghana which indicates higher use of biological -based therapies mostly herbal preparations, moringa, pear leaves, and dandelion, prayer, massage therapy, and Chinese medicine. (Gyasi, Mensah, et al., 2015; Kretchy et al., 2014; Yarney et al., 2013). It is imperative to note from the review done, herbal medicine is mostly used as complementary and alternative medicine perhaps, its available in the open market and the cultural beliefs seems to endorse the use of herbal medicine as a means to preserving culture.

The literature review identified some forms of complementary and alternative medicine use. The forms can be categorized according to the classification by the National Centre for Complementary and Alternative classification. These are the mind-body therapies, biological-based therapies, manipulative and body therapies, energy fields, and alternative medicinal systems. In this thesis the term, CAM is used interchangeably to depict other management modalities used instead of the conventional medicine regimen in managing diabetes. It is expected in the current thesis to identify the various forms of complementary and alternative medicine used by people diagnosed with diabetes. The ensuing section talks about the outcome of complementary and alternative medicine use. Complementary medicine is mostly used in the relieve of symptoms associated with the effects of orthodox medicine whereas alternative medicine is used instead of the orthodox medicine. For instance, a cancer or diabetic patient may take herbal medicine, or go in for acupuncture of massage to relieve the effects of the orthodox medicine. Thus, these therapies such as acupuncture, yoga, massage just to mention can be used as either complementary or alternate medicine depending on the purpose of its use (Ausanee, et.al 2016) .

2.4 The Outcome of Care for The Use of Complementary and Alternative Medicine

In a study to determine the differences between male and female consumers of complementary and alternative medicine use in a US population, 34,525 participants were involved. Findings were that most of the females recorded that they use CAM because they achieved the feeling of general wellness and also it prevents them from various diseases (Yan et al., 2015). A similar cross-sectional study conducted on 541 subjects using cluster sampling method to determine the prevalence of traditional and complementary medicine in Kashan also reported that (66.5 %) of the participants reported that CAM is effective in improving their diseases whilst (52.7%) believed that herbs were very effective in the treatment of their health problems (Lotfi et al., 2016).

It is thought-provoking to note that although the study in the United States by Yan et al. (2015) indicated that more females attributed feeling of wellness to CAM use, this finding is divergent to the study in Kashan by Lotfi et al. (2016) where more men (56.9%) reported that complementary and medicine is effective in treating diseases.

There is another report of the positive outcome of complementary and alternative medicine use in a research by Lien et al. (2016) with the aim to explore the prescription pattern of traditional and complementary medicine and its impact on the risk of diabetic ketoacidosis in patients with type 1 diabetes in a controlled trial; patients who use traditional and complementary medicine users were analyzed against non-users and it was found out that there was a (33 %) reduction rate of diabetic ketoacidosis in all tradition medicine users. This finding is consistent with the research finding that posited that significant adverse effects to CAM use were noted among type 1 diabetes patients due to

the cessation of taking insulin resulting in hypoglycaemia, ketoacidosis and kidney injury (Kavanagh, 2017).

Besides, a qualitative study on the use of complementary and alternative medicine by lung cancer patients in Korea revealed that, about 50% of the subjects attested to the use of CAM to improve their quality of life, lessen side effects of biomedical anticancer treatment and enhance their quality of life (Kim et al., 2016). This finding supports the numerous suggestions that complementary and alternative medicine use brings a positive outcome to the users. Considering most research work, participants attributed their explanation to the positive response they elicited to the traditional medicine use. Some of these outcomes mentioned includes relief of symptoms, cure for diabetes, decrease in side effects of simultaneous medication use, and delay in progression of disease prognosis (Aziato & Antwi, 2016; Hasan, Ahmed, Bukhari, & Loon, 2009; Korsah, 2015; Sheikhrabori et al., 2017; Thirthalli et al., 2016; Warren et al., 2013).

Based on the various literature reviewed so far, it is important to note that patients who use traditional medicine are more likely to experience better disease outcomes such as for relief of symptoms, slow down of disease progression and decrease from side effects than the non-users of complementary and alternative medicine.

Contrary to the above research finding, another study by Spinks, Johnston, & Hollingsworth (2014) refuted the fact that CAM use is associated with a positive effect. The researchers were of the view that, complementary and alternative medicine use is not totally attributed to the increased quality of life. They postulated that most of these studies used non – experimental research methods whereby the results were positively linked with health consequences and negatively related in the same study (Spinks et al., 2014).

From the literature reviewed, the outcome of complementary and alternative medicine could either be positive or negative. Some of the positive outcomes identified include relieve of symptoms, reduction in side effects and delay in the outcome of the disease which could be attributed to the belief of the safety of herbal medicine because it is natural. Other findings were that, negative outcomes are associated with complementary and alternative medicine use and these could be kidney problems, hypoglycaemia and ketoacidosis. The current thesis is likely to record some of these outcomes associated with complementary and alternative medicine use. The next sub topic talks about some risk associated with complementary and alternative medicine use.

2.5 Risk Regarding the use of Complementary and Alternative Medicine

A closer examination of a quantitative research study by Sheikhrabari et al. (2017) shows that the type of occupation of the patients determines the treatment sought for in managing diabetes because job determines income and it impacts directly on product consumed. The researcher narrated that complementary medicine is not captured under the health insurance scheme being operated in their country thus the cost of conventional medicine could be the reason to use CAM.

A similar study on hawking of medicinal drugs: the perspective of the Ghanaian consumer by Edem, Eli, & Adigbo (2014) indicate that majority of herbal drugs are being sold along the street and market areas by vendors. Again, the finding indicated that there is high patronage of these hawked drugs along the streets and 648 (88.4%) of the participants are aware of the risk associated with buying vended drugs. The respondents further gave detailed risks such as a failure of treatment, health damage and even death (Edem et al., 2014). According to Edem et al. (2014), the national health insurance

scheme instituted by the Government of Ghana is to provide affordable health care services but in spite of it, people still patronize herbal drugs sold in the open market. It is significant to note that it is a common practice in the streets of Ghana, bus terminals, and open spaces for herbal drugs to be on display for sale. Again, people who patronize these herbal drugs at bus terminals, open spaces do so at their own risk.

Moreover, it is important to note that the researcher was silent whether alternative medicine is captured under the insurance scheme being operated in Ghana but the study by Sheikhrabari et al. (2017), did mention that complementary and alternative medicine is not captured under the health insurance scheme being run in Iran but was silent about open sale of CAM. Perhaps, an introduction of alternative medicine under the various health insurance schemes will eliminate the patronage of herbal drugs being sold in open markets and on the streets.

Research findings indicate that people can buy these drugs left at the mercy of the sun, cold, dust weather change, and without prescription from a doctor and even from peddlers who cannot read the dosage and instructions written on these said drugs. These alternative drugs could be expired, have altered shelf life, or problems with underdose or overdose (Edem et al., 2014; Komlaga et al., 2015; Quiroz et al., 2014; Thirthalli et al., 2016). This is supported by a study on the modern concept of storage and packaging of raw herbs which confirmed that herbal drugs exposure to atmospheric changes such as sunlight, extremes of temperatures may undergo changes that may compromise the shelf life of the herbal drugs and in effect reducing its efficacy (Masand et al., 2014). There are connections in the findings of the studies above. The findings point to the direction that most herbal drugs are sold without a prescription, and it can be bought at the open market under adverse environmental conditions which may put the potency of these drugs at risk.

Asase, Daniel, & Akweteya (2016), in their study on the ethnobotanical study of herbal medicines for the management of diabetes mellitus in Dangme West District of southern Ghana, established that about 47% of the plants and leaves used for complementary and alternative medicine treatment were collected just from their compounds or backyard gardens. This is supported by a cross-sectional study by Kretchy et al. (2014) conducted in Ghana which revealed that, 37.25% of the participants confirmed that traditional medicines were bought at the open market. 21.57% obtained traditional medicine from backyard garden and farms. The findings further indicated that most of the respondents mentioned that they were financially challenged in purchasing their conventional medicine hence resorted to complementary and alternative medicine (Kretchy et al., 2014).

The affordability of complementary and alternative medicine is seen in a similar research study by Gask, Macdonald, & Bower (2015) which stated that complementary and alternative medicine is cheaper because one can even defray the cost even by paying in installment.

Although the study by Kim et al. (2016) mentioned that, CAM is cheaper, in the study finding by Kretchy et al. (2014), participants indicated that they face some financial challenges in procuring their conventional medicine hence the use alternative medicine which is relatively easy to get. Comparing these findings with that of (Edem et al., 2014; Sheikhrabori et al., 2017) I am confident to say that inability to capture the cost of alternative medicine under national health insurance is likely to attract people to patronize open market drugs.

Nevertheless, one may say that taking the herbal drug from your compound or backyard garden may be the safest means for one's health. Considering a quantitative study to analyze heavy metals in medicinal plants collected from environmentally diverse locations in India, it was revealed that minimal presence of heavy metals is permissible to ensure safety and prevent hazardous health conditions (Sadhu et al., 2015).

On the contrary, some studies findings also demonstrated that the breakdown of herbal drugs by the liver for subsequent absorption by the body goes through four phases of which at the final phase some of the compounds of the herbal drugs may be changed into lethal constituents through the hepatic breakdown (Masand et al., 2014; Peng et al., 2015). This is similar to research finding by Matheka (2013) which indicated complications such as drug-drug interactions are likely to occur when complementary and alternative medicine is used. It was further stated by the researcher that this drug interaction may affect the proper control of their blood sugar levels (Matheka, 2013).

The literature review pointed out that the risk related to the use of CAM include readily availability of herbal medicines in the open market under adverse environmental conditions that affect the efficacy of the active ingredients. Another attribute identified was the financial status of the people involved because the majority of them were low salary workers, poor labelling as well as self-prescription.

Again, although some of the respondents acknowledged the risk associated with CAM use, it is interesting to note that they use the herbal medicines irrespective of these challenges. Perhaps, the cultural background and the belief system were the motivating factors to herbal medicine use. The next section looks at the conceptual framework.

2.6 Conceptual framework

Conceptualization of this study leads to the consideration of several theories that could probably be used to guide the study. Some conceptual framework and philosophies underlying some of the theories of healthcare were studied. The applicability, benefits, and weakness in relation to each of the theories were examined and the most appropriate one considered for the study. The theories examined include the following;

- a) Kleinman's explanatory model
- b) Biopsychosocial model.
- c) Andersen's Socio Behavioural model.
- d) Complementary and Alternative Medicine Healthcare model.

The justification for the various frameworks is examined below in terms of relevance or applicability to the current study.

2.6.1 Justification for the Complementary and Alternative Healthcare Model

The Kleinman's explanatory model of illness was proposed by Kleinman (1981). The model influences utilization of health service and health seeking behaviour. The model reveals how people evaluate their illness allowing them to express how it happened, its causes, effects and what will make you feel better. It further explains how social realities are influenced by cultural background and as such impress on the decision making of the sick. The model enables the health provider to understand the sick comprehensively. One of the merits of this model is that it allows the researcher to draw experiences of illness from his or her participants. The model has been used in a variety of studies

including diabetes and stigma associated with HIV/AIDS. Although this model provides the opportunity for the clinician to know the belief the patient holds about his or her ailment as well as social meanings to the diseases, the researcher did not consider it because it may not help to answer the research questions.

Another model that was considered was the biopsychosocial model proposed by Engel (1978) this model is basically understood in terms of the psychological, social and biological attributes to health. It is explained that the psychological features are the thoughts, emotions, and behaviours. He emphasized that for one to be stable to function properly in the event of ill health, the social factors need to be firm. The biological domain reflects the genetic propensity, Hypothalamic -Pituitary Axis and the fight-flight response as well as the effects of medications. Lastly, the social domain of this model explains the various support from family and others, interactions, background, socio-economic status traditions, and cultures. In summary, the biological aetiology must not be solely considered but rather, the social, biological and psychological aspects must be evaluated when applying this model to care. This model dictates that factors that affect health outcome span from various levels and this need to be empirically assessed to know the role played. In African and the Ghanaian context with a rich cultural background, not all the factors can be evaluated scientifically so the researcher could not consider this model.

A critical look at the Andersen's socio behavioural model was done. This is a model proposed in 1960 by Andersen (1968) that consist of three constructs to predict and explain the use of health care which is commonly used in conventional medicine literature. The model consists of three constructs which include predisposing factors, enabling factors and the need factors. This model has been used widely to examine HIV patients, cancer patients and CAM clinic clients. The main aim of this model is to determine

conditions that either enable or obstruct the utilization of healthcare services. He attributes the predisposing factors to the social and cultural structures, occupation, ethnicity and other social connections. Other predisposing factors he explains include the values of individual's, attitudes and knowledge about healthcare. The model further explains the enabling factors as the quality of relationships of the family and significant others as well as personal qualities. Again, the quality of community service available in terms of healthcare and waiting time. Lastly, the model talks about the need factors. This is how the client view his or general state of health. How the person feels and explains his or condition. Even though this model is widely used in most complementary and alternative medicine studies, the researcher did not find this appropriate because the researcher wanted to know more than just the reasons for the choice of the healthcare.

2.6.2 Complementary and Alternative Medicine Healthcare Model

This model was developed by Fouladbakhsh & Stommel (2007) with its philosophical underpinnings from Anderson's socio behavioural model. The proponents considered health care service utilization, CAM practices and or its products, either both or individually and the use of CAM providers. This conceptual framework was developed based on Andersen's socio behavioural model. It actually encompasses all the factors identified in the model and enhances it by incorporating likely individual and system level indicators. The framework helps to identify the pattern and predictors of complementary and alternative medicine use. Andersen's model incorporates health service and this is expanded to include health practices and its products. That comprise complementary and alternative medicine services that make it a bit easier to predict factors of CAM use. However, this CAM healthcare model includes indicators that may either pull someone

towards CAM use or push another individual away from CAM use. This is further explained in the explanations given on the constructs of the framework.

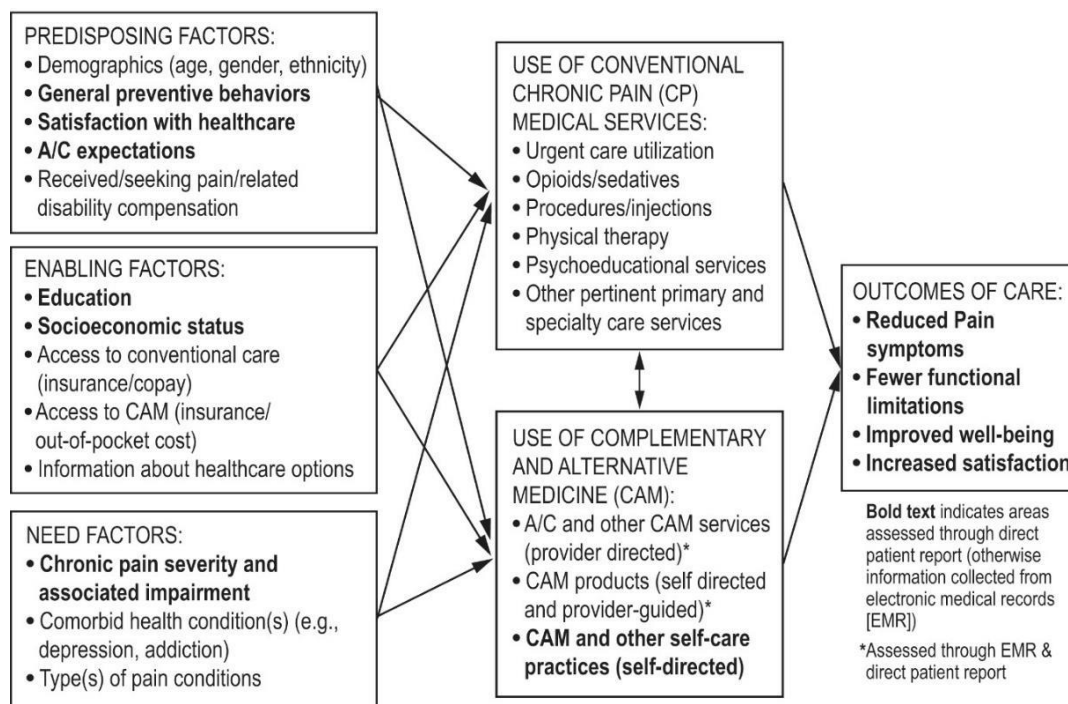
Predisposing factors were explained to be factors that make one susceptible to use CAM. These could be a belief in traditional medicine and ethnic practices that are mostly passed on from generation to generation as well as values and attitudes. Practices within the community can also be a pull factor for the use of CAM. It is argued that community influence although mentioned as a predisposing factor, may also be an enabling factor to CAM use. Let us consider a community whose value and attitudes are that it is the responsibility of the individual to be responsible for ones' health. People in this community learn this attribute from the family and the community consciously and unconsciously and as such predisposes them to CAM use. The perception of risk has been also associated as a predisposing factor to CAM use. That is if the individual considers his disease state as of higher severity, then the individual is likely to engage in all forms of health care services. This basically depends on the knowledge base of the individual as well as the self-care ability of the individual and autonomy. In effect, the predisposing factors not only the cultural and psychological factors of health but explain the frustration with the conventional medicine of healthcare.

Enabling factors is the second construct in this model and having a regular source of CAM Healthcare services is a resource to the individual because it serves as a source of information and a referral for CAM services. Thus, the geographic location of an individual is an enabling factor in CAM use. It is also an attributing factor to the variety of CAM therapies globally in relation to continents. Financial burden and insurance remain as enabling factors because of the effects it bears on the decision to seek any form of healthcare.

The need factors can be identified under the construct as an illness experience. The potential indicator implied in this is the morbidity of the diagnosis, cancers and other chronic diseases. Consequently, the disease burden is likely to influence the individual toward CAM use due to a belief in a particular therapy that may alleviate the associated health problems. Health service use explains the concept of CAM as it is a self-directed therapy that involves all CAM practices and products that can be purchased.

Outcome of care is the last construct and as it is expected of healthcare to achieve optimum health goal so do this model seeks to apply. Applying the beliefs of the behavioural model, this model seeks an improvement in the quality of life of people. This quality of life can be measured as potential empirical indicators as decreased in symptoms experienced, decreased in functional limitation, diagnostic verification of improvement in the condition, increased satisfaction as well as the increased perception in control of one's health. The complementary and alternative healthcare model has been used as an organization framework for this thesis. In other words, the model assisted me explain the major headings of the literature review to the end. The constructs of the model, helped defined my objectives.

Figure 2.1: Complementary and Alternative Medicine Model Fouladbaksh & Stommel 2017



2.7 Summary of literature review

The literature reviewed extensively indicates that the use of complementary and alternative medicine exists among individuals diagnosed with all forms of chronic conditions. A significant number of these studies stated concomitant use of conventional and complementary and alternative medicine products. Most of these studies were from other African countries with a few from Ghana. Majority of the studies were quantitative with a few qualitative studies. In this current thesis, CAM use among patients diagnosed with type 2 diabetes will be explored and described. The intent of the study is to enhance the treatment options available and to add knowledge to the literature in the area of people diagnosed with diabetes mellitus. In the ensuing chapter, comprehensive descriptions of the research methodology will be presented.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter entails a description of the research methodology used in the study. Again, the chapter includes the research design, research setting, target population, sample size and sample technique. It also outlines the data gathering tool, data analysis, data management, methodological rigour, and ethical considerations.

3.1 Research design

The researcher engaged the respondents in an explorative descriptive study approach to research. Qualitative research is an approach to research that seeks to explore basically the motives, emotions, ideas, opinions feeling that expands our understanding of the social world. Qualitative data is about obtaining subjective data about the phenomenon under study (Profetto-McGrath, Polit, & Beck, 2010). The approach is a thoughtful, deliberate strategy for understanding the meaning of human actions, understanding the experiences of attitudes, behaviours, and actions in an established self- designed articulate collection of data. This data is duly organized and the textual information interpreted.

With the aim of understanding the use of complementary and alternative medicine among people with diabetes, it was necessary for the researcher to use qualitative design since it sought to deal with the experiences of the respondents. The method enabled the researcher to explore the views of the participants on what accounts for the use of complementary and alternative medicine.

3.2 Research setting

The proposed study took place at Ledzokuku-Krowor Municipal Assembly (LEKMA) Hospital. It is a 100-bedded facility build in 2010 through a partnership of Government of Ghana and China. The hospital is sited in Accra precisely at Teshie: serving the people of Nungua and other surrounding towns. The hospital has an outpatient department (OPD) that runs services like general consulting, emergency services, dental services, ear nose and throat, diabetes clinic, eye clinic, family and child welfare clinic. Other services available on OPD basis include radiological services, pharmacy and an herbal service at the herbal clinic. Inpatient department at the hospital entails paediatric, maternity, medical and surgical wards as well as a theatre where patients are admitted when necessary. Support services that can be identified at the facility are finance, transport In-service training, and personnel department. LEKMA hospital can boast to be the first Ghana Health Service to have computerized tomography in Accra. The herbal unit has two herbal doctors, one specialist for acupuncture services and one enrolled nurse who is responsible for nursing care activities such as history taking and counseling of patients taking herbal medications. The herbal unit lacks an in-patient ward of its own. Patients are attended to only on OPD basis. However, if any of them need in-patient care, they are admitted to the main hospital wards. The herbal unit operates only on weekdays that is Mondays to Fridays.

The setting was chosen because of the comprehensive health care provided to consumers that patronize the facility. In addition, the majority of research in Ghana on diabetes was conducted in Korle-Bu Teaching Hospital which is the nation's premier and a national referral point. Similarly, studies in Accra on complementary and alternative medicine were conducted at other private institutions that provide herbal treatment.

Hence, to explore the use of complementary and alternative medicine among patients with type 2 diabetes, the researcher chose this setting which is a Government facility where CAM is practiced.

3.3 Target Population

The study population was the entire group of people of which the researcher made implications to. Thus, all adults who have been diagnosed with type 2 diabetes for six months and beyond who seek health care at the LEKMA hospital were considered. The researcher chose this population because she anticipated that people with six months and beyond experience in CAM use will have the rich knowledge to share.

Target population can be defined as the wholeness of the persons from which participants may legally be sampled to be involved in a study (Robinson, 2014).

3.3.1 Inclusion criteria

Participants for the study were patients diagnosed with type 2 diabetes who were eighteen (18) years and above and were using the complementary and alternative medicine for six months and above. Using the CAM for the period of six months gives an individual the ample experience to share in the study.

3.3.2 Exclusion criteria

In this study, persons diagnosed with diabetes either type 1 or type 2 for less than six (6) months and those are below eighteen years of age were not included in the study.

The researcher anticipated that those with less than six months of CAM use would not have had adequate time to develop the experience to share.

3.4 Sample size and Sampling Technique

Purposive sampling method can be explained as a method whereby the researcher, identifies people who are eligible to participate in the study or are readily available. Again, available respondents or people with such experiences are usually requested to contact researcher by placing notices at vantage places at the setting. The criteria for selection into the study was explained to the participants as being diagnosed with type 2 diabetes and managing with complementary and alternative medicine for a period of six months and above and being above eighteen years and beyond. To determine sample size, one must consider the scope of the study because once the scope is broad, a longer time will be required for saturation to be reached. The researcher stated that ideas, feeling, opinions, thoughts are expressed beyond an individual respondent's experience because respondents share experiences of significant others who have similar conditions or are in similar situations (Morse, 2000).

The researcher left a notice on the unit's notice board as well as her contact. This attracted some participants who called to express their interest in the study of which those who were eligible were recruited. The researcher also identified some contacts in the folder of the unit and made follow up calls that yielded fruitful results. The researcher also spoke one -on -one with some clients diagnosed with type 2 diabetes who came for a follow -up visit and accepted to join the study. One participant who had gone through the interview already introduced one other participant through snowballing sampling to be interviewed. The purpose of the study, merits and the academic purpose of

the study was explained to the participants. Participants were recruited and interviewed until no new significant information was being given at the thirteenth (13th) participant.

3.5 Data collection tool and procedure

The data collection tool used for this study was an interview guide. In this type of interview, the researcher prepares interview guide on areas of the subject to be discussed. Based on the response elicited from the respondents, the researcher asks further questions to unearth more information and thereby regulate the path of the interview. The semi structured interview guide was prepared with the CAM Healthcare model as a guide to the objectives of the study. Section A of the interview guide entailed the demographic data of the participants while section B encompassed the open-ended questions with probes. Data saturation was achieved when no new idea was collected during the data collection. Data was saturated with the thirteenth (13th) participant. Semi- structured interviews are chiefly used in qualitative studies (Creswell, 2014).

According to Anderson (2010), purposive sampling method in qualitative research is whereby the researcher recognizes individuals who are willingly available to be involved in a study which is usually exploratory in nature. The researcher placed notice explaining the purpose of the study and her contact on the notice board of the unit. Mounting notices or entreating individuals with the requisite experiences in your area of study expands the probable range of experiences available to the researcher (Anderson, 2010). The notice spelled out the inclusion criteria. Participants who were interested called the researcher for enlistment. Again, the researcher spoke on one- on -one basis to some participants who were at the unit for their follow up visit. Those who were interested and met the inclusion criteria were recruited.

Face-to-face in-depth interviews were conducted in the English Language at the facility at the date and time that was convenient for the participants. The researcher had to visit some other participants who preferred the interviews to be conducted in the comfort of either their home or shop. In all, ten (10) of the participants were interviewed at the facility at a designated office space. Two (2) participants were interviewed at their homes and one participant was interviewed at her shop. The participants read the information sheet, sought clarifications for all misunderstanding before they appended their signature to the documents prior to the interview. During the interview, the researcher listened attentively and minimized all forms of interruptions that might disrupt the conversation as they spoke of the use of complementary and alternative medicine. The researcher wrote down issues of concerns in her field notebook during the interviews. These were concerns the researcher noted to probe for further clarification. Participants were probed to further expand their ideas on the issues raised. In the course of the interview, the researcher kept on nodding her head or used silent voice such as 'oh yeah' to urge the participants to express their views fluently on the use of complementary and alternative medicine.

The interviews were recorded using a voice recorder after seeking the consent of the participants. In addition, the researcher recorded all her field experiences, nonverbal communications of the participants in the field notebook. After the interview, the participants were given a token. The entire interview period lasted from forty- five minutes to one hour. The participants were reminded that they would be called upon for further clarification if need be. However, it became expedient on one occasion two weeks after the first interview to conduct another interview with a participant that lasted from forty -five minutes (45minutes) to an hour. The researcher conducted twelve of the interviews in English language and one interview in Twi language (a local Ghanaian Language).

The researcher later translated the transcribed data from Twi to English since the researcher conducted the interview herself without engaging a research assistant. The transcription was made easy because the researcher had asked of the meaning of the Twi words. The researcher did the translation herself to ensure that there was consistency in the translation from Twi to English since the researcher could speak the Twi fluently. No professional translator was employed in this thesis. In all, the collection was started in January 2018 and ended in May 2018.

3.6 Piloting of Instruments

A pilot study was conducted at Tema General Hospital after obtaining permission from the Institutional Review Board of the Noguchi Memorial Institute of Medical Research. The researcher conducted the pilot study using three participants that met the inclusion criteria. The purpose of the study was explained to the respondents thoroughly that, the pilot study was to enable the researcher to correct any uncertainty that may arise before the main interview. The results from the analysis of the pilot interviews were not included as part of the main thesis. However, they were useful in fine-tuning and further developing the semi-structured interview guide. And this occurred concurrently with the literature review. Again, the researcher shared the findings of the of the pilot study with the supervisors for suggestions.

3.7 Data Analysis

In this study, collection of data and analysis was conducted concurrently. Each day, after data collection: all the recorded interviews on the audio recorder were written out word for word by the researcher. The researcher gave each participant a recording number to differentiate the transcript and the order of the interview. The participants were given pseudonym. The concurrent data collection and the word for word transcription enabled the researcher to note the emerging codes and improve on subsequent interviews. The audio recordings were replayed repeatedly and the transcribed data was read over to maintain correct data. After a thorough manual transcription of all the audio recordings, the researcher typed and analyzed data using thematic analysis.

Data analysis is a “systematic organization and synthesis of research data and testing of research hypothesis using the data” (Polit & Beck, 2010). Thematic content analysis gives an exhaustive explanation of qualitative data and provides a comprehensive, exhaustive, rich and supple data and this method identifies, analyses and report patterns within data collected (Anderson, 2007). In this thesis, thematic content analysis was employed and this is supported by Creswell (2014) and Polit & Beck (2010) who agrees that in analyzing qualitative data, a detailed approach must be used and every sentence must be analyzed by the researcher.

The researcher read the transcription repeatedly and assigned codes to all the responses that were similar based on the constructs of the complementary and alternative healthcare model. Findings that were inconsistent with the themes and subthemes were content analysed. During the content analysis, the researcher read each transcript severally to comprehend the meaning portrayed by the participant. The researcher

grouped words, phrases, and statements with similar meaning into codes. Corresponding codes were grouped into subthemes with its equivalent themes. Data analysis was done devoid of researcher's feelings and thoughts. The experiences, thoughts and feelings of participants were solely reported. Quotes from participants were used to support the themes generated.

3.8 Methodological Rigour

Results of the qualitative research study may not apply to a bigger population and hence some scientist argue that qualitative research is not scientific enough. However, to ensure rigour and trustworthiness of qualitative research study as argued by quantitative researchers', Lincoln & Guba (1985) proposed four criteria namely, credibility, transferability, dependability and confirmability that must be ensured in qualitative research to ensure rigour. In this thesis, the rigour of data collection and analysis was ensured as detailed as follows.

Credibility. To ensure the credibility of this thesis, the researcher conducted a pilot study at Tema General Hospital with three participants who met the inclusion criteria. The findings from the pilot interview were not part of the main thesis. They were very useful because the final review of the interview guide was based on the findings derived from the pilot study. This was made possible when the researcher showed the pilot interview and the results to the supervisor for review. In addition, the researcher recruited only participants that met the inclusion criteria in the main study as well. The researcher kept a field diary to record all the nonverbal communications of the participants as well as the field experiences of the researcher. The researcher spent 45-60 minutes interviewing the participants. This time allotted was adequate enough to build rapport

with the participants and to allow the participant to give out a detailed description on the use of complementary and alternative medicine among patients with type 2 diabetes.

According to Lincoln & Guba (1985), research findings that represent the true nature of the study respondents make the findings credible and that determines the strength of the research study. This is referred to as internal validity. The researcher ensured internal validity by maintaining pseudonyms for each of the participants to ensure confidentiality throughout data collection, transcription and interpretation of findings. Ensuring internal validity is also supported by Polit & Beck (2010), as they mentioned that conducting the research in a believable manner depicts credibility. Lastly, there was member checking to verify their responses to ensure the true responses were documented. Member check was achieved in this study by giving the participants who could read the opportunity to read the transcripts to confirm what they said during the interview. The researcher also read the transcripts to the other participants who could not read due to visual challenges to verify with the participants what was documented.

Transferability. Transferability in this study was achieved by detailed description of the context of the study. The study sample was described fully as well as the methodology used to arrive at the findings. All the data transcribed and the field notes have been kept for audit trail. Transferability in a qualitative research finding can be met when the outcome of the study can fit into another similar context (Lincoln & Guba, 1985).

Dependability. This refers to the extent to which the study findings can be repeated among same sample or context. In other words, how reliable are the research findings (Lincoln & Guba, 1985). This was accomplished in this study by the detailed description of the sample, setting, methodology and data analysis. Each interview was

transcribed and analysed by the same process to arrive at themes and sub themes and the transcribed data kept for audit trail.

Confirmability. To achieve confirmability, the researcher sought for in-depth experiences of patients diagnosed with diabetes on the use of complementary and alternative medicine. Again, the researcher sought for clarification from responses that were not properly understood. Participants were debriefed about their responses which participants confirmed what they said. Data was collected until it was saturated and no new ideas were generated. The data was analysed based on the information provided by the respondents devoid of the feelings of the researcher. Confirmability can be referred to as the extent to which a research finding reflects the experiences of the participants devoid of researcher's bias. Thus, there should be the likelihood of another researcher arriving at the same results when data is analysed (Lincoln & Guba, 1985).

3.9 Ethical Considerations

The researcher received ethical clearance from the Institutional Review Board of the Noguchi Memorial Institute of Medical Research, at the University of Ghana, Legon on 10th January, 2018 (Ref.N 060//17-18). Again, the researcher received ethical clearance from Ethics Committee Ghana Health Service on 22nd April,2018 (Ref.N GHS-ERC061/02/18).

Afterward, an introductory letter was obtained from the School of Nursing and Midwifery, University of Ghana, Legon, to introduce the researcher to the LEKMA Hospital, Municipal Director of Health Service at Ledzokuku Krowor Municipal Assembly. The participants were educated that, they have the right to withdraw from the

study at any point in time and that withdrawing will not have any impact on the care they receive at the unit. An information sheet that explains the purpose of the study, the benefits and risk of the study was given to the respondents. This was to enable the researcher to gain the consent of those interested in the study a week before the interview. Only participants who willingly agreed to participate in the study were asked to append their signatures on the consent form. A conducive, suitable and convenient setting was sort for within the Unit for data collection. Maximum time was allotted to the respondents and those who wanted to take periodic breaks to prevent fatigue during interview session were allowed to do so.

Participants were also told that they could decline to answer certain questions that they so wished. Participants were also advised that interview materials would be kept in a cupboard locked in the researchers' custody and that only the researcher and her supervisors would have access to them. Again, the biographic data of participants were stored in a different cupboard locked from interview data for easy identification. Pseudonyms were used in reporting research to protect the anonymity of the participants. The transcripts will be kept for a minimum of five years following completion of the thesis.

3.10 Data Management

The researcher has kept the transcribed data, field notebook and all other documents have been locked in cupboard in researcher's safekeeping. However, the demographic information and consent forms were labelled and kept separately for easy

identification, locked and keyed in researcher's custody. The researcher will further keep the transcript for five years upon completion of this theses for future clarifications.

In conclusion, this chapter has described the research methodologies that was suitable to the qualitative research. Particularly exploratory descriptive design as an appropriate methodology for exploring the use of complementary and alternative medicine among patients diagnosed with diabetes mellitus. The research setting was duly described, methods of data collection, sampling frame and data management were detailed. The sampling method used in this current thesis was purposive and snowball sampling in a peculiar situation. In addition, data analysis methods were emphasized which included a thorough account of thematic and content analysis by (Braun & Clarke, 2006; Creswell, 2014). The methodological rigour that is relevant to this study was discussed as well as ethical issues in this thesis. The following chapter will present the findings from this thesis.

CHAPTER FOUR

FINDINGS OF THE STUDY

4.0 Introduction

The major findings presented in this chapter emerged from the all the participants on the data gathered on the use of Complementary and Alternative Medicine among patients diagnosed with type 2 diabetes mellitus using a semi-structured interview guide. Peculiar and common experiences about the use of Complementary and Alternative Medicine in diabetes exhibited by the participants will be presented. The findings are presented based on the objectives of the study. Applying thematic analysis, five themes were derived in relation to the objectives. These are predisposing factors, enabling factors, need factors, complementary and alternative medicine use and the outcome of care. This chapter will commence with a detailed description of the demographic characteristics of the study population. Then the thematic areas identified will also be presented subsequently.

4.1 Description of the study population

The study population was thirteen (13) adults diagnosed with type 2 diabetes of which majority were females representing eight (8 participants) and a minority of males representing five (5 participants) out of the thirteen (13). The ages of the participants range between twenty-nine years (29) to sixty-nine (69) years. One of the participants was twenty-nine years (29) of age, three (3) were between the ages of fifty-one (51) to fifty-five (55), six (6) were between fifty-six (56) to sixty years (60) whilst three (3) were between sixty-one (61) years to sixty-nine (69). With respect to their educational

background, one (1) of the participant is a Middle School Leaving Certificate Holder, four (4) had second cycle education and eight (8) had tertiary education. Three (3) out of the eight (8) participants who had tertiary education had a second degree. One (1) of them have MPhil. in Environmental Management and Policy and the two (2) other have Masters in Business Administration. The five (5) are first degree holders in various fields. Four (4) out of the thirteen (13) were retired public servants, five (5) Public Servants, one (1) Pastor, one (1) farmer, and two (2) petty traders. On their marital status, one (1) was single, and twelve (12) were married. On the duration of living with diabetes mellitus, three (3) of the participants have been diagnosed between one (1) to ten (10) years and ten (10) of them for more than ten (10) years now.

The least duration was one (1) year after diagnosis and the longest duration being forty-two (42) years of being diagnosed with diabetes mellitus. Except for one participant, the other twelve (12) were all married with children. Twelve (12) of the participants identified themselves with the Christian religion and one (1) was of the Islamic religion. All the participants were resident in and around Teshie and Nungua both suburbs in the Greater Accra region.

Most of the participants were from the Akan ethnic group comprising Ashanti, Akwapim, and Fante. One person was from the North and two others from the Volta region. The participants spoke different dialect including English, Twi, Fante, Ewe, Ga, and Hausa. All the participants could communicate in Twi and English well aside from their respective local language. All the participants patronize health services at LEKMA Hospital.

4.2 Organization of Themes and Thematic concepts

Complementary and Alternative Medicine Model by Fouladbakhsh & Stommel (2008) was used as a guide to this study. There are six major constructs in the Complementary and Alternative Medicine Health Care model. These include predisposing factors, enabling factors, need factors, use of conventional chronic pain, use of complementary and alternative medicine and the outcome of care. This framework was used to explore factors of health care utilization. However, this study applied five of the constructs as a guide to the objectives of this study since the focus of the study was on the use of Complementary and Alternative Medicine in type 2 Diabetes Mellitus. The presentation of the findings was organized based on the constructs of the model in relation to the objectives of the study as factors (predisposing factors, enabling factors) that accounts for the use of complementary and alternative medicine among diabetes mellitus. In addition, to explore the challenges (need factors) and outcome of care.

The ensuing section will be a presentation of the identified main themes and its corresponding sub-themes. The data generated from the interview revealed five (5) themes and twenty-two (22) sub-themes. The data produced will be discussed and this will be supported by verbatim quotations from the interview transcripts. The identified themes and sub-themes are presented in Table 4.

Table 4.1: Themes and Sub Themes from Transcribed Data

MAIN THEMES	SUB THEMES
Predisposing Factors to the use of Complementary and Alternative Medicine	<ul style="list-style-type: none"> • Family influence on the use of complementary and alternative medicine • Influence of Significant others on complementary and alternative medicine use. • Media influence on the use of complementary and alternative medicine • Influence of belief system on the use of complementary and alternative medicine • Perceived Ineffective Orthodox medicine
Enabling Factors to the use of Complementary and Alternative medicine	<ul style="list-style-type: none"> • Socioeconomic Status • Access of CAM(Accessibility) • Affordability • Effectiveness • Acceptability • Information about Health Care options • The attitude of health professionals
Need Factors to the use of complementary and alternative medicine	<ul style="list-style-type: none"> • Chronic Symptoms • Comorbid Health Conditions • Risk perception regarding the use of complementary and alternative medicine
Complementary and Alternative Medicine	<ul style="list-style-type: none"> • Herbal • Exercise • Physical therapy • Dietary
Outcome of Care	<ul style="list-style-type: none"> • Improved Well Being • Increased Satisfaction • Challenges to CAM use

Source: Field Data, 2018

4.3 Predisposing Factors influencing the use of complementary and alternative medicine among patients diagnosed with type 2 Diabetes Mellitus

In the search to answer the initial research question: “what are the predisposing and enabling factors that account for the use of complementary and alternative medicine (CAM) among diabetes?” predisposing factors was derived as the major theme with its corresponding sub-themes. Below is a presentation of the various main theme and sub-themes. One of the major themes identified in the study is predisposing factors in the use of Complementary and Alternative Medicine in type 2 diabetes. People diagnosed with type 2 diabetes attributed reasons for the use of Complementary and Alternative Medicine to several factors. Reviewing and analyzing the narratives, as many as five (5) sub-themes emerged from this main theme. These were family involvement, Influence of significant others, media exposure, belief system and perceived ineffective orthodox medicine. The participants explained that they were desperate to find the best solution to their health needs and as such, they welcome other opinions. The ensuing paragraph, participants outlined what motivated them to the use of complementary and Alternative Medicine in managing type 2 Diabetes Mellitus. The word for word quotations by participants would be used to describe the attributes.

4.3.1 Influence of Family Involvement in the use of Complementary and Alternative Medicine

The use of Complementary and Alternative Medicine among patients with type 2 diabetes was found to be influenced by the family. The participants interviewed expressed that type 2 diabetes is a debilitating disease of familial tendency. Thus, the disease burden

is enormous and the family if possible, must be involved in the care to achieve the desired outcome. Hence the advice from family members who have been diagnosed with the condition must be taken into consideration. Some of the participants were of the view that since people in the family have lived with the disease for years without major complications, it worth abiding by their suggestions. The findings of the study revealed that nine (9) of the participants use CAM based on the advice from a family relation and a testimony of improved health status. The family members in the context of Ghanaian culture could be your immediate family as a wife, children, brother, sister, mother, father and other extended family members such as aunties, uncles, and in-laws. The participants attributed various reasons to the influence of family in the use of Complementary and Alternative Medicine.

One participant a retired public servant with an MPhil degree explained that he was losing weight progressively and other family members expressed concern.

“my wife kept telling me about people who have used herbal medicine and achieved good results in their sugar level..... errrrmmm it took some time but I heeded to her advice and I had to try it as she said and at least I feel better with it. It has helped me” (CAM D1).

According to another participant, once diabetes is a hereditary disease, you need to make other family members be aware of it, so they can better advise you to seek health care at the appropriate quarters. In the Ghanaian culture, the family is pivotal when it comes to matters of health and illness. Family members would not want to be associated with certain diseases and as such would do their possible best to assist any member afflicted with any kind of disease.

“...the disease is in the family so one weekend my uncle visited and after excusing myself to use the washroom periodically he asked whether I have gotten ‘saa yare no’ literally translated as that disease (depicting diabetes)? Then he warned me that if I depend solely on orthodox

medicine, it will lead me to my grave early, so I should use herbal medicine if I want a long life. Since then I became afraid so I visited the herbal clinic'' (CAM D 3).

Similarly, another participant who is a first-degree holder and a public servant also had this to say.

''diabetes is not something new to me, other family members are diagnosed as such. My grandmother died out of complications of it and my mother and two of her siblings have been diagnosed same. Fortunately, I am the only one among my mother's children that has it now. For the past 20years, my mother has been taking herbal medicine without side effects. Immediately I informed my mother about my diagnosis, she poured some of her herbal medicines for me and that is how I ended up taking it'' (CAM D13).

The family system here in Ghana is so strong that family members are involved in the health care of their members, providing support in any form they deem necessary. Again, one participant narrated how his family members introduced him to the use of Complementary an Alternative Medicine.

''Every family member is concerned with me and is ready to help. My uncle was the first person to introduce to me herbal medicine. He said, one of his friends was diagnosed with diabetes and he used akoko mesa (Basil leaves) which was very effective so he gave me a preparation of it. Then my auntie told me to use dandelion in every meal I prepare''. (CAM D12).

The findings denote that the social system in our Ghanaian context can have a major influence on the choices that people make and in decision making. No matter the socio-economic status and academic background of an individual, the family system has much influence in decision making in relation to health care. Nevertheless, significant others such as friends also influence decisions and choices.

4.3.2 Influence of Significant others to the Use of Complementary and Alternative Medicine

Even though the family is important in decision making as narrated above, another area mentioned during the study was the significant others. The significant others as described by the participants included friends, co-patients, co-workers and even passers-by. The participants were of the view that ‘wo tɔn wo yarɛ a wonya ano ɛduro’ literally meaning, ‘if you sell your ailment you will get treatment for it’. Thus, the participants were inspired to use herbal medicine during conversations with these significant others. Some participants narrated how their interest was developed.

“I was murmuring one day after I left the consulting room so one of the patients asked me what the problem was. Then I told him how the doctors and nurses in the consulting room spoke to me about my high sugar levels recorded that day. I was annoyed my dear, as if I am the one who controls my sugar levels and I did not control it well. So, the patient, an elderly woman asked if I take anything in addition to what I am supplied at the pharmacy. Then I told her no, then she responded that ‘nunum’ (Ocimum canum) is used to control sugar so I started using it even before I was directed to the herbal clinic” (CAM D 9).

Findings from another participant revealed the understated.

“I have a friend who has been diagnosed with diabetes so many years ago so when I realized mine, I called her. She then told me that she uses the herbal medicine at LEKMA so she brought me here and that is how I started using the herbal medicine” (CAM D 6).

“My landlord knows a lot of herbs so during a conversation, he mentioned that he will bring me herbal medicine the next time he comes to Accra. The following month he came back with some herbal preparations of akoko mesa (Basil leaves) and cinnamon which has helped reduce my sugar level a lot. Since then I have been taking it” (CAM D 7).

4.3.3 Influence of Media exposure to the use of Complementary and Alternative Medicine

The mass media was another means that participants made mention of as one of the factors that contributed to the use of Complementary and Alternative Medicine among patients with diabetes. Participants expressed concerns about the enticing nature of advertisements on mass media. Some participants noted that there are recognized agencies that deal with herbal medicine and advertise these on radio and television.

“I did not go anywhere madam, I started right here in my room. I watched an advertising cycle on Tv and herbal preparation was advertised that it cures diabetes. I told my wife to buy some of the herbs advertised because, I spoke with few people and they said it is good so I started using it and it is ok” (CAM D 3).

The power of advertisement, the images, language and voice tone make it so attractive with most of these adverts providing directions or contacts numbers to enhance patronage. A participant noted how a caller into on a radio programme influenced the decision to take herbal medication.

“There was a radio program and a caller said LEKMA hospital has an herbal centre so the following day I just visited this hospital” (CAM 6).

Another participant affirmed how information about locating services point influence CAM use.

“I was not well so I came to report to the doctor. I was losing weight and urinating a lot overnight. Whilst in the queue waiting, I heard an announcement through the hospital’s public-address system that there is a herbal clinic upstairs so if anyone has an interest he or she can seek care there. So, I just left the queue and climbed upstairs to the herbal clinic and that has been it” (CAM D5).

Media influence in the form of radio and TV programmes, advertisement in mass media, open media announcement in mainstream facilities all have one thing in common: it

provides information about herbal medications and alternative treatments for different illnesses. Nevertheless, even if the information is available, the individual belief system will determine the patronage of CAM.

4.3.4 Influence of Belief systems to the Use of Complementary and Alternative Medicine Use

In our Ghanaian culture, herbal medicine is well noted to be used by the forefathers in managing several conditions. This act is believed to be handed over from generation to generation. Although there is an advancement in science, some participants expressed a strong belief in herbal medicine, others supporting its use with their Christian faith. Some participants narrated that we do not need to import drugs from anywhere since we have all the herbal preparations to manage the chronic conditions.

“I have strong faith in our herbal drugs because it is very effective. For example, there were no hospitals in the olden days but our forefathers had long life in good health. We have neglected what is good for our health hence our suffering. Herbal medicine is good, I use it because I know I achieve results with its use. I cannot tell the last time I went for check-up” (CAM D 10).

“Before orthodox medicine came to Africa, our forefathers were living healthy depending on herbal medicine without any problems” (CAM D 5).

In addition, other participants backed their belief in herbal medicine with biblical teaching and narrated how their Christian faith supports herbal medicine use in the treatment of illness.

“I am a farmer, I only come to Accra when my children invite me, I know the herbs that are good for treating diabetes. My children convinced me to try these drugs from Mampong Plant Research Centre and they are good.

Herbs have no chemicals; the Bible even says we should eat the fruits and use the leaves to treat diseases... ” (CAM D 8).

“Herbal medicine is natural. Everything that is natural does not have a side effect. Bible even state in Ezekiel 47: 12 that we should use the leaves of trees as medicine” (CAM D 11).

“Once I have seen this remarkable improvement in my health, it has affirmed the belief I have in herbs medicine” (CAM D 1).

As some of the participants expressed belief in herbal medications, others were of the view that the orthodox medicines were ineffective.

4.3.5 Perceived Ineffectiveness of Orthodox Medicine

Most of the participants expressed that, the signs and symptoms of type 2 diabetes are worrying. Therefore, they have to go beyond conventional medications to help relieve this stress. In an attempt to find a solution to the frequent urination, excessive thirst, hunger and fatigue, the participants explained that orthodox medicine was not helpful.

One of the respondents a second-degree holder had this to say;

“One thing I have to say is that the local metformin was not effective. My sister used to send me metformin from the US and anytime I take that metformin it was effective and my sugar level remains down and but whenever I run out and I take the local metformin, then my sugar level rises up that I sometimes try to balance it with herbal medicine to bring it down. I boil mango leaves and drink” (CAM D 1).

Furthermore, one other participant had this to say,

“As for me, (hahahahaha), I use lemon tea as often as my blood sugar remains high. In fact, that is what I use as my own control measure together with my herbal drug. I take it frequently, just to feel full and to control my sugar. I eat twice a day so this tea makes me feel full” (CAM D 2).

The participant with the first degree in theology also said,

“My dear, I was dying. I was very sick even though I was on tablet metformin. It was not working for me. My sugar level kept on rising and rising whilst I became weaker and weaker until I could barely do anything” (CAM D 11).

My impression about the findings of these predisposing factors is that most of the participants attributed the use to Complementary and Alternative Medicine among them to the fact that some members of their family use herbal medicine so the information they received from them convinced them to use alternative medicine. It appears to me that, the educational background of an individual does not matter in terms of seeking advice.

Participant CAM D 1 who is a second-degree holder narrated how comments from his wife influenced his decision to take herbal medicine.

In addition, another participant who also has a first degree also described how weak he felt whilst he was on tablet metformin. Similarly, a farmer with some level of formal training also gave an analogy of how well he knows herbs and that it worked for a relative. Furthermore, family members such as aunties, uncle's, mothers were mentioned as people with type 2 diabetes who were on herbal treatment. Then significant others such as co-patients and landlords were also mentioned as people whose ideas made an impact in the management of type 2 diabetes in some participants. This indicates that, irrespective of the academic background and the relationship with an individual, opinions of other family members and significant others matters most in decision making. The findings also revealed that participants had the perception that orthodox medicine was ineffective. Accounts given above by the participants was vividly narrated as their emotions about the orthodox medicine appeared not to work for them. Looking at the background of the respondents, it implies that evaluating the effectiveness of orthodox medicine is independent of the level of education. Again, most of the participants narrated that they

have ever used conventional medicine before but however, they stopped due to either the perception that it was not resolving their problem or they felt it was not genuine.

4.4 Enabling Factors to the use of Complementary and Alternative Medicine

This theme emerged in the quest to answer the research question“ what are the factors (predisposing and enabling) that account for the use of Complementary and Alternative Medicine in Diabetes Mellitus”. The first research question also leads to the emerging of the second major theme and the corresponding sub-themes of the study. The findings are presented in the following paragraphs.

4.4.1 Socioeconomic Status

Managing type 2 diabetes involves financial commitment and as such, participants connected their employment status to the cost of managing type 2 diabetes. Most of the participants were aged and hence, either retired or engaged in petty trading. In Ghana, there is no public insurance policy for the aged to access. Managing type 2 diabetes just as any other chronic disease puts financial burden on the individual and the family. Similarly, even participants in active service expressed some concern about the financial implication of managing diabetes. As a young Ghanaian researcher and a nurse who engages clients in educating them on their condition, I have met people who laments a lot about how arduous it is to live with type 2 diabetes. Seven of the respondents mentioned that type 2 diabetes is ‘koankoro yare’ (chronic disease) that needs attention.

“...If you are not employed, then you have a problem because the society expects that you should cater for others. A lot is expected of those of us who are educated. Irrespective of your health status, you need to fulfill your duties as a man. No one cares whether you are purchasing expensive drugs so the financial responsibility remains unchanged. Therefore, if herbal medicine is less expensive and effective why not” (CAM D 2).

“I am also expecting that; my extended family and the entire community must understand and expect little from me. Sometimes the demands are too much” (CAMD1).

The same participant went on to say that,

“You see treating diabetes is quite expensive, expensive in terms of refilling your medications monthly and continuous monitoring of blood glucose level. How many people can afford this let alone own a glucometer? Oh, how I wish there is some kind of sub cedi for our drugs” (CAM D 1).

“What more can I do at this age, but it is expected of me to go for review regularly. How do I do it consistently if I have no source? It is really a problem” (CAM D7).

“How much is my salary on pension? To retire from active service with ill health is a problem. The salary is small so I have to live within my means and herbal is equally good” (CAM D4).

Participants of the study expressed great concern about the chronicity of the condition type 2 diabetes regardless of their employment background, social status and orientation. In Ghana, it is a common practice in most cultures that individuals especially, those who are well-educated help others in their family to also attain certain social status. Thus, participants who are obliged to fulfill this social and family need expressed the additional burden the disease puts on them as described above.

4.4.2 Accessibility

In the study, some of the participants recounted how feasible it is to get access to what they use to manage type 2 diabetes. Most of them narrated that apart from the supply

they receive from the herbal clinic, there are quite a number of other herbal products that help them achieve good glycaemic control. Some narrations given are as follows;

“I use ladies’ fingers sometimes; do you know ladies’ fingers? (Referring to okra) Yes, they are right in my backyard garden” (CAM D11).

“Ohh it is not difficult at all to get my supply of the herbal medicines. I receive it from this clinic. Even if I cannot make it, I just need to call my doctor and to inform her of my sugar reading that morning and then send my driver. They will give him my supply. I don’t need to be physically present if I am not sick or I don’t have complaints” (CAM D 1).

“All these herbs were planted by nature, ‘akoko mesa’ is very common. I don’t need to spend money to buy” (CAM D 8).

The above descriptions by the participants explain their choice of Complementary and Alternative Medicine. Participants stated how easy it is for them to get access to the varied alternative medicine used in managing diabetes type 2.

4.4.3 Effectiveness

The study enabled the participants to make mention of how reliable complementary and alternative medicine use has helped them achieve better sugar readings. Most of the participants expressed joy in their narration because as said they achieved stable glucose recordings some stating stability for a year with the least control being three months.

One participant who holds a first degree in theology and a Pastor had this to say:

“As for the herbal drugs from Mampong, ‘se manhyia’ literally translated as if I had not met them. I may be dead by now; it just took me patience for the first few months. Afterward, my sugar control has been good. I do a lot of sugar profiles so I know what I am talking about. My folder is the evidence of my state before I started the herbal drugs and the same document will testify my state now” (CAM 11).

The same respondent continued to share on reliability with this concern

“I am not just testifying of what these herbal drugs have done in my life. Wherever I stand, I advocate for its use. My life is a testimony of what herbal medicine can do so I talk about it passionately...” (CAM D 11).

“I was educated as part of managing high glucose level to drink solution prepared by putting 5 pieces of okra in 500mls of potable water in a container. After two hours I am to take 250mls of this solution. I recorded sugar of 25mmol one day, all I had to do was to prepare this solution and drink. And I monitored my sugar hourly for 6 hours and by the sixth hour, my sugar level was 10mmol. Again, I have been thought to monitor my ketones as well. I have the urine strips at home and I monitor and give my doctor report. If I had come to your clinic, probably you would have put infusion on me and injected some insulins. This should explain to you why I talk about herbal medicine passionately” (CAM 11).

“Initially when I was using only orthodox medicine, my sugar readings were not stable, but since I started the herbal medicine: I don’t have any problems at all. My fasting blood sugar has been 7.1 for the past six months and it becomes as low as 4.0 sometimes” (CAM D 2).

“The herbal drugs are good all you need to do is to take them and your sugar level will go down” (CAM D 8).

It is obvious from the above narrations that, participants gave testimonies about the efficacy of complementary and alternative medicine.

4.4.4 Acceptability

The findings of the study demonstrated how well accepted herbal medicine is in our Ghanaian society. The traditions and culture of the Ghanaian society do not frown on the use of herbal medicine. Herbal medicine was used by our forefathers and it was handed over as a tradition before the Scientific Research Centre Mampong, was set up and even the introduction of the formal training of the practitioners. The participants expressed how acceptable it is to be on herbal medicine.

“At first I didn’t want to hear anything about herbal medicine, but when I was on a dying bed, I was informed that this herbal medicine is from Mampong I said anything that will give me life was welcome” (CAM D 11).

“For me, for a hospital to be dispensing herbal medicine means that it is not just one of those quarks. The staffs are well trained and the herbal preparations are coming from a reliable source so there is nothing wrong with using it” (CAM D 5).

“Initially my kids did not agree to my option to use herbal. I did not mind them but the evidence speaks for itself. When they saw my laboratory results after six months, they have no option than to appreciate it” (CAM D 11).

Participants expressed confidence in the herbal medicine being available at the hospital setting.

4.4.5 Information about Options in Health Care

The respondents made mention of the counsel they received about available options they can seek help in relation to the management of type 2 diabetes. Most of them narrated that when they were given the option to choose, they think they made a better choice that has resulted in some form of satisfaction. Once they were not forced to use the orthodox medicine, the next point of call was the herbal clinic because they needed something that will put their sugar level under control.

“It got to a time that my liver enzymes were bad, my sugar levels were uncontrolled. Then my physician specialist suggested that I should come upstairs and speak to the herbal doctors for a try. I did not hesitate because I wanted a solution. If he hadn’t informed me, I wouldn’t have known that there is even a centre here that dispenses only herbal drugs for all manner of diseases” (CAM D 11).

“I was not well so I came to report to the doctor. I was losing weight and urinating a lot overnight so I came to report. Whilst in the queue waiting, I heard an announcement through the hospital’s public-address system that there is an herbal clinic upstairs so if anyone has an interest, he or she

can seek care there. So, I just left the queue and climbed upstairs to see the doctor and that has been it'' (CAM D 5).

Some healthcare providers are implicated here. The implication being that they gave the participants option of choice in consultation with participants.

4.4.6 The Attitude of Health Professionals

The attitude of health professionals was mentioned as one of the factors that contribute to the use of Complementary and Alternative Medicines among people with type 2 diabetes. Attitude will be discussed in terms of being either positive or negative attitude. The positive attitude shown to patients was described as welcoming, willingness to help and improved nurse-patient interaction. It was realized that these attributes helped in improving quality of care in these participants. On the other hand, some participants narrated how negative attitudes such as disrespect of clients, making derogatory comments about patient, apathy, and unfriendliness discouraged them from follow up care. The following statements demonstrate the attitudes described as positive attitude exhibited by some health professionals.

Positive Attitude

One of the important sub-themes identified in the study is a positive attitude. Quality of care rendered was greatly influenced by practitioner-patient interaction. Good interpersonal relationship enhances the quality of care. Participants stated that, attitudes that promoted the nurse-patient relationship include welcoming, empathy, respectful and caring. Participants narrated how these positive virtues urged them on to take their medications and other management modalities seriously. Below are some of the narrations about positive attitudes described.

“...Ahhhh, I came here and the staffs are polite, welcoming and encouraging. ‘metse omo so a masore’ literally translated as if I am sitting on them, I can stand” (CAM D 11).

This is a well-known proverb in Ghana that means, you can rely on such a person.

“Oh, the doctors and nurses here are different, they empathize with you, periodically, they call you to ask about your wellbeing. They constantly remind you of your follow up days when it is getting nearer. Errrrmmm they care, that is all” (CAM D 2).

“The doctor spent time to teach me food that will increase my blood sugar level and that has been helpful” (CAM D 5).

This same client further explain that,

“You know sometimes I veer off my dietary counsel and eat what I am not supposed to eat. When I check my sugar level afterward and it has shot up, I report it. The doctor will correct me calmly and encourage me to abide by my dietary measures” (CAMD 5).

Negative Attitude

Some participants described situations they experienced that were unfavourable and unwelcoming that impacted negatively on nurse-patient relationship. Findings revealed attitudes such as apathy, disrespect, poor communication, and unfriendliness.

Participants gave narrations about various instances that negative attitudes of health staff especially nurses demonstrated that discouraged them from continuing with care.

“Instead of coming to the hospital to be tossed about, it is better I go to a place that I will be welcomed” (CAM D 1).

“Of course, it is true that sometimes I may be in a queue to see a doctor and someone will come in very weak. It is natural that we give them priority but it is good that the nurse tells the rest of us something. But all you will see is that, the young nurse will just send the patient to the consulting room with an attitude without a word of you” (CAM D 1).

The same participant gave another scenario to buttress his assertion.

“It is demeaning to hear comments like eii Papa as for your sugar control it is poor, you are not doing well at all. Am I God to regularize my sugar level, my daughter?” (CAM D1).

Another participant had this to say,

“The nurse was not approachable so immediately I heard the announcement that there is herbal centre upstairs, I said to myself then let me go there” (CAM D 5).

“I know working on human beings is very difficult but that is your work. Maame (referring to P.I), I hope you understand what I mean. When we come to the hospital, it means we need help but some nurses don't see it that way. They think we are nobody so we are treated anyhow. Yes, some are good, some are doing a good job but the bad nuts are destroying the profession. You know the popular adage 'odwaan baako dōri ntwem a εsan odwean kuwo nyira' (when one sheep is infested with a skin condition it affects the rest of the flock). They do not care; you have to walk around the hospital doing everything by yourself. Sometimes even giving direction to the next point of care is a problem for them. In fact, our hospitals are not welcoming”

(CAM D1).

As narrated above, the negative behaviours of some professionals especially nurses cause patients to lose interest in our health care system. These attitudes are of a greater challenge to the health system since it negatively affects the nurse-patient relationship.

4.5 Need factors

In the quest to answer the second question as “to explore the challenges (need factors) that patients with type 2 diabetes go through in using complementary and alternative medicine”.

Need factors are both the perceived and actual need for health services, hence, participants mentioned various reasons why they chose herbal medicine. The following sub-themes emerged from the main theme. They include chronic symptoms, comorbid

health conditions, and risk perception. It was revealed in the findings that some participants have other existing conditions. Others expressed concern about the chronicity of the symptoms of type 2 diabetes so the herbal medicine is perceived as a measure of control of such symptoms. Some participants also mentioned that some risk is associated with the use of complementary and alternative medicine. As a researcher, my interest in this theme is to find out how the chronicity of the symptoms experienced influence the decision to seek treatment. Again, whether comorbidity influence the choice of treatment modality and any possible side effects observed.

4.5.1 Chronic symptoms

The symptoms of type 2 diabetes were of great concern to participants. The findings showed how these persistent symptoms disrupted the lifestyle of participants. Some of the perceptions of the participants noted in the study demonstrated that due to the existence of other conditions, they tend to seek solution that will cater for all the existing diseases as well. It is a well-known fact in the Ghanaian culture that herbal medicine can be used to manage more than one disease condition. Below are some narrations that were given by the participants.

“It has not been easy at all, with all these signs and symptoms. Now my sight is greatly affected too, the number of tablets you would have to take a day is a lot. Complaints here and there every day, so I would want to take a one in all herbal medicine that will be of some relief” (CAM D 1).

“diabetes is a very devastating disease. (You keep losing weight unnecessarily even amidst eating a lot). The signs and symptoms are terrible and disgracing. So, I want to do all I can to curb the massive changes I am experiencing” (CAM D 13).

The same participant went on to say that:

“The disease is chronic so everything about it is cumbersome. Weakness, palpitations, and fatigue that never goes away even when you take medicines” (CAM D 13).

“So, for me, I started using herbal medicine because I was frustrated that my health was not getting any better” (CAM D 5).

“Then when all hopes were gone without relieving, I decided to go to Mampong for herbal medicine because I know they research into herbal drugs. My sister, I had suffered ooo hmmm today I have abdominal pains, tomorrow breathlessness, the next day dizziness. I became very lean, emaciated” (CAM D 11).

Interestingly, another participant had this to share

“Sometimes I report to the hospital and I find it difficult to explain what is happening in my body” (CAM D 12).

From the above, it was realized that some participants chose herbal medicine mainly because they wanted a medication that could relieve them of the numerous signs and symptoms they experience.

4.5.2 Comorbidity

Findings from the study indicated that most of the participants were diagnosed with other diseases as well. The majority were diagnosed with other chronic diseases such as hypertension. Other conditions made mention of included fatty liver and raised levels of lipids (hyperdyslipidaemia). Five (5) of the participants narrated how anxious they were to seek treatment for the multiple health conditions they were diagnosed with. Out of the five (5), three (3) of them have hypertension as well.

“I was 19 years old at the university when I was diagnosed with hypertension but I did not take it serious, then in 1994, I got to know I have diabetes also” (CAM D 1).

He continued by saying that,

“I was diagnosed with glaucoma as well because that is a genetic condition too. How can one person be carrying all these giant diseases? Then after some time, I was told I have increased cholesterol level” (CAM D 1).

Other participants also shared their thoughts as:

“I was not only diagnosed with diabetes but also fatty liver. I have a liver problem and I was taking the orthodox medicine and I was not improving in health. I battled with it for years so I was about to give up. My health started deteriorating in 2013: I was completely down and I was thinking I was going to die” (CAM D 11).

“All along I was just managing my BP, I started falling sick continuously so I reported for a thorough assessment and diabetes was diagnosed. I have to find ways and means to treat both before I get any further complications” (CAM D 12).

One participant who has no comorbid condition narrated her anxiety but she, however, expressed satisfaction with care.

“I live in constant fear of getting hypertension because I am told the two diseases are twins. And I have a family disease of hypertension too and with my weight I am scared but I am happy the herbal staff is helping me out” (CAM D 13).

4.5.3 Risk Perception

Findings from the study revealed that none of the participants has suffered any major side effects. Some of the participants expressed concern about some risks associated with CAM use as follows.

“Herbal medicine must be prescribed to prevent drug abuse. It is just like any of the orthodox drugs that need a prescription. You do not have to take it anyhow because, it may be harmful to your health. For instance, millet is used to reduce blood sugar level. So, if my sugar level is high and I tend to eat more meals prepared from millet, it will reduce the sugar level faster. So, you need to abide by the quantity measured by your doctor” (CAM D 11).

The same participant added that,

“Some people just take any quantity of herbal medicine but the right dosage must be prescribed by a doctor. Someone may say that oh today I feel that my sugar level has gone up. I am urinating too much and so instead of 100mls let me take 150mls” (CAM D 11).

Then another participant also narrated that,

“I have heard that herbal medicine can cause kidney diseases but why should I bother. Are all the people suffering from kidney problems herbal drug users? Probably not, as for complications we pray not to get there now” (CAM D 1).

“There are so many preparations out there with claims of treating diabetes. I cannot tell which one is the original so apart from this hospital, I don’t buy from anywhere” (CAM D 13).

4.6 Complementary and Alternative Medicine use among Patients with type 2 Diabetes

Participants revealed in this study that a number of interventions are employed in managing type 2 diabetes. The findings from the study led to the identification of five (5) sub-themes worthy to be discussed. The sub-themes include herbal, physical, exercise and dietary interventions.

4.6.1 Herbal Intervention

The findings from the study also show that herbal medicine is not only taken to manage the symptoms or control the sugar level but as a means to prevent or delay complications. Participants gave various narrations about how herbal drugs have served as a preventive measure.

“The herbal drugs put my blood pressure in check as well” (CAM D 3).

“I have family members who have suffered a stroke. I need not get to that stage. I use cinnamon in every meal. It is a great medicine to lower blood

pressure. Then I take beetroot juice as well but this one I do so with maximum caution otherwise it will shoot up my sugar level” (CAM D 11).

“I use ‘akoko mesa’ referring to Basil leaves also known as (Onicum canum) is used to lower both blood sugar and high blood pressure” (CAM D 8).

The above findings suggest that although some of the participants take herbal medicine to control the various chronic diseases, others take it to prevent complications and to minimize the effects of the signs and symptoms experienced.

4.6.2 Exercise

Regular exercises were found to be one of the important sub-themes found in this study. Participants narrated how regular exercise help improve health and in so doing results in decreased blood sugar level. According to participants exercises improves the condition of the heart and reduces cholesterol level. Participants further described that exercises help prevent complications and even delay the development of complications. The following are statements by participants that indicated the importance of regular exercises in managing diabetes.

“I exercise a lot, initially I could not even walk. But now, I do exercise by riding a bicycle about two hours every day. This exercise has really help me keep cholesterol level in check.” (CAM D 11).

“I don’t use my car again; it makes me sedentary. Now I walk a lot especially, early morning and I believe it has helped me a lot. Since I started, I have seen tremendous improvement in my general state of health as well” (CAM D 6).

“I don’t have the stamina like when I was young but I do walk once in a while and it is helpful” (CAM D 7).

4.6.3 Physical therapy

One other alternative medicine identified to be used by one of the participants is a personnel assistive measure. Although the participants expressed satisfaction with its use, he also expressed concern about the length of stay at the hospital to complete a session. He expressed concern that he wished it was a self-directed procedure so that he can undertake it, even at home.

He described his experience as;

“I chose Acupuncture as well; it is really helpful. The problem I have with it is that I have to spend about one hour for the process. If it is something that I could have done at home, I would not bother to be here at all” (CAM D 9).

4.6.4 Dietary regimen

Dietary control is one of the major management models for type 2 diabetes mellitus. Almost all the participants mentioned diet as one of the areas that they have been educated to take keen control of. Participants gave narrations as to how they use diet to control their sugar level.

“Do you know millet? It reduces sugar level a lot. If you eat it in excess, you will run into hypo (hypoglycaemia that is low sugar level). My doctor taught me to eat millet and Sorghum” (CAM D 11).

This same participant added that:

“I know what to eat and what not to eat. ...the healthy foods are the vegetables, sorghum, millet, and wheat. What I have realized is that each time I eat unhealthy foods... I record high sugar level. But whenever I eat the good food (millet, sorghum or wheat) my sugar checked two hours after eating remains the same. So, if I have the evidence myself, I don't need any more persuasion from my doctor. I just have to follow my dietary instructions period” (CAM D 11).

“I have been educated on the food that will increase my sugar level that I need to eat in moderation or avoid” (CAM D 7).

“Here they have time to teach what to eat and what not to eat” (CAM D 8)

In contrast one of the participants expressed how the dietary management has brought major interruptions in her nutritional status. The participant narrated that,

“Now, I cannot go out with my friends as I used to. I cannot eat all the fast foods and pastries I like. My dietary pattern has changed and it is a bother” (CAM D 13).

The findings demonstrated that most participants were observing keenly their body’s reaction to food intake and hence, moderate food intake appropriately. It is important to note that dietary management forms one of the fundamentals of managing type 2 diabetes. Some participants saw it as a means to control their sugar level while one participant saw the dietary modification as restrictive.

4.7 The Outcome of Care to Complementary and Alternative Medicine Use

This is the last main theme identified and three sub-themes were identified. This theme emerged in response to the objective, “to explore the outcome of care using complementary and alternative medicine”. The sub-themes identified are improved wellbeing, increased satisfaction and challenges to complementary and alternative medicine use. Type 2 diabetes mellitus is a disease that has a positive outcome if well managed. However, management of type 2 diabetes mellitus entails great commitment on the part of the affected person. The affected person needs to be well informed and totally involved in the plan of care. Most of the participants reiterated satisfaction with the outcome of their health status. However, some of the participants also expressed some challenges they experienced in the use alternative medicine use.

4.7.1 Improved Well Being

Most of the participants narrated how they felt after some months and others years of using complementary and alternative medicine. Most participants expressed how well they feel and how stable their glucose level have been. Below are some of the descriptions narrated by participants about their improved health status.

“I was put on about 10 bottles of liquid herbal medication and the doctors helped me to modify my diet. To cut the long story short, within a period of nine months my sugar level has come down to normal and the scan results after 9 months said that my liver has come to normal” (CAM D 11).

“I reported with high sugar level, as high as 28. I was counseled and I started my drugs, I was anxious but I was encouraged to take my dietary modifications seriously. It has not been an easy journey but God has been good. The frequency of urination and hunger have all reduced drastically” (CAM D 13).

Another participant also narrated how poor his prognosis was before he started his herbal medicine.

“Madam, I felt I was dying. I could not even stand. But now, I can even climb the stairs when I come to the hospital without panting for breath” (CAM D 2).

The narrations above make it clear that self-care management of type 2 diabetes such as dietary modification, exercise and medication would help boost the health indicators of the individual. These findings did not demonstrate any specific pattern. However, it was based on individuals' unique experiences.

4.7.2 Increased Satisfaction

Most participants expressed how happy they were with their state of health. Some of them expressed joy, enthusiasm, and happiness even on the mere mention of alternative medicine.

“I am a living testimony, my family, my church members, and friends are my witnesses. I took leave without pay for a year because I was actually dying. Looking back, I give Glory to God. I am happy ... I have invited them twice to give health talk at my church. God has preserved my life through this team” (CAM D 11).

“Oh, I am glad, I am glad because I don’t visit the washroom frequently as I used to. I can also sit through church service without interruptions. It was embarrassing to disturb others during church service just to pass urine” (CAM D 1).

“I feel happy about my sugar level now. God has been good.” (CAM D 10).

“What more can I say but say thank you to the herbal doctors for helping me bring my blood sugar level under control” (CAM D 6).

It is worthy to note that of the thirteen (13) participants interviewed, twelve (12) participants recognized themselves with the Christian faith whilst one (1) identified herself with the Islamic religion. This is reflected above as participants affirmed their faith in their level of satisfaction.

4.7.3 Challenges to Complementary and Alternative Medicine Use

Personnel assistive complementary and alternative medicine method that was noted to be a major challenge was Acupuncture. Although some participants expressed the desire to use it, they were worried about the fact that because of its nature they would have to spend some time at the clinic for their session.

Some participants narrated that:

“I would have preferred Acupuncture; I have ever gone through the therapy before. But it means I have to come here (referring to the hospital) whenever I have an appointment” (CAM D 13).

“Acupuncture to is not bad but doing that in the comfort of my home is highly impossible” (CAM D 6).

4.7.4 Measures to Improve the use of Complementary and Alternative Medicine (CAM)

In this study, the researcher was interested to enquire from the participants perspective, how the use of complementary and alternative medicine among type 2 diabetes can be improved. Findings deduced from the study was content analyzed and it include research, motivation, monitoring, and evaluation. In addition, participants made mention of the burden of health care financing in our country. Participants gave passionate and strong statements to demonstrate their assertions.

4.7.5 Research

Most participants mentioned research as an important area that need to be strengthened in order to properly integrate herbal medicine in the mainstream healthcare service. Participants also raised concern on how low research is conducted on patients and that one of the surest ways to improve the effectiveness of the herbal medicine is by research. The participants also mentioned that people who are interested in research must be supported financially.

This is narration from a participant with a master's degree.

“There must be proper research into our health service delivery. It should not be only during our education. It must be practicalized on the ward as well. It is a problem with our system. I also conducted research whilst in school. But afterwards, nothing about research again. Patients like myself need to be understudied. My health data must be studied to assess my progress. Health workers must be interested in my health indicators. If my sugar levels are decreasing, you must find out why they are decreasing. You must find out whether I am taking herbal medicine or orthodox medicine or both. Health workers know the chemical composition of drugs so you must find out which chemicals in the herbal medicines do help to control sugar level. Find out average health status of those who take herbal medicine against those who take orthodox medicine to help restructure care” (CAM D 1).

The same participant continued with the narration that,

“For instance, I must be followed till I pass on. Health workers must be interested in how long I suffered diabetes, how I managed my sugar, the medications I took and what may lead to my death so my family members would be educated to increase their life's span. The Europeans countries do that and that is the difference between us and them. We are not helping our country in any way. ...” (CAM D 1).

The above narration from the participant revealed that research work must be intensified in the area of herbal medicine. He emphasized particularly, the need to conduct studies on patients with respect to the condition and include family education in our health care system. An element of patriotism was mentioned in his narration. That, more needs to be done in projecting herbal medicine internationally. It is worthy to note that, the participant is a master's degree holder and as such his education background may have a bearing on his answer.

Another participant also a first-degree holder also reiterated that,

“Look at the young doctors over there, they need to be supported you will bear with me that conducting research is expensive. At least they should be supported to do more” (CAM D 11).

4.7.6 Monitoring and Evaluation

Participants further mentioned that proper monitoring and evaluation will inform decision making about the expansion of the herbal clinic across the nation. Participants believe that if the activities of the unit are supervised, report and other health indicators will speak for itself. Participants were of the view that, once monitoring is carried out on a regular bases high standard of care will be maintained to ensure that positive results and increase in clientele. The following are statements made by some of the participants:

“I think our system must work, there should be regular monitoring to assess the progress of work. That is the only way the ministry can evaluate whether the herbal clinic is making an impact” (CAM D 1).

“If I am doing something for you and you do not check whether I am doing it well would you be able to tell when I will go wrong? So, the doctors need to be checked frequently to make sure they are doing the right thing” (CAM D 9).

“Food and drugs board need to deal with all the unlicensed herbal products on the market” (CAM D 2).

“Who is monitoring the progress of work? Who ensures that the right thing is done? There should be supervision to assess what is going on” (CAM D 11).

4.7.7 Motivation

Finding from the study identified motivation as a means to improve complementary and alternative medicine use. Participants were of the view that if the herbal practitioners are recognized and motivated, then herbal medicine could be improved. Participants identified modes of motivation such as awards, recognition and requisite logistics to be made available for use.

Some of the narrations by the participants are as follows:

“Look, these doctors and nurses, work so hard. They need to be commended so that they do more. Again, people close to those of us who use herbal treatment must not look down on us. For instance, my wife and daughter were not in favour of the idea of using herbal medicine so although I was using it, psychologically it affected me. But when they understood me, I became happy and I think that has helped me as well.” (CAM D 11).

“To have these young doctors interested in herbal medicine is very good. Just like what happens on Farmers Day, I think the Health Ministry can also appreciate their contribution to motivate them” (CAM D 1).

4.7.8 Financing Health

From the study, participants also mentioned health care financing as one of the means to improve complementary and alternative medicine use. The national health insurance must cover herbal medicine to reduce the cost of care. Findings from this study also suggested that financial burden among people diagnosed with type 2 diabetes is high: as all the participants narrated that cost of care as a problem. The demographic characteristics in terms of age revealed majority of the participants being in the less productive age group. This may be suggestive of the complaints of the cost of care.

“Managing diabetes needs money, one must have enough money because when it comes to food, you must be choosy. Oh, how I wish the health insurance can cover good medicines like these ones (herbal) then it will lighten the financial burden on us” (CAM D 1).

“As I pensioner, how much is my salary? So, you see, the government must do something to assist us” (CAM D 6).

“As for diabetes, it is supposed to be for the rich man not farmers like us. There should be some sub cedi for the medicines” (CAM D 8).

Participants were implying that the National Health Insurance Authority should consider adding the complementary and alternative medicine to the list of drugs under insurance.

4.8 Summary of findings

The results of the study disclosed the predisposing and enabling factors to complementary and alternative medicine use, the challenges or the need factors that account for CAM use and the outcome of care in using complementary and alternative medicine. These were consistent with some of the constructs of the CAM model of Health Care. Moreover, content analysis was used to discover other results such as research, motivation and health financing which were not consistent with the CAM model of health care. The sub-themes that emerged from the study includes family, significant others, media exposure, belief system, perceived ineffectiveness of orthodox medicine, socioeconomic status, access to complementary and alternative medicine, affordability, effectiveness, acceptability, information about health care options, attitude of health care professionals, chronic symptoms, comorbid health conditions, risk perception, herbal medicine use, exercise, physical management, dietary management, improved wellbeing, increased satisfaction and challenges associated with CAM use. A comprehensive description of participants views on factors that accounts for the use of complementary and alternative medicine among patients with type 2 diabetes was provided in line with the sub-themes. The study revealed several factors that lead to the use of complementary and alternative medicine among patients with type 2 diabetes. Participants were of the view that convincing information they receive from family and friends, exposure to media, are some of the factors that lead to CAM use.

In addition, most participants were of the view that herbal medicine is accessible, affordable, reliable and effective. Again, some of the participants expressed the belief they have in herbal medicine that informed them to its use. The findings also indicate that most of the participants were being managed on orthodox medicine before they defected to

herbal medicine use due to poor communication by the health care professionals in the mainstream facilities whereas they felt welcomed at the herbal unit. The findings also revealed that the complementary and alternative medicine forms available at the unit include and herbal medicine and acupuncture. Dietary management and exercises were used to complement the herbal drugs.

Furthermore, majority of the participants expressed some challenges to the use of complementary and alternative medicine. The results revealed factors such as chronicity of the disease, disease burden and the existence of other diseases. It was further demonstrated that most participants have perceived knowledge about some risk associated with herbal drug use. Most participants noted that dosage of the alternative medicine is crucial as well as regulation of the market to avoid fake supply. Coupled with the belief that participants had in complementary and alternative medicine, participants expressed satisfaction and improved health status with its use. Notwithstanding, acupuncture which is personnel -assistive complementary measure was identified as one of the barriers to CAM use because it requires the involvement of a trained personnel. The results of the study were based on the data collected on people diagnosed with type 2 diabetes mellitus at LEKMA hospital in the Greater Accra Metropolis. Although, the herbal unit at the LEKMA hospital was built in collaboration with the Chinese government, herbal medicine and acupuncture was identified as the only forms of CAM rendered at the centre. In the next chapter, these findings will be discussed in relation to literature.

CHAPTER FIVE

DISCUSSIONS OF FINDINGS

5.0 Introduction

This chapter discusses the findings generated from the data collected from the participants in relation to the literature reviewed in the area of this research. The study was designed to comprehend the use of Complementary and Alternative Medicine (CAM) among patients with type 2 diabetes. Specifically, the study sought to:

- To explore the factors (predisposing and enabling) that account for the use of complementary and alternative medicine (CAM) among patients with type 2 diabetes.
- To explore the challenges (need factors) that patients with type 2 diabetes encounter in using complementary and alternative medicine.
- To find out what needs to be done to improve the use of complementary and alternative medicine among patients with type 2 diabetes.
- To explore the outcome of care using complementary and alternative medicine.

Following an analysis of the use of Complementary and Alternative Medicine (CAM) among patients with type 2 diabetes, five main themes emerged. The main themes were developed from thematic and content analysis by using the Complementary and Alternative Medicine health care model by Fouladbakhsh & Stommel (2007) as a guide. The main themes and their respective sub-themes that emerged from the study are presented and discussed with the requisite literature. The main five themes identified are predisposing factors, enabling factors, need factors, forms of complementary and alternative medicine and the outcome of care.

References to existing literature will be made throughout the discussion in order to position the findings of the study within the context of nursing knowledge.

5.1 Predisposing and Enabling Factors that account for the use of Complementary and Alternative Medicine among patients with type 2 Diabetes Mellitus

The predisposing factors in the use of complementary and alternative medicine among patients with type 2 diabetes identified in this study include family, significant others, media, belief and perceived ineffective orthodox medicine. The predisposing factors are the convincing information some participants received as a recommendation from family and friends that lead to the use of herbal medicine. Most of the participants in this study mentioned that information from family and friends motivated them to use herbal medicine. This is consistent with several studies by (Ausanee et al., 2016; Aziato & Antwi, 2016; Gyasi, Siaw, et al., 2015; Matheka, 2013) where family and friends were identified to influence the use of CAM with their convincing information.

Again, the current study finding is in agreement with Wazaify et al. (2011) who also noted in their research results that family and friends recommend the use of complementary and alternative medicine to individuals or even get them a supply for their ailments. In the view of the participants, advice from family is necessary because type 2 diabetes mellitus is a genetic disease and hence, advice from the family members who are already diagnosed with diabetes is deemed very important. Again, friends who are already diagnosed with type 2 diabetes also share their experience and considerable knowledge of herbal medicine use. These findings are substantiated by a study conducted by Korsah

(2015) on coping strategies of newly diagnosed type 2 diabetes patients which also revealed the influence of family and friends in the decision to the use of CAM.

Participants in this current study were of the view that once family members who gave them information about complementary and alternative medicine have testimonies of how well their sugar levels have been. There is no doubt about its efficacy and hence, they also subscribe to its use. Participants used words like herbal drugs being dependable and the expression of feeling better in their clinical status to describe how effective herbal medicine is.

In addition, participants in this study also mentioned that some family members have lived with the disease for years hence, they have received undoubted information about the effectiveness of CAM. Arguably, it can be stated that most people diagnosed with type 2 diabetes who have relations who are diabetics are likely to use CAM. This assertion by the participants in this current study is in line with a study conducted by Sheikhrabari et al. (2017) and Kalaci et al. (2019) that revealed that, family members who have lived with diabetes for less than 10 years used one form of complementary and alternative medicine of which herbal medicine was of the majority. Majority of the respondents in this study attributed herbal medicine use to family members than friends. This is consistent with finding by Hashempur, Heydari, Mosavat, Heydari, & Shams (2015) which shows that 51.7% of the participants indicated family influence to herbal medicine use. This finding is contrary to a study by Gyasi, Mensah, & Agyemang (2011) and Yarney et al. (2013) that indicated greater percentage of friends and media as motivators to use of herbal medicine than family influence. This could probably be as a result of the age group that was involved in the study. Even though most of the participants in this study mention that diabetes is hereditary and as such family advice is

necessary. Perhaps, it may be because the family is a very strong social bond in the Ghanaian culture that cannot be disrespected.

In this study, participants also mentioned that experiences of significant others such as co-patients and passers-by were worth noting to help them control their sugar level. The above findings by the participants concur with a study by Morse (2000) where the results revealed that respondents share experiences of significant others who have similar conditions or are in similar situations. A study by Baldé et al. (2006) also affirms the fact that the positive experiences of other people narrated facilitate the use of complementary and alternative medicine.

Furthermore, another predisposing factor identified in the study was the influence of media to the use of CAM. Some participants in this study narrated how enticing the advertisement of herbal medicines was. Again, it was found in this study that advertisement on radio and television also makes people susceptible to use complementary and alternative medicine. In addition, publicity by the health facility of the option of herbal medicine made it remarkable to be considered by people with some interest in herbal medicine. These findings from the current study revealed how appealing and inviting these advertisements are. These findings are in tandem with various studies by (Aziato & Antwi, 2016; Gyasi, Mensah, & Agyemang, 2011; Wazaify et al., 2011) where media was mentioned as one of the means through which people are attracted to herbal medicine use.

In a similar study by Yarney et al. (2013), and Hashempur et al. (2015) it was realized that the media was one of the sources of influence to complementary and alternative medicine use. This finding corroborates with findings with this study where

participants also mentioned that convincing information through the media attracts them to use herbal medicine. Probably the participants were not in the position to get their family into their care at that stage of their ailments.

One other important finding in this study was the belief that participants have in the traditions of the Ghanaian society. Traditions are inherent and transferred from generation to generation. It is an asset that is being held in high esteem and no generation would like to lose its significance. In the Ghanaian culture, it is common that at least a member of the family has insight into traditional medicine which is consciously or unconsciously handed over to family members informally. Participants in this study strongly stated how valuable the belief system is in terms of seeking solutions to health conditions.

The present findings on complementary and alternative medicine use was consistent with this finding of belief as a precursor to herbal medicine use in similar research findings by (Farooqui et al., 2016; Gyasi, Mensah, & Agyemang, 2011; Kretchy et al., 2014; Natan et al., 2016). The cultural belief was discussed in the literature as one of the views held by participants in relation to their choices in health care. Findings from this current study are also in line with Hasan et al. (2009) in their research on complementary therapy in clinical practice that also realized that participants had cultural beliefs and folk remedies as a reason for starting CAM use. Furthermore, it is recorded in the literature review that the use of complementary and alternative medicine stems from the ancient days and its use has increased both locally and internationally depending on the beliefs and the socio-cultural perspective of the populace concerned (Baldé et al., 2006; Fennell et al., 2009; Gaboury et al., 2012). In no doubt, this assertion is similar to a

study where findings stated that CAM use in Ghana is embedded in our way of life and motivated by traditional thought and the pattern of diseases (Yarney et al., 2013).

In this current study, this finding of cultural belief to CAM was noticed to be repetitive across participants with their diverse educational background, majority of the participants had gone through tertiary education. Gardiner et al. (2007), in their research to determine the factors associated with herbal therapy use in the United States realized that higher education is a factor in the use of CAM. Participants with educational background as tertiary, second cycle all testified that belief is a strong pull factor to use CAM in this study. Therefore, findings by Gardiner et al. (2007) substantiate the finding that people who are highly educated have the tendency to use complementary and alternative medicine.

In this thesis, some participants with higher education were of the view that, orthodox medicine was not of desirable effect to them. This finding is similar to a study by Korsah (2015) on coping strategies of newly diagnosed patients with type two Diabetes Mellitus in Ghana where participants in their perception of seeking cure resorted to herbal medicine use with the assumption that conventional medicine was not effective in management of chronic condition. Again, participants in this current study attributed ineffectiveness of orthodox medicine use to the fact that they still experienced weakness, tiredness, abdominal upsets, frequent urination and continuous increase in blood sugar level. This is in line with a study by Porqueddu (2017) that discovered that participants reduced their prescribed doses of medication with the reason that they experienced some side effects such as abdominal upsets and the number of medications to take at a time. Additionally, another research by Gyasi et al. (2016) also supports the finding in this current study

where participants reiterated that some ineffectiveness exists in conventional medicine use hence, their decision to use complementary and alternative medicine.

Besides, the enabling factors identified, included socioeconomic status which plays a vital role in decision making relating to the management of diabetes and its associated conditions. This study discovered that the socio-economic responsibilities, chronicity of diabetes as well as the medical needs of participants informed participants to make the choice to use complementary and alternative medicine. This finding can be attributed to the fact that most of the participants were highly educated but not in active service so the cost of orthodox medicine was a burden hence, considered CAM which is less expensive.

This is consistent with a similar research study by Gask et al. (2015) stated that complementary and alternative medicine is cheaper because one can even defray the cost by paying in installment. On the contrary, study findings by Aziato & Antwi (2016) in their research to explore the facilitators and barriers to herbal medicine use, indicated that most of the participants who use herbal medicine were highly educated and they did so because they were better employed and well paid and could afford the high cost of herbal medicine. It is interesting to note that the same research finding noted that the high cost of the herbal medicine prevented other people from using CAM. Furthermore, other research findings by (Ghaedi, Dehghan, Salari, & Sheikhrabari, 2017; Hasan et al., 2009) corroborate with this finding that higher education, higher salary, and advanced age contribute to the use of complementary and alternative medicine.

Divergent view to this is seen in other research finding by Korsah (2015), where participants with limited formal education and low salary revealed that high cost of care of diabetes mellitus without sustainable health insurance policy is a challenge to seeking

conventional medication to their health needs. This is supported by study finding by (Gyasi, Mensah, et al., 2015) that indicate that patients of middle to low economic status are most likely to use complementary and alternative medicine. This finding by Gyasi, Mensah, et al. (2015) can be explained by the result of Sheikhrabari et al. (2017) who posited that the type of occupation of the participants determines the treatment sought for in managing diabetes because job determines income and it impacts directly on product consumed. It is therefore interesting to note that both researchers stated that complementary medicine is not captured under the health insurance scheme of their respective countries.

The current research findings ascribed the use of complementary and alternative medicine use to a number of reasons. Affordability and access to complementary and alternative medicine seem to be interwoven. Results of this study revealed that access to complementary and alternative medicine was easy. Participants were of the view that herbal drugs can be found as near as the background of individuals. This is supported by a study finding by Kretchy et al. (2016) that discovered that herbal medicine is found both at the open market and backyard gardens.

This is similar to the findings by various studies conducted by (Gyasi et al., 2016; Gyasi, Mensah, Adjei, & Agyeman, 2011; Gyasi, Mensah, et al., 2015; Korsah, 2015), where almost all of the participants in their respective studies agreed that herbal medicine is easy to come by. Not only was a commonplace of sale documented on but the results of these research findings also demonstrated that the cost of the orthodox medicine was a burden to some participants who considered their earnings as inadequate, hence settled on CAM which was less expensive to them. This is again supported by findings by Koley et al. (2016) that stated that financial burden leads to CAM use in their search of knowledge,

attitude and practice related to diabetes mellitus among diabetics and non-diabetics visiting Homeopathic Hospitals in West Bengal, India.

Additionally, a comparable research finding by Tabi, Powell, & Hodnicki (2006), reported that some Ghanaians who live at the rural areas are said to be poor and in addition, have difficulty accessing orthodox health care due to the poor road network and therefore use complementary and alternative medicine. Some research findings are demonstrating that people use complementary and alternative medicine mainly due to the bad road network, poverty or inadequate income problems accessing health care due to their geographical locations (Rutebemberwa et al., 2013; Saunjoo & Jeong-Hee, 2013). Findings in these studies and this current research implies that, in the Ghanaian context, the use of herbal medicine is independent on geographical location based on the fact that this particular study was conducted in a cosmopolitan city where access to health care may not be a problem, however, herbal use was undenied.

Another finding indicated in this study was that, participants use CAM because it is effective and reliable. It was discovered from this study that communications between family and significant others such as friends, passers-by and other patients emphasized on the effectiveness of herbal medicine and that served as the key to the decision to use herbal medicine. It was revealed in this study that; consistent use of herbal medicine leads to improved and normal blood sugar level. This is supported by various research findings that established that complementary and alternative medicine use is reported to be very effective by the consumers (Aziato & Antwi, 2016; Farooqui et al., 2016; Ghaedi et al., 2017; Pumthong et al., 2015). Besides, this corresponds with a research by Baldé et al. (2006) on the influences to use of complementary and alternative medicine among

Africans. Findings revealed factors that comprise the effectiveness of herbal medicine as looking for a complete cure by shopping for a healer, cost of herbal medicine, affirmative testimony from other users and satisfaction.

It was found out in this study that all the participants use herbal medicine because it is an acceptable practice in the Country and in the facility. Perhaps, it could also be that because the present study was conducted in a facility where CAM is sited and advertised. This finding is consistent with the research result that indicates that it is generally accepted for most ethnic groups to use one form of traditional and complementary medicine including spiritual healing (Baldé et al., 2006; Chingwaru & Vidmar, 2016; Koley et al., 2016). Arguably, in the literature search, the researcher realized that even though herbal medicine is widely accepted globally, some regions in the continent also have diverse views on complementary and alternative medicine use (Rutebemberwa et al., 2013).

One important finding of this study was the attitude of health workers that participants described as either welcoming, pleasant or unwelcoming. It was realized from the current study that some of the participants decided to use CAM because they did not feel welcome enough when they visited the health professionals at the regular or orthodox unit. However, the atmosphere they encountered at the herbal unit was welcoming and the health care providers were empathetic. This finding is similar to a study by Chingwaru & Vidmar (2016), in their study on prevalence, perceptions, and factors influencing traditional and complementary medicine use in Zimbabwe which revealed that mainstream care providers are indifferent whilst CAM providers were offering better information to the CAM users. Participants described CAM providers again as providing tailored -made care or individualized care than their colleagues at the mainstream health care. This is congruent in finding in the current study where participants narrated that the service

providers were unapproachable, unwelcome and some negative remarks about the consistent high sugar level.

It was also noted by the researcher in the literature review that most people who use complementary and alternative medicine could not disclose use to their health professionals (Gardiner et al., 2007; Kretchy et al., 2014; Rutebemberwa et al., 2013; Wazaify et al., 2011). Probably these negative attitudes suggested in the present study could perhaps explain why the participants could not mention the use of CAM to their service providers.

The positive attitudes identified in this study by the CAM providers may have great impact in their quality of life. This is supported by research on predictors of traditional medicine utilization in Ghana where one of the findings was that good behaviour portrayed by traditional herbal medicine provider was found to be a pull factor to CAM use Gyasi, Mensah, et al. (2015).

In addition, the researcher realized in this study that although the participants were using herbal medicine, some of them have ever used conventional medicine. This is supported by numerous studies where the use of complementary and alternative medicine is associated with conventional medicine (Ausanee et al., 2016; Choi et al., 2017; Korsah, 2015; Porqueddu, 2017; Wazaify et al., 2011). However, no finding was recorded on concomitant use of alternative and conventional medicine in this present study. This could probably be due to fact that the herbal treatment was well accepted in the facility as one of the treatment models for type 2 diabetes. When the researcher probed why they stopped using conventional medicine, participants made mentioned that some of the nurses and other healthcare workers ruin the interest they had in conventional medicine. This finding

is vital tool in health care delivery since the attitude of service providers have a great impact on patient-provider relationship. This finding corroborates with a study finding that stated that although empathy is a crucial component in physician -patient communication, it is seldom expressed (Adams, Cimino, Arnold, & Anderson, 2012).

Results from this present study indicate that some of the participants chose an herbal medicine based on the counseling received from their health professionals. This corroborates with findings from a research by (Rutebemberwa et al., 2013; Wazaify et al., 2011) where participants also indicated that their health professionals introduced them to CAM use.

Again, findings by Rutebemberwa et al. (2013) also revealed that some herbalist convinces participants to use complementary and alternative medicine. The current study did not discover herbalist opinion on the use of CAM probably because the study was conducted in the urban community where herbalists are scarcely identified. Research finding by Chingwaru & Vidmar (2016) also buttresses the assertion that providers persuaded them to use complementary and alternative medicine. Divergent finding indicates that, few healthcare professionals will recommend complementary and alternative medicine to their patients with the assumption that probably the health care workers have little knowledge about alternative medicine (Bahall, 2017).

5.2 The Need factors (Challenges) that facilitate the use of Complementary and Alternative among type 2 Diabetes Mellitus

Other factors that make individuals susceptible to use complementary and alternative medicine that was identified from this study are chronic symptoms, co-morbidity, and

perception of risk. Participants in the study gave varied reasons why these attributes are convincing reasons to use complementary and alternative medicine. Participants of this study noted that type 2 diabetes mellitus is manifested by chronic signs and symptoms such as frequent urination hunger, thirst, either low or high blood sugar levels which brings uncomfortable interruptions to their lives. This finding is consistent with numerous studies that posited that diabetes is classically evaluated by presenting hyperglycaemia with increased thirst, urination, hunger, and hypoglycaemias (Gyasi, Mensah, et al., 2015; Jacobson et al., 2013; Ozougwu et al., 2013; Patel et al., 2012). In a related study by Korsah (2015) identified that the chronicity of diabetes influences the decision to use herbal medicine because people diagnosed with diabetes wanted cure or solution to the overwhelming signs and symptoms experienced. In this current study, participants expressed the frustration they experienced when they were not getting any relief with their conventional medicine so they decided to use herbal drugs. Similarly, research finding by Wazaify et al. (2011) also concurs with the results that people use herbal medicine for the relief of symptoms.

Another key finding from this study that made participants choose herbal medicine is co-morbid diseases. It was found out from this study that, almost all the participants were diagnosed with other conditions. Some of the diseases coexisting with people diagnosed with type 2 diabetes identified in the study are fatty liver, eye problems, high cholesterol, kidney conditions and chiefly amongst them is hypertension. Participants narrated how distressing it is to take medications for all these various conditions. This finding is supported by (Hasan et al., 2009; Kretchy et al., 2014) where co-morbidity was indicated to influence complementary and alternative medicine use. Participants were of the view that in order not to swallow different drugs to manage the various disease conditions they

are beset with; herbal medicine is the solution because it can take care of all the other diseases.

Again, finding realized from this study was that, participants acknowledged that there are some risks associated with taking herbal medicine. Some of the participants raised concerns about how risky it is to buy the herbal medication at the open market due to regulatory issues and fake products. This is supported by a research finding where it was established that poor vending environment and poor knowledge of vendors are negative values that prevent people from using herbal medicine (Edem et al., 2014). It is worthy to note that two of the participants in this current study with higher education sounded the caution that herbal drug users may overdose themselves in some instances. This finding is buttressed by Kavanagh (2017) where inappropriate dosing was identified as a demotivating factor to herbal drug use. Similarly, some participants in this current study noted that they are aware that herbal medicine can in a way lead to kidney failure. Some study findings also acknowledged that herbal medicine is associated with some side effects (Calitz et al., 2015; Chun et al., 2016; White et al., 2014; Zhao, Otieno, Akpan, & Moots, 2017). Nevertheless, some form of herbal drug interaction exists as discovered by a research where side effects measured ranges from mild-moderate to severe (Koren et al., 2015). However, the beneficial use of the complementary and alternative medicine cannot be underestimated.

5.3 Complementary and Alternative Medicine use among patients with type 2 Diabetes

Finding in this present study revealed the use of chiefly herbal medicine in managing the disease condition type 2 diabetes. It was found out that most of the

participants use herbal medicines, diet, exercise, and acupuncture. Likewise, the research findings by Korsah (2015) support the use of herbal medicine, dietary restrictions among people diagnosed with diabetes. However, this study did not identify other forms of alternative treatment except acupuncture use among people with type 2 diabetes. Possibly acupuncture was recognized in this study due to the skill mix of staff in the research setting and the background of the respondents. Participants expressed how consistent their blood sugar level has remained within the normal range with the herbal medicine use. It was also realized from this study that although participants were on herbal medications, they were also using other forms of herbal therapies such as dandelion, okra, and lemon to complement their treatments. No individual participant was identified to use solely the herbal medicine. They engaged in dietary management, which is necessary in managing diabetes type 2, engage in exercises and would go for acupuncture once a while. This corresponds with studies where the qualitative approach was used to explore CAM use, and it was mentioned that bitter melon, ginseng, exercise, gymnema, prickly pear cactus, and exercises were approaches used to treat type 2 diabetes naturally (Hasan et al., 2009; Pumthong et al., 2015).

Although complementary and alternative medicine is grouped under the same umbrella, there is a difference. Complementary medicine is used when these therapies are used along with the conventional medicine whereas alternative medicine is used, when these therapies are used instead of conventional medicine.

Various studies agree to this finding of complementary and alternative medicine use among patients (Aziato & Antwi, 2016; Bahall, 2017; Farooqui et al., 2016; Gyasi et al., 2016; Korsah, 2015; Pumthong et al., 2015). Complementary and alternative medicine is classified as mind-body therapies, biological -based therapies, manipulative and body -based therapies, energy therapies and alternative medicinal systems. Of all the

classifications mentioned, the ones that were identified in this study includes, biological - based therapies where participants were identified to use herbal medicine as well as diet therapies to manage type 2 diabetes. Again, one participant was observed to use acupuncture which is an energy field therapy. An overlap exists in the use of complementary and alternative medicine. This overlap is seen when these therapies are used in the mainstream health care to help achieve some therapeutic purposes. For example, acupuncture and aromatherapy is used in conventional medicine to help lessen discomfort experienced by patients after surgery. When this happens, the therapy becomes complementary medicine. However, when this therapy is used to manage a disease condition instead of a recommended therapy by a conventional medical practitioner, then it becomes an alternative medicine. For example, when diet is used to manage cancer instead to undergoing radiation recommended by a doctor. In this study, participants used herbal medicine as alternative medicine.

5.4 The Outcome of Care of Complementary and Alternative Medicine use

The outcome of care could either be a positive or negative response to the effects of the medications given. Findings from this study revealed that participants elicited either of them in their various narrations include improved wellbeing, increased satisfaction and some challenges to complementary and alternative medicine use. Participants mentioned how better their clinical indicators mainly the sugar level has been with complementary and alternative medicine use. It was revealed in this study that participant do a lot of self-sugar profiling to help them detect emergencies early. This corroborates with research finding where participants attested that regular sugar monitoring is a healthy lifestyle among people diagnosed with diabetes (Koley et al., 2016).

Participants narrated how they use various dietary modifications to achieve optimal sugar level. In this study, the participants did not evaluate the dietary change as a challenge in their management. However, with a study finding where dietary change was used by participants to control blood sugar Korsah (2015), participants had a divergent view on the dietary control and saw it as a challenge because it caused a change in their lifestyle. In the perspective of the researcher, once the therapy is seen to be challenging, the probability of not committing to it is will be higher. Thus, the study finding revealed positive results of stable sugar levels perhaps the participants saw the diet modification as a therapy but not a challenge.

Again, the results of this study established that there is feeling of wellbeing and increased satisfaction of the participants. Participants exhibited emotions such as joy and happiness and some fulfillment to buttress their level of satisfaction. Likewise, research findings by (Hasan et al., 2009; Pumthong et al., 2015; Wazaify et al., 2011) agrees with the finding that participant fulfillment exists with herbal medicine use. This was evidenced in a narration where participants expressed that God has healed them that through the herbal medicine. This finding in the present study could probably be due to the fact that except one of the participants who was of the Islamic religion, all the participants identified themselves with the Christian religion.

Contrary to this, research finding by Chingwaru & Vidmar (2016) on prevalence, factors, and perceptions influencing the use of traditional and complementary medicine it was reported that Apostolic Church does not agree to use of traditional medicine among its members with the exception of nutritional supplements although most Christian denominations declared the use of it in that study. Another study with a divergent view as per the literature review on clients claim of positive effect with use of complementary and alternative medicine is that most of these studies use non – experimental research methods whereby the results were positively linked with health consequences and negatively related in the same study (Spinks et al., 2014).

Participants of the present study made great observations on how the marketing of herbal medicine is being conducted in the country. Findings from this study revealed that there are a lot of vending sites for herbal medications in the country. Some of the places include streets, commercial buses, the open market as well as drug peddlers. It was also

realized in the present study that these vendors always initiate their marketing strategy with a prayer to gain the attention of the passengers. Afterward, they establish rapport by asking the commuters whether they have ever met them before then introduce the herbal medicine to them. Some participants expressed concerns about the efficacy of these drugs and expressed worry about unnecessary exposure of the herbal medicines to sunlight. Some participants emphasized that it was a bother to them because they cannot trust where these drugs are stored. Besides, participants raised concerns about how the potency of the herbal medicine would be ensured in the harsh weather in order not to compromise the quality of the drug bought from the open market. Furthermore, some vendors were said to use cunning and funny messages to persuade individuals to buy herbal medicines. These acts may pose a health hazard to the individual who may be coaxed to patronize these drugs thereby marring the trust one has in herbal medications. This finding is consistent with the findings by (Andel et al., 2015; Quiroz et al., 2014) that shows variety of herbal medicine in the open market due to regulation gaps. Participants expressed confidence in the herbal drugs dispensed at the hospital because it was prescribed by highly qualified health personnel. They were of the view that the drugs are well packaged and labeled just like the orthodox drugs.

5.4.1 Measures to Improve on CAM among Patients with Diabetes Mellitus

Findings from this current study revealed some means by which CAM use can be improved. This includes research into the active ingredients that are present in herbal medicine to help achieve low sugar level. Secondly, findings show that when the government formulate a policy to finance CAM through the existing National Health Insurance it will help regulate patronage from the open market. Moreover, it was also

suggested the health care professionals who work at the herbal centre need to be motivated and supported through continuous training and development. Again, monitoring and evaluation of people using CAM is also necessary to assess whether the risk associated with its use is reported and properly managed. Notable among findings in this study is that, research ought to be conducted to determine how integration of CAM to mainstream medical services will improve the use of CAM and this agrees with a study by Chingwaru & Vidmar (2016) that indicated that integrating both traditional and complementary medicine could improve its use.

5.4. 2 Summary

In summary, most of the findings of this study correspond with other research findings on complementary and alternative medicine use. Other researchers used Anderson's socio behavioural model in their respective studies. However, this current work used some constructs of the complementary and alternative model as a guide to explore the use of complementary and alternative medicine in type 2 diabetes.

Again, the findings agree with other studies that propose that herbal medicine should to properly licensed and regulated. The findings were consistent with other studies that support the integration of both orthodox and complementary and alternative medicine. In addition, the results support the idea of including complementary and alternative medicine to the National Health Insurance Scheme. Finally, the finding suggests that studies are needed to determine which herbal medicine are safe and effective in managing diabetes

CHAPTER SIX

SUMMARY, IMPLICATIONS, LIMITATIONS, CONCLUSIONS, AND RECOMMENDATIONS

This chapter highlights the implications of the entire research, the conclusion and findings to nursing practice, education, management, and research. This chapter also presents a summary of the limitations and recommendations for future studies.

6.0 Summary

Diabetes mellitus can be defined as a metabolic disease which is non-communicable characterized by deficient insulin secretion in its action or both. Lifestyle changes, obesity and hypertension, genetic predisposition and chromosomal changes are noted to be some of the prevailing causes of diabetes. Diabetes can be classified as type 1 diabetes, type 2 diabetes, gestational diabetes and diabetes from other causes such as drug-induced, diseases like Cushing's syndrome, environmental factors such as viruses and toxins (Alvarez, Herrería-Bustillo, Utset, & Martínez, 2015; American Diabetes, 2010; Association, 2014; Jarald, Joshi, & Jain, 2008). Diabetes is associated with life threatening events such as long-standing hyperglycaemia which can result in malfunctioning of several organs including the nerves, eyes, and kidney. Diabetes is managed through a multidisciplinary approach. Thus, some individuals with diabetes prefer complementary and alternative medicine as a form of treatment. The popularity of traditional medicine has gained among people and the upsurge in the economic benefit of traditional medicine has motivated governments and academia globally as presented in the standard of care of diabetes (American Diabetes, 2015).

Complementary and alternative medicine is defined by WHO as knowledge, skill, and practices based on the theories, beliefs, and experiences indigenous to different cultures, whether explicable or not, used in the maintenance of health as well as in the prevention, diagnosis, improvement or treatment of physical and mental illness (WHO 2014).

The aim of the study was to explore the use of complementary and alternative medicine among patients diagnosed with type 2 diabetes at LEKMA hospital. This study employed exploratory descriptive qualitative design and recruited participants using purposive sampling and snow balling method. Approval was sought from the Institutional Review Board of the University of Ghana; Noguchi Memorial Institute of Medical Research and the Ethics Committee; Ghana Health Service after which data collection began. The Complementary and Alternative Health Care Model was used as a guide to develop semi-structured interview guide for the data collection. To ensure that the instrument was consistent with the purpose of the study as well as the objectives and to prevent ambiguity, a pre-test of the semi-structured interview guide was carried out at the Tema General Hospital. All the participants who agreed to be part of the study appended their signature to the consent form. Saturation was achieved at the thirteenth participant. All the participants gave their consent for the interviews to be recorded of which transcription was done word for word. Thematic content analysis was employed to examine the data generated. Five major themes and 22 corresponding sub-themes were generated from the data. The major themes are the predisposing factors, enabling factors, need factors, complementary and alternative medicine use and outcome of care to the use of complementary and alternative medicine among patients with type 2 diabetes mellitus. The findings revealed that patients were much convinced based on the information they

receive from family and friends, the enticing advertisement on television and some publicity of herbal drug as a choice in the health facility.

Again, participants demonstrated a strong belief in the herbal medicine since it is culturally and socially acceptable. Another finding was that participants were motivated to use herbal medicine was when their health care professionals suggested it's used to them. Results revealed that positive attitude by health professionals at the herbal clinic also contributed to the drive to use the herbal medicine. Furthermore, it was demonstrated that herbal medicine was effective and relatively cheaper although it is not covered under the National Health Insurance Scheme. It was also realized from the study that, dietary management, exercises, acupuncture and herbal medicine administration was the only forms of complementary and alternative medicine available at the facility. In addition, other factors that made patients susceptible to the use of complementary and alternative medicine was the experience of chronic symptoms and co-morbid diseases that compounded the disease burden of people diagnosed with type 2 diabetes mellitus.

All these factors notwithstanding, the poor attitude of nurses at the mainstream healthcare was the single most demotivating factor for the participants to continue with conventional care. Conversely, participants acknowledged that although there is risk associated with herbal medicine use, none was observed in this present study. Some inconsistency was realized with the Complementary and Alternative Medicine Model for Health Care (CAM) in the hospital setting used because other forms of CAM such as yoga, homeopathy, hypnosis, Ayurveda, and naturopathy were not identified among the patients. Last but not the least, the findings were that participants were highly confident in their improved health status that lead to optimum satisfaction with care.

6.1 Implications

This study has revealed some suggestions that will be beneficial for nursing education, nursing administration, nursing practice, nursing research and for policy development.

6.1.1 Implication for Nursing Education

It is important for nurse educators to develop curriculum on herbal medicine practitioner nursing, so nurses can discharge specialized nursing care to patients who chose herbal medicine as an option of treatment since the mainstream nursing curriculum does not cover pharmacology of alternative medicine. Again, the study has revealed the need for nurses to improve their interpersonal relationship with clients. Nurse educators must take a look again at the curriculum of nursing communication skills to include customer care. This will help make nurses more effective communicators and enhance nurse-patient interaction.

6.1.2 Implication for Nursing Administration

Findings revealed that some of the nurses were not welcoming to the patients so they were compelled to visit the herbal unit where the atmosphere was warm. The nursing administration must institute an orientation programme for all nurses and educate them on therapeutic communication skills. Once it becomes the culture of the facility, the new recruit will also be oriented and client dissatisfaction due to poor nursing attitude will be

greatly reduced. The nursing administration can also institute client feedback about their services in order to correct the problems identified in relation to the attitude of nurses.

6.1.3 Implication for Nursing Practice

The implication of the study to nursing practice is that nurses must be trained to be competent and effective communicators since they are the pivot of care in the health care system. Nurses are the first point of call at each facility, therefore, the patient and family-centered model of care must be embraced in nursing care. Clinical nurses must be supervised and monitored periodically to ensure that the proper behaviour is exhibited. Nurse managers must use infraction sheets as a corrective measure to curtail the poor attitudinal problems identified in nursing practice. In addition, nurse managers must develop plans to motivate well-behaved nurses to encourage the others to modify their behaviour.

6.1.4 Implication for Nursing Research

This study has identified further research into the use of herbal medicine in managing diabetes. The current study explored the factors to complementary and alternative medicine use among diabetes. The study findings provide a future research to compare and contrast the outcome of type 2 diabetes mellitus to treatment with orthodox medicine and herbal medicine. Moreover, this same study can be conducted at another facility without a herbal unit to determine the factors to the use of complementary and alternative medicine among patients diagnosed with type 2 diabetes since findings revealed that some patients were on orthodox medicine before they were convinced to use herbal medicine.

The study can also be conducted to find out herbal medicine use among young adults diagnosed with type 2 diabetes.

6.1.5 Implication for Policy Development

The Ministry of Health (MOH) must work in collaboration with the National Health Insurance Authority to factor into the scheme the cost of care of diabetes using herbal medicine. This will in effect reduce the economic burden expressed by participants in this study finding. Again, the Ministry of Health together with the curriculum developers of the nursing training models must work together to develop a specialty on herbal medicine in nursing to better equip nurses in managing patients on herbal medications. The Ministry of Health must expand the unit to other health facilities to ensure even distribution of other forms of health care.

6.2 Field experience/ Reflections

The study offered the researcher the opportunity to gain rich knowledge in some of the local herbs and meals used to control sugar level. The experience was a humble one as the researcher had an encounter with the clients in their home setting and saw the efforts, they make in ensuring that the blood sugar levels remain normal. The researcher empathized with participants, most of them who were old and alone at home during weekdays. In addition, the researcher is generally attentive and a good listener. This attribute coupled with her facial expression gave the participants the power to express wholeheartedly how they were convinced to use herbal medicine. It was observed that participants narrated their stories with joy and zeal because they felt better than they used

to be. It appeared the participants were glad they were being interviewed about their success story of herbal medicine use. The study has brought a drastic change in the thinking of the researcher. The researcher has become more empathetic to people who use herbal medicine. The researcher before the study did not understand why patients would use herbal medicine and thought they simply do not comply with their medications. It was revealed by the study that patients who use herbal medicines get convincing information chiefly by family and friends and the influence of media. Attitudes and belief were also identified as another criterion that makes one susceptible to use CAM.

6.3 Limitations

The study will contribute to nursing practice as stated; however, some challenges do exist. The use of an exploratory descriptive approach does not allow large sample size to be used so this is likely to affect generalization of findings. Thus, there is the need to consider the study quantitatively for possible generalization.

Secondly, locating the residence of participants was difficult. Most of the home addresses of the participants were difficult to locate. There was a cost increase in relation to transportation and communication because the researcher had to drive around in search of the participant's residence.

Lastly, the interviews that were conducted at the worksite of participants were disrupted occasionally by either customers or vehicular movements. The flow of stories was affected during these interruptions. These limitations notwithstanding, the findings from this study may buttress the knowledge on the use of complementary and alternative medicine among patients with type 2 diabetes.

6.4 Conclusion

In conclusion, patients diagnosed with type 2 diabetes mellitus use complementary and alternative medicine due to some motivating factors. These factors include predisposing and enabling factors such as convincing information about CAM from family, friends, media, belief in herbal medicine. Besides, relatively low cost of herbal medications, easy accessibility of herbal medicine, the effectiveness of herbal medicine, and information about care option also makes people susceptible to use herbal medicine. This study found that the underlying factor that lead people to complementary and alternative use is the poor communication between health professionals in the mainstream health care. It is important for stakeholders involved in decisions related to health to be aware of the dissatisfaction expressed by participants with conventional medicine use being the most important factor to herbal medicine use.

The participants of this study further explained that finding solution to the chronic symptoms to type 2 diabetes, the presence of other disease condition was some of the factors that leads to herbal medicine use. Amongst the various categories of complementary and alternative medicine available in the literature, the study finding recorded dietary use, exercise, acupuncture and herbal medicine use among the patients diagnosed with type 2 diabetes. There was a positive outcome to the use of complementary and alternative medicine among patients with type 2 diabetes as participants expressed improved health status and increased satisfaction. This may serve as an impetuous for the recommendation of CAM as answer to the research question.

Nonetheless, participants have knowledge about risk associated with herbal medicine use such as over dose of herbal medicine, extreme environmental conditions, self-prescription, poor labelling and possibility of kidney diseases. However, risks connected with CAM use were not identified in this study probably due to the fact that participants noted that herbal medicine is safe and does not have side effects. Furthermore, side effects related to herbal medicine use are usually not monitored or reported. Some recommendations to improve the use of complementary and alternative medicine identified in the study include continuous research on herbal medicine use and its associated adverse effects, integration of CAM services under the Health Insurance Policy and lastly, monitoring of complementary and alternative medicine use and evaluation of its associated risk.

6.5 Recommendations

The following recommendations were made to regulatory bodies, hospital management, policymakers and other interested groups.

Nursing and Midwifery Council of Ghana (NMC)

- The Nursing and Midwifery Council of Ghana must ensure that curriculum has been developed to embrace pharmacology of herbal medicine.
- Again, a specialist programme on herbal medicine for nurses must be considered to equip nurses to provide expert care to the patients who use herbal therapy.

- As part of the Continuous Professional Development Plan of the Nursing and Midwifery Council (NMC) of Ghana, the council must ensure that a programme on communication skills including customer service care is mandatory for all nurses.

Ministry of Health

- The Ministry of Health should work with the other stakeholders of health to revise the drugs under the National Health Insurance Scheme (NHIS) to include herbal medicine once the ministry endorses its use.
- The Ministry of Health ought to collaborate with stakeholders of nursing education in Ghana to revise the nursing curriculum to include the pharmacology of herbal medicine since the ministry agrees to its use.
- The Ministry of Health ought to collaborate with the Food and Drugs Authority to ensure that herbal medicine over the counter is properly certified.

Hospital Management

- The nursing administration must institute measures to orient nurses on effective communication to enhance the nurse-patient relationship.
- There should be recognition of well-behaved staff to motivate others.

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Appendix B: Ethical Clearance (GHS)

GHANA HEALTH SERVICE ETHICS REVIEW COMMITTEE

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



Research & Development Division
Ghana Health Service
P. O. Box MB 190
Accra
Tel: +233-302-681109
Fax + 233-302-685424
Email: ghserc@gmail.com
22nd April, 2018

MyRef. GHS/RDD/ERC/Admin/App/18/260
Your Ref. No.

Augustina Amoah
University of Ghana
School of Public Health
Legon, Accra

The Ghana Health Service Ethics Review Committee has reviewed and given approval for the implementation of your Study Protocol.

GHS-ERC Number	GHS-ERC061/02/18
Project Title	The Use of Complementary and Alternative Medicine among Patients with Diabetes Mellitus at Lekma Hospital, Greater Accra
Approval Date	22 nd April, 2018
Expiry Date	21 st April, 2019
GHS-ERC Decision	Approved

This approval requires the following from the Principal Investigator

- Submission of yearly progress report of the study to the Ethics Review Committee (ERC)
- Renewal of ethical approval if the study lasts for more than 12 months,
- Reporting of all serious adverse events related to this study to the ERC within three days verbally and seven days in writing.
- Submission of a final report **after completion** of the study
- Informing ERC if study cannot be implemented or is discontinued and reasons why
- Informing the ERC and your sponsor (where applicable) before any publication of the research findings.

Please note that any modification of the study without ERC approval of the amendment is invalid.

The ERC may observe or cause to be observed procedures and records of the study during and after implementation.

Kindly quote the protocol identification number in all future correspondence in relation to this approved protocol

SIGNED.....
DR. CYNTHIA BANNERMAN
(GHS-ERC CHAIRPERSON)

Cc: The Director, Research & Development Division, Ghana Health Service, Accra

Appendix C: Consent Form

CONSENT FORM

Title: **The use of Complementary and Alternative Medicine among Patients with Diabetes at the LEKMA Hospital Greater Accra**

Principal Investigator: Augustina Amoah, MPHIL Nursing Student

School of Nursing and Midwifery, University of Ghana, Legon

P.O. Box LG 43

Accra

MOB. +233 243519457

E-mail: aamoah021@st.ug.edu.gh

General Information about Research

The aim of this study is to explore the use of Complementary and Alternative Medicine among patients with diabetes. If you have been diagnosed with diabetes mellitus for at least six months and above and access health care at LEKMA Hospital, then you qualify to take part. In this interview, you will be required to share your opinion about the use of Complementary and Alternative Medicine in diabetes. This interview will last for 45 minutes.

Before you are interviewed, it will be required of you to append your signature or thumb print to indicate your agreement to participate. The interview will be audio recorded. However, your name and address will not be necessary in this interview.

It is expected that the findings may show the use of complementary and alternative medicine among patients with diabetes and subsequently how they cope with the use of complementary and alternative medicine. In addition, factors that influences people diagnosed with diabetes mellitus to use complementary and alternative medicine will be known. These findings will enable policy makers and all other stake holders justify the need to incorporate and improve complementary and alternative medicine use in our health care delivery. Furthermore, the study will add to the body of knowledge on the use of complementary and alternative medicine among people diagnosed with diabetes in Ghana. Finally, this study will serve as basis for future studies.



Possible Risks and Discomfort

You will not be at risk for your participation in the study. However, some questions may make you feel uncomfortable during the interview. You have the right not to answer questions of such nature. Again, you may be exhausted physically in the course of the interview and you will be allowed to rest to continue later in the day or the next day.

Possible Benefits

There will be no direct benefits to participants in this study. However, the knowledge from this study will help health administrators and policy makers to make decisions that will enhance nursing care to patients with diabetes.

Confidentiality

The information you provide during the interview will not be made accessible to other parties except the researcher and his supervisors. Your real name will be represented by a pseudonym or false name to ensure anonymity. Moreover, the laptop on which your information will be kept will be protected by a password. All information stored in hard copies will be kept in a cabinet and locked in the supervisor's office. This cabinet can only be accessed by the researcher and her supervisors. These documents will be destroyed after 5 years. Before the interview session starts, you will be required to sign 2 consent forms, one will be kept by you and the other by the researcher. Findings of the study could be published or presented at conferences but once again, your identity will be protected.

Compensation

You will be served with snack in the form of apple to appreciate your time and effort.

Voluntary Participation and Right to Leave the Research

Your participation in this study is absolutely voluntary. You have the right to participate in the study or not to participate. You can choose to stop or withdraw from the study at any time. You only need to inform the researcher about your intention to withdraw from the study without explanations. Your withdrawal from the study will not affect the treatment you are receiving at the hospital.



Contacts for Additional Information

For more information about the study, you can contact the following people;

Augustina Amoah, Principal Investigator
School of Nursing and Midwifery
University of Ghana, Legon
P.O. Box LG 43

Accra

Tel: +233243519457

Email: aamoah021@st.ug.edu.gh

Supervisors: Dr. Kwadwo Ameyaw Korsah

Department of Adult Health

School of Nursing and Midwifery

University of Ghana

Phone number: + 233(0) 243547317

Email: korsah19@yahoo.com/kakorsah@ug.edu.gh

Madam Gladys Dzansi

Department of Adult Health

School of Nursing and Midwifery

University of Ghana

Mobile Phone: +233 (0) 549337945

Email: gladysdzansi@gmail.com

Your rights as a Participant

This research has been reviewed and approved by the Institutional Review Board of Noguchi Memorial Institute for Medical Research (NMIMR-IRB). If you have any questions about your rights as a research participant you



Appendix D: Statement of Compliance

STATEMENT TO COMPLY WITH ETHICAL PRINCIPLES

As the Principal Investigator (PI) of the protocol '**The use of Complementary and Alternative Medicine (CAM) among Patients with Diabetes Mellitus at LEKMA Hospital, Greater Accra**' and on behalf of my supervisor, I write to inform your committee that we will diligently abide by all the ethical principles which includes, justice, respecting the autonomy of individual respondents, avoiding harm, being faithful to the participants, and ensuring that the study is of benefit to the respondents.

To achieve this, the transcribed scripts and the interview guide will be kept in a cabinet and locked in the supervisor's office. The cabinet will be accessible to only the Principal Investigator and the supervisor. In addition, the lab top on which the all information will be kept will be protected by a password that will be known by my supervisor and I.

The use of the data will only be for the purposes of this study and not for any other purposes than this MPhil thesis.

We promise to strictly abide by all ethical principles and guidelines throughout this study.

Thank you.

Augustina Amoah



Dr. Kwadwo Ameyaw Korsah

Department of Adult Health

University of Ghana

School of Nursing and Midwifery



Appendix E: Introductory Letter from UG to GHS ERC



UNIVERSITY OF GHANA
SCHOOL OF NURSING

Ref. No.: SONM/F.11

05 February 2018

The Chairperson
Ghana Health Service Ethical Review Committee
Accra-Ghana

Dear Sir/Madam,

LETTER OF INTRODUCTION: AUGUSTINA AMOAH

I write to introduce to you Augustina Amoah, an MPhil second year student of the School of Nursing and Midwifery, University of Ghana, Legon. As part of the MPhil programme, she is conducting a research on '**The use of Complementary and Alternative Medicine (CAM) among Patients with Diabetes Mellitus at LEKMA Hospital, Greater Accra**'.

I am thereby supporting her application to the ethical committee to review her proposal for approval to enable her use the LEKMA Hospital as her data collection outlet.

Thank you.

Yours faithfully,


Dr. Lydia Aziato
Ag. Dean

COLLEGE OF HEALTH SCIENCES

P. O. Box LG 43, Legon, Accra, Ghana.
• Tel: +233 (0) 302 513 250 / 0289 531 213 • Email: son@chs.ug.edu.gh • Website: www.nursing.ug.edu.gh

Appendix F: Introductory Letter from UG to LEKMA



UNIVERSITY OF GHANA
SCHOOL OF NURSING

SONM/F.11

12 February 2018

Ref. No.:

The Medical Superintendent
Ghana Health Service
LEKMA Hospital
Accra-Ghana

Dear Sir/Madam

LETTER OF INTRODUCTION: AUGUSTINA AMOAH

I write to introduce to you Augustina Amoah, an MPhil second year student of the School of Nursing and Midwifery, University of Ghana, Legon. As part of the MPhil programme, she is conducting a research on 'The use of Complementary and Alternative Medicine (CAM) among Patients with Diabetes Mellitus at LEKMA Hospital, Greater Accra'. Your facility has been chosen as her data collection site.

I would be pleased if you could kindly assist her where necessary, to enable her collect data for her thesis.

Thank you.

Yours faithfully,

A handwritten signature in black ink, appearing to read 'Kwawo Ameyaw Korsah'.

Dr. Kwadwo Ameyaw Korsah.
(Supervisor)

Cc:

The DDHS
Ledwokoko Krowor Municipal Health Directorate

The DDNS
Ledwokoko Krowor Municipal Health Directorate

COLLEGE OF HEALTH SCIENCES

P. O. Box LG 43, Legon, Accra, Ghana.
• Tel: +233 (0) 302 513 250 / 0289 531 213 • Email: son@chs.ug.edu.gh • Website: www.nursing.ug.edu.gh

Appendix G: Introductory Letter from GHS to LEKMA

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

*My Ref No. GAR/RHD/ADMIN
Your Ref. No.*



Ghana Health Service
Greater Accra Regional Health.
Directorate
P O Box 184
Accra.
Tel.0302 – 234225

MAY 15, 2018.

THE DIRECTOR
LEDZOKUKU-KROWOR MUNICIPAL HEALTH DIRECTORATE
GHANA HEALTH SERVICE
TESHIE

INTRODUCTORY LETTER

Approval has been given to the attached student from University of Ghana, Legon to undertake her research work in your facility.

Attached is an introductory letter from the school for your perusal.

I would be grateful if you could give her the necessary support and assistance.

Thank you.

**MR PETER MENSAH
DEPUTY DIRECTOR, ADMINISTRATION
FOR: REGIONAL DIRECTOR OF HEALTH SERVICE
GREATER ACCRA**

Appendix H: Interview Guide

SEMI-STRUCTURED INTERVIEW GUIDE

Research Topic: The use of Complementary and Alternative Medicine among Patients with diabetes mellitus at the LEKMA Hospital, Greater Accra

Researcher: Augustina Amoah (MPhil Nursing Student)

Address: School of Nursing and Midwifery, University of Ghana, Legon.

Tel: 0243519457

You are invited to participate in a study to explore the use of complementary and alternative medicine (CAM) among patients with diabetes.

This will enable the researcher understand why complementary and alternative is used among patients with diabetes, the factors that drive patients to use complementary and alternative medicine, the pattern of use and how patients cope with CAM use in diabetes. The interview will be audio recorded with your permission and the session is expected to last between thirty (30) and forty-five (45) minutes.

Pseudonym

SECTION A: DEMOGRAPHIC INFORMATION

Please tell me about yourself?

Age.....

Ethnicity.....

Nationality.....

Marital Status: **Single** [] **Married** [] **Divorced** [] **Widowed** []

Educational Background

Language Spoken.....

Occupation

Unemployed []

Self-employed []

Any Other.....



Private employee Government employee Student

Religious affiliation: Christianity Traditional Islamic Others.....

Duration of diagnosis

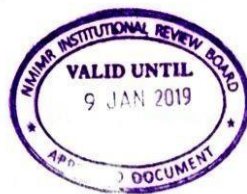
SECTION B: GUIDING QUESTIONS

Complementary and Alternative medicine (CAM) use diabetes

1. Please share with me why complementary and alternative medicine (CAM) is used in diabetes.
2. What are some of the things done as a form of management for diabetes?
3. Why do you think some people use herbal medicine as a form of treatment in diabetes?
4. In your view, what do you think can be done to improve the use of complementary and alternative CAM in the healthcare.

Factors Associated with Complementary and Alternative Medicine (CAM) use

5. What do you think drive people to use complementary and alternative medicine (CAM) in managing diabetes?
6. How did you initiate complementary and alternative medicine (CAM) in managing diabetes?
7. Could you please tell me some of the complementary and alternative medicine (CAM) used in diabetes?
8. How often do you think people who use CAM in diabetes use it?
9. How about yourself, how often do you use complementary and alternative medicine in diabetes management.



Challenges faced with the use of Complementary and Alternative Medicine in management of diabetes mellitus

10. In using CAM what do you think are the problems you face?

How patients with diabetes cope with CAM use

11. How do you deal with the challenges in using complementary and alternative medicine (CAM)?

12. How does this coping measure help you in managing diabetes?

How to improve the use of CAM

13. Tell me about your suggestions as to how to improve the use of CAM among people with diabetes

14. What support do you need with the use of complementary and alternative medicine (CAM) in diabetes?

15. Why do you prefer this support?

16. How do you want this support to help you in managing diabetes?

17. Tell me more of what you want authorities to do for you in CAM use.

18. Please is there anything else you will like me to know

THANK YOU



Appendix I: Participant Characteristics

Participant code	CAMD1	CAMD2	CAMD3	CAMD4	CAMD5	CAMD6	CAMD7	CAMD8	CAMD9	CAMD10	CAMD11	CAMD12	CAMD13
Age (years)	62	51	29	65	56	59	56	55	60	60	52	69	58
Gender	M	F	F	M	F	F	F	M	M	F	M	F	F
Ethnicity	Fante	Akwapim	Ashanti	Ga	Akwapim	Ashanti	Fante	Ashanti	Volta	Kwahu	Volta	Akwapim	Tamale
Nationality	Gh	Gh	Gh	Gh	Gh	Gh	Gh	Gh	Gh	Gh	Gh	Gh	GH
Marital status	M	M	S	M	M	M	M	M	M	M	M	M	M
Educational Background	MPhil in Environmental Policy	Msc.in Business Adm.	BA. Humanities	MSc. Business Adm.	BA. Theatre Art.	SHS	BA. Edu.	BA. Edu.	SHS	SHS	BSc. Theology	SHS	MSLC
Language Spoken	English, Fante	Twi English, Ga	English, Twi, Ga	English, Twi, Ga	English, Twi, Ga	English, Twi, Ewe	English, Twi	English, Twi	English, Twi	English, Twi	English, Twi, Ga, Ewe	English, Twi	English, Twi, Ga Hausa
Occupation	Retired	Public servant	Public servant	Retired	Public servant	Trader	Public servant	Public servant	Farmer	Retired	Pastor	Retired	Trader
Religious Affiliation	Christian	Christian	Christian	Christian	Christian	Christian	Christian	Christian	Christian	Christian	Christian	Christian	Moslem
Duration of Diagnosis	24 years	15years	2years	20years	1year	11years	9 years	12 years	17 years	18 years	15years	42 years	15 years