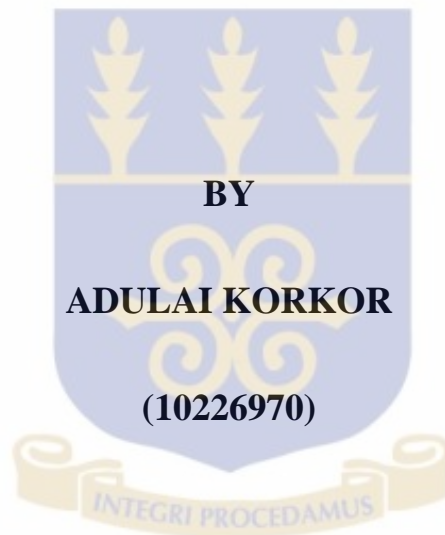


SCHOOL OF PUBLIC HEALTH
COLLEGE OF HEALTH SCIENCES
UNIVERSITY OF GHANA

PATIENT'S PERCEPTION OF DIABETES AND ITS MANAGEMENT
AMONG PATIENTS AT LA GENERAL HOSPITAL



A DISSERTATION IS SUBMITTED TO THE UNIVERSITY OF GHANA
IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE
AWARD OF MASTER OF SCIENCE IN APPLIED HEALTH SOCIAL
SCIENCE DEGREE

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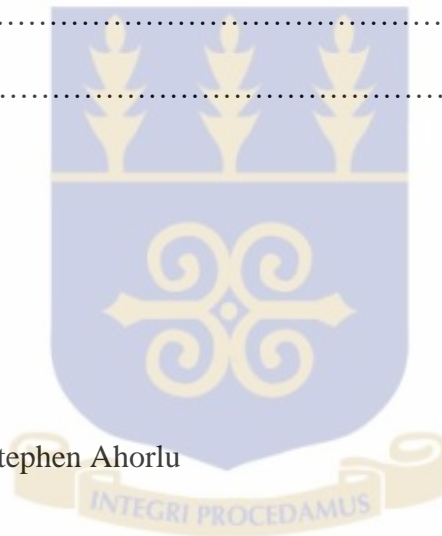
DECLARATION

I, Korkor Adulai, do hereby declare that with the exception of references made to other people’s work and textbooks which have been duly acknowledged, this dissertation is a result of my own effort. No material in this work has been presented either in whole or part to any other institution apart from the University of Ghana, for the award of any degree or certificate.

STUDENT: Korkor Adulai

SIGNATURE

DATE.....



SUPERVISOR: Dr Collins Stephen Ahorlu

SIGNATURE.....

DATE.....

DEDICATION

This work is dedicated to my husband Mr. Sosthenes Konutsey who *has always helped me and believed that I could do it.*

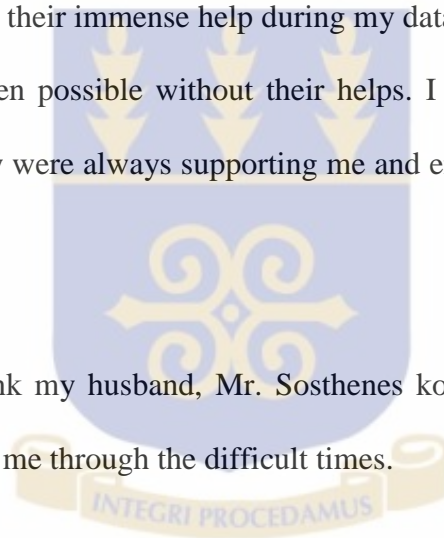


ACKNOWLEDGEMENT

I would never have been able to finish my dissertation without the help of the Almighty God, the guidance of my supervisor, help from nurses at the La General Hospital, and support from my family and friends.

My sincere thanks go to the Almighty God for his grace and protections. I would like to express my deepest gratitude to my supervisor Dr. Collins Stephen Ahorlu, of Noguchi Memorial Institute for Medical Research, University of Ghana, Legon for his excellent guidance, caring and patience. I would like to thank nurses at the La General hospital; Mrs. Emma Afari and Priscilla for their immense help during my data collection at the facility. My research would not have been possible without their helps. I would also like to thank my parents and my friends. They were always supporting me and encouraging me with their best wishes.

Finally, I would like to thank my husband, Mr. Sosthenes konutsey. He was always there cheering me up and stood by me through the difficult times.



ABSTRACT

The prevalence of diabetes is on the increase in the world, however, the rate in sub-Saharan Africa requires urgent attention from health workers. This is because the complications associated with diabetes range from physical to mental health issues leading to shortage of human capital. One of the key issues in diabetes management is self-care practices and these practices are influenced by varied factors. This study examined the influence of diabetes attitude, knowledge and beliefs on their self-care practices among diabetes patients receiving treatment at the La General Hospital. The effects of their demographic characteristics on their self-care practices were also examined. A total of 160 patients participated in a questionnaire survey. A cross-sectional survey design was employed. Independent t test, Pearson correlation and one-way ANOVA were used to analyze the data. Results from the analysis showed that diabetes knowledge had a significant positive influence on patients, self-care practices while diabetes beliefs had a significant negative influence on patient's self-care. However, no significant correlation was found between diabetes attitude and self-care practices. Further analysis showed that patient's demographic characteristics such as education, sex, marital status and age had significant effects on their self-care practices. The implication of these findings are discussed.

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LIST OF ABBREVIATIONS

BMI- Body mass index

DM- Diabetes Mellitus

GD- Gestational Diabetes

GI- Glycemic Index

HbA1C- High blood glyceimic control

HBM- Health Belief Model

PAID- Problem areas in diabetes

SDSCA- Summery of diabetes self-care activities

SPSS- Statistical package for social sciences

SSA- Sub Sahara Africa

WHO- World Health Organization

BST- Blood Sugar Test

T2DM- Type Two Diabetes Mellitus

DEFINITION OF TERMS

Attitude- a settled way of thinking or feeling about something

Belief- an acceptance that something exists or is true, especially one without proof

Diabetes- Diabetes Mellitus is an endocrine disease that is characterized by high blood sugar levels.

Glycemic Level- The glycemic index or glycemic index (GI) is a number associated with a particular type of food that indicates the food's effect on a person's blood glucose (also called blood sugar) level.

Knowledge- facts, information, and skills acquired through experience or education; the theoretical or practical understanding of a subject.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Diabetes Mellitus is a chronic metabolic disease. Diabetes causes the body to be unable to adequately store and use glucose in the blood, causing blood sugar or glucose to rise too high (Chouhan & Shalini, 2006). Diabetes Mellitus is an endocrine disease that is characterized by high blood sugar levels. There are three types of diabetes, these are: type 1, type 2 and gestational diabetes (GD). Type 1 diabetes is often diagnosed at childhood and it peaks up at puberty, Type 1 diabetes can be complex when it comes to treatment (Sultana, Oommen, & Shanmugham, 2007). Type-1 diabetes is also referred to as insulin dependent.

When the immune system goes out of order and it is destroying the cells in the pancreas that produce insulin, it is called type 2 diabetes (Chouhan & Shalini, 2006). The type 2 diabetes is more common than the type 1 diabetes. Without insulin, glucose cannot get into the cells of the body where it is used. Gestational diabetes (GD) is the start of glucose intolerance during pregnancy. Reported cases of gestational diabetes range from 2% to 10% of pregnancies. Women with gestational diabetes are found to have diabetes (usually type- 2) instantly after pregnancy (Facts & Diabetes, 2011)

It is suggested that the number of adults living with diabetes in the world will expand by 54%, from 284.6 million in 2010 to 23.9 million by 2030 (IDF, 2009). Impaired glucose tolerance in sub Saharan Africa (SSA) is predicted to go up by 75.8% from 26.9 million in 2010 to 47.3 million in 2030. This is obviously more than double the predicted global increase at 37% (Mbanya, Motala, Sobngwi, Assah, & Enoru, 2010). This prevalence comes with its own cost in terms of healthcare and the loss of human capital due to complications and mortality.

In Ghana, International Diabetes Federation Diabetes Atlas (2013) indicates that diabetes cases are around 440,000. It is also estimated that the mortality rate of diabetes is at 8,527 and the number of people with undiagnosed diabetes is around 330,380. Complications associated with diabetes whether managed by eating well and physical activity alone or with combination with tablets or injection, poorly controlled diabetes will cause damage to the body. High blood glucose levels over a period of time may cause harm or damage to the small and large blood vessels and nerves (Fowler, 2008). The most common complications associated with diabetes include problems with the eyes (retinopathy), the kidney (nephropathy), Gum disease, blood and heart vessels (cardiovascular disease), impotence(erectile dysfunction) and feet (Barreto, Passos, Almeida & Assis, 2007; Kim, Edelman & Kim, 2001)

There are many factors that have effect on the risk of developing complications including smoking, persistent high blood glucose, high cholesterol, excessive alcohol intake and high blood pressure among other. These complications can be reduced by self-care activities like regular exercise, healthy eating, regular check-ups and medication adherence. However, these self-care practices have been thought to be significantly influenced by several psychosocial and demographic factors of the individuals living with diabetes.

Additionally, the beliefs and practices, attitudes and knowledge of health status is a subjective assessment people make about their health. These perceptions exert so much influence on the individuals' decisions regarding their health and wellbeing. For instance, lower ratings of perceived severity and vulnerability of health status has been associated with increased morbidity and mortality (Al-mandhari, Al-zakwani, Al-hasni, & Al-sumri, 2011).

Studies have shown that cultural beliefs and practices, attitudes and knowledge about diabetes affect other aspects of the patient's wellbeing as well as adherence to treatment regimen (Nwankwo, Nandy & Nwankwo, 2010). Other studies also showed that some patients resorted to witchcraft (use of spells) because of the belief that the disease was caused by evil doers. Others also resorted to the use of herbal concoctions because of their cultural practices (Abioye-Akanji, 2013). Despite all these factors accounting for patterns in self-care practices, there is dearth of literature in examining some of these perceptions.

1.2 Statement of the Problem

The prevalence of diabetes is on the increase in Sub-Saharan Africa and consequently represents a major public health issue. The management of diabetes requires major self-care activities or practices that depend on the individual patients. These self-care practices require consistency and commitment as these determine the diabetes health outcomes of the patients. However, in the mainstream healthcare system there is little attention to individual patients' psychosocial characteristics that affect their self-care practices. As such, the focus of care is usually directed at the physical aspects of the illness to the neglect of patients' perceptions in the form of attitudes, knowledge and beliefs about diabetes.

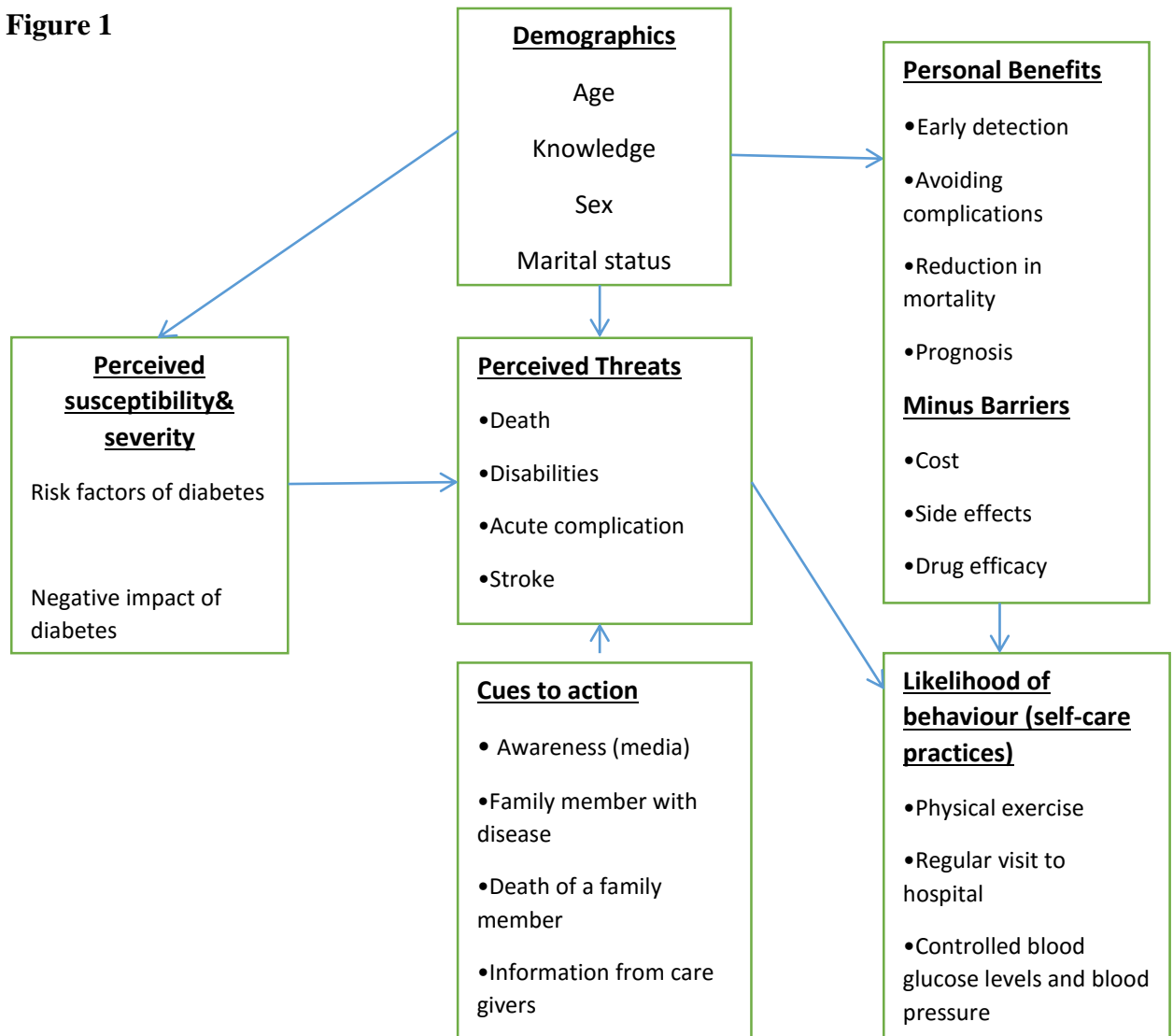
Studies have shown that some diabetic patients in West Africa do not have accurate knowledge about the condition. This lack of knowledge has been demonstrated to influence their physical and psychosocial outcomes. This is because cultural beliefs and practices of persons living with diabetes have been found to interfere with adherence to treatment given to them at the hospitals. Studies have also shown that low rates of perceived severity and vulnerability of health status has been associated with increased morbidity and mortality. Thus, achieving holistic diabetes management outcomes requires

understanding of the perceptions of persons living with diabetes in terms of their attitudes, knowledge and beliefs. The question that remains unanswered is whether these attitudes, knowledge and beliefs held by persons living with diabetes are incorporated in the treatment regimen. This is because diabetes education which is a public health issue is likely to be more effective if patients' characteristics and attitude toward diabetes is well understood (Adisa, Fakeye & Okorie, 2010).

1.3 Conceptual Framework

The health belief model (HBM) (Janz & Becker, 1984) was adopted to examine modifying variables such as: attitudes, beliefs, knowledge and practices of diabetic patients and how it can affect self-care practices. According to the health belief model (Janz & Becker, 1984), human behavior or action is guided by (1) perceived susceptibility; (2) perceived severity; (3) perceived benefits; (4) perceived barriers; (5) cues to action and (6) self-efficacy. As a general rule, the strength of a person's intention to perform a particular behavior is based on the level of key concepts in the model. The intent to self-manage diabetes at home will depend on the patient's cultural beliefs, attitudes, knowledge and practices. Therefore the practices of diabetic patients at La general hospital could be explained and predicted by whether they will change behavior or not using the HBM.

The purpose of the study is to adopt the health belief model to examine the relationship between modifying variables, cultural beliefs and practice, attitude and knowledge and how they affect self-care activities. Thus, the conceptual frame work consists of five main concepts that are likely to influence diabetic patient's self-management. The concepts are modifying variables, attitudes, knowledge, beliefs and practices. An individual will perceive the seriousness of a condition, see if he or she is vulnerable, and consider the obstacles to the action they will want to take- all affect the likelihood of behavior change.

Figure 1

Health Belief Model (Adopted from Janz & Becker, 1984)

Perceived severity and susceptibility of diabetes and its complications (threat), perceived benefits of and barriers to treatment management (threat reduction) cues to action and modifying variables were adopted. According to the model, individuals with diabetes will most likely comply with treatment plan if they are concerned about their health. If they believe they are vulnerable to, or diabetes complications could have a serious negative impact on their lives, adherence to professional treatment, regular physical exercise, reduction in smoking and alcohol intake will be beneficial (perceived benefits) in reducing the threat (severity and susceptibility) of diabetes related complications and difficulties (barriers) that come with health recommendations (cost, pain, side effects, etc.) are

outweighed by the benefits. Cues to action (media, death of a family member, family member living with disease, education from health care providers) can also lead to perceived threat which will then lead to a likelihood of behavior change (self-care practices). Modifying variables like age, education, and knowledge can have an effect on a patients fear of death or complications of diabetes (perceives threat of complications of diabetes) and negative impact of diabetes (perceived severity)

1.4 Justification

The study seeks to highlight the perceptions of diabetic patients at La General Hospital about the condition and how they manage it at home. Knowing the beliefs, knowledge, attitudes and practices of diabetes patients towards self-care will help to develop better public health interventions to enhance biomedical health seeking behavior for the condition. Other issue of interest is how patients' perceptions affect self-management of the condition using both personal and social resources available to deal with diabetes. Results from this research would provide information to public health experts on how to improve strategies and interventions to meet the needs of diabetic patients in Ghana with regards to self-care. This study will add to existing literature in the area of illness perception and diabetic management. This will also form the basis for further studies to enhance knowledge

1.5 General Objectives

The general objective of this study is to determine the effect of diabetic patients' perceptions about their illness on their self-care practices.

1.6 Specific Objectives

Specifically, this study seeks to;

1. Examine attitudes of patients towards diabetes and how these affect their self-care practices at home.
2. Identify patients' knowledge about diabetes and its effect on their self-care practices at home.
3. Examine how diabetic patients' beliefs about diabetes affect their self-care practices.
4. Determine whether diabetic patients' demographic characteristics affect their self-care practices significantly.

1.7 Research Questions

1. How do beliefs about diabetes affect self-care practices at home?
2. What are the attitudes of patients toward diabetes?
3. Does patient's knowledge about diabetes affect their self-care behaviour?

1.8 Hypotheses

H₁: Diabetic patients' attitudes towards their illness will significantly predict their self-care practices at home.

H₂: Diabetic patients' knowledge about their illness will significantly predict their self-care practices at home.

H₃: Diabetic patients' beliefs about diabetes will significantly predict their self-care practices at home.

H₄: There will be significant sex differences in self-care practices among diabetic patients.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The review of studies have been divided into several subsections according to the main independent variables in the study and how they relate to self-care practices and health outcomes among persons living with diabetes.

2.2 Diabetes Attitude and Self-Care Behaviours

Diabetes attitudes have been shown to be significant in influencing self-care behaviours among persons living with diabetes. For instance, Huang, Liu, Zhang and Yao (2013) found in their study that diabetes attitude and knowledge are significant predictors of self-care behaviors. Their study examined the levels as well as the relationship between diabetes knowledge, attitude and self-management activities of the patients with type 2 diabetes mellitus (T2DM). The cross-sectional survey design was employed and a total of 200 patients with Type-2 diabetes mellitus were administered with the Audit of Diabetes Knowledge (ADKnowl), the Diabetes Attitude scale (DAS-3) and the Summary of Diabetes Self-Care Activities (SDSCA). Results from the analysis revealed that diabetes self-care was significantly and positively correlated with patients' diabetes knowledge and diabetes attitude. It further noted that patients' demographic characteristics such as education level, duration of diabetes, complications and periodic review significantly affected their diabetes self-care behaviors. This study contributes significant knowledge to diabetes literature but the findings are limited to China as cultural differences shape our attitudes towards illnesses and may therefore not be applicable within the Ghanaian setting.

Anderson, Fitzgerald and Oh (1993) investigated the relationship between diabetes-related attitudes and patients' self-reported adherence among a total of 1202 patients who were either classified into low adherence or high adherence groups. The researcher compared patients' attitudes concerning variety of adherence behaviors. Results from the analysis revealed that patients in the high adherence group reported favorable diabetes attitudes while patients in the low adherence group reported less favorable diabetes attitude. It was further noticed that the difference in the attitudes between high and low adherence groups were more pronounced on specific self-care practices such as diet and exercise which are difficult adherence areas. Thus, it was concluded that there is the need to understand the attitudes of patients towards their illness as these attitudes affect their self-care practices significantly.

Relatedly, Fitzgerald, Anderson and Davis (1995) sought to investigate whether significant gender differences exist between male and female patients living with diabetes by sampling 1201 patients. Majority of the sample were females as they constituted 65% of the total sample. Results from independent t-tests showed that among patients with T1DM, significant sex differences were found in three of seven attitudes. However, no statistically significant sex differences were found in the attitudes of men and women with non-insulin-dependent diabetes mellitus (NIDDM) using insulin, and only one attitude was different for patients with NIDDM not using insulin. The strength of this study lies in its ability to demonstrate that gender differences are important in determining diabetes attitude of patients to inform intervention planning.

In a related study conducted in Nigeria, Adisa, Fakeye and Okorie (2010) found that persons with type-2 have low knowledge, attitude and self-management practices. The researcher sought to examine knowledge and attitude of patients with type 2 diabetes

about diabetes in general and its complications, self-care practice in southwestern Nigeria. A cross-sectional survey design was used and the respondents (175) were administered with standardized questionnaires. The results from the data analysis using chi-square, t-test and ANOVA showed that only 26.9% had a good knowledge and attitude about diabetes which indicates general lack of knowledge and poor attitudes among persons living diabetes. However, the study did not examine how these variables are related to one another and which other patients' characteristics that are important in influencing their self-care activities.

Didarloo et al. (2012) conducted a study among a sample of 352 women with type 2 diabetes to examine whether the variables within the Theory of Reasoned Action along with Self-Efficacy predict self-care behaviors. Data analysis was done using the Person correlation and regression analysis and the result revealed that diabetes attitude is significantly and positively related to diabetes self-efficacy, subjective norms, behavioural intention and self-care behaviors among the patients. The findings from the study suggest that the attitudes of the patients towards their illness plays a significant role in their self-care activities as well as other important variables that influence the health outcomes of persons living with diabetes. However, the study sample is limited to only women and therefore, does not make generalization to males living with diabetes possible as several studies have documented sex differences in experience of illness and attitudes.

Furthermore, Al-Maskari et al (2013) explored the levels of diabetes knowledge, attitudes and practices among persons living with diabetes in the United Arab Emirates. A total of 575 persons living with diabetes were randomly sampled from two hospitals and administered with questionnaires measuring their knowledge, attitudes and practices. Results showed that 31% of patients had poor knowledge of diabetes while 72% had

negative attitudes towards having the disease. Further analysis demonstrated that significant positive relationships exist among diabetes relationships Knowledge, practice and attitudes. Thus, it is very crucial to examine patients' attitude towards diabetes and how this attitude affects other aspects of their disease management.

In a recent study in Ethiopia, Worku, Abebe and Wassie (2015) examined the level of dietary practices and their associated factors among persons living with Type-2 diabetes using a cross-sectional survey design. A total of 403 patients were sampled from a Hospital in Addis Ababa and were administered with questionnaires. Results from chi-square and logistic regression analysis showed that almost half (46.4%) of the patients were overweight and obese. It was also observed from the analysis that 58.8% of the patients in the study FBG level ≥ 126 mg/dl. Further analysis revealed that the level of dietary practice among half of the (51.4%) type 2 diabetic patients was poor. Poor dietary practice was significantly associated with patients not getting nutrition education in hospitals, despondency, facing difficulty to choose foods, non-availability of fruits and vegetables, thinking about the high cost of foods were the factors significantly associated with the poor dietary practice.

2.3 Diabetes Knowledge and Self-Care Behaviours

Diabetes knowledge and self-care practices are significantly associated with diabetes management/ glycemic control (Bains & Egede, 2011; Heisler et al, 2008; Padma, Bele, Bodhare & Valsangkar, 2012; Schillinger et al, 2002; Smalls et al, 2012). These studies which were conducted among varied groups of persons living with diabetes pointed to the importance of diabetes knowledge to self-care behaviors as knowledge about the illness will inform your actions in the management process. Thus, the more knowledge patients

have about their illness, the more likely they are to comprehend their illness and take up self-care behaviors such as diet, exercise and blood sugar testing among others.

For instance, Bains and Egede (2011) concluded from their study among persons living with T2DM that the most important factors associated with glycemic control are diabetes knowledge and perceived health status. In their study, a total of 125 persons living with diabetes were recruited from hospitals and administered with standardized instruments of health literacy, diabetes knowledge, and self-care (medication adherence, diet, exercise, blood sugar testing, and foot care). Results from the study revealed that diabetes knowledge was significantly associated with health literacy while only diabetes knowledge and perceived health status significantly predicted glycemic control which is an objective measure self-management. E The study contributes to literature by including both objective and subjective measure. Nonetheless, the sample for this study was relatively small and patients' overall attitude towards the illness was not considered.

Smalls et al, (2012) conducted a survey among patients with diabetes with the aim of investigating the associations between coping, diabetes knowledge, medication adherence, and self-care behaviors in adults with Type-2 diabetes. The researchers sampled 378 respondents with type 2 diabetes from two primary care clinics in the Southeastern United States and administered them with validated questionnaires measuring the constructs in the study. The analysis of the data revealed that emotional coping, emotional processing and self-care behaviors were significantly correlated. Further analysis using linear regression revealed that emotional processing significantly predicted medication adherence, diabetes knowledge, diet, exercise, blood sugar testing and foot care while emotional expression significantly predicted self-care behaviors such as diet, exercise, blood sugar testing and foot care. This study shed light on the emotional aspects of dealing with diabetes which is

often neglected in intervention programs and therefore, broadened the scope of factors that influence diabetes knowledge and self-care behaviors.

Xiao-hui et al. (2012) sought to determine the impact of diabetes education on glycemic control, and to also assess the attitude, knowledge and self-care behavior in patients with type 2 diabetes in China. A total of 5961 participants were administered with questionnaires that measured their attitude, knowledge and self-care behavior. Results from the analysis of the data revealed that majority of the patients received some form of diabetes education. It was further observed that compared with patients without diabetes education, their educated counterparts showed significant lower value of HbA1c, after controlling for age, gender, body mass index and duration of diabetes. Further analysis showed that patients who received diabetes education obtained significantly higher scores on attitude, knowledge and self-care than their uneducated counterparts. In terms of their demographic characteristics, patients with lower income or education level tended to have higher glucose levels, and showed lower percentage of patients received diabetic education.

In a related study to examine the relationship between diabetes self-care, psychological adjustment and social support and glycemic control (A1C levels) among the Lebanese adults with diabetes mellitus, Sukkariah (2011) used a descriptive correlational design with convenience sample of 140 adults diagnosed with type 2 DM recruited from two diabetes clinics. The participants completed a set of questionnaires: Summary of Diabetes Self-Care Activities (SDSCA), Social Support and Problem Areas in Diabetes (PAID) and a demographic and physiological sheet. Results from the data analysis showed that there were statistically significant relationships between PAID scores and glycemic control. Social support scores were significantly associated with glycemic control. It was finally

observed by these authors that respondents' Age, Gender, type of treatment, problems associated with DM and BMI demonstrated statistical effects on glycemic control. However, this study failed to examine how patients' perceptions of their illness could impact their self-care practices at home.

Another study by Gopichandran et al (2012) estimated the existing self-care behaviors and factors influencing these behaviors among adult patients with type 2 diabetes in urban southern India. Using a cross-sectional survey, The Summary Diabetes Self-Care Activities questionnaire was administered to collect information on diet, exercise, monitoring of blood sugars and adherence to drugs. Risk factors such as marital status, socioeconomic status, depression, benefit-finding and duration of illness, which are likely to influence self-care behavior, were also assessed by the researchers. It was observed from this study that good dietary behavior was present in 29% of the sample, good exercise behavior in 19.5%, regular blood sugar monitoring in 70% and drug adherence in 79.8% of the total sample. Further analysis shows that being male and married significantly favored good exercise behavior. Also, being married and belonging to the higher socioeconomic status were significantly associated with monitoring of blood sugars. Despite the great insight from these outcomes, the authors failed to take into consideration the opinions of patients about their diabetes influencing their self-care practices.

Perera, De Silva and Perera (2013) noted that diabetes knowledge among patients is very significant in influencing self-care practices. In their study among patients attending the diabetes clinic of a primary care level hospital in Moratuwa, Sri Lanka, 150 patients diagnosed with diabetes were sampled. Using an interviewer administered, structured questionnaire, the respondents' diabetes knowledge was tested. Results indicate that

majority of patients (70.0%) had a good score (> 65) on the knowledge test but critical gaps in knowledge were revealed, especially regarding knowledge about symptoms of poor control and importance of regular follow-up. The researchers observed that although patients with longer duration of diabetes had higher mean knowledge scores, they also had higher fasting blood glucose levels. As a result of these findings, the authors advocated for diabetes education programs to address critical gaps in patients' knowledge.

Other researchers have examined how diabetes health literacy which is an indication of knowledge and diabetes knowledge affect self-care practices among persons living with diabetes (van der Heide et al. 2014). In their study, van der Heide et al., (2014) examined the mediating role of diabetes knowledge on the relationship between diabetes health literacy and self-care practices among a sample of 1,714 diabetic patients. The analysis of the direct and indirect relationships showed that Lower health literacy was significantly associated with less diabetes knowledge, higher HbA1c level, less self-control of glucose level, and less physical activity. It was also found that patients in the study with more diabetes knowledge were less likely to smoke and more likely to control glucose levels. Further analysis revealed that diabetes knowledge mediated the association between health literacy and glucose self-control and between health literacy and smoking. This study emphasized the importance of diabetes knowledge in self-care practices as it demonstrated both direct and indirect effects on self-care practices. The findings are consistent with similar results reported on diabetes knowledge and self-care behaviors among persons living with diabetes in US and Netherlands (Bains & Egede, 2011; Fransen et al., 2012).

2.4 Diabetes Belief and self-care behaviours

Vedhara et al, (2014) investigated the effects of illness beliefs on foot self-care behaviours in patients with diabetic foot ulcers. A total of 169 were recruited from outpatient podiatry clinics in the UK. The researchers assessed the clinical and demographic factors, illness beliefs and foot self-care behaviours at a baseline. Foot self-care behaviours were measured on three intervals of 6, 12 and 24 weeks. The results from the analysis showed that after controlling for past foot-care behaviours, age and ulcer size; patients' beliefs regarding the symptoms associated with ulceration, their understanding of ulceration and their perceived personal control over ulceration emerged as independent determinants of foot self-care.

French, Wade and Farmer (2013) found among persons living with diabetes that past behaviour, trial group allocation, and clinical and demographic factors predicted between 16% and 35% variance in medication adherence, exercise, and diet scales. It was further observed that Illness beliefs of patients added between 0.9% and 4.5% additional variance. It was also found that beliefs about behaviour added a further 1.1% to 6.4% additional variance. Beliefs regarding the importance of exercise in controlling diabetes, the need to eat less, and enjoyment from eating sweet or fatty food, added unique variance. The findings from this study indicated that diabetes beliefs significantly influences self-care practices among persons living with diabetes.

Unlike illness beliefs, Watkins, Quinn, Ruggiero, Quinn, and Choi (2013) investigated the relationship among spiritual and religious beliefs and practices, social support, and diabetes self-care activities in African Americans with type 2 diabetes. Results from analysis showed that there were significant relationships between spiritual and religious beliefs and practices and general diet. Additional significant relationships were found for

social support with general diet, specific diet, and foot care. Similar findings were reported by other researchers who found diabetes beliefs to be significantly associated with diabetes self-care (McSharry, Moss-Morris, & Kendrick, 2011).

2.5 Socio-demographic characteristics and self-care behaviours

Research findings have shown that self-care behaviors among persons living with diabetes are significantly affected by their marital status, level of education, monthly income, presence or absence of diabetes complication and age (Berhe, Kahsay & Gebru, 2013; Yekta et al., 2011). However, no sex and age differences were observed in diabetes knowledge and foot care practices (Desalu, et al 2011). Other findings indicate that diabetic patients' illiteracy and low socioeconomic status are significantly associated with poor diabetes knowledge and practice of foot care (Desalu, et al., 2011; Khamseh, Vatankhah & Baradaran, 2007; Hasnain & Sheikh, 2009).

In a study among persons living with Type-2 diabetes, Albright, Parchman, Burge and RRNeST Investigators (2001) conducted a cross-sectional survey of patients seeking care in the outpatient clinics of the Residency Research Network of South Texas (RRNeST). The researchers sampled 397 adults with type 2 diabetes presenting for appointments with family medicine faculty and family practice residents over a 6-month time period to determine the psychosocial factors associated with self-care practices among the participants. Results showed that age significantly predicted self-care practices among the participants. It was also observed in this study that satisfaction with doctor-patient relationship, personal stress, and family context significantly influence respondents' self-care practices such diet, exercise, and medication adherence. The impact of respondents' age has been demonstrated by other studies which found that younger patients with

diabetes were less likely to adhere to self-care practices (Chourdakis, Kontogiannis, Malachas, Pliakas & Kritis, 2014).

Research have also found that income and marital status of patients significantly influence their self-care behaviors. For instance, Daly, et al (2009) examined barriers to controlling their diabetes and patient self-care behaviors such as adherence to medication, diet, exercises and blood glucose testing. A total of 253 persons living with Type-2 diabetes were randomly selected and administered with survey instruments as well as their glycosylated hemoglobin (HbA1c). Results from the analysis showed that cost of diabetes treatment was reported as the most common barrier. Patients' demographic characteristics such as being married and adherence satisfaction with self-care behaviours were significantly associated with objective measure of diabetes control. This study highlighted the psychosocial effect of marriage on diabetes management as support from spouse in marriage may prove vital in self-care practices.

Furthermore, one study on persons with diabetes has included all age groups but Bai, Chiou and Chang (2009) sampled 165 Type-2 diabetic patients in Taiwan who were 65years and above. A cross-sectional survey design was used and the participants were administered with the Personal Resource Questionnaire 2000 (PRQ 2000), Diabetes Self-Care Scale and Taiwan Geriatric Depression Scale (TGDS). Descriptive statistics and multiple regression analyses showed that patients' gender, education level, economic status and religious beliefs significantly predicted their diabetes self-care behaviors. It further observed that patients' reported level of social support, education and duration of diabetes significantly predicted patients' diabetes self-care behaviors. The findings from the study emphasized that understanding factors influencing self-care behaviors among

patients with Type-2 diabetes should include both patients' inherent characteristics and external factors.

Additionally, Hasnain and Sheikh (2009) examined diabetes knowledge and practices among the diabetic patients regarding their foot care. A total of 150 persons living with diabetes were conveniently sampled and administered with questionnaires measuring their diabetes knowledge and practices. Results from the data analysis revealed that 29.3% respondents had good knowledge, 40% had satisfactory knowledge and 30.7% had poor knowledge about foot care. For the foot practices among the respondents, it was observed that only 14% respondents had good practices for foot care, 54% had satisfactory practices and 32% had poor practices. Further analysis revealed significant association between patients' education and knowledge, patients' education and foot care practices. However, unlike some other previous studies that found significant association between sex, income and self-care practices (Bai, Chiou & Chang, 2009; Berhe, Kahsay & Gebru, 2013; Yekta et al, 2011), no significant associations were found between patients' knowledge and self-care practices and their sex and income per capita.

More so, if patients living with diabetes have poor knowledge about the illness and engage in less self-care behaviors in domains such as foot care, other complications could arise leading to fatalities. Thus, Desalu, et al (2011) surveyed 352 diabetic patients in Nigeria and administered them with instruments measuring diabetes knowledge and foot-care behaviors. Desalu and colleagues reported that out of the total sample in the study, 30.1% had good knowledge and 10.2 % had good practice of diabetes foot care. The results further indicated that 78.4% of patients with poor practice had poor knowledge of foot care. Personal demographic characteristics such as illiteracy and low socioeconomic status were significantly associated with poor knowledge and practice of foot care. This is

because diabetes management especially self-care practices involves reading labels, buying medications and many which those with no formal education and are relatively find difficult to deal with in the disease management. This finding of significant association between patients' education and income with their knowledge and practice have been established in the diabetes literature (Bai, Chiou & Chang, 2009; Hasnain & Sheikh, 2009).

Yekta et al, 2011 reported from their study that diabetes patients' education, duration of illness and treatment intensity were significantly associated with diabetes self-care behaviors. This was a cross-sectional study conducted among a total of 400 persons living with diabetes in urban area of Urmia, Northwest of Iran. In addition to the significant association between patients' demographic characteristics and diabetes self-care practices, it was observed that patients' self-care practice was good in 15.1%, moderate in 58.7%, and poor in 26.2%. The findings suggests that persons living with diabetes on the whole report practice levels that are not good enough in the management process and thus, clinical and public health focus should be directed towards identifying factors that serve as barriers and those that serve as protective factors for optimum self-care practices.

In contrast to the previous studies focusing of broader psychosocial factors, Yu, Lyles, Bent-Shaw and Young (2013) argued that research on sex disparities in modifiable factors such as processes of care or self-care activities have not been explored in detail among persons living with diabetes. Therefore, males and females living with diabetes were sampled and sex differences in processes of care and self-care activities were assessed. Logistic regression analysis results showed that women had decreased odds of dyslipidemia screening, reaching low-density lipoprotein goal, and statin use compared to their male counterparts. Further, women had 19% greater odds of reaching hemoglobin

A1c <7%, however no significant sex differences were found in hemoglobin A1c testing, microalbuminuria screening, or angiotensin-converting enzyme inhibitor use. Further analysis of self-reported practices showed that women were less likely to report regular exercise but had better adherence to healthy diet, glucose monitoring, and self-foot examination compared to men. Thus, gender differences should be considered in diabetes education as these differences could influence health outcomes among persons living diabetes.

In the same vein, Berhe, Kahsay and Gebru (2013) assessed adherence to diabetes self-management practices and its associated factors among 320 persons with T2DM in Ethiopia using a cross-sectional survey design. Results from analysis of the data revealed that adherence to physical activity or exercise among the patients was associated with their marital status, level of education, monthly income and diabetes complication. It was also observed that adherence to diabetic foot care management practices by diabetic patients was significantly predicted by gender and age. It was also observed that overall diabetes self-management practices were significantly associated with patients' gender, level of education, diabetes complication and age. This is one of the few studies that exhaustively examined patients' demographic characteristics and their associations with patients' diabetes management but the findings are limited to only persons living with type-2 diabetes.

Chourdakis, Kontogiannis, Malachas, Pliakas and Kritis (2014) examined self-care behaviors of adults with type 2 diabetes mellitus living in the Metropolitan Area of Thessaloniki in Northern Greece. The study reported that respondents who were older than 65 years and had "higher educational level" did not distribute their daily carbohydrate intake equally. However, these respondents were more likely to adapt to their physician's

recommendations regarding medication and to regularly perform suggested blood glucose checking. Exercise patterns were more often found for higher educated, earlier diagnosed males. Younger patients were less likely to follow their healthcare professional's recommendations, regarding diet, medication intake, blood glucose checking, foot care and exercise compared to older patients. The findings concur with previous works demonstrating younger age as a risk factor for poor self-care practices

In a more recent study, Choi, Kim and Chang (2015) explored gender-specific factors influencing diabetes self-care behaviors and health-related quality of life among older adults with type 2 diabetes in South Korea. Results from the analysis showed that no significant gender differences in diabetes self-care behaviors and health-related quality of life. Further analysis showed that the number of diabetes-related complications predicted diabetes self-care behaviors in older men, while duration of diabetes and barriers predicted diabetes self-care behaviors in older women. Depression was a significant common predictor of health-related quality of life in older men and women. The study pointed out that among the various sexes, specific factors influence their self-care behavior which requires public health attention.

In a meta-analysis to identify the psychosocial factors associated with diabetes self-care behaviors among persons living with diabetes, Abraham (2011) observed a consistent pattern of patients' demographic such as age, Social support/network, high income level, high educational attainment and long Type-2 DM diagnosis history predicting self-care behavior among the patients. These consistent patterns of associations indicate that in analysis of diabetic patients' self-care practices. These results were reported by other researchers among persons living with diabetes (Berhe, Kahsay & Gebru, 2013; Choi, Kim & Chang, 2015).

In conclusion, the studies reviewed above demonstrate that there is a significant association between patients' diabetes attitude and self-care behaviors such that patients with more positive attitude towards their illness tend to adhere to their self-care practices. It was also found that there is a significant association between diabetes knowledge and self-care practices in most studies. However, some studies did not observe such association between diabetes knowledge and self-care practices. Research evidence has demonstrated that patients' age, sex, income, duration of illness, complications and education significantly affect patients' self-care behaviors. However, most of these studies focused on just type-2 diabetes to the neglect of type- 1 and not much attention has been paid to diabetes attitudes in most of the studies especially within the Ghanaian context.

CHAPTER THREE

METHODOLOGY

3.1 Type of study

This study adopted a quantitative approach using the cross-sectional survey design. The cross-sectional study design is preferred because the study gathered information on diabetic patients' attitudes, beliefs, knowledge and self-care practices which helped in drawing quantifiable inferences. One advantage of this design is that it is relatively less expensive and time consuming. It allows for studying several outcome variables at the same time the respondents being contacted mostly only once. This design also eliminates the problem of attrition among respondents.

3.2 Study Variables:

The key variables in this study are described below;

Dependent variable:

- Self-care practices

Independent variables:

- Attitude
- Beliefs
- Knowledge
- Age
- Sex
- Educational level
- Marital status

3.3 Study Area/ Population

The population of interest for this study was all diabetic patients attending health facility and seeking treatment for diabetes at La General Hospital in the Greater Accra region of Ghana. Accra being the national capital and home for people from all over the country and beyond, it is hoped that information from the study will cut across ethnic boundaries.

The La General hospital was chosen for this study because of its location and easy to access by the student. Another reason for its choice is the fact that it is a general hospital and serves as a referral point for various health facilities in the Accra metropolis and therefore receives a good number of diabetic patients. The La General hospital has a diabetic unit where 217 diabetic patients were registered in 2013, (information from the OPD).

3.4 Sampling

3.4.1 Sample Size Calculation

Because the number 217 patients registered in 2013 was small, it was decided to select 2/3 of the expected patients using the 2013 figure of 217 and that gave a sample size of 144. However, at the end of the study 160 patients were interviewed.

3.4.2 Sampling Procedure / Method:

The purposive and convenient sampling techniques were employed for data collection. The purposive sampling technique was used because the focus was solely on persons living with diabetes who were receiving care at the La General Hospital. The convenient sampling technique was used because it allows for the use of participants who are readily available and willing to take part in the study within the limited time and resources available to the student for the study.

3.5 Measures

The study employed a set of questionnaire as the main research instruments. The questionnaire consisted of five sections and the various sections are described below;

Section A: Demographic Characteristics

This section consisted of information on respondents' demographic characteristics such as sex, age, marital status, religious affiliations, educational level and the duration of respondents' diabetes.

Section B: Self-Care Practices Questionnaire (Toobert & Glasgow, 1994)

This is an 11-item self-report questionnaire which consists of five domains of diabetes self-care practices. These domains include Diet which was measured by four items, Exercise which was measured by two items, Blood Sugar Testing was measured by two items, Foot- Care was measured by two items while the final subscale which is Medications was measured by one item. A seven-point Likert response format was used with responses to each item ranging between 0 and 7. In this study the scale has an internal consistency value of .76 which indicates a good reliability.

Section C: Diabetes Attitude Survey (Michigan Diabetes Research and Training Center, 1998)

This is a 33-item questionnaire which measures the attitudes of persons living with diabetes with their illness. This questionnaire measured five domains of respondents' attitudes and these include; Need for Special Training which consists of five items, Seriousness of NIDDM which consists of seven items, Value of Tight Control which consists of seven items, Psychosocial Impact of DM which consists of six items and the

final subscale Patient Autonomy consists of eight items. A five point Likert response format was used with five responses namely; Strongly Disagree, Disagree, Neutral, Agree and Strongly Agree.

A total attitude score was obtained for each respondent by adding the responses across all the 33 items. In this study, the study had an internal consistency value of .89 which indicates a very good reliability.

Section D: Diabetes Knowledge Question (Michigan Diabetes Research and Training Center, 1998)

This is a 24-item test which measures diabetes knowledge among respondents. Each question has a correct response and two wrong responses (True, False and Don't Know). One mark was awarded for each correct response and the total possible score for each respondent ranged between 0 and 24 with higher scores reflecting higher diabetes knowledge. Some of the items include; "Eating too much sugar and other sweet foods is a cause of diabetes", "The usual cause of diabetes is lack of effective insulin in the body", "Diabetes is caused by failure of the kidneys to keep sugar out of the urine", "In untreated diabetes, the amount of sugar in the blood usually increases" and "If I am diabetic, my children have a higher chance of being diabetic". The test has an internal consistency value of .72 which indicates a good reliability.

Section E: Brief Illness Perception Questionnaire (Broadbent, Petrie, Main, & Weinman, 2006)

This is a nine-item question, which measures patients' cognitive and emotional representations of their illness including their perceptions of illness consequences, duration, personal control, treatment control, symptoms, coherence, concern, emotional response, and causes. Examples of items on the scale include; "How much control do you feel you have over your illness? "How long do you think your illness will continue? "How much does your illness affect your life? The causal item was open ended to allow respondents to indicate what they thought caused their illness. A total illness belief or perception score was computed by adding the responses on all the eight scales. A Cronbach alpha of .78 was reported for the scale in the current study.

3.6 Pre Test

Pretesting of Data collections tools was done at Kaneshie poly clinic with 20 diabetic patients to authenticate the survey tools. The purpose was to establish if the tool was clearly understood and free of biases and can seek the type of information needed. Pretesting was also done with the goal of removing irrelevant questions so as to make it reliable. It took participant approximately 15 to 20 minutes to complete the questionnaire. The results from the pretesting were used to refine the questionnaire before the main study.

3.7 Data Collection

To ensure quality control, the researcher ensured that the instrument used was easily understood by the respondents. On each day of data collection, the researcher was introduced to patients waiting to see the clinician/doctors after which the researcher and the research assistants engaged the patients individually. The patients were given the consent form to write their names and sign or make a mark indicating their acceptance of voluntary participation. The respondents who could read and write were allowed to fill

(self-administered) the questionnaire themselves. Interviewer-administered technique was used to interview those who could not read or write. During the data collection, uncompleted questionnaire were exempted from processing and subsequent analysis.

3.8 Ethical Consideration/Issues

Ethical clearance was sought from the Ghana health service ethical review board. All the ethical guidelines concerning the use of human participants in research (e.g. confidentiality, privacy, no harm, voluntary participation etc.) were strictly adhered to in the research process. Permission was also sought from the La General Hospital where the study was conducted. The rights of respondents were protected by informing them about the purpose of the study and not coercing them to participate. Participants were also informed that their involvement in the study is voluntary and they have the option of withdrawing at any time. Furthermore, respondents were provided with contact numbers for explanation to ensure confidentiality of the data

3.9 Statistical Methods

Hypotheses 1, 2 and 3 were analyzed using Pearson correlation to identify whether any significant relationship exist between patients' diabetes Attitude, Knowledge and beliefs and their Self-care practices. The fourth hypothesis was tested with independent t-test as two groups of patients (Males and Females) were compared on their self-care practices. The effects of other demographic characteristics were analyzed with the One-Way ANOVA.

CHAPTER FOUR**RESULTS****4.1 Introduction**

Chapter four presents the analysis of the survey data using the Statistical Package for the Social Sciences (SPSS 22.00). The first main section presents respondents' demographic characteristics such as sex, age and marital status. The second section of the results consists of testing the stated hypothesis. The chapter concludes with the summary of the results from the analysis.

4.2 Table 1a: Summary of Frequencies and Percentages of Respondents' Sex and Age

VARIABLES	FREQUENCY (N=160)	PERCENTAGE (%)
SEX		
Male	45	28.1
Female	115	71.9
AGE		
30-40 years	12	7.5
41-50 years	22	13.8
51-60 years	38	23.8
61-70 years	46	28.8
71 years and above	42	26.3

It was observed from Table 1a above that majority of the respondents were females (71.9%). However, the age groups were evenly distributed in exception of respondents between the ages of 30 and 40 who constituted only 7.5% of the respondents.

Table 1b: Frequencies and Percentages of other Demographic Characteristics of Respondents

Table 1b

VARIABLES	FREQUENCY (N=160)	PERCENTAGE (%)
MARITAL STATUS		
Married	63	39.4
Single	8	5.0
Divorced	16	10.0
Separated	27	16.9
Widowed	46	28.8
RELIGION		
Christianity	140	87.5
Islam	12	7.5
African Traditional Religion	2	1.3
Others	6	3.8
EDUCATION		
Primary	28	17.5
JHS	58	36.3
Secondary	37	23.1
Tertiary	22	13.8
No formal Education	15	9.4
DURATION OF ILLNESS		
1-5 years	54	33.8
6-10 years	41	25.6
11-15 years	33	20.6
16 years and above	32	20.0

It was observed from Table 1b that only 5% of the respondents were single. The rest of the respondents were married, widowed or separated. It was also observed that majority of the respondents were Christians (87.5%). Results further revealed that majority of the respondents had some form of formal education with only 9.4% having no formal education.

Respondents were having the illness for varied duration, however, a third of them (33.8%) have it for between 1 and 5 years (Table 1b)

4.3 Hypotheses Testing:

Hypothesis One: Diabetic patients' attitudes towards their illness will significantly and positively influence their self-care practices at home.

To test this hypothesis, the Pearson correlation analysis was used as the hypothesis seeks to test the association between diabetes attitude and self-care practices. The results are summarized in the Table 2 below.

Table 2: Correlation between Diabetes Attitude and Self-Care Practices

VARIABLES	MEAN	SD	Diabetes Attitude (r)
Diabetes Attitude	125.04	6.85	1
Total Self-Care	34.11	12.24	-.06
Diet	14.78	5.17	.01
Exercise	7.58	4.96	-.11
Blood Sugar Test (BST)	1.62	2.44	-.02
Foot Care	3.54	4.47	-.08
Medication	6.61	1.27	.15*

** = significant at .01 level of significance, * = significant at the .05 level of significance

From Table 2, it was observed that no statistically significant relationship exists between diabetes attitude and total self-care practices at the .05 level of significance, $r(158) = -.06$, $\rho > .05$. Therefore, the first hypothesis that diabetic patients' attitudes towards their illness will significantly and positively influence their self-care practices at home is not supported. Further analysis of the individual self-care practices revealed that no statistically significant relationship exists between diabetes attitude and diet at the 05 level of significance, $r(158) = .01$, $\rho > .05$. No statistically significant relationship was found between diabetes attitude and exercise at the 05 level of significance, $r(158) = -.11$, $\rho > .05$.

Also, no statistically significant relationship was observed between diabetes attitude and blood sugar testing at the 05 level of significance, $r(158) = -.02$, $\rho > .05$. No statistically significant relationship was found between diabetes attitude and Foot Care at the 05 level of significance, $r(158) = .01$, $\rho > .05$. However, a significant positive relationship was found between diabetes attitude and Medication adherence at the .05 level of significance,

$r(158) = .15, \rho < .05$. Thus, the more positive attitude patients have about their disease, the more likely they are to adhere to their diabetes medication.

Hypothesis Two: Diabetic patients' knowledge about their illness will significantly predict their self-care practices at home.

To test the second hypothesis, the Pearson correlation analysis was used as the hypothesis seeks to examine the association between diabetes knowledge and self-care practices. The results are summarized in the Table 3 below.

Table 3: Correlation between Diabetes Knowledge and Self-Care Practices

VARIABLES	MEAN	SD	Diabetes Knowledge (r)
Diabetes Knowledge	9.36	3.02	1
Total Self-Care	34.11	12.24	.31**
Diet	14.78	5.17	.46**
Exercise	7.58	4.96	-.10
Blood Sugar Testing	1.62	2.44	.43**
Foot Care	3.54	4.47	.18*
Medication	6.61	1.27	.03

** = significant at .01 level of significance, * = significant at the .05 level of significance

It was observed from Table 3 that, a statistically significant relationship exists between respondents' diabetes knowledge and their overall self-care practices at the .05 level of significance, $r(158) = .31, \rho < .05$. Diabetes knowledge predicted 10% of variance in overall self-care practices ($R^2 = .10$). This shows that the more knowledge respondents

have about their disease, the more self-care practices they perform. Therefore, the second hypothesis that diabetic patients' knowledge about their illness will significantly predict their self-care practices at home is supported. Further analysis showed that respondents' diabetes knowledge significantly and positively correlated with their diet practices at the .05 level of significance, $r(158) = .46, \rho < .05$.

However, there was no significant relationship between respondents' diabetes knowledge and their level of physical activity (Exercise) at the .05 level of significance, $r(158) = -.11, \rho > .05$. It was also observed that a significant positive relationship exists between respondents' diabetes knowledge and their Blood Sugar Testing at the .05 level of significance, $r(158) = .31, \rho < .05$. Results also show that there is a significant positive relationship between respondents' diabetes knowledge and their foot-care practices at the .05 level of significance, $r(158) = .18, \rho < .05$. However, respondents' diabetes knowledge did not significantly relate with their medication adherence at the .05 level of significance, $r(158) = .31, \rho < .05$.

Hypothesis Three: Diabetic patients' belief about diabetes will significantly influence their self-care practices at home.

To test the third hypothesis, the Pearson correlation analysis was used as the hypothesis seeks to test the association between diabetes perception and self-care practices. The results are summarized in the Table 4 below.

Table 4: Association between Diabetes Belief and Self-Care Practices

VARIABLES	MEAN	SD	Diabetes Beliefs (r)
Beliefs	38.39	6.66	1
Total Self-Care	34.11	12.24	-.41**
Diet	14.78	5.17	-.33**
Exercise	7.58	4.96	-.57**
Blood Sugar Test	1.62	2.44	.02
Foot Care	3.54	4.47	-.08
Medication	6.61	1.27	-.10

** = significant at .01 level of significance, * = significant at the .05 level of significance

It was observed from Table 4 that a statistically significant relationship exists between respondents' diabetes belief and their overall self-care practices at the .05 level of significance, $r(158) = -.41$, $\rho < .05$. Diabetes belief therefore, predicted 17% of variance in overall self-care practices ($R^2 = .17$). Thus, the third hypothesis which states that diabetic patients' belief about diabetes will significantly influence their self-care practices at home is supported. Similarly, a significant relationship exists between respondents' diabetes perception and their diet practices at the .05 level of significance, $r(158) = -.33$, $\rho < .05$. It was also observed that a significant relationship exists between respondents' diabetes perception and their exercising at the .05 level of significance, $r(158) = -.57$, $\rho < .05$.

However, no statistically significant relationship was found between respondents' diabetes perception and their Blood sugar testing at the .05 level of significance, $r(158) = .02$, $\rho > .05$. There was also no statistically significant relationship between respondents' diabetes perception and their foot care practices at the .05 level of significance, $r(158) = -.08$, $\rho > .05$. It was also observed that no statistically significant relationship exists between

respondents' diabetes perception and their medication adherence at the .05 level of significance, $r(158) = -.10$, $\rho > .05$.

Hypothesis Four: There will be significant sex differences in diabetes self-care practices among the respondents.

To test the fourth hypothesis, the independent t-test was used as the hypothesis compares two independent groups of respondents (Males/Females) on their self-care practices.

Table 5: Sex Differences in Respondents' Diabetes Self-Care Practices

VARIABLES	Male (N=45)	Female(N=115)	df	t	ρ
Overall Self-Care	34.20 (SD=14.29)	34.07 (SD= 11.41)	158	.06	.95
Diet	14.29 (SD= 5.93)	14.97 (SD= 4.86)	158	-.75	.45
Exercise	8.29 (SD= 5.33)	7.30 (SD= 4.81)	158	1.13	.26
Blood Sugar Testing	1.15 (SD=2.56)	1.66 (SD= 2.40)	158	-.35	.73
Foot-Care	4.02 (SD= 5.17)	3.36 (SD= 4.46)	158	.81	.42
Medication	6.20 (SD= 1.90)	6.77 (SD= .87)	158	-2.62	.01

It can be seen from table 5 that sex of respondents did not have statistically significant effect on their overall self-care practices ($\rho > .05$). Therefore, the fourth hypothesis that there will be significant sex differences in diabetes self-care practices was not supported. Further analysis of the individual self-care practices revealed that sex of respondents did not have statistically significant effect on their dietary practices ($\rho > .05$). It was also

observed that sex of respondents did not have any statistically significant effect on their exercising ($\rho > .05$).

It was observed that sex of respondents did not have statistically significant effect on their blood sugar testing at the .05 level of significance ($\rho > .05$). No statistically significant difference was observed between male and female respondents in their foot-care practices at the .05 level of significance ($\rho > .05$). However, there was a significant difference between male and female respondents in their adherence to medication with females reporting more adherence than males ($\rho < .05$).

4.4 Age Differences in Self-Care among Diabetic Patients

To determine whether age of respondents had any statistically significant effect on their overall self-care and domain specific self-care practices, the One-Way ANOVA was used as there were more than two age groups of respondents compared on their self-care practices. Summary of the results from the analysis are presented in the Table 6 below;

Table 6: Summary of One-Way ANOVA of Age Differences in Self-Care Practices among Diabetic Patients

Variables	30-40yrs (n=12)	41-50yrs (n=22)	51-60yrs (n=38)	61-70yrs (n=46)	≥71years (n=42)	ρ
Self-care	33.92 (SD=11.40)	40.09 (SD=8.96)	35.34 (SD= 10.10)	36.57 (SD= 12.85)	27.21 (SD= 12.48)	.01
Diet	15.75 (SD= 5.24)	15.77 (SD=3.84)	14.32 (SD= 5.15)	15.65 (SD= 5.78)	13.45 (SD= 5.23)	.23
Exercise	11.25 (SD=5.10)	11.55 (SD=2.69)	9.42 (SD=3.82)	7.76 (SD=4.24)	2.60 (SD=3.29)	.01
BST	.67 (SD=1.30)	1.82 (SD=2.59)	1.00 (SD=1.72)	2.13 (SD=2.71)	1.79 (SD=2.74)	.16
Foot Care	1.00 (SD=2.34)	4.45 (SD=5.59)	3.84 (SD=4.52)	4.11 (SD=4.67)	2.90 (SD=4.62)	.20
Medication	5.67 (SD=2.67)	6.50 (SD=1.06)	6.76 (SD=.75)	6.91 (SD=.46)	6.48 (SD=1.61)	.03

It was observed from Table 6 that age of respondents had a statistically significant effect on their overall self-care practices with a p-value of .01. Comparison of the means showed that respondents who are 71years and above reported the lowest mean (Mean= 27.21, SD=12.48) of total self-care practices while respondents between the ages of 41 and 50years reported the highest mean (Mean= 40.09, SD= 8.96) of total self-care practices.

Meanwhile the age of respondents had no statistical significant effect on the respondents' diet. However the age of respondents had a statistical significant effect on their exercise activities with a p-value of .01. Assessment of the means showed that respondents between the ages of 41-50 years had the highest mean (Mean=11.55, SD=2.69) of exercise while respondents who are 71 years and above had the lowest mean (Mean=2.60, SD=3.29) of exercise performance.

Again as shown from Table 6, the age of respondents had no statistical significant effect on respondents blood sugar testing and foot care but had statistical significant effect on the respondents' medication adherence with a p-value of .03. An observation of the mean showed that respondents between the ages of 30-40 years had the lowest mean (Mean=5.26, SD=2.67) of medication while respondents between ages 61-70 years had the highest mean (Mean=6.91, SD=.46) of medication adherence.

Marital Status and Self-care practices among persons living with Diabetes

To determine whether respondents' marital status had any statistically significant effect on their overall self-care and domain specific self-care practices, the One-Way ANOVA was used as there were more than two groups of respondents being compared on their self-care practices. Summary of the results from the analysis are presented in the Table 7 below;

Table 7: Summary of One-Way ANOVA of Marital Status and Self-Care practices among Diabetic Patients

Variables	Married (n=63)	Single (n=8)	Divorced (n=16)	Separated (n=27)	Widowed (n=46)	ρ
Self-care	35.97 (SD=11.78)	36.50 (SD=14.73)	35.56 (SD= 7.34)	32.96 (SD= 11.19)	31.30 (SD= 14.11)	.33
Diet	15.17 (SD=5.24)	14.50 (SD=5.04)	14.69 (SD= 4.42)	14.70 (SD= 5.28)	14.37 (SD= 5.46)	.95
Exercise	9.19 (SD=4.67)	11.00 (SD=4.11)	9.88 (SD=3.40)	7.19 (SD=4.66)	4.22 (SD=4.33)	.01
BST	1.25 (SD=2.04)	2.38 (SD=2.39)	1.31 (SD=1.66)	1.15 (SD=2.36)	2.37 (SD=3.04)	.10
Foot Care	3.73 (SD=4.97)	3.25 (SD=4.89)	2.75 (SD=3.38)	3.19 (SD=3.94)	3.83 (SD=3.94)	.92
Medication	6.62 (SD=1.17)	6.00 (SD=2.45)	6.94 (SD=.25)	6.74 (SD=.71)	6.52 (SD=1.56)	.49

As indicated in Table 7, the marital status of respondents did not statistically have significant effect on the respondents' self-care, diet, blood sugar testing, foot care and medication. However the marital status of respondents had statistical significant effect on respondents exercise practises with significant p-value of .01. Comparison of the means showed that respondents with widowed status had the lowest mean (Mean=4.22, SD=4.33) of total exercise practises while the respondents with the single status had the highest mean (Mean=11.00, SD=4.11) of total exercise practises.

Level of Education and Self-Care Practices among Diabetic Patients

To determine whether respondents' level of education had any statistically significant effect on their overall self-care and domain specific self-care practices, the One-Way ANOVA was used as there were more than two groups of respondents being compared on their self-care practices. Summary of the results from the analysis are presented in the Table 8 below;

Table 8: Summary of One-Way ANOVA of Level of Education and Self-Care practices among Diabetic Patients

Variables	No F.Edu. (n=28)	Primary (n=58)	JHS (n=37)	Secondary (n=46)	Tertiary (n=42)	P
Self-care	29.40 (SD=12.14)	28.89 (SD=12.32)	32.98 (SD= 10.12)	36.57 (SD= 10.02)	43.55 (SD= 15.35)	.01
Diet	14.20 (SD= 4.11)	11.82 (SD=5.73)	14.10 (SD= 4.49)	15.57 (SD= 4.09)	19.41 (SD= 5.40)	.01
Exercise	5.00 (SD=5.33)	5.57 (SD=4.96)	8.07 (SD=4.61)	9.27 (SD=4.74)	7.77 (SD=3.29)	.01
BST	1.40 (SD=2.44)	1.86 (SD=2.65)	1.05 (SD=2.12)	1.43 (SD=1.89)	3.27 (SD=3.13)	.01
Foot Care	2.00 (SD=4.05)	3.39 (SD=4.33)	2.95 (SD=4.35)	3.19 (SD=4.29)	6.95 (SD=5.64)	.01
Medication	6.80 (SD=.77)	6.25 (SD=1.96)	6.81 (SD=.58)	6.65 (SD=.88)	6.36 (SD=2.06)	.30

As shown in Table 8, the level of education of respondents had a statistically significant effect on their overall self-care practices with a p-value of .01. Comparison of the means showed that respondents with primary education reported the lowest mean (Mean= 28.89, SD=12.32) of total self-care practices while respondents with tertiary education reported the highest mean (Mean= 43.55, SD= 15.35) of total self-care practices.

Also the level of education of respondents had a significant statistical effect on their diet with a p-value of .01. Observation of the means showed that respondents with primary education had the lowest mean (Mean=11.82, SD=5.73) of total diet behaviour while respondents with tertiary education reported the highest mean (Mean=19.41, SD=5.40) of total diet behaviour practices.

In addition the level of education of respondents had a significant statistical effect on the respondents exercise practise with a p-value of .01. Assessment of the means revealed that the respondents with no formal education reported the lowest mean (Mean=5.00, SD=5.33) of the total exercise practises while respondents with secondary educational level reported the highest mean (Mean=9.27, SD=4.74) of total exercise practises.

Again the level of education of respondents had statistical significant effect on their blood sugar testing with a p-value of .01. Comparison of the means showed that respondents with Junior High School (JHS) level of education reported the lowest mean (Mean=1.5, SD=2.12) of total blood sugar testing while those with the tertiary level of education reported the highest mean (Mean=3.27, SD=3.13) of total blood sugar testing.

From table 8 again, the level of education of respondents had statistical significant effect on the respondents' foot care practices with a p-value of .01. The means observation showed respondents with no formal education reporting the lowest mean (Mean=2.00,

SD=4.05) of total foot care while those with tertiary education reporting the highest mean (Mean=6.95, SD=5.64) of total foot care. However, the level of education of respondents had no statistical significant effect on respondents' adherence to medication.

CHAPTER FIVE

DISCUSSION

5.1 Introduction

This study examined the influence of diabetes knowledge, attitudes and beliefs on self-care practices among persons living with diabetes at the La General Hospital in Accra. The study also investigated the influence of diabetic patients' demographic characteristics on their total self-care as well as their domain specific self-care practices. The discussions of the main findings with reference to the stated hypotheses are presented below;

5.2 Diabetes Attitude and Self-Care Practices among Persons Living with Diabetes

Diabetes attitude has been shown to significantly influence diabetes management in research conducted in other parts of the world (Anderson, Fitzgerald & Oh, 1993; Huang, Liu, Zhang & Yao, 2013). Consequently, this study examined the relationship between diabetes attitude and overall self-care as well as domain specific self-care practices among persons living with Type-2 diabetes. The results from the analysis showed no statistically significant association between respondents' attitude towards diabetes and their overall self-care practices. This means that the attitude of patients towards their illness does not have any significant effect on their overall self-care practices. This lack of significant association between diabetes attitude and overall self-care practices could be due to respondents' perception or beliefs about their illness which is influenced by their level of awareness about diabetes in general.

However, this finding of lack of significant association between respondents' diabetes attitude and their overall self-care practices is inconsistent with previous works done among persons living with diabetes which showed that diabetes attitude is a significant predictor of self-care practices as well as adherence to management plans. For examples

Huang, Liu, Zhang and Yao (2013) reported from their study in China that diabetes attitude is a significant predictor of self-care behaviours among diabetic patients. Similar to the finding from this study, a study in United States of America by Anderson, Fitzgerald and Oh (1993) who investigated the relationship between diabetes-related attitudes and patients' self-reported adherence among diabetic patients who were either classified into low adherence or high adherence groups and found that patients in the high adherence group reported favourable diabetes attitudes while patients in the low adherence group reported less favourable diabetes attitude.

Our finding that diabetes attitude does not influence respondents' self-care practices significantly is also incongruent with the findings from study in Iran by Didarloo et al. (2012) among a sample of women with type 2 diabetes suggested that the attitudes of the patients towards their illness plays a significant role in their self-care activities as well as other important variables that influence the health outcomes of persons living with diabetes. The differences in the current finding and previous literature could be due to cultural differences as most of these studies were conducted outside Ghana.

An examination of the individual self-care practices among respondents showed no statistically significant relationship between diabetes attitude and dietary practices. It was also found that there is no statistically significant relationship between respondents' diabetes attitude and exercise. Also, no statistically significant relationship was observed between diabetes attitude and Blood Sugar Testing. It was further observed that no statistically significant relationship exists between diabetes attitude and Foot Care. This lack of significant associations between specific self-care practices and diabetes attitude is incongruent with other findings (Anderson, Fitzgerald & Oh, 1993; Huang, Liu, Zhang & Yao, 2013).

However, a significant positive relationship was found between diabetes attitude and Medication adherence among persons living with diabetes which suggests that the more positive attitude patients have about their disease, the more likely they are to adhere to their diabetes medication. This is very important as adherence to diabetes medication is one of the crucial self-care practices. This finding is consistent with previous works that found that diabetes attitude significantly predict both overall self-care practices as well as specific domains of self-care (Al-Maskari et al, 2013; Didarloo et al, 2012; Huang, Liu, Zhang & Yao, 2013).

5.3 Diabetes Knowledge and Self-Care Practices among Persons Living with Diabetes

Diabetes knowledge is one of the most important diabetes variables that have been shown to have significant influence on diabetes management and other health outcomes (Padma, Bele, Bodhare & Valsangkar, 2012; Smalls et al, 2012). Our results showed a significant positive association between respondents' diabetes knowledge and their overall self-care practices. This means that the higher an individual's diabetes knowledge, the more likely they are to engage in self-care practices. Thus, the more the patient has about the illness, in terms of the causes, symptoms and consequences, the more he/she will be motivated to engage in beneficial self-care practices to manage their conditions.

The significant association found between diabetes knowledge and overall self-care practices is consistent with previous studies that have shown the impact of diabetes knowledge on self-care practices. For instance, Bains and Egede (2011) concluded from their study among persons living with Type-2 diabetes mellitus that the most important factors associated with glycaemic control are diabetes knowledge and perceived health status. In the same vein, Perera, De Silva and Perera (2013) noted that diabetes knowledge among patients is very significant in influencing self-care practices. Also, van

der Heide et al., (2014) examined the mediating role of diabetes knowledge on the relationship between diabetes health literacy and self-care practices among diabetic patients and found that patients in the study with more diabetes knowledge were less likely to smoke and more likely to control glucose levels.

Further analysis of the domain specific self-care practices showed that respondents' diabetes knowledge correlated positively with their diet practices, blood sugar testing and foot-care practices. These findings demonstrate that being knowledgeable about diabetes may lead to good diabetes related practices that are essential for optimum health outcomes. These findings are consistent with previous works that found knowledge to be significantly associated with self-care practices among diabetes patients (Heisler et al., 2008; Padma et al., 2012; Smalls et al., 2012).

However, there was no significant relationship between respondents' diabetes knowledge and their level of physical activity (Exercise). This suggests that the decision to exercise by patients is independent of their knowledge. This finding could be influenced by the fact that majority of our respondents were elderly who may not have the physical strength to engage in unsupervised physical exercise even if they know that it was good for them. Similarly, respondents' diabetes knowledge did not significantly relate to their medication adherence. This finding means that the decision to adhere to diabetes medication was independent of the knowledge level among respondents. This could be due to the fact that the patients saw medication as the key to their treatment and therefore adhere it regardless of what they know about their illness. These findings are inconsistent with other studies where diabetes knowledge was found to be significantly associated with self-care practices (Padma, Bele, Bodhare & Valsangkar, 2012; Schillinger et al., 2002).

5.4 Diabetes Beliefs and Self-Care Practices among Persons Living with Diabetes

Additionally, the beliefs that respondents have about diabetes were examined to determine how they affect self-care practices among respondents. We found a significantly negative association between respondents' diabetes belief and their overall self-care practices. This means that beliefs that diabetes is a severe illness with longer duration and not curable resulted in lower self-care practices among respondents.

Further analysis of the domain specific self-care practices showed that belief about diabetes has significantly negative association with respondents' dietary self-care practices. It was also observed that a significant negative relationship exists between respondents' diabetes belief and their physical activities (exercise). These findings mean that when the patients believe that their illness is life threatening and severe, they tend to engage less in dietary self-care as well as physical exercise. This could be due to the development of learned helplessness where the patients who perceive the illness as life threatening also assumed that there is nothing they can do about it and therefore become inactive in their self-care practices. However, no statistically significant relationship was found between respondents' diabetes belief and their Blood sugar testing.

There was also no statistically significant relationship between respondents' diabetes belief and their foot care practices. It was also observed that no statistically significant relationship exists between respondents' diabetes perception and their medication adherence. These findings suggest that the belief that patients have about their illness does not influence some of their domain specific self-care practices, which is inconsistent with the health belief model (Janz & Becker, 1984) which postulates that the belief about illness influence illness actions or self-care practices significantly.

5.5 Sex Differences in Self-Care Practices among Persons Living with Diabetes

It has been reported that demographic characteristics of patients significantly predict their self-care practices (Berhe, Kahsay & Gebru, 2013; Sukkarieh, 2011). However, in our study we found no significant sex difference between male and female respondents in their overall self-care practices. This finding is inconsistent with the health belief model (Janz & Becker, 1984) which identified sex of patients as one of the significant factors in predicting health outcomes such as diabetes self-care practices. It is also incongruent with previous findings that found significant sex differences in diabetic patients' self-care practices (Gopichandran et al., 2012; Sukkarieh, 2011).

Further analysis of the individual self-care practices revealed that sex of respondents did not have any statistically significant effect on their dietary practices. It was also observed that sex of respondents did not have any statistically significant effect on their exercising practices. Similarly, it was observed that sex of respondents did not have any statistically significant effect on their blood sugar testing. In the same vein, no statistically significant difference was observed between male and female respondents in their foot-care practices. These findings suggest that within our study setting there was no significant sex difference between male and female diabetic patients when it comes to some of their self-care practices.

The findings of no significant sex differences in patients' self-care practices is consistent with a previous study by Hasnain and Sheikh (2009) who examined diabetes knowledge and practices among the diabetic patients regarding their foot care and found no significant sex differences in their foot-care practices. However, these findings are inconsistent with some previous studies that noted significant sex differences in patients' self-care practices

(Bai, Chiou & Chang, 2009; Berhe, Kahsay & Gebru, 2013; Gopichandran et al., 2012; Sukkarieh, 2011).

However, significant sex differences exist between male and female respondents in their adherence to medication with females reporting more diabetes medication adherence than male diabetic patients. It must be noted that medication adherence could lead to reduction in complications and fatality our finding suggests that female patients may suffer less complications by adhering to medications compared to males. Thus, there is a public health need to create awareness among diabetes patients on the importance of medication adherence, especially among men. This finding is consistent with previous findings which demonstrated significant sex differences in diabetic patients' self-care practices (Berhe, Kahsay & Gebru, 2013; Gopichandran et al, 2012; Sukkarieh, 2011).

5.6 Age Differences in Self-Care Practices among Persons Living with Diabetes

The age differences in self-care practices among persons living with diabetes were also examined. Results showed that the age of respondents had a statistically significant effect on their overall self-care practices. Diabetic patients between the ages of 30 and 40 years and those who were 71 years and above reported the lowest means of self-care activities compared to the other age groups. This means that the relatively younger diabetic patients and the more elderly patients engaged in less diabetes self-care practices in our study population. Among the aged (70 and above years year group), this could be due to decline in both physical and psychological abilities as most of the self-care practices rely on both psychological and physical energies. Among the younger (30-40 years group) diabetic patients, their relatively less engagement in self-care activities could be due to their perceived lack of susceptibility to complications or busy schedules mainly because they feel healthy at the initial stage of the illness. This finding is consistent with previous

studies (Berhe, Kahsay & Gebru, 2013; Yekta et al, 2011) and the health belief model (Janz & Becker, 1984) which showed that age could be a significant predictor of health beliefs and behaviour.

Further analysis of the domain specific self-care practices revealed that the younger patients reported more exercising than older patients. This could be due to the deteriorating physical health of older patients as ageing has its own associated physical and psychological problems. It was also found that older patients reported more medication adherence than younger patients. These findings were consistent with other findings (Albright, et al, 2001; Chourdakis et al, 2014).

5.7 Marital Status and Self-Care Practices among Persons Living with Diabetes

There was no relationship between marital status and overall self-care practices among respondents. This means that marriage or living with a partner which has been seen as a form of social support to help patients in their regular self-care practices is not evident in this study. This is inconsistent with studies that found marital status to be a significant predictor of respondents' self-care practices. For instance, Gopichandran et al., (2012) found that being married significantly favoured good exercise behaviour and monitoring of blood sugar among his study participants.

However, marital status of the patients had a statistically significant effect on their exercising with patients who are single engaging in more physical exercise than the other groups. This finding concurs with previous results which found marital status of patients to be significantly associated with their self-care activities (Berhe, Kahsay & Gebru, 2013; Daly, et al, 2009; Yekta et al, 2011).

5.8 Level of Education and Self-Care Practices among Persons Living with Diabetes

Our results showed a statistically significant relationship between educational level and the overall self-care practices among persons living with diabetes. Thus, patients with higher educational qualifications engaged in more self-care practices than those with lower educational qualifications. This could be due to the fact that there is a link between education and diabetes knowledge, with educated individuals being aware of the benefits of self-care practices and therefore engaging in them. These findings are consistent with previous works that found education and literacy to be predictive of diabetes self-care practices (Xiao-hui et al., 2012).

CHAPTER SIX

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

This final chapter presents the summary of key findings from the study, the conclusion drawn from the results, the recommendation for patients, practice and future research. The limitations of the study were also highlighted in this section.

6.2 Summary of Findings

- ✚ No significant association between respondents' attitude towards diabetes and their overall self-care practices.
- ✚ A significant positive association was observed between respondents' diabetes knowledge and their overall self-care practices.
- ✚ A significant negative association was observed between respondents' diabetes perceptions and their overall self-care practices.
- ✚ No significant sex difference was found between male and female respondents in their overall self-care practices.
- ✚ There was statistically significant age difference in diabetic patients' overall self-care practices.
- ✚ Marital status of the respondents did not have any statistically significant effect on their overall self-care practices.
- ✚ Educational levels of diabetic patients had a statistically significant effect on their overall self-care practices.

6.3 Conclusion

This study examined how patients' diabetes attitude, knowledge and beliefs influence their self-care practices. The study also investigated the association between patients' demographic characteristics and their overall self-care as well as domain specific self-care practices. It was observed from the study that patients' diabetes attitude did not have any significant influence on their overall self-care as well as all the domain specific self-care practices in exception of adherence to diabetes medication where a significant positive relationship was found. Thus, although patients' attitude did not influence their overall self-care, the significant association with diabetes medication adherence requires that a more positive attitude towards the illness is encouraged among the patients.

Further, patients' diabetes knowledge and beliefs significantly influenced their self-care practices such that the more knowledge patients have, the more likely they are to engage in self-care practices which suggest that there is the need for increased knowledge among patients to enhance their self-care practices. Additionally, the significant negative relationship between diabetes beliefs and self-care practices imply that any efforts aimed at improving self-care practices among persons living with diabetes should take into consideration their beliefs about diabetes which are shaped usually by cultural and contextual factors as these beliefs, at least in our study, tend to inhibit positive self-care practices.

Finally, patients' demographic characteristics such as age, sex, marital status and most especially the level of education significantly affect the self-care practices among diabetic patients. This finding implies that in ensuring increases in self-care behaviours or practices among diabetic patients, their demographic profiles should be taken into consideration as influence their self-care practices.

6.4 Recommendations

Based on the findings from the study, the following recommendations are put forward;

- ✚ Health professionals and the stakeholders involved in issues concerning diabetes and its management should create avenues that will enhance the knowledge levels of patients and their caregivers. This is because, compared to other studies conducted within the sub-region, the knowledge level among our respondents was relatively low.
- ✚ Health officials should also engage in diabetes awareness creation programmes with the aim of influencing the attitudes of persons living with or without diabetes so that a more positive outlook can be developed towards the illness.
- ✚ Diabetic patients should be encouraged to be proactive in seeking health information concerning their illness in order to make informed decision in the management of their disease.
- ✚ Future study is needed to compare diabetic patients' and non-diabetic patients' knowledge and attitudes toward the disease to inform the design and implementation of diabetes related interventions.
- ✚ Future studies should also employ a relatively large sample size across the country to provide nationally representative data for generalization.

Study limitations

- ✚ This is just a student's work done with limited resources and time constraints with a small sample size, so findings from this study cannot be generalised to represent diabetes patients let alone the nation.
- ✚ Despite the contributions of this study to knowledge, findings must be interpreted with some cautions as situational factors were not considered since the study was a

cross-sectional and conducted among patients who were seeking treatment at a health facility.

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APPENDICES

Appendix A: Consent Form

Title: **“Patients perception of Diabetes and its management among patients at La general hospital”**

Principal Investigator: Adulai Korkor

Principal Supervisor: Dr Collins Ahorlu

School of Public Health

General Information about the Research:

The aim of this research is to examine whether the views held by diabetic patients about their illness in terms of knowledge, attitude and belief have any significant influence on their self-care behaviors. Therefore, you will be required to respond each item on the questionnaire as truthfully as possible and there are no correct or wrong answers. The completion of the questionnaire could last from 20minutes to 45minutes depending on the individual participant. The Diabetic Unit of La General Hospital will be the venue for the data collection.

Possible Risks and Discomforts:

There are no foreseeable risks in participating in this study. However, any discomforts experienced by any respondent as a result of his or her involvement in the study will be dealt with accordingly

Possible Benefits:

The possible benefit may be indirect but the outcomes are likely to inform policy decision making that would shape the scope of diabetes management in Ghana in relation to dealing with self-care practices issues which the respondents may be beneficiaries. This

can help bring more health professional on board in the management of the diabetic condition.

Confidentiality:

Please be assured that no names or any other form of identity is required of you. Any information provided will be handled with care and used for academic purpose only.

Compensation:

There will be no material or direct compensation for participation in the study since the study will not take so much time and does not pose any danger to the respondents.

Voluntary Participation and Right to Withdraw:

Participation in this research is absolutely voluntary and you are under no compulsion to take part. You may withdraw as you so wish at any point in the study. You may also choose not to answer specific questions.

Contacts for Additional Information:

In case of any doubt or/and for additional information concerning the study you may contact the Principal Investigator, Adulai Korkor, School of public health, University of Ghana, Legon. Telephone: 0244479703 or email address: korkoradulai@yahoo.com. Or the administrator of Ghana health service ethical review committee Hannah Frimpong on 0243235225

Your right as a participant:

This research has been reviewed and approved by the Ghana Health Service. If you have any questions about your rights as a research participant you can contact the Ghana Health Service.

VOLUNTEER AGREEMENT:

The above document describing the benefits and procedures for the research titled:

“Patient’s perception of Diabetes and its management among patients at La General Hospital” has been read and explained to me. I have been given an opportunity to have any questions about the research answered to my satisfaction. I agree to participate as a volunteer.

Date

signature or mark of volunteer

If volunteers cannot read the form themselves, a witness must sign here: I was present while the benefits, risks and procedures were read to the volunteer. All questions were answered and the volunteer has agreed to take part in the research.

Date

signature of witness

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

Date

Signature of Person Who obtain Consent

PER WEEK have you followed your eating plan?

3. On how many of the last SEVEN DAYS did you eat
6 7 0 1 2 3 4 5

Five or more servings of fruits and vegetables?

4. On how many of the last SEVEN DAYS did you eat
6 7 0 1 2 3 4 5

High fat foods such as red meat or full-fat dairy
Products?

Exercise

5. On how many of the last SEVEN DAYS did you
6 7 0 1 2 3 4 5

Participate in at least 30 minutes of physical activity?
(Total minutes of continuous activity, including
Walking).

6. On how many of the last SEVEN DAYS did you
6 7 0 1 2 3 4 5

Participate in a specific exercise session (such as
Swimming, walking, biking) other than what you do
around the house or as part of your work?

Blood Sugar Testing

7. On how many of the last SEVEN DAYS did you test
6 7 0 1 2 3 4 5

your blood sugar?

8. On how many of the last SEVEN DAYS did you test
6 7 0 1 2 3 4 5

your blood sugar the number of times recommended by

your health care provider?

Foot Care

9. On how many of the last SEVEN DAYS did you check
6 7 0 1 2 3 4 5
your feet?

10. On how many of the SEVEN DAYS did you inspect
6 7 0 1 2 3 4 5
the inside of your shoes?

Medications

11. On how many of the last SEVEN DAYS, did you take
7 0 1 2 3 4 5 6
your recommended diabetes medication?

OR

12. On how many of the last SEVEN DAYS did you take
7 0 1 2 3 4 5 6
your recommended insulin injections?

Section C: Diabetes Attitude Survey

Below are some statements about diabetes. Each numbered statement finishes the sentence “In general, I believe that...” You may believe that a statement is true for one person but not for another person or may be true one time but not be true another time. Mark the answer that you believe is true most of the time or is true for most people. Place a check mark in the box below the word or phrase that is closest to your opinion about each statement. It is important that you answer every statement.

Note: The term “health care professionals” in this survey refers to doctors, nurses, and dietitians.

In general, I believe that:	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1. ...health care professionals who treat people with diabetes should be trained to communicate well with their patients.					
2. ...people who do not need to take insulin to treat their diabetes have a pretty mild disease.					
3. ...there is not much use in trying to have good blood sugar control because the complications of diabetes will happen anyway.					
4. ...diabetes affects almost every part of a diabetic person's life.					
5. ...the important decisions regarding daily diabetes care should be made by the person with diabetes.					
6. ...health care professionals should be taught how daily diabetes care affects patients' lives.					
7. ...older people with Type 2* diabetes do not usually get complications.					
8. ...keeping the blood sugar close to normal can help to prevent the complications of diabetes.					
9. ...health care professionals should help patients make informed choices about their care plans.					
10. ...it is important for the nurses and dietitians who teach people with diabetes to learn counseling skills.					
11. ...people whose diabetes is treated by just a diet do not have to worry about getting many long-term complications.					
12. ...almost everyone with diabetes should do whatever it takes to keep their blood sugar close to normal.					
13. ...the emotional effects of diabetes are pretty small.					
14. ...people with diabetes should have the final say in setting their blood glucose goals.					
15. ...blood sugar testing is not needed for people with Type 2* diabetes.					
16. ...low blood sugar reactions make tight control too risky for most people.					

17. ...health care professionals should learn how to set goals with patients, not just tell them what to do.					
18. ...diabetes is hard because you never get a break from it.					
19. ...the person with diabetes is the most important member of the diabetes care team.					
20. ...to do a good job, diabetes educators should learn a lot about being teachers					
21. ...Type 2* diabetes is a very serious disease.					
22. ...having diabetes changes a person's outlook on life.					
23. ...people who have Type 2* diabetes will probably not get much payoff from tight control of their blood sugars.					
24. ...people with diabetes should learn a lot about the disease so that they can be in charge of their own diabetes care.					
25. ...Type 2* is as serious as Type 1† diabetes.					
26. ...tight control is too much work.					
27. ...what the patient does has more effect on the outcome of diabetes care than anything a health professional does.					
28. ...tight control of blood sugar makes sense only for people with Type 1† diabetes.					
29. ...it is frustrating for people with diabetes to take care of their disease.					
30. ...people with diabetes have a right to decide how hard they will work to control their blood sugar.					
31. ...people who take diabetes pills should be as concerned about their blood sugar as people who take insulin.					
32. ...people with diabetes have the right not to take good care of their diabetes.					
33. ...support from family and friends, is important in dealing with diabetes.					

Section D: Diabetes Knowledge Question

Statements	Yes	No	Don't Know
1 Eating too much sugar and other sweet foods is a cause of diabetes			
2 The usual cause of diabetes is lack of effective insulin in the body.			
3 Diabetes is caused by failure of the kidneys to keep sugar out of the urine.			
4 Kidneys produce insulin.			
5 In untreated diabetes, the amount of sugar in the blood usually increases.			
6. If I am diabetic, my children have a higher chance of being diabetic.			
7. Diabetes can be cured.			
8 A fasting blood level of 210 is too high.			
9 The best way to check my diabetes is by testing my urine.			
10 Regular exercise will increase the need for insulin or other diabetic medication.			
11 There are two main types of diabetes: type 1 (insulin-dependent) and type 2 (non-insulin dependent).			
12 An insulin reaction is caused by too much food.			
13 Medication is more important than diet and exercise to control diabetes.			
14 Diabetes often causes poor circulation.			
15 Cuts and abrasions on diabetics heal more slowly.			
16 Diabetics should take extra care when cutting their toenails.			
17 A person with diabetes should cleanse a cut with iodine and alcohol.			
18 The way I prepare my food is as important as the foods I eat.			
19 Diabetes can damage my kidneys.			
20 Diabetes can cause loss of feeling in my hands, fingers, and feet.			
21 Shaking and sweating are signs of high blood sugar.			
22 Frequent urination and thirst are signs of low blood sugar.			
23 Tight elastic hose or socks are not bad for diabetics.			
24 A diabetic diet consists mostly of special foods.			

