INFORMATION NEEDS AND SELF-CARE PRACTICES OF DIABETIC PATIENTS IN MBALA, NORTHERN PROVINCE, ZAMBIA

BY

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DISSERTATION SUBMITTED TO THE UNIVERSITY OF ZAMBIA IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR AWARD OF THE DREGREE OF MASTER OF SCIENCE IN CLINICAL NURSING

October 2022

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DECLARATION

I, Chisha Jones Simuyemba, do hereby solemnly declare that this dissertation represents my own work, except where otherwise acknowledged, and that it has never been previously submitted for a degree at the University of Zambia or any other university.

Name of the researcher: ……

Signature of the researcher: ……

CERTIFICATE OF APPROVAL

This thesis of Chisha Jones Simuyemba is hereby approved as fulfilling the requirements for the degree of Master in Clinical Nursing by the University of Zambia.

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ABSTRACT

Introduction: Diabetes mellitus is a chronic disease that occurs either when the pancreas does not produce enough insulin or when the body cannot effectively use the insulin it produces. It is "a group of metabolic diseases characterized by hyperglycemia resulting from defects in insulin secretion, insulin action or both" manifested by carbohydrates, fat and protein metabolism abnormality. If untreated high blood sugar can damage the nerves, eyes, kidneys, and other organs. The purpose of this study was to assess the information needs and self-care practice of Diabetic Patients in Mbala, Northern Province Zambia.

Methods: This was an analytical cross-sectional study where 105 respondents aged 18 years and above participated in the study. Participants were randomly selected. A structured interview schedule and a check list were used to collect data. Statistics Package for Social Sciences computer software package version 23.0 was used to analyze data. Chi square and fisher's exact tests were used to test the significance of the association between Knowledge on Diabetes Mellitus, attitude towards self-care practices, self-care practices among Diabetic patients and the need for information among Diabetic patients. A 95% confidence interval and P value of 0.05 were used to ascertain the degree of significance. Multivariate binary logistic regression model to determine predictors of self-care practices and need for information was also used.

Result: On analyzing the dependent variables, more than half (61.9%), had high need for information and three quarters (85.7%) of respondents had poor self-care practices. Slightly more than half (58.1%) had high knowledge levels majority (78.1%), had a negative attitude. Significant associations were found $P < 0.05$ between knowledge levels and self-care practices (P-value 0.017), and between attitude and self-care practices (P-value 0.005). Information needs were also associated with knowledge (P-value 0.040) while attitude (P-value 0.198) showed no association with information needs of Diabetic patients. On multivariable logistic analysis patients with low knowledge levels were 0.080 times less likely to achieve good self-care practices (OR: 0.080, CI: 0.009 - 0.623, P: < 0.020) and those with a negative attitude were 0.174 less likely to achieve good self-care practices (OR: 0.174, CI: 0.049 - 0.584, P: < 0.006). Patients who had low knowledge levels were 2.263 times more likely to have a high need for information compared to those who had high knowledge levels, and this effect was significant (OR: 2.263, CI: 0.957 – 5.104, P: < 0.05).

Conclusion: Negative attitude and lack of information among Diabetic patients were the main reasons associated with poor self-care practices. Particular attention should therefore be given to ensuring that Diabetic patients are given adequate information on Diabetes self-care in order to improve the quality of life.

Keywords: Information needs, Self-care practices, Knowledge, Attitude, Diabetes mellitus.

DEDICATION

This thesis is dedicated to the loving memory of my late Mother; My Mother, Mercy Kasungo Simuyemba whose smiles and encouragement taught me perseverance and who is by far the best teacher I have ever had. My living Father, Mr. Billy Chisha Simuyemba, who has laid a solid foundation of my character and made me to believe that "determination and focus are key to success" and above all taught me about multiple intelligences. To my lovely family, "My wife (Ngosa Mubanga Mwewa) and my Daughters [Hadassah & Hannah (amazing twins)]"… Who always encourage me with passion and endless support. I am so lucky to have a woman who stands beside me the way you do!

ACKNOWLEDGEMENT

"I am obliged to all those patients who were a part of this dissertation" Initial thanks go to “THE ALMIGHTY GOD” for giving me an opportunity to do my post-graduation. Certainly, this is my long awaited opportunity to express my gratitude towards all you wonderful people who have, in one way or another, supported me in my work with this thesis. In particular I would like to express my sincere gratitude to the following people: First of all I would like to express my highly grateful to my supervisor Doctor Patricia Katowa Mukwato for allowing me to do research work under her guidance, patience, support and inspiration, collaboration and friendship in research. She introduced me to the world of research and sharing her immense knowledge in the field, for the enormous amount of work, time, energy and support. She has put in along with her heavy and administrative responsibilities and for her resolve and inspiring attitude that most things can be solved. I was impressed by your never ending energy and blessed by your keenness towards your students. This dissertation would not have been possible without the guidance and the help of Mrs Kabwe Chitundu Mutambo, my Co-supervisor and the post-graduate coordinator Mrs Brenda Sianchapa for her untiring effort in encouraging the teaching staff to pursue professional growth.

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ABBREVIATIONS

DM	Diabetes Mellitus

DSMQ	Diabetes Self-Management Questionnaire
WHO	World Health Organization
SMBG	Self-Monitoring Blood Glucose
HPM	Health Promotion Model
IDF	International Diabetes Federation
AFR	Africa Region

CHAPTER ONE

1.0 Background information

Diabetes is a chronic disease that occurs either when the pancreas does not produce enough insulin or when the body cannot effectively use the insulin it produces (WHO, 2018). It is "a group of metabolic diseases characterized by hyperglycemia resulting from defects in insulin secretion, insulin action or both" manifested by carbohydrates, fat, protein metabolism abnormality (American diabetes association, 2005). If untreated high blood sugar can damage the nerves, eyes, kidneys, and other organs (Watson, 2018). The global diabetes prevalence in 2019 is estimated to be 9.3% (463 million people), rising to 10.2% (578 million) by 2030 and 10.9% (700 million) by 2045. According to WHO (2016), the number of people with diabetes has risen from 108 million in 1980 to 422 million in 2014. Diabetes prevalence has been rising more rapidly in middle- and low-income countries. The prevalence is higher in urban (10.8%) than rural (7.2%) areas, and in high-income (10.4%) than low-income countries (4.0%). One in two (50.1%) people living with diabetes do not know that they have the disease. The global prevalence of impaired glucose tolerance is estimated to be 7.5% (374 million) in 2019 and projected to reach 8.0% (454 million) by 2030 and 8.6% (548 million) by 2045 (International Diabetes Federation Diabetes, 2019).

According to the International Diabetes Federation (IDF) Diabetes Atlas 9th Edition, an estimated prevalence in Africa is 19.4 million adults aged 20-79 years living with diabetes in the IDF Africa Region in 2019, representing a regional prevalence of 3.9%. Africa is the region with the highest proportion of undiagnosed diabetes, with 60% of adults currently living with diabetes unaware of their condition (International Diabetes Federation Diabetes, 2019). The International Diabetes Federation (IDF) Africa Region (AFR) includes 49 diverse sub-Saharan countries and territories and currently represents 34 diabetes organizations in 29 countries.

The prevalence of Diabetes in Zambia is at 4.1% in males, 4.4% in females with a total of 4.2% of the total population of 16212000 (WHO, 2016). Zambia is one of the 47 countries of the IDF African region. According to IDF African region, Zambia has a total adult population of 8,001,400 and the Prevalence of diabetes in adults is at 3.4%. The Total number of cases of diabetes in adults is 273,800 (International Diabetes Federation Diabetes, 2019).

Due to the chronicity of the condition, a person with diabetes should cooperate in all phases of the control and treatment and should be able to do self-care activities. Self-care is crucial for the

control of diabetes and includes self-monitoring of blood glucose, diet, setting insulin dosage, and doing regular physical activity (Borji, et al., 2017). As a chronic condition, Diabetes can be managed effectively however, if poorly managed it can lead to potential complications that include heart disease, stroke, kidney damage, and nerve damage (Pietrangelo, and Cherney, 2017). Effective management required adequate information on part of the patients, and positive self-care practices

According to a study conducted by Saleh et al., (2017), whose aim was to assess the effect of diabetes education in knowledge improvement and attitudes towards type 2 diabetes and related self-care activities in the patients, the study suggested that Diabetes-related self-care activities depend on the ability of patient to manage his/her daily life. Evidence shows that the individuals with diabetes often have inadequate information on the nature, risk factors and associated complications. In fact, people with DM communicate a particularly high need for information, higher than people with cancer or cardiovascular diseases, for example. It can therefore be concluded that people with DM do not feel adequately informed about their condition or regarding medication use. Therefore, it is important that a study be conducted to determine the information need on diabetes and self–care practices among diabetic patients in Mbala, Northern Zambia.

1.1 Problem statement

The rate of diabetes is said to be high in Africa with most cases remaining undiagnosed (Kugbey, Asante, Adulai , 2017). The case is not different in Zambia as a developing country where there is a significant diabetes burden reference. Particular attention should be paid to the patient's self-care and psychosocial therapy (Mwila et al., 2019). Self-care protocols should be tailored to complement the different types of patients with diabetes and improve their quality of life (Mwila et al., 2019). According to Mwila et al., (2019), it was discovered that patients do not have enough information concerning their Diabetes, therefore, patients experience a lot of physical sicknesses and their challenges, especially of the psychosocial nature may require professional attention hence readmissions. Similarly in Mbala, It has also been noticed that majority of known Diabetic patients do not only revisit the hospital for drug collection but as patients requiring admission. They are mostly in a state of hypoglycemia or hyperglycemia. This could be an indicator of inadequate information among Diabetic patients on Diabetic disease in relation to self-care practices, drug compliance, exercises, diet and health seeking behavior.

Table 1 below shows statistical data collected from Mbala General Hospital Health Management Information System (HMIS), on the number of admissions and deaths from the year 2016 to 2019. Information shows that the number of admissions and deaths has been on an increase rising from 0.6% in 2016 to 3.1% in 2019. Therefore, it is hoped that if patients have enough information on Diabetes mellitus and self-care practices, the admission and death rates related to DM will reduce.

Table 1.1 Statistical data from Mbala General Hospital on Diabetic patients from 2015 to 2019

	2016		2017		2018		2019	
	Adm	Deaths	Adm	Deaths	Adm	Deaths	Adm	deaths
1st Quarter	76	0	78	2	79	2	89	4
2nd Quarter	84	0	77	0	80	0	98	0
3rd Quarter	59	0	79	3	95	3	106	3
4th Quarter	81	2	85	4	79	2	88	5
Totals	300	2 (0.6%)	319	9 (3%)	333	7 (2.1%)	381	12 (3.1%)

1.2 CONCEPTUAL MODEL

1.2.0 Health promotion model

This study will be guided by the health promotion model (HPM) which was proposed by Pender (1982; revised, 1996) was designed to be a "complementary counterpart to models of health protection. It defines health as a positive dynamic state not merely the absence of disease. Health promotion is directed at increasing a client's level of well-being. The health promotion model describes the multi-dimensional nature of persons as they interact within their environment to pursue health. This model will play a critical role in this study as it will help identify the gaps and promote the self-care levels among Diabetic patients by focusing on the major concepts such as individual characteristics and experiences, prior related behavior, behavior-specific cognitions and Affect, behavioral outcome- health promoting behavior

1.2.1 Application of the model to this research study

1. **Individual characteristics and experiences:** According to the health promotion model, individual characteristics and experiences, behavior-specific cognitions, and affect behavioral

outcomes can either negatively or positively determine the needs of a patient. In relation to the concept of individual characteristics and experiences of the HPM, it is of great significance to know the characteristics (age, personality structure, race, ethnicity, level of education and socioeconomic status) of each and every respondent in this study. The assumptions are that individuals can actively regulate their own behavior by use of knowledge acquired through health education provided by health personnel and through person to person interactions in the community. Diabetic patients can also be influenced to improve on knowledge levels and self-care practice on Diabetic disease.

2. **The behavior-specific cognition and affect**: This is another important concept to this study which describes the perceived benefits of action, perceived barriers of action, perceived self-efficacy, activity related affect, interpersonal influences and situational influences. This will help the researcher to assess the level of understanding among Diabetic patients on Diabetic Disease and self-care practices. It is assumed that, if Diabetic patients exhibit negative benefits of action towards the disease, then they are lacking information and hence the need for adequate information on Diabetic Disease and self-care. Pender's HPM also states that prior behavior and inherited and acquired characteristics influence beliefs, affect, and enactment of health-promoting behavior. Therefore, Diabetic patients behavior, inherited and acquired characteristics would influence and determine the need for information on Diabetic disease.

3. Behavioral Outcome: Health promoting behavior is the desired behavioral end point or outcome of health decision-making and preparation for action. In this regard, the behavior of the patient determines the outcomes of the illness. Carrying out self-care practices is also dependent on the behavior of the patient. A positive behavior implies that the patient is able to perform self-care practices such as compliance to treatment, diet control, exercises and health seeking behavior. It is therefore predicted that the patient will need more information on the Diabetic disease and self-care practices in order for them to understand the importance of ensuring adequate and sufficient self-care practices.

1.2.2 CONCEPTUAL FRAMEWORK

Below is a conceptual framework adapted and adopted from the health promotion model by Pender (1982).

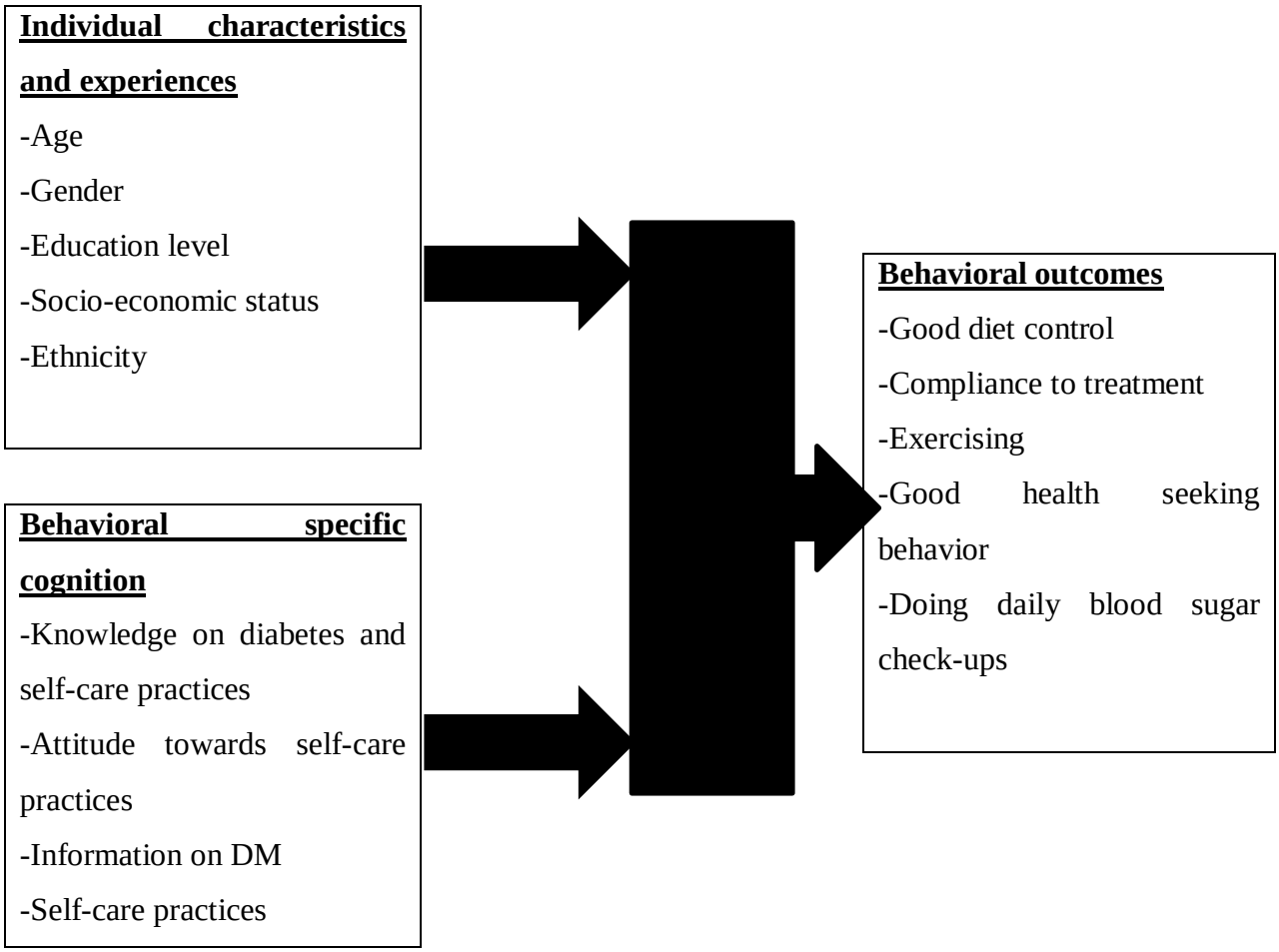

Figure 1.0

1.3 JUSTIFICATION

Possession of information and positive self-care practices are believed to play an important role in diabetes mellitus (DM) management (Song, 2010). The relationship between DM self-care and glycemic control has been extensively examined in the literature (Song, 2010). However, most existing DM self-information and self-care literature focuses on patients' routine health behaviors (Song, 2010).

Information on Diabetes Mellitus plays a very important role in that it helps the patients to understand the condition and the necessary self-care practices. Patients gain an understanding on how well they can take care of their wellbeing in relation to dietary modification, compliance to treatment, exercises and seeking medical checkups.

It is hope that information obtained from this study on information needs and self-care practices among Diabetic patients will enable health care providers to plan and decide the best approach to put in place in order to ensure adequate information is disseminated to Diabetic patients. It is also hoped that the findings of this study will be utilized by policy makers to direct their policies towards promoting self-care practices among Diabetic Patients in Mbala District of Northern Zambia. The study has also added to existing body of knowledge about the need for information on diabetes self-care practices among Diabetic patients.

1.4 RESEARCH OBJECTIVES:

1.4.0 General objective:

To assess the information needs and self-care practice of Diabetic Patients in Mbala, Northern Province, Zambia

1.4.1 Specific objectives:

1. To establish the information needs of Diabetic Patients in Mbala, Northern Province, Zambia
2. To determine the self-care practices of Diabetic Patients in Mbala, Northern Province, Zambia
3. To determine the factors associated with information needs and self-care practice of Diabetic Patients in Mbala, Northern Province, Zambia

1.5 RESEARCH QUESTIONS:

1. What are the information needs of diabetic patients in Mbala District Norther Province?
2. What are the self-care Practices of diabetic patients in Mbala District Northern Province?
3. What are the factors associated with information needs and self-care practice of Diabetic Patients in Mbala, Northern Province, Zambia

1.6 DEFINITIONS:

1.6.0 Conceptual definitions

1.6.1 Diabetes Mellitus: Diabetes is a chronic, metabolic disease characterized by elevated levels of blood glucose (or blood sugar), which leads over time to serious damage to the heart, blood vessels, eyes, kidneys and nerves (WHO, 2020).

1.6.2 Knowledge: Acquaintance with or understanding of a science, art, or technique (Merriam-Webster, 2020).

1.6.3 Self-care: it is the ability of individuals, families and communities to promote health, prevent disease, maintain health, and to cope with illness and disability with or without the support of a healthcare provider" (WHO, 2020).

1.6.4 Self-care practice: self-care practice means that you choose to explore your needs through regular reflection and make appropriate changes to meet these needs (Brown, 2019).

1.6.5 Operational definitions

1.6.6 Diabetes Mellitus- a disease of high glucose level in the body or blood

1.6.7 Knowledge- the extent to which an individual understands the situation

1.6.8 Self-care- the degree to which a Diabetes Mellitus patient is able to meet their self-care needs namely, healthy eating, being physically active, monitoring of blood sugar, compliant with medications, good problem-solving skills, healthy coping skills and risk-reduction behaviors.

1.6.9 Self-Care Practice- activities performed by a Diabetes Mellitus patient in order to meet their daily self-care needs namely, healthy eating, being physically active, monitoring of blood sugar, compliant with medications, good problem-solving skills, healthy coping skills and risk-reduction behaviors.

1.7 VARIABLES:

1.7.0 Dependent variable

1. Information needs and self-care practice

1.7.1 Independent variables

1. Knowledge of Diabetes Mellitus
2. Attitude towards self-care practices
3. Information Education and communication given to the patient
4. Socio-demographic Characteristics of the Diabetic patients including age, gender, ethnicity, education level, income and location.

CHAPTER TWO: LITERATURE REVIEW

2.1 INTRODUCTION

Literature review involves findings, readings, understanding and forming conclusions about published concepts on a particular topic under study. Some literatures that have been reviewed show that the factors associated with information needs and self-care practices among Diabetic patients are a worldwide issue. It affects many Diabetic patients in different countries and this problem is more acute in the sub Saharan Africa and Zambia inclusive. Data search was done according to the dependent variables (information needs and self-care practices) and independent variables (knowledge and attitude) of the study through searching using Google chrome to gather information. This review was aimed at determining what was already known about the topic and identified gaps such as lack of information on Diabetes mellitus, low knowledge levels on self-care practices and negative attitude towards self-care practices.

2.0 Overview of information needs and self-care practices:

Although education alone is not a cure for the disease, a diabetic patient is not able to achieve metabolic regulation, if he/she does not know the basic principles of nutrition, physical activity, care of the lower extremities, as well as specific skills related to the administration of subcutaneous injection of insulin, control of blood sugar levels, and other necessary parameters. The teaching of the technique of injection of insulin in type 2 Diabetes Mellitus by the patient and a family member is the most important part of the educational program. Initially, the technique of injection is taught and then the calculation of the required units of insulin, the selection of sites, and the way of handling the equipment in order to prevent contamination and injuries. Afterwards, basic principles regarding diet, maintenance of body weight, resting, and prevention of hypoglycemia or deregulation of blood sugar are taught. The patients with diabetes are invited to be aware about the information provided, and to incorporate long-term education in their lifestyle, with emphasis on behavioral changes. In addition, the state should realize the financial benefits from the information provided to patients with diabetes and support such interventional programs.

Diabetes self-care is important to keep the disease under control, It includes performing activities such as healthful eating, regular physical activity, foot care, medication adherence, and self-monitoring of blood glucose (SMBG). However, it is highly challenging since many people with diabetes may have contact with a healthcare professional for a total of a few hours per year and factors such as diabetes knowledge, physical activities, social support and self-efficacy can affect the self-care practice (Chali et al., 2018).

2.1 Information needs among diabetic patients:

According to a study that was conducted by Biernatzki, et al., (2018), on information needs in people with diabetes mellitus in German. The purpose of this study was to identify and analyze currently available knowledge on information needs of people with diabetes mellitus, also considering possible differences between subgroups and associated factors. According to the results, nine main categories of information needs were identified, including 'treatment-process', 'course of disease', 'abnormalities of glucose metabolism' and 'diabetes through the life cycle'. Differences between patient subgroups, such as type of diabetes or age, were sparsely analyzed. Some studies analyzed associations between information needs and factors such as participation preferences or information seeking. They found, for example, that information needs on social support or life tasks were associated with information seeking in Internet forums. In conclusion, information needs in people with diabetes mellitus, appear to be high, yet poorly investigated. Research is needed regarding differences between diverse diabetes populations, including gender aspects or changes in information needs during the disease course.

Another study was conducted by Kalantzi1, et al., (2015), on information seeking behavior of patients with diabetes mellitus. The purpose of the study was to examine the information behavior of diabetic patients, a relatively unexplored field of diabetes care, including their needs for information, resources used, obstacles encountered and degree of satisfaction for diabetes-related information acquisition. Results concluded that Diabetic patients' stated information needs and information sources, as well as main obstacles to obtaining information could potentially have important implications in designing a future information campaign.

In another study conducted by Crangle, et al., (2018), one exploring patient information needs in type 2 Diabetes. The aim was to better understand people's information needs by starting with what they do not know, discovered through their own questions, rather than starting with what we know about type 2 Diabetes Mellitus and subsequently finding ways to communicate that information to people affected by or at risk of the disease. Results revealed no highly significant gender-specific topics emerged in our study, but questions about weight were more likely to come from women and psychosocial questions from men. There were significantly more crowd sourced questions about the time Prior to any Diagnosis ([(-0.11, -0.04], p = .0013) and significantly more

clinic questions about Health Maintenance and Prevention after diagnosis ([0.07. 0.17], $p < .001$). A descriptive analysis pointed to the value provided by the specificity of questions, their potential to disclose emotions behind questions, and the as-yet unrecognized information needs they can reveal.

2.2 Self-care practice among diabetic patients:

A study was conducted in India by Selvaraj et al., (2016), whose main objective was to assess the Self-care practices among diabetes patients registered in a chronic disease clinic in Puducherry. This study was aimed at establishing the proportion of diabetic patients following the recommended self-care practices in an urban area of Puducherry. Consecutive eligible patients registered in chronic disease clinic were interviewed using Summary of Diabetes Self Care Activities Score (SDSCA) questionnaire. Results showed that totally 162 diabetic patients were interviewed. Among all domains, adherence to medication was the highest followed by avoidance of selected food items. Almost 78% of patients had their blood sugar checked at least once in the last three months. Only half of them had followed at least 20 minutes of leisure time physical activity. Therefore, it was concluded that, higher level of compliance to self-care practices in terms of taking drugs and diet but self-care in other domains such as foot care is alarmingly low (Selvaraj et al., 2016). With regard to this study, the alarmingly low levels of self-care practices could have been due to lack of adequate information on Diabetes Mellitus.

Another study was conducted by Missiriya S, (2016), in India on the Knowledge and Practice of Self Care Management on Diabetes Mellitus among Urban People. The aims of the study were to assess the knowledge and practice on demonstration regarding blood sugar testing and insulin injection administration among client with diabetes mellitus in pre and posttest, to determine the effectiveness of demonstration regarding self-care management in knowledge and practice among client with diabetes and to establish the association between knowledge and practice score of client with selected demographic variables. There was significant association between the level of knowledge with the selected demographic variables such as age, education and source of health information at $P<0.005$. The study concluded that demonstrations are effective on self-care management among Clients with diabetes mellitus, (Missiriya, 2016). According to this study, pre-test knowledge levels were low compared to the post-test knowledge levels. This was indicative that the respondents needed information on self-care management of Diabetic disease.

Similarly, another study was conducted by Dehvan et al., (2020), on Self-care in Iranian patients with diabetes. This study aimed to determine the self-care status of Iranian patients with diabetes and to estimate the percentage of self-care in these individuals through a systematic review and meta-analysis. According to the results, the percentage of self-care score was higher in patients with type I diabetes (55.53) when compared with patients with type II diabetes (49.26). It was concluded that since patients with diabetes obtained only half of the self-care score and given the importance of self-care in controlling and treating diabetes, it is necessary to perform actions to improve self-care such as benefiting from health facilities, and social and family support. Therefore, a disparity in relation to self-care practices between the type 1 and type 2 Diabetic patients could be due to the fact that type 1 Diabetes is hereditary hence such patients begin to learn and adjust at a very early age and gain knowledge on self-care practices more than the type 2 patients who begin to learn and adjust in adult life.

Another study was conducted by Chali, et al., (2018), on Self-care practice and associated factors among Diabetes Mellitus patients. The main objective of this study was to assess the self-care practice among patients with diabetes and their associated factors in Benishangul Gumuz Public Hospitals, Western Ethiopia. Results concluded that, the general findings of this study revealed that a significant number of diabetes patients had a low level of self-care practice. These findings request for the need of integrated interventional management on diabetes, which will increases health and wellbeing of the patients. Therefore, in order to improve diabetes self-care practice; different stakeholders including Hospitals, health professionals, health programmers, and different non-governmental organizations should give emphasis on linking diabetic patients to different supporting social groups, improving knowledge through health education and providing self-monitoring glucometer for those individuals who are unable to buy by themselves (Chali, et al., 2018).

Another study was conducted by Aschalew AY1, Yitayal M1, Minyihun A1, et al., (2019), on Self-care practice and associated factors among patients with diabetes mellitus on follow up at University of Gondar Referral Hospital, Gondar, and Northwest Ethiopia. The study focused on Diabetes as a rising global health problem, which requires continuous self-care practice. It was

discussed that there were limited studies about self-care practice, and most of the studies conducted in Ethiopia focused on some parts of the recommended self-care practices. Results of the study revealed that majority (51.86%) of the patients have poor self-care practice (Aschalew, et al., 2019). The study indicates that the prevalence of poor self-care practice was high. Education, residence, socio-economic status, complication and social support were significantly associated with poor self-care practice. Therefore, strategies should be developed to support patients with information, glucometer, and enhance patient's social support (Aschalew, et al., 2019).

According to another study conducted by Musenge E.M, et al., (2016**),** on glycaemic control and associated self-management behaviors in Diabetic outpatients as a hospital based observation study in Lusaka, Zambia, in which an assessment on glycaemic control status and self-management behaviors that may influence glycaemic control among diabetic outpatients was done. Results showed evidence of poor glycaemic control status among most diabetic patients suggesting that health promotion messages need to take into account both individual and community factors to promote behaviors likely to reduce non-adherence. This could be associated with lack adequate information to Diabetic patients hence the need for information.

2.3 Knowledge self-care practices among Diabetic patients:

According to a study conducted by Shrivastva, et al., (2020), in selected tertiary healthcare facilities in coastal Karnataka, India, whose main objective was to assess knowledge and self-care practices about Diabetes among patients with type 2 Diabetes Mellitus. Results showed that most of the participants (>65%) had knowledge about different aspects of Diabetes. The Mean total score of self-care practices among participants without and with intensive insulin treatment was 6.25 ± 1.25SD and 6.20 ± 1.01SD respectively. Mean subscales score related to dietary control, glucose management and physician contact was almost the same as that of total mean scale score except for physical activity subscale score in both the group of patients. This study emphasized the need to strengthen the initiatives related to generating awareness about diabetes and improving self-care practices related to it.

Another study conducted by Mukeshimana et al., (2015), on the knowledge and practice of self-care management among patients attending a diabetes clinic in Kigali, Rwanda. This study revealed the need for information on Diabetic disease and self-care practices among Diabetic

patients. Results revealed that participants had a self-care knowledge gap in some areas of diabetes self- management. In conclusion, there were self-care knowledge and practice gaps in some areas of diabetes self-care management. Health care providers, particularly nurses should play a key role in providing with accurate information on diabetes self-care. The gaps could have been due to inadequate information on Diabetes Mellitus to Diabetic patients.

In another study conducted in the sub-Saharan Africa region by Stephani et al., (2018), on Self-management of diabetes, and was aimed at describing the level of self-management among persons living with type 2 DM in sub-Saharan Africa. Results showed that, self-management in sub-Saharan Africa is poor, therefore a serious threat to the health of individuals and the health systems capacity. This gap could have been due to poor or lack of communication between health professionals and Diabetic patients. Hence it shows the need for information among Diabetic patients on Diabetes Mellitus and self-care practices.

2.4 Attitude of Diabetic patients

According to a study conducted by Jasmine and Harihara Iyer (2017), whose main objective was to assess the knowledge, attitude, practice and barriers for self-care among type 2 diabetes mellitus patients attending a rural health centre in Tamil Nadu. A structured questionnaire was used to assess the knowledge, attitude, practice and barriers against self-care. Results showed that most of the study participants had good (76.6%) or moderate knowledge (6.5%). Attitude (96.1%) and practice (85.7%) towards the disease was poor. It was conclusion that improved self-care practices will minimize morbidity and mortality associated with Diabetes. This study has highlighted lack of awareness as a major barrier for self-care. This has to be addressed by improving health literacy in the community. Developing Behavioral Change Communication programs need to be developed to address poor awareness in both clinical and community settings.

In another study conducted by Ahmed, et al., (2015), to assess the Knowledge, Attitude, and Self Care Practices Amongst Patients With Type 2 Diabetes in Pakistan. A cross sectional survey to assess the knowledge and practices of people with diabetes was conducted in general urban populace. A total of 139 diabetics were included into the study. Basic knowledge about diabetes and its complications were assessed as well as the frequency of practices such as keeping a blood glucometer at home and checking blood sugar with it. Results showed only 18.7% with knowledge

regarding the complications of diabetes mellitus, 8.6% of participants checked their blood glucose levels at home regularly, and 4.3% visited their physicians regularly for check-ups. With regard to practices, a minority attested to have changed their lifestyle and commit to basic practices in order to reduce diabetes related complications with women being more prone to changes than men.

In conclusion, the results showed that most participants had a negative attitude and very little knowledge regarding diabetes. There is a need for increased diabetes related education and for developing positive attitudes towards reduction of diabetes related complications. The Pakistani population is seen to be almost completely unprepared to fight against an increase in type 2 Diabetes prevalence. The negative attitude among the participants could have been due to lack of knowledge on diabetes mellitus. Therefore, increasing the level of know would significantly improve the attitude of Diabetic patients.

2.5 CONCLUSION:

The above studies conducted in different continents, countries, Zambia inclusive on information needs and self-care among Diabetic patients have shown that there is still inadequate information, low knowledge levels and a negative attitude towards self-care practices. This prompted the researcher to propose a study on information needs and self-care practices of Diabetic patients in Mbala, Northern Province, Zambia.

CHAPTER THREE: RESEARCH METHODOLOGY

3.0 1NTRODUCTION

This chapter represents the research methodology that will be used in this study. The areas of focus are the study setting, study population, sample selection, sample size and data collection techniques.

3.1 Study Design

The study utilized an analytical cross sectional study. An analytical cross-sectional study is a type of quantitative, non-experimental research design (Schmidt and Brown, 2019). This study seeks to "gather data from a group of subjects at only one point in time". The purpose was to measure an association between information needs, self-care practices and knowledge and attitude. Cross-sectional studies often utilize surveys or questionnaires to gather data from participants (Schmidt and Brown, 2019). This study was suitable as this research as it quantitative by nature investigated an association between variables.

3.1 Study Setting

The study was conducted at Mbala General Hospital. It is a third level Hospital that provides specialized health care in various disciplines including diabetes management. It has a bed capacity of 300. Mbala General Hospital was chosen on the basis that it is the biggest Hospital in Mbala District and many diabetic patients are reviewed from the same Hospital. There has been also an observed increase in the number of admissions and deaths resulting from diabetes complications at the Institution.

3.2 Study Population

The study population includes all confirmed diabetic patients male and female, who resided within Mbala General Hospital catchment area.

3.2.1 Target Population

The target population included all adult diabetic patients with type 1 or type 2 diabetes mellitus aged 18 years and above who were accessing care at Mbala General Hospital.

3.2.2 Accessible Population

The accessible population included all adult confirmed diabetic patients who were accessing care at Mbala General Hospital Outpatient Department during the data collection period.

3.3 Sampling

3.3.1 Sample Selection

A simple random sampling method was used to choose participants using a sampling frame for eligible type 1 or 2 Diabetes Mellitus patients accessing care from the Out-patient Medical Clinic. A lottery method was used in which the researcher gave each member of the population a number. The researcher drew numbers from the box randomly to choose samples.

3.3.2 Sample Size

A sample size of respondents was calculated using **Krejcie and Morgan 1970s** formula for a finite population. A total sample size of **105** participants was recruited.

Population size to sample from

= 7 patients daily X 30 days =210

$$\mathbf{n = \frac{Z^2\ NP\ (1\text{-}P)}{d^2\ (N\text{-}1) + Z^2 P\ (1\text{-}P)}}$$

Where:

n = Required Sample size

Z = Standard normal variate at 95% confidence level = 1.96

N = Population Size = 210

P = Prevalence of diabetes in Zambia = 0.042 (4.2%)

d = Degree of accuracy (5%), expressed as a proportion (0.05); It is margin of error.

Therefore;

$$\mathbf{n = \frac{1.96^2\ X\ 210\ X0.042X\ 0.958}{0.05^2\ (210\text{-}1) + 1.96^2\ X\ 0.042\ X\ 0.958} = \frac{32.46}{0.32} = 100}$$

The sample size was adjusted by 10% to carter for non-response rate

- 100+5= 105
- Sample size= **105**

3.4 Inclusion criteria

The following were included in the study as they met the criteria set by the researcher:

3.4.1 Confirmed type 1 or type 2 diabetic patients on treatment for at least more than 6 months.

3.4.2 Patients aged between 18 years and above

3.4.3 Patients who had blood glucose test results

3.4.4 Those who consented to participate

3.4.5 Exclusion criteria

The exclusion criteria were as follows:

3.4.6 Those who were very sick and could not stand the interview.

3.4.7 Diabetic patients who were mentally ill. This was confirmed by conducting a quick mental state exam.

3.4.8 Diabetic patients who were not residents of Mbala.

3.5 Data Collection Tool

Data was collected using a structured interview schedule and using a checklist. A structure interview schedule was used to collect data on information needs and Self-Care Practices. The interview schedule had been developed basing on the need for information and self-care practice among Diabetic patients. The interview schedule had been developed basing on the Diabetes Self-Management Questionnaire (DSMQ) which was validated by Schmitt, et al., 2013. It was a reliable and valid instrument with the cronbach's alpha of 0.84. It enables an efficient assessment of self-care behaviors associated with glycaemic control. There was no permission required for reuse of the instruments as it had been tested and used in the UK and San Marino with reliability of Cronbach's alpha of 0.84. The structured interview schedule comprised of a series of open and closed ended questions and had three sections as follows;
Section A had questions on demographic data including; Sex, Age, Marital status, Income and level of Education. Section B assessed Diabetic patient's need for information and Section C assessed self-care practices.

3.6 Validity and Reliability

Validity and reliability in this study was ensured by using validated instruments adapted from Diabetes Self-Management Questionnaire (DSMQ) by Schmitt, et al, 2013. This instrument had been tested and used in the UK and San Marino with reliability of Cronbach's alpha of 0.84. Positive questions were used in the interview schedule to avoid mistakes of negative coding in data analysis. The instruments were pretested using a pilot study. After testing the tool, reliability was ensured of Cronbach's alpha of 0.83.

3.7 Data Collection Technique

Data was collected by the researcher personally from the Outpatient Department, Medical Clinic. The researcher obtained permission from the institution; introduce himself and the topic understudy to the participants, its purpose and the procedure. Each participant was given a consent form to sign. Those who were not able to sign were asked to make a thumb print. Data was collected in a quiet private room using a structured interview schedule and a check list adapted from a Questionnaire. Participants were assured of confidentiality and anonymity. Serial numbers were used instead of names. During the interview process, questions were read to participants and they were given time to answer. All participants were given time to fill in the interview schedule which were collected on the same day of the interview. The completed interview schedules were collected by the researcher immediately after the interview. Participants were thanked thereafter.

3.8 Pilot Study

The pilot study was conducted prior to the main study at chulungoma urban clinic which had similar characteristic with the study setting. Chulungoma urban clinic is also which offers specialized health services including diabetes management. It is a clinic within the catchment area for Mbala General Hospital and one of the referring centers to Mbala General Hospital. The purpose of the pilot study was to ascertain the appropriateness of the study instrument and obtain direction for the main study. The pilot study also helped the researcher to identify any part of the instrument that needs modification. It enabled the researcher to determine the length of time needed to complete the interview. The pilot

study sample constituted ten percent (10%) of the sample size (105) of the actual study which translated to 12 participants.

3.9 Ethical and Legal Issues

Ethical approval was sought from the University of Zambia Biomedical Research Ethics Committee (UNZABREC REF. No. 1662-2021). A written permission was sought from the Medical Superintendent for Mbala General Hospital and District Health Director for Mbala District. The purpose of the study was explained and a written consent was obtained from each participant before the study. Those who were willing to participate were asked to sign the consent form, which was explained to them fully. The participants were assured of anonymity by using serial numbers on the interview schedule instead of writing their names. Participants were also informed that participation was voluntary, therefore they were free to terminate the contract any time if they so wished. Participants were not subjected to any physical harm as the study did not involve invasive procedures. Participants were not denied access to appropriate services and healthcare whether they refuse to participate in the study or not. They were assured of the best proven therapeutic method that was; the study would not disturb their dietary intake or their treatment scheduling. However, participants would not be rewarded in any way as it may be viewed as coercion which was explicit or implicit threats of penalty for failing to participate in a study or exclusive rewards from agreeing to participate. This was not ethically accepted. After data collection, the interviews schedules were kept under lock and key for security and confidentiality. No one, apart from the Principal researcher was allowed to access the collected data.

4.0 CHAPTER FOUR: DATA ANALYSIS AND PRESENTATION OF FINDINGS

4.1 INTRODUCTION

This chapter provides highlights on how data was analyzed and presents findings from the study which was carried out to assess the information needs and self-care practices of Diabetic Patients in Mbala, Northern Province, Zambia. Data was collected using a semi structured interview

schedule. Following administration of each interview schedule, the schedule was checked for completeness, accuracy and possible duplication of responses. Results obtained from the study are presented in form of frequency tables, and pie charts.

4.2 DATA ANALYSIS

Responses were coded and entered in Statistical Package for Social Science (SPSS) version 23 for windows. Analysis was done by running frequencies, descriptive statistics and cross-tabulations on different variables. For categorical variables, Chi-square test was performed and p-values obtained from the cross-tabulations. Binary Logistic Regression was also performed to analyze the dependent and independent dichotomous variables. P-value was set at 95% Confidence Interval.

4.3 PRESENTATION OF RESULTS

Results are presented according to sections of the interview schedule as follows; Section A: Demographic Characteristics (age, marital status, employment status, education level and income of the people within the population), Section B: Social-economic factors, Section C: knowledge on Diabetes Mellitus, Section D: Attitude towards Diabetes and self-care practice, Section E: information needs to Diabetic Patients, Section F: self-care practices of Diabetic patients.

TABLE 4.1 Demographic Characteristics (n=105)

GENDER	**FREQUENCY**	**PERCENTAGE**
Male	60	57.1
Female	45	42.9
AGE		
Less than and equal to 20 years	8	7.6
21 to 40 years	25	23.8
41 to 60 years	54	51.4
61 to 80 years	11	10.5
above 80 years	7	6.7
MARITAL STATUS		
Married	68	64.8
Divorced	9	8.6

Widowed	12	11.4
Single	16	15.2
RESIDENCE		
Urban	69	67.7
Rural	36	43.3
EMPLOYMENT STATUS		
Formal Employment	34	32.4
Self-employed	37	35.2
Not employed	32	30.5
Retired	2	1.9
TOTAL	**105**	**100.0**

Table 4.1 above shows the analysis of demographic characteristics of 105 respondents, out of which the majority 60 (57.1%), were males while 45 (42.9%) were female. In relation to age, it shows that out of 105 respondents, the majority 54 (51.4%) were aged between 41 to 60 years. Majority 68 (64.8%) were married, majority 69 (67.7%), lived in the Urban area while 36 (43.3%) lived in the rural area. Most of the respondents, 37 (35.2%) were self-employed, 34(32.4%) were in formal employment, 32(30.5%) were not employed, and 2(1.9%) were retired.

SECTION B: Social factors of Diabetic patients

TABLE 4.2 Tobacco smoking (n=105)

SMOKES TOBACCO	FREQUENCY	PERCENTAGE
Yes	14	13.3
No	91	86.7
TOTAL	**105**	**100**

Table 4.2 above shows that out of 105 respondents, the majority 91 (86.7%), do not smoke while

14 (13.3%) smoke.

TABLE 4.3 Alcohol drinking (n=105)

TAKES ALCOHOL	FREQUENCY	PERCENTAGE
Yes	39	37.1
No	66	62.9
TOTAL	**105**	**100**

Table 4.3 above shows that out of 105 respondents, the majority 66 (62.9%), do not take alcohol while 39 (37.1%) take alcohol.

SECTION C: Knowledge on Diabetes Mellitus

Table 4.4 Knowing about random and fasting blood sugar (n=105)

KNOWING ABOUT RANDOM AND FASTING BLOOD SUGAR	FREQUENCY	PERCENTAGE
Yes	58	55.2
No	47	44.8
TOTAL	**105**	**100.0**

Table 4.4 above shows that, majority 58(55.2%) of the respondents agreed knowing what random and fasting blood sugar are, 47(44.8%) denied.

Table 4.5 Knowing how to check blood sugar levels (n=105)

KNOW HOW TO CHECK BLOOD SUGAR LEVEL	FREQUENCY	PERCENTAGE
Yes	56	53.3
No	49	46.7
TOTAL	**105**	**100.0**

Table 4.5 above shows that, out of 105 respondents, slightly above half 56 (53.3%) agreed

knowing how to check blood sugar levels, while 49(46.7%) disagreed.

Table 4.6 Knowing if Diabetes can cause complications (n=105)

KNOWING IF DIABETES CAN CAUSE COMPLICATIONS	FREQUENCY	PERCENTAGE
Yes	65	61.9
No	40	38.1
TOTAL	**105**	**100.0**

Table 4.6 above shows that, majority 65 (61.9%) of the respondents agreed Knowing that Diabetes can cause complications while 40(38.1%) didn't know.

Table 4.7 Knowing if Diabetes is genetic (n=105)

KNOW IF DIABETES IS GENETIC	FREQUENCY	PERCENTAGE
Yes	59	56.2
No	46	43.8
TOTAL	**105**	**100.0**

Table 4.7 above shows that, out of 105 respondents, majority 59 (56.2%) agreed Knowing that Diabetes is genetic while 40(38.1%) did not know.

Table 4.8 Knowing if exercises can help prevent Diabetes (n=105)

KNOW IF EXERCISES CAN HELP PREVENT DIABETES	FREQUENCY	PERCENTAGE
Yes	63	60
No	42	40
TOTAL	**105**	**100.0**

Table 4.8 above shows that, majority 63 (60%) agreed Knowing that exercises can help prevent

Diabetes 42(40%) disagreed.

Table 4.9 Knowing that reducing sugar intake can control Hyperglycemia (n=105)

KNOWING IF HYPERGLYCEMIA CAN BE controlled BY REDUCING SUGAR INTAKE	FREQUENCY	PERCENTAGE
Yes	74	70.1
No	31	29.5
TOTAL	**105**	**100.0**

Table 4.9 above shows that, majority 74 (70.1%) agreed Knowing that reducing sugar intake can reduce Hyperglycemia while 31(29.5%) disagreed

Overall knowledge levels:

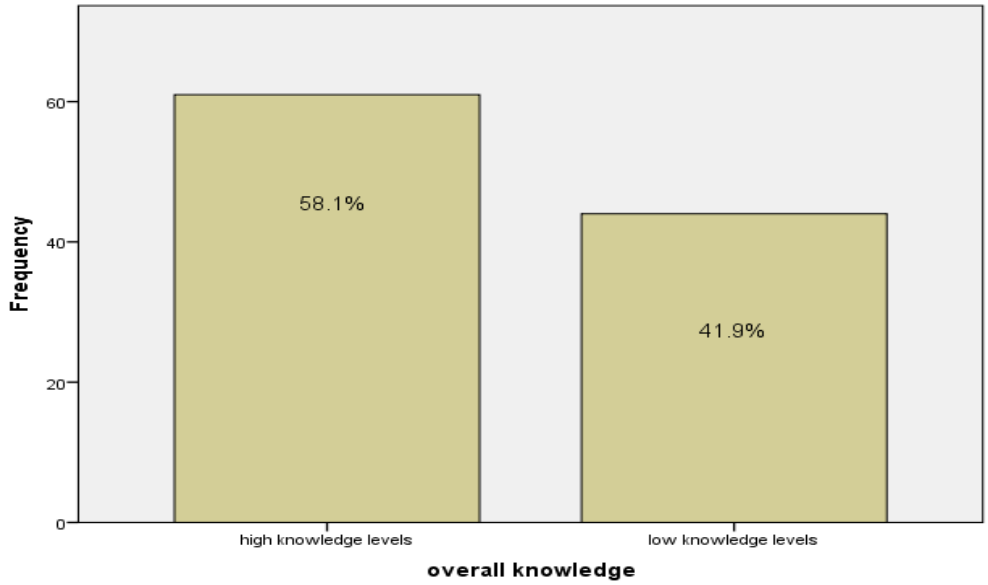

Figure 4.1

Regarding the overall knowledge levels, majority 61 (58.1%) had high knowledge levels while 44 (41.9%) had low knowledge levels (Figure 4.1).

<u>SECTION D:</u> Attitude of Diabetic patients towards self-care practices

Table 4.10: Regularity in seeing the Doctor (n=105)

REGULARITY IN SEEING THE DOCTOR	FREQUENCY	PERCENTAGE

Always	22	21
Sometimes	26	24.8
Not all the time	40	38.1
Never	17	16.2
TOTAL	**105**	**100.0**

Results in table 4.10 above shows that, majority 40 (38.1%) indicated that Diabetic patients shouldn't see their doctor all the time, 26(24.8%) only sometimes, 22(21%) always and 17(16.2%) never to see their Doctor.

Table 4.11 Importance of regular exercises (n=105)

IMPORTANCE OF REGULAR EXERCISES	FREQUENCY	PERCENTAGE
Always	35	33.3
Sometimes	39	37.1
Not all the time	27	25.7
Never	4	3.8
TOTAL	**105**	**100.0**

With regard to the importance of regular exercises, only 35 (33.3%) of the respondents expressed that regular exercises were always important, 39(37.1%) indicated only sometimes and the least 4(3.8%) expressed that exercises were never being important (Table 4.11).

Table 4.12 BELIEF IN USEFULNESS OF BLOOD SUGAR CONTROL (N=105)

BELIEF IN USEFULNESS OF BLOOD SUGAR CONTROL	FREQUENCY	PERCENTAGE
Always	12	11.4
Sometimes	25	23.8
Not all the time	36	34.3
Never	32	30.5
TOTAL	**105**	**100.0**

Table 4.12 shows that, majority 36 (34.3%) of participants did not believe that there use in maintaining good blood sugar control, 32(30.5%) never believed, 25(23.8%) sometimes believed, and 12(11.4%) always believed.

Table 4.13 DESIRE FOR SPECIAL DIET (n=105)

DESIRE FOR SPECIAL DIET	FREQUENCY	PERCENTAGE
Always	44	41.9
Sometimes	24	22.9
Not all the time	26	24.8
Never	11	10.5
TOTAL	**105**	**100.0**

Table 4.13 shows that majority 44 (41.9%) participants always desired having special diet, 26(24.8%) not all the time, 24(22.9%) sometimes and 11(10.5%) never desired having a special diet.

Table 4.14 IMPORTANCE OF TAKING DIABETIC MEDICATION (n=105)

IMPORTANCE OF TAKING DIABETIC MEDICATION	FREQUENCY	PERCENTAGE
Always	47	44.8
Sometimes	21	20.0
Not all the time	29	27.6
Never	8	7.6
TOTAL	**105**	**100.0**

Table 4.14 above shows that, majority 47 (44.8%) of participants indicated that it was important to take diabetic medicine always, 29(27.6%), 21(20%) stated sometimes and the least 8(7.6%) expressed that it was never importance to take medicine.

Overall attitude towards self-care practices

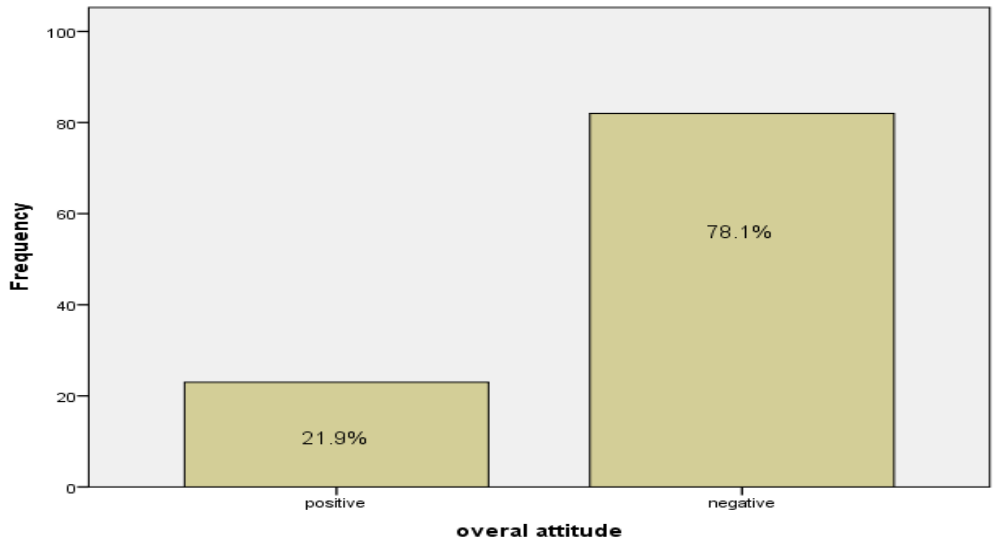

Figure 4.2

Figure 4.2 above shows that out of 105 respondents, the majority 82 (78.1%), had a negative attitude while 23 (21.9%) had a positive attitude.

SECTION E: INFORMATION NEEDS OF DIABETIC PATIENTS

TABLE 4.15 NEED FOR INFORMATION ON EXERCISES (n=105)

NEED FOR INFORMATION ON EXERCISES	**FREQUENCY**	**PERCENTAGE**
Agreed	85	80.9
Disagreed	20	19.0
TOTAL	**105**	**100**

Table 4.15 above shows that out of 105 respondents, majority 85 (80.9%) agreed to needing information on exercises while 20 (19.0%) disagreed that they needed.

TABLE 4.16 NEED FOR INFORMATION ON KEEPING REVIEW DATE (N=105)

NEED FOR INFORMATION ON KEEPING REVIEW DATE	**FREQUENCY**	**PERCENTAGE**

Agree	45	42.9
Disagree	60	57.1
TOTAL	**105**	**100**

Table 4.16 above shows that the majority 60 (57.1%), of the respondents disagreed that they needed information on the importance of keeping review date while 45 (42.9%) agreed.

TABLE 4.17 NEED FOR INFORMATION ON COMPLIANCE TO TREATMENT (n=105)

NEED FOR INFORMATION ON COMPLIANCE TO TREATMENT	FREQUENCY	PERCENTAGE
Agree	42	40
Disagree	63	60
TOTAL	**105**	**100**

Table 4.17 above shows that out of 105 respondents, majority 63 (60%), disagreed that they needed information on compliance to treatment while 42 (40%) agreed.

TABLE 4.18 NEED FOR INFORMATION ON DOING RANDOM BLOOD SUGAR CHECKUPS (n=105)

NEED FOR INFORMATION ON DOING RANDOM BLOOD SUGAR CHECK	FREQUENCY	PERCENTAGE
Agree	62	59.0
Disagree	43	40.9
TOTAL	**105**	**100**

Table 4.18 above shows that out of 105 respondents, majority 62 (59.0%) agreed to needing information on doing random blood sugar while 43(40.9%), disagreed.

TABLE 4.19 NEED FOR INFORMATION ON JOINING THE DIABETES ASSOCIATION GROUP (n=105)

NEED FOR INFORMATION ON JOINING THE DIABETES ASSOCIATION GROUP	FREQUENCY	PERCENTAGE
Agree	95	90.5
Disagree	10	9.5
TOTAL	**105**	**100**

Table 4.19 above shows that out of 105 respondents, majority 95 (90.5%) agreed to the need for information on joining the Diabetes Association group while 10 (9.5%) disagreed.

TABLE 4.20 NEED FOR DIET MODIFICATION AS A FORM OF DIABETES MELLITUS CONTROL (n=105)

NEED FOR INFORMATION ON DIET MODIFICATION AS A FORM OF DIABETES MELLITUS CONTROL	FREQUENCY	PERCENTAGE
Agree	68	64.8
Disagree	37	35.2
TOTAL	**105**	**100**

Table 4.20 above shows that majority 68 (64.8%) participants agreed to needing information on diet modification as a form of Diabetes while 37 (35.2%) disagreed.

TABLE 4.21 NEED FOR INFORMATION ON AVOIDING INJURIES (n=105)

NEED FOR INFORMATION ON AVOIDING INJURIES	FREQUENCY	PERCENTAGE
Agree	100	95.2
Disagree	5	4.8
TOTAL	**105**	**100**

Table 4.21 shows that out of 105 respondents, majority 100 (95.2%), agreed to the need for information on avoiding injuries while 5 (4.8%) disagreed.

TABLE 4.22 NEED FOR INFORMATION ON TYPES OF DIABETES MELLITUS (N=105)

NEED FOR INFORMATION ON TYPES OF DIABETES MELLITUS	FREQUENCY	PERCENTAGE
Agree	91	86.6
Disagree	14	1.3
TOTAL	**105**	**100**

Table 4.22 above shows that out of 105 respondents, majority 91 (86.6%) agreed to the need for information to types of Diabetes Mellitus while 14 (1.3%)

Table 4.23 NEED FOR INFORMATION ON THE FORMS OF TREATMENT FOR DIFFERENT TYPES OF DIABETES MELLITUS (n=105)

NEED FOR INFORMATION ON THE FORMS OF TREATMENT FOR DIFFERENT TYPES OF DIABETES MELLITUS	FREQUENCY	PERCENTAGE
Agree	75	71.4
Disagree	30	28.6
TOTAL	**105**	**100**

Table 4.23 shows that majority 75 (71.4%), of respondents agreed to the need for information on the forms of treatment the different types of Diabetes Mellitus while30 (28.6%), disagreed.

Overall Information needs among Diabetic patients

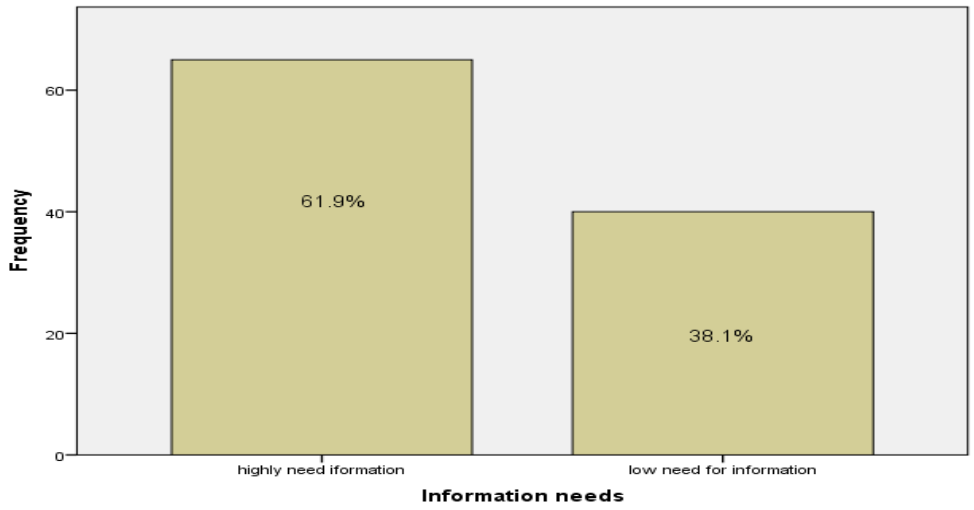

Figure 4.3

Figure 4.3 above shows that out of 105 respondents, majority 65 (61.9%), had high need for information while 40 (38.1%) had low need for information.

SECTION F: SELF-CARE PRACTICES OF DIABETIC PATIENTS

Table 4.24 REGULARITY OF CHECKING BLOOD SUGAR LEVEL (n=105)

CHECKING BLOOD SUGAR LEVEL	FREQUENCY	PERCENTAGE
Always	11	10.5
Sometimes	38	36.2
Not all the time	33	31.4
Never	23	21.9
TOTAL	**105**	**100.0**

Table 4.24 shows that only 11(10.5%) of participants always checked their blood sugar, while majority 38 (36.2%) checked blood sugar levels sometimes, 33(31.4%) not all the time, 23(21.9%) never.

Table 4.25 Adhering to the Doctor's appointment (n=105)

Adhering to the Doctor's appointment	FREQUENCY	PERCENTAGE
Always	30	28.6
Sometimes	29	27.6
Not all the time	36	34.3
Never	10	9.5
TOTAL	**105**	**100.0**

Table 4.25 above shows that, out of 105 respondents, majority 36 (34.3%) do not keep the Doctor's appointments all the time, 30(28.6%) always kept the appointment, 29(27.6%) sometimes, and 10(9.5%) never.

Table 4.26 ADHERENCE TO TAKING DIABETES MEDICATION AS PRESCRIBED (n=105)

Adherence to taking Diabetes medication as prescribed	FREQUENCY	PERCENTAGE
Always	40	38.1
Sometimes	21	20.0
Not all the time	29	27.6
Never	15	14.3
TOTAL	**105**	**100.0**

Table 4.26 above shows that, majority 40 (38.1%) of the respondent always adhered to taking Diabetes medication as prescribed, 29(27.6%) not all the time, 21(20%) sometimes, and 15(14.3%) never adhered.

Table 4.27 ENGAGING IN PHYSICAL ACTIVITY TO ACHIEVE OPTIMAL BLOOD SUGAR LEVELS (n=105)

ENGAGING IN PHYSICAL ACTIVITY TO ACHIEVE OPTIMAL BLOOD SUGAR LEVELS	FREQUENCY	PERCENTAGE
Always	12	11.4
Sometimes	51	48.6
Not all the time	32	30.5
Never	10	9.5
TOTAL	**105**	**100.0**

Table 4.27 above shows that , only 12(11.4%) always engaged in physical activities to achieve optimal blood sugar level, while majority 51 (48.6%) only engaged in physical activity sometimes, 32(30.5%) not all the time, and 10(9.5%) never at all.

Table 4.28 FOLLOWING DIETARY RECOMMENDATIONS GIVEN BY THE DOCTOR/SPECIALIST (n=105)

FOLLOWING DIETARY RECOMMENDATION GIVEN BY THE DOCTOR/SPECIALIST	FREQUENCY	PERCENTAGE
Always	12	11.4
Sometimes	45	42.9
Not all the time	38	36.2
Never	10	9.5
TOTAL	**105**	**100.0**

Table 4.28 above shows that, out of 105 respondents, only 12(11.4%) followed dietary recommendations always, while the majority 45 (42.9%) only followed the recommendations sometimes and 10(9.5%) never at all.

Overall self-care practice

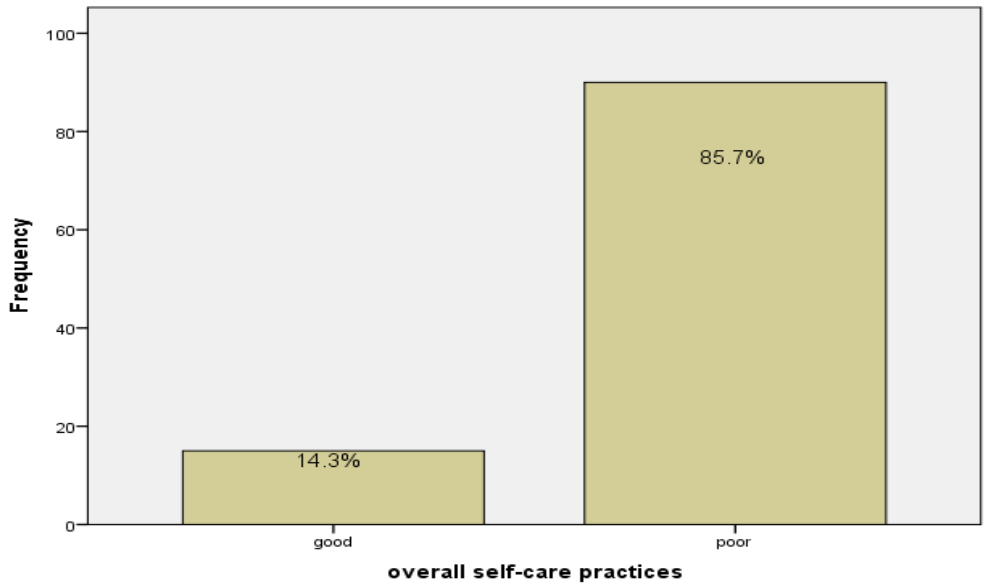

Figure 4.4

Figure 4.4 above shows that out of 105 respondents, majority 90 (85.7%), had poor self-care practices while 15 (14.3%) had good self-care practices.

SECTION G: Relationship between Variables

This section presents information on the relationships between variables. The dependent variables in this study are self-care practices and information needs. The independent variables included knowledge on diabetes and self-care practices, and attitude of diabetic patients.

Table 4.29 Relationship between Self-care practices and demographic variables

Variable	**Self-care practices**			**P-value**
	Good, n (%)	**Poor, n (%)**	**TOTAL**	
Gender				
Male	11 (73.3%)	49 (54.4%)	**60 (57.1%)**	0.260
Female	4 (26.7%)	41 (45.6%)	**45 (42.9%)**	
TOTAL	**15 (14.3%)**	**90 (87.7%)**	**105**	
Age				
Less than 20	2 (13.3%)	6 (6.7%)	**8 (7.6%)**	0.028
21 to 40	7 (46.7%)	18 (20%)	**25 (23.8%)**	
41 to 60	4 (26.7%)	50 (55.6%)	**54 (51.4%)**	
61 to 80	0 (0%)	11 (12.2%)	**11 (10.5%)**	
Above 80	2 (13.3%)	5 (5.6%)	**7 (6.7%)**	
TOTAL	**15 (14.3%)**	**90 (87.7%)**	**105**	

According to the results obtained on Gender and self-care practices from 105 participants, 11 (73.3%) respondents with good self-care practices were males compared to 4 (26.7%) females. Similarly, majority 49(54.4%) males and 41 (45.6%) females had poor self-care practices respectively. Chi-square test on gender and self-care practices, (P-value 0.260), $P > 0.05$ indicates that there is no association between gender and self-care practices of Diabetic patients (table 4.29 above). Regarding age and self-care practices from 105 participants, 7 (46.7%) aged between 21 to 40 years, 4 (26.7%) aged between 41 to 60, 2(13.3%) and 2 (13.3%) aged less than 20 and above 80 years respectively had good self-care practices compared to 50 (55.6%) aged 41 to 60 years, 18 (20%) aged 21 to 40 years, 11 (12.2%) aged 61 to 80 years, 8 (7.6%) aged less than 20 years and 7 (6.7%) aged above 80 years who had poor self-care practices respectively. Chi-square test on age and self-care practices, (P-value 0.028), $P < 0.05$ indicates that there is an association between age and self-care practices of Diabetic patients (table 4.29 above).

Table 4.30 Relationship between information needs and demographic factors of Age and Gender

Variable	Need for information			P-value
	High, n (%)	Low, n (%)	TOTAL	
Gender				
Male	35 (53.8%)	25 (62.5%)	**60 (57.1%)**	0.422
Female	30 (46.2%)	15 (37.5%)	**45 (42.9%)**	
TOTAL	**65 (61.9%)**	**40 (38.1%)**	**105**	
Age				
Less than 20	6 (9.2%)	2 (5%)	**8 (7.6%)**	0.254
21 to 40	11 (16.9%)	14 (35%)	**25 (23.8%)**	
41 to 60	37 (56.9%)	17 (42.5%)	**54 (51.4%)**	
61 to 80	6 (9.2%)	5 (12.5%)	**11 (10.5%)**	
Above 80	5 (7.7%)	2 (5%)	**7 (6.7%)**	
TOTAL	**65 (61.9%)**	**40 (38.1%)**	**105**	

According to the results obtained on Gender and need for information from 105, majority 35 (53.8%) male respondents compared to 30 (46.2%) females had high need for information, while the 25 (62.5%) males and 15 (37.5%) females had low need for information respectively. Chi-square test on gender and need for information, (P-value 0.422), $P > 0.05$ indicates that there is no association between gender and information among Diabetic patients (table 4.30 above). Regarding age and need for information from 105 participants, the majority 37 (56.9%) aged between 41 to 60 years, 11 (16.9%) aged between 21 to 40, 6 (9.2%) and (9.2%) aged less than 20 and between 61 to 80 respectively and 5 (7.7%) aged above 80 years had high need for information compared to 17 (42.5%) aged 41 to 60 years, 14 (35%) aged 21 to 40 years, 5 (12.5%) aged 61 to 80, 2 (5%) and 2 (5%) aged less than 20 and above 80 years respectively had low need for information. Chi-square test on age and need for information, (P-value 0.254), $P > 0.05$ indicates that there is no association between age and need for information among Diabetic patients (table 4.30 above).

Table 4.31 Relationship between Self-care practices and Knowledge and Attitude a

Variable	Self-care practices			P-value
	Good, n (%)	Poor, n (%)	TOTAL	
Knowledge				
High knowledge levels	14 (23%)	47(77%)	**61 (58.1%)**	0.017
Low knowledge levels	1 (2.3%)	43 (97.7%)	**44 (42%)**	
TOTAL	**15 (14.3%)**	**90 (85.7%)**	**105**	
Attitude				
Positive	8 (34.7%)	15 (65.2%)	**23 (22%)**	0.005
Negative	7 (8.5%)	75 (91.5%)	**82 (78.1%)**	
TOTAL	**15 (14.3%)**	**90 (85.7%)**	**105**	

From 105 participants, 14 (23%) respondents with high knowledge levels had good self-care practices compared to 1 (2.3%) who had low knowledge, while majority 47(77%) with high knowledge levels and 43 (97.7%) with low knowledge levels revealed poor self-care practices respectively. Chi-square test on knowledge and self-care practices, (P-value 0.017), $P < 0.05$ indicates that there is an association between knowledge levels and self-care practices of Diabetic patients (table 4.31 above).

Regarding attitude, out of 105 participants, 8 (34.7%) respondents with a positive attitude had good self-care practices compared to 7 (8.5%) with a negative attitude but had good self-care practices while majority 75 (91.5%) with a negative attitude and 15 (65.2%) with a positive attitude revealed poor self-care practices respectively. Chi-square test on attitude and self-care practices, (P-value 0.005), $P < 0.05$ indicates that there is an association between attitude and self-care practices of Diabetic patients (table 4.31 above).

Table 4.32 Relationship between Knowledge and Attitude associated with the need for information

Variable	Information needs	P-value

	Low need, n (%)	High need, n (%)		
Knowledge			**TOTAL**	
High knowledge levels	33 (54.1%)	28 (45.9%)	**61 (58.1%)**	0.040
Low knowledge levels	32 (72.7%)	12 (27.9%)	**44 (42%)**	
TOTAL	**65 (61%)**	**40 (38.1%)**	**105**	
Attitude			**TOTAL**	
Positive	12 (52.2%)	11 (47.8%)	**23 (22%)**	0.198
Negative	53 (64.6%)	29 (35.4%)	**82 78.1%)**	
TOTAL	**65 (61.9%)**	**40 (38.1%)**	**105**	

According to table 4.32 above, out of 105 participants, 33 (54.1%) with high knowledge levels and 32 (72.7%) with low knowledge levels had low need for information compared to 28 (45.9%) with high knowledge levels and 12 (27.9%) with low knowledge levels who revealed high need for information. Following a statistical analysis result with the Chi-square test on knowledge (P-value 0.040) and $P < 0.05$, indicates that there is an association between information needs and knowledge levels of Diabetic patients (table 4.32).

Result on the relationship between attitude and information needs revealed that out of 105 participants, 12 (52.2%) with a positive attitude and 53 (64.6%) with a negative attitude had high need for information compared to 11 (47.8%) with a positive attitude and 29 (35.4%) with a negative attitude who revealed a low need for information. Chi-square test on attitude (P-value 0.198), $P > 0.05$ indicates that there is no association between information needs and attitude of Diabetic patients (table 4.32 above).

4.4 MULTIVARIATE BINARY LOGISTIC REGRESSION MODEL DETERMINING PREDICTORS OF SELF-CARE PRACTICES AND NEED FOR INFORMATION

4.4.1 Self-care practices by age, gender, knowledge and attitude (binary logistic regression)

The self-care practices of the patients according to demographic characteristics, knowledge and attitude is shown in Table 27 below. In a Chi-square test analysis, there was an association between self-care practices and knowledge and attitude. However, there was no association between self-care practices and gender and age.

Table 4.33 Self-care practices by knowledge and attitude (binary logistic regression)

Variable	Self-care practices	P-value		Adjusted estimates

	Good, n (%)	Poor, n (%)	TOTAL		Odds ratio	95% CI	
						Lower	Upper
Knowledge							
High knowledge levels	14 (23%)	47(77%)	**61**	**0.020**	**0.080**	**0.009**	**0.623**
Low knowledge levels	1 (2.3%)	43 (97.7%)	**44**				
TOTAL	**15 (14.3%)**	**90 (85.7%)**					
Attitude							
Positive	8 (34.7%)	15 (65.2%)	**23**	**0.006**	**0.174**	**0.049**	**0.584**
Negative	7 (8.5%)	75 (91.5%)	**82**				
TOTAL	**15 (14.3%)**	**90 (85.7%)**	**105**				

Table 4.33 shows the binary logistic regression model was tested for multicollinearity, Hosmer and Lemeshow test of fitness for data, and omnibus test of model coefficients and classification accuracy. The dependent variable was self-care practice: Good (1) and Poor (0). The results of the binary logistic regression analysis showed that holding other variables constant, patients who had low knowledge levels were 0.080 times less likely to achieve good self-care practices compared to those who had high knowledge levels, and this effect was highly significant (OR: 0.080, CI: 0.009 - 0.623, P: < 0.020). Further analysis showed that patients who had a negative attitude were 0.174 less likely to achieve good self-care practices compared to those who had a positive attitude and this effect was highly significant (OR: 0.174, CI: 0.049 - 0.584, P: < 0.006).

4.4.2 NEED FOR INFORMATION BY KNOWLEDGE (BINARY LOGISTIC REGRESSION)

The need for information of the patients according to knowledge is shown in Table 4.34 below. In a Chi-square test analysis, there was an association between need for information and knowledge. However, there was no association between age, gender, attitude and need for information.

Table 4.34 Need for information by knowledge (binary logistic regression)

Variable	Information needs			P-value	Odds ratio	Adjusted estimates 95% CI	
	Low need, n (%)	High need, n (%)				Low	Upper
Knowledge			**TOTAL**				
High knowledge levels	33 (54.1%)	28 (45.9%)	**61(58.1%)**	**0.05**	**2.263**	**0.957**	**5.104**
Low knowledge levels	32 (72.7%)	12 (27.9%)	**44 (41.9%)**				
TOTAL	**65 (61%)**	**40 (38.1%)**	**105**				

Table 4.34 shows the binary logistic regression model was tested for multicollinearity, Hosmer and Lemeshow test of fitness for data, and omnibus test of model coefficients and classification accuracy. The dependent variable was information needs: Good (1) and Poor (0). The results of the binary logistic regression analysis showed that holding other variables constant, patients who had low knowledge levels were 2.263 times more likely to have a high need for information compared to those who had high knowledge levels, and this effect was significant (OR: 2.263, CI: 0.957 – 5.104, P: < 0.05).

5.0 CHAPTER FIVE: DISCUSSION OF FINDINGS

5.1 Introduction

This discussion is based on the analysis of responses from a sample of 105 Diabetic patients from Mbala General Hospital in Northern Province. The study assessed the information needs and self-care practices of Diabetic Patients in Mbala, Northern Province, Zambia.

5.2 Characteristics of the Study Sample

The important socio demographic variables in this study included age, sex, marital status and professional qualifications. These were included in the study to assist the researcher understand how they may influence self-care practices and the need for Information among Diabetic patients.

Results revealed that majority 57.1%, were males while 42.9% were female. The results correspond with the study that was conducted by Takele (2021) which showed that more than half of the respondents (55.8%) were males. These results are in line with a study conducted by Nordström, et al., (2016), which revealed the prevalence of type 2 diabetes being higher in males (14.6%) than women (9.1%). Therefore, the results of these studies showed a higher number of males than females. Consistence was also found with a study conducted by Alodhayani, et al., (2021), whose results showed female patients having more self-care management practices than male patients (B 0.20; 95CI 0.10– 0.96 ($p = 0.015$). therefore, it is highly likely that the high number of males compared to females could be associated with poor self-care practices among males thus, the higher number of male re-attendances and admissions to the hospital.

In relation to age, it shows that out of 105 respondents, majority 51.4% were aged between 41 and 60 years. The results correspond with the study that was conducted by Takele (2021) which showed that majority of respondents were in the age range of 34 and 48 years. This could be due to the fact that the age group of 45 and above has a higher incidence rate of diagnosed Diabetes (Centers for Disease Control, 2020). Regarding marital status, majority of the respondents 64.8% were married. This finding is similar to a study conducted by Takele (2021) which also revealed that majority (61.6%) participants were married.

5.3 Knowledge on Diabetes Mellitus

With regards to knowledge on DM, majority of the respondents 61 (58.1%) had had high knowledge levels while 44 (41.9%) had low knowledge levels. Of the respondents who had high knowledge, the specific areas where respondents had high knowledge included “Knowing that reducing sugar intake can control Hyperglycemia” while those where there was low knowledge were “Knowing how to check blood sugar levels”.

Having high knowledge levels is important considering that in Zambia, around 4.2 % out of 6.3 million people have Diabetes and good knowledge about their own health status (Mbinga, 2018).

Disease may be one of the positive indicators for healthful living despite the fact that 46 % of people with diabetes in Zambia aren't aware that they have the disease and do not accordingly get needed treatment (Mbinga, 2018). Further knowledge can serve as an important resource base for improving one's own health.

The findings of this study are consistent with results from studies by Shrivastva, et al., (2020), which found knowledge on DM among Diabetic patients to be more than 65%. Jasmine and Harihara Iyer (2017) also demonstrated good (76.6%) knowledge on DM. This is as a result of a similar data collection tool being used in both studies.

On the contrary, it was also seen in a study conducted by Dinesh et al., (2016), which reflect that only 24% of the respondents had an overall good knowledge regarding diabetes among the rural Sullia, Karnataka population. This poor knowledge indicates that most of them are not educated regarding their disease by their primary care physicians and field-level health workers (Dinesh et al., 2016). One of the reasons for the lack of providing education could be that field workers are themselves not aware or not motivated to educate the public (Dinesh et al., 2016). Physician's failure in this part may be due to the heavy load of patients that they see in their daily practice and thus the lack of time to educate (Dinesh et al., 2016).

5.4 Attitude of Diabetic patients towards self-care practices

In relation to attitude, majority 82 (78.1%), of the respondents had a negative attitude while 23 (21.9%) had a positive attitude towards self-care practices. Of the respondents who had negative attitude the specific areas where respondents had negative attitude included belief in usefulness of blood sugar control, Importance of regular exercises, Regularity in seeing the Doctor, while the specific area of respondents with a positive attitude was importance of taking diabetic medication. One possible reason for the negative attitude towards self-care practices in this study could be the patients' beliefs and expectations about various aspects of their plight, their own coping capacity and the health care system which influence the reports of a chronic condition, activity, disability and response to treatment. Some patients have maladaptive beliefs and expectations about chronic conditions like DM that compromise their coping resources. Another possible reason demonstrated by most respondents could be lack of adequate knowledge on DM. In another context, the health care team also plays a role in either promoting a positive or negative attitude of such patients especially that Diabetes is a chronic condition.

The findings of this study are similar to studies conducted by Ahmed, et al., (2015) which revealed that only 8.6% of participants checked their blood glucose levels at home regularly, and only 4.3% visited their physicians regularly for check-ups expressing a negative attitude towards self-care. These results are contrary to the studies conducted by Mekonnen and Hussien (2021) which showed that 59.6% of patients had a positive attitude towards Diabetes self-care practices. In Mbala, majority of respondents revealed a negative attitude compared to the study results of a study by Mekonnen and Hussien (2021) and Ahmed, et al., (2015) in Ethiopia in which the attitude was positive. This might be due to study setting differences; study conducted in Mbala was from both rural and urban while the study conducted in Ethiopia was from the urban setting.

5.5 Information needs of Diabetic patients

In determining the Information needs of Diabetic patients on DM majority of the respondents 61.9%, had high need for information on Diabetes while 38.1% had low need. Of the respondents who had high need for information, the specific areas indicated by majority of respondents were need for information on avoiding injuries, 95.2% while those with low need indicated the need for information on compliance to treatment 60%**.** Findings revealed low need expressed on information on keeping review dates and need for information on compliance to treatment. This could be associated with the health education focus areas from the health care team. In contrary, the participants showed high need for information on the majority of the topics such as need for information on types of DM, need for information on the forms of treatment for different types of DM, need for information on avoiding injuries, need for diet modification as a form of diabetes mellitus control and need for information on joining the diabetes association group which can be assumed that the health care team ether gave inadequate information nor gave no information at all. This could also be related to lack of access to literature on DM and the low literate levels of the participants making them fail to acquire and read information. Results of this study are almost similar to a study conducted by Biernatzki, et al., (2019), nine main categories of information needs were identified, including 'treatment-process', 'course of disease', 'abnormalities of glucose metabolism' and 'diabetes through the life cycle'. It was then concluded that information needs in people with DM, appear to be high, yet poorly investigated.

5.6 Self-care practices of Diabetic patients

On assessing self-care practices, the researcher established that majority 85.7% of respondent, had poor self-care practices while 14.3% had good self-care practices. Of the respondents who had good self-care practices, the specific area indicated by majority of respondents was engaging in physical activity to achieve optimal blood sugar levels 48.6% while those with poor self-care practice was adherence to taking diabetes medication as prescribed 14.3%. Overall the study showed a poor self-care practice which could have been because of the lack of awareness and knowledge regarding diabetic care in Mbala. This could also be due to the negative attitude of Diabetic patients towards self-care practices.

The findings of this study are not consistent with the studies conducted by Gulentie, (2020), which showed 63.8% of responded with adequate self-care practices and Chali, et al., (2018), whose results showed that out of 383 who participated in the study, 45.7% had poor diabetes self-care practice. This discrepancy may be due to differences in population source, sample size, socio-economic status, and lifestyle in the study settings.

More than half of the patients in the current study had insufficient information on diabetes and self-care habits, resulting in ineffective self-care behaviors on physical activity, balanced diet following prescribed treatment, self-monitoring of blood glucose level, and foot care. These findings were consistence to those from a study conducted by Baral and Baral, (2021), whose results showed that out of 139 participants, 54% had poor practice of self-care for the management of their diabetic status. This might be because Baral and Baral's study was also conducted in rural settings similar to the setting for the current study.

5.7 Relationship between Variables

An association between self-care practices and knowledge and attitude was analyzed. Pearson's Chi square tests as well as Fisher's exact tests were used to test for significance with the P-value set at 0.05. In this study, it was revealed that there was an association between knowledge on DM and self-care practices among Diabetic patients. Therefore, in this study, respondents with high knowledge also had good self-care practice. These findings are similar to the findings of Saleh F, et al., (2012), whose study reviewed a significant relationship, existed between basic knowledge and glucose monitoring among newly diagnosed type 2 DM patients.

Results also revealed an association between attitude of Diabetic patients and self-care practices among Diabetic patients. Therefore, majority of respondents who had a negative attitude also had poor self-care practices. These findings are similar to the findings of Kassa, (2021), whose studies revealed 26.8% of the respondents had good attitude towards diabetes mellitus self-care.

An association between knowledge, attitude and the need for information was analyzed. To achieve this, cross tabulation of variables was done. Pearson's Chi square tests as well as Fisher's exact tests were then used to test for significance with the P-value set at 0.05. From the statistical analyses, significant association was found between knowledge and the need for information while no association was found between attitude and the need for information.

In this study, it was revealed that there was an association between knowledge on DM and the need for information among Diabetic patients. However, the sole respondent with high knowledge also demonstrated low need for information. Therefore, in this study, the majority of respondents with low knowledge had high need for information.

Regarding attitude, there was no association with the need for information among Diabetic patients. Therefore, in this study, whether one had a positive or negative attitude, it did not influence the need for information.

Analysis to determine predictors of self-care practices and need for information was done using multivariate binary logistic regression model at 95% level of significance. From the statistical analysis of self-care practices, it was discovered that knowledge and attitude predicted self-care practices of patients (Table 4.33). Thus, patients who had low knowledge levels with odds ratio less than 1 (0.080) and negative attitude with odds ration less than 1 (0.174) were less likely to achieve good self-care practices (Table 4.33).

These findings are similar to the findings of Saleh, et al., (2012), whose study reviewed that total basic knowledge (TBK) and business profession were significant independent predictors of good practice. Similarly, in a study conducted by Watcharanat, et al., (2021), results revealed that the knowledge about diabetes, attitude towards diabetes, and social support towards diabetes positively affected self-care behavior towards diabetes with the statistical significance of 0.05.

In another analysis to determine predictors of need for information using multivariate binary logistic regression model at 95% level of significance, it was discovered that knowledge predicted need for information of patients (Table 4.34). Thus, patients who had low knowledge levels odds

ratio (2.263) were more likely to have a high need for information (Table 4.34)

5.8 Conclusion

The study has established presence of poor self-care practices among Diabetic patients. This supports the initial assertion that Diabetic patients have poor self-care practices as they frequently seek health care despite being on DM medication. The findings have also demonstrated a high need for information among Diabetic patients being the key component in Diabetes self-care. The specific attributes that were revealed as being predictors of self-care practices and need for information regarding DM were attitude and knowledge of Diabetic patients.

It has therefore been shown in this study that there is need to promote a positive attitude and provide vast information to regarding self-care practices among Diabetic patients. Negative attitude and lack of information among Diabetic patients were the main reasons found for poor self-care practices. Particular attention should therefore be given to ensuring that Diabetic patients are given vast information on Diabetes self-care and improve the quality of life.

5.9 Implications to the Health Care System

This study has revealed poor self-care practices and high need for information among Diabetic patients which are the key components of good health among these patients. This is shown by the fact that a considerable number of Diabetic patients do not practice good self-care measures and expressed lack of information on Diabetes self-care practices. Even when they decide to go for medical check-ups, a considerable number of them get to the hospital seeking the refill of drugs and not information concerning Diabetes. Such patients would seldom improve their self-care practices and information on Diabetes self-care practices. Furthermore, lack of information on Diabetes self-care practices by Diabetic patients serves as a potential source of readmissions and Diabetes related complications in health institutions. Therefore, there is need to encourage Diabetic patients to seek information on diabetes self-care practices. Adequate information on Diabetes self-care is needed to promote self-care practices and reduce Diabetes related complications. This will positively impact on good health and quality of life among Diabetic patients.

5.10 Implication to Nursing Practice

The study demonstrated considerable poor self-care practices and a high need for information among Diabetic patients. This has potential to compromise the quality of life and hence will require adequate provision of information on Diabetes self-care. This is because a patient with poor self-care practices might experience psychological stress and Diabetes related complications and this will in-turn affect the nursing practice by increasing the work load on nurses. Therefore, there is need to equip nurses with vast knowledge on Diabetes mellitus in order for them to further educate Diabetic patients thereby lessening the burden on the nursing practice.

5.11 Implications to Nursing Research

Information from this study has generated questions such as: could self-care practices and need for information affect the health of Diabetic patients? What are the predictors of self-care practices and information needs among Diabetic patients? Literature review has also shown that very few studies have been carried out to determine need for information and self-care practices among Diabetic patients in Mbala, There is therefore need to conduct more research in this area using a larger sample and with possible use of qualitative approaches to obtained more detailed data regarding issues of self-care practices and need for information.

5.12 Implication to nursing administration

This study has demonstrated a negative attitude among majority of respondents, therefore, the need for nurse administrators to use strategies such as training more specialized nurses in clinical nursing who would provide adequate and accurate information to Diabetic patients and help them develop a positive towards Diabetes self-care practices. The study has also awakened nurse managers to the truth that Diabetic patients do not have adequate information on Diabetes resulting in an increase in the number of readmissions and Diabetes related complications.

5.13 Implication to nursing education

The poor self-care practices and high need for information demonstrated by Diabetic patients in this study with regards to Diabetes mellitus indicate a need for curriculum developers to include components that will allow for the training of a nurse who has a more positive attitude towards information education and communication and well poised to develop strategies to enhance good self-care practices among Diabetic patients.

5.14 Recommendations

1. The Ministry of Health should ensure that attention is also focused on DM as a communicable disease with increasing prevalence and formulate guidelines on the

management of Diabetic patients. Work place policies are disseminated and implemented with emphasis on the need for HIV testing for nurses and other health workers.

2. Emphasis should be made in the nurse training curriculum on the importance of providing information education and communication on self-care practices among Diabetic patients to allow them graduate as nurse educators upon completion of training.
3. Members of staff managing DM patients should intensify the provision of information Education and Communication (IEC) sessions during the follow-up visit to patients. The IEC should include reducing carbohydrate intake, performing regular exercises, adherence to drugs, monitoring of blood glucose levels and self-care management and keeping appointment schedules.
4. Support groups should be formed in communities in collaboration with the non-governmental organizations, health care providers and family members to assist DM patients to access recommended treatment services.
5. To have this study replicated using a larger sample in order to evaluate a large-scale representation of patients' information needs and self-care practices among DM patients.

5.15 Limitations of the Study.

The study sample size (n = 105) was limited, thus generalization of results should be with caution as it only represented views of patients who accessed medical services from Mbala general hospital. The sample size comprised of patients from the rural and peri-urban settings hence the result may not be generalized for the rest of Zambia. The case may be different from patients in urban towns, as urban hospitals have availability of specialized health professionals to provide sufficient information on DM and self-care practices. The data collecting tool used comprised closed ended questions and this could have limited the respondents from giving more required information.

5.16 Strengths of the study

The strength of this study is the use of a validated instrument adapted from Diabetes Self-Management Questionnaire (DSMQ) by Schmitt, et al, 2013 and Diabetes Management Self-efficacy Scale, by Messina et al, 2018. These instruments had been tested and used in the UK and San Marino with reliability of Cronbach's alpha of 0.84 and 0.81 respectively. The tool was further

tested using a pilot study in Mbala and reliability was ensured of Cronbach's alpha of 0.83. This ensured reliability and validity of the instrument used to collect data.

5.17 Plan for Dissemination of study findings

The findings of this study will be presented to the faculty of the School of Basic and Clinical Nursing Sciences, University of Zambia. The results will be presented to various stakeholders involved in developing health education materials and treatment protocols for patient's self-care and health promotion, these includes; Mbala General Hospital as they provided the study site for implementation of the gaps identified in the study, Ministry of Health and its cooperating partners. In addition, bound copies of the study will be submitted to the School of Basic and Clinical Nursing Sciences, UNZA -Medical Library and Main Library. The findings will be published in a reputable peer reviewed journal.

5.18 Plan for utilization of Data

The findings of the study will be utilized in the improvement of the Diabetic patients' care. The conclusion on the information needs will dictate the reasons why there is need to give more information to the Diabetic patients so as to help them improve on their self-care and prevent complications. Data will also be utilized by the rest of the health practitioners within the same study setting in the improvement of Diabetic patient management by implementing the prevailing knowledge from the data finding. This will help in reducing the number of visits to the hospital admissions and also reduce on the costs related to admissions such as procurement of drugs, reagents for checking the blood sugar levels, stationary and many more.

Utilization of the results will also include conducting dissemination workshops, publishing scientific papers, developing policy briefs, providing technical assistance to policymakers at different levels and programme implementers.

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APPENDICES

APPENDIX 1: PARTICIPANT INFORMATION SHEET

Research title:

Information needs and self-care practices of diabetic patients in Mbala, Northern Province, Zambia.

Introduction:

I am a Master of Science in clinical nursing student from the University of Zambia, Ridgeway Campus. As part of my program and academic exercise, I am conducting a research on Information needs and self-care practices of diabetic patients in Mbala, Northern Province, Zambia. You have been invited to participate in this study because you have confirmed Diabetes Mellitus and on

treatment for at least more than 6 months. It is also because you are aged between 18 years and above.

Purpose of study:

The research will help to assess the information needs and self-care practice of Diabetic Patients in Mbala, Northern Province, Zambia. It will also help to determine the

Procedure:

You will be asked questions on the information you have on Diabetes Mellitus and the self-care practices in relation to Diabetes control. The questioning interval will be approximately thirty (30) minutes. No names will appear, instead, codes will be used in the questionnaire.

Voluntary participation:

It is up to you to decide whether or not to take part. If you do decide to take part, you will be given this information sheet to read. You can withdraw from participation at any time and without giving a reason. Please note that once you have completed and submitted your survey responses, we are unable to remove your anonymised responses from the study. Deciding to take part or not will not impact upon you in any way.

Benefits:

Whilst there are no immediate benefits for those of you participating in the project, it is hoped that this study highlight the benefits of having information on self-care practices such as random blood sugar check-ups, dietary control and health seeking behavior. It will benefit the participant in relation to the prevention of complications by abiding to the information and self-care practices. No monitory form will be given in this procedure. The type of information that will be sort from you includes the information that you have on Diabetes Mellitus, self-care practices on Diabetes Mellitus such as random blood sugar check-ups, dietary control and health seeking behavior, knowledge on Diabetic disease and attitude towards the disease. This information will help and provide data that will enable the researcher to determine the relationship between variables and come up with conclusive predicted outcomes from the research project objectives.

Confidentiality and anonymity:

No names will be indicated anywhere but serial numbers alone. The data that will be collected will be kept by the researcher and will not be accessed by any other individual. You will be subjected to no harm during the entire process.

Dissemination of information:

The findings of the study will be presented to the faculty of the School of Basic and Clinical Nursing Sciences, University of Zambia. The results will be presented to various stakeholders involved in developing health education materials and treatment protocols for patient's self-care and health promotion, these includes; Mbala General Hospital as they will provide the study site for implementation of the gaps identified in the study, Ministry of Health and its cooperating partners. In addition, bound copies of the study will be submitted to the School of Basic and Clinical Nursing Sciences, UNZA -Medical Library and Main Library. The findings will be published in a reputable peer reviewed journal. The findings of the study will be utilized in the improvement of the Diabetic patients' care. The conclusion on the information needs will dictate the reasons why there is need to give more information to the Diabetic patients so as to help them improve on their self-care and prevent complications. Data will also be utilized by the rest of the health practitioners within the same study setting in the improvement of Diabetic patient management by implementing the prevailing knowledge from the data finding. This will help in reducing the number of visits to the hospital, admissions and also reduce on the costs related to admissions such as procurement of drugs, reagents for checking the blood sugar levels, stationary and many more.

If you have any questions or would like further information, please contact:

- Researcher's contacts numbers- +260977940543/ +260966675518
- Researcher's email address- cjonessimuyemba@gmail.com
- Supervisors' email address- patriciakatowamukwato@gmail.com
- Co-supervisors' email address- kabwechitundu@gmail.com

APPENDIX 2: CONSENT FORM

I have read and understood the information given to me about the study. I agree to participate in the study. I further understand that I can withdraw from the study at any time without having to give an explanation.

Signature of patient …… Date ……

Signature of witness …… Date ……

Signature of researcher …… Date ……

APPENDIX 3: QUESTIONNAIRE

UNIVERSITY OF ZAMBIA

SCHOOL OF NURSING SCIENCES

QUESTIONNAIRE ON "information needs and self-care practices of diabetic patients in Mbala, Northern Province, Zambia"

QUESTIONNAIRE NO: ……..

DATE OF INTERVIEW: …….

PLACE OF INTERVIEW: ……...

NAME OF RESEARCHER: ……...

INSTRUCTIONS

Read the instructions and understand. Where not clear, you are free to ask.

1. Do not write your name on the questionnaire.
2. Answer the questions either by ticking the most appropriate response(s) provided or by writing down the answers in the spaces provided.
3. The information obtained will be treated in strict confidence.
4. Give clear and simple explanations to the questions which requires an explanation.

SECTION A

DEMOGRAPHIC DATA

1. What is your age? ……..
2. What is your marital status?
    1. Married [ ]
    2. Divorced [ ]
    3. Widowed [ ]
    4. Single [ ]
    5. Other (Specify).....
3. Where do you reside?
    1. Urban area
    2. Rural area
4. What is your body weight?

    …….

SECTION B

SOCIO-ECONONIC FACTOR

5. What is your highest level of education?
    1. Never been to school [ ]
    2. Primary level (grade 1-7) [ ]
    3. Junior secondary level (grade 8-9) [ ]

4. Senior secondary level (grade 10-12) [ ]
5. College [ ]
6. University [ ]

6. What is your employment status?
   1. Employed for wages [ ]
   2. Self-employed [ ]
   3. Not employed [ ]

Others specify.....

7. If not employed, how do you supplement your living?

……

8. Do you smoke?
   1. Yes
   2. No
9. Do you drink alcohol?
   1. Yes
   2. No

SECTION C

Knowledge questions

10. Have you ever heard of diabetes?
    1. I strongly agree
    2. I agree
    3. I strongly disagree
    4. I disagree
11. Do you know what Random Blood Sugar and Fasting Blood Sugar is?
    1. I strongly agree
    2. I agree
    3. I strongly disagree
    4. I disagree

12. Do you know how to check the blood sugar level?

1. I strongly agree
2. I agree
3. I strongly disagree
4. I disagree

13. Do you know diabetes can cause complications such as foot ulcer, stroke, and eye problems?
    1. I strongly agree
    2. I agree
    3. I strongly disagree
    4. I disagree

14. Do you know diabetes is a genetic disease?
    1. I strongly agree
    2. I agree
    3. I strongly disagree
    4. I disagree

15. Do you know exercise can be helpful to prevent diabetes?
    1. I strongly agree
    2. I agree
    3. I strongly disagree
    4. I disagree

16. Do you know that reducing carbohydrate intake can reduce diabetes?
    1. I strongly agree
    2. I agree
    3. I strongly disagree
    4. I disagree

17. Do you know that reducing sugar intake, reduce diabetes?

1. I strongly agree
2. I agree
3. I strongly disagree
4. I disagree

18. Do you know diabetes can be controlled by avoiding smoking?
    1. I strongly agree
    2. I agree
    3. I strongly disagree
    4. I disagree

SECTION D

Attitude questions:

19. Do you think Diabetics should see their doctor only when they have a problem?
    1. All the time
    2. Sometimes
    3. Not all the time
    4. Never at anytime
20. Do you feel that regular exercise is important?
    1. All the time
    2. Sometimes
    3. Not all the time
    4. Never at anytime
21. "Do you think that controlling glucose with diet alone is superior to that of controlling glucose with diet and medications?"
    1. All the time
    2. Sometimes
    3. Not all the time
    4. Never at anytime
22. Do you believe that there is not much use in trying to have good blood sugar control, because complications of diabetes will happen anyway?"

1. All the time
2. Sometimes
3. Not all the time
4. Never at anytime

23. Do you think that you should have a special diet?
    1. All the time
    2. Sometimes
    3. Not all the time
    4. Never at anytime

24. Do you think that it is important to take your Diabetes medication every day?
    1. All the time
    2. Sometimes
    3. Not all the time
    4. Never at anytime

SECTION D

Information needs

25. Diabetes mellitus is a condition related to high blood sugar levels.
    1. Yes
    2. No
26. Control of Diabetes can be achieved with insulin injections, taking tablets and diet
    1. Yes
    2. No
27. Diabetes mellitus is curable
    1. Yes
    2. No
28. Do you know the different types of Diabetes mellitus?
    1. Yes
    2. No

29. Where did you hear the different types from?
    1. Health practitioners
    2. Fellow Diabetic patient
    3. Read in books
30. Since the time you were diagnosed with Diabetes, have you ever visited the doctor?
    1. Yes
    2. No
31. Did the doctor explain to you the importance of visitations?
    1. Yes
    2. No

32. Do you think keeping review dates can help you control your blood sugar levels?
    1. Yes
    2. No
33. Do you have a machine for checking your blood sugar level?
    1. Yes
    2. No
34. Do you know how to do a self-test with a machine?
    1. Yes
    2. No
35. By avoiding foods rich in sugar, do you think Diabetes can be controlled?
    1. Yes
    2. No
36. Have you heard about the Diabetes association of Zambia?
    1. Yes
    2. No
37. Are you a member of this association and is it beneficial to you?
    1. Yes
    2. No

SECTION E

Self-care practices:

38. I check my blood sugar levels with care and attention.
    1. All the time
    2. Sometimes
    3. Not all the time
    4. Never at anytime
39. The food I choose to eat makes it easy to achieve optimal blood sugar levels.
    1. I agree
    2. I strongly agree
    3. I disagree
    4. I strongly disagree
40. I keep all doctors' appointments recommended for my diabetes treatment.
    5. All the time
    6. Sometimes
    7. Not all the time
    8. Never at anytime

41. I take my diabetes medication (e. g. insulin, tablets) as prescribed.
    1. All the time
    2. Sometimes
    3. Not all the time
    4. Never at anytime
42. I do regular physical activity to achieve optimal blood sugar levels.
    1. All the time
    2. Sometimes
    3. Not all the time
    4. Never at anytime
43. I strictly follow the dietary recommendations given by my doctor or diabetes specialist.
    1. All the time
    2. Sometimes
    3. Not all the time

4. Never at anytime

44. I tend to forget to take or skip my diabetes medication (e. g. insulin, tablets).
    1. All the time
    2. Sometimes
    3. Not all the time
    4. Never at anytime

END OF INTERVIEW

THANK YOU FOR YOUR PARTICIPATION

APPENDIX 4: BUDGET

TABLE 3

Item	**Unit Cost**	**Quantity**	**Total Cost (Zambian kwacha)**
STATIONARY			
Note Books	10	4	40

Reams of Paper	80	4	320
Pens	2	10	20
Erasers	2	5	10
Tip-Ex	15	2	30
Stapler	25	1	25
Perforator	50	1	50
Manila Paper	50	1	50
Diary	100	1	100
Paper Pins	1	50	50
Scientific Calculator	100	1	100
Flip Charts	40	2	80
Markers	15	2	30
Staples	35	1 box	35
Box File	35	1	35
Folder Clips	5	10	50
Small Folder	5	10	50
Field Bag	100	3	300
Memory Sticks	100	1	100
Flush disc	100	1	100
SUBTOTAL			**1, 575**

SECRETARIAL			
Research Proposal printing and binding	4	120	480
Questionnaire printing and photocopying	1 x 8 / 0.50	340	1, 360
Research Report writing	120	3	360
Photocopying of Final Research Documents	120 x 0.50	6	360
Binding of Final Research Documents UNZABREC Fee	50	6	300 500
SUBTOTAL			**3, 360**
HUMAN RESOURCE EXPENSES			
Transport during Pilot Study	40X3	X10 days	1,200
Lunch Allowance during Pilot Study	150	x 10 days	1, 500
Transport during Main Study	60	X14days	840
Breakfast and Lunch Allowance for researcher	100 x3	x 14 days	1,400
SUBTOTAL			4,940
GRAND TOTAL			**9,875**

3.9.8 JUSTIFICATION OF BUDGET

The budget is for the necessary items that I will need for my research. Secretarial services will be employed when it comes to binding, photocopying my proposal and the final dissertation. Ink and paper will be used for printing out my questionnaires that will be used for data collection. Transport fees are to be used to enable travelling to the Hospital where the study will be conducted. The flash disc will be used to store data that will be collected.

APPENDIX 6: GANTT CHART

TABLE 4

	JAN-JULY 2020	AUG-SEPT 2020	OCT 2020	NOV 2020	DEC 2020	JAN 2021	FEB 2021	MAR 2021	APRIL 2021	MAY 2021	JUNE 2021	JULY 2021	RESPONSIBLE PERSONS

Development of Research Proposal													Researchers
Data collection tool preparation													Researchers
Finalize Research Proposal													Researchers
Pilot study													Researchers
Data Collection Tool Amendments													Researchers
Clearance From Authority-police headquarters													Researchers
Data Collection (main study)													Researchers
Data Analysis													Researchers

Report Writing													Researchers
Draft Report To DNS Supervisor													Researchers
Finalize Report													Researchers
Publication of Results													**Researchers**
Supervision of Research Study													**Supervisor**

APPENDIX 7: REQUEST TO CONDUCT RESEARCH

The District Health Management Team,

Mbala district health office,

P O Box 420059

Mbala.

UFS: The Assistant Dean Postgraduate

University of Zambia

School of Nursing Sciences,

PO Box 50110

LUSAKA

Dear Sir/Madam,

RE: REQUEST TO CONDUCT A RESEARCH STUDY

I am a master of science in clinical nursing student from the University of Zambia School of nursing sciences Ridgeway Campus. As part of course requirements, I have to undertake a research study.

The purpose of writing to you is to request for permission to conduct a research study titled, "information needs and self-care practices of diabetic patients in Mbala, Northern Province, Zambia". I intend to commence the process of data collection in March, 2021.

Prior to the main study, I would like to conduct a Pilot Study at Tulemane clinic on Diabetic patients aged 18 years and above in order to test the validity and reliability of my data collection tools and make necessary adjustments. Thereafter, I will conduct the main study at Mbala General Hospital.

Your assistance and cooperation towards this request will be highly appreciated.

Thanking you in anticipation.

Yours faithfully,

Researcher: Simuyemba Chisha Jones

REPUBLIC OF ZAMBIA
MINISTRY OF HEALTH
MBALA GENERAL HOSPITAL
22 FEB 2021
MEDICAL SUPERINTENDENT
P.O. BOX 420059, MBALA

No objection
Ag MS
22/02/2021.

The Medical Superintendent,
Mbala General Hospital,
P O Box 420059
Mbala.

UFS: The Assitant Dean Postgratuate
University of Zambia
School of Nursing Sciences,
PO Box 50110
LUSAKA

Dear Sir/Madam,

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THE UNIVERSITY OF ZAMBIA
SCHOOL OF NURSING SCIENCES
OFFICE OF THE ASSISTANT DEAN POSTGRADUATE

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School of Nursing Sciences Building
University Teaching Hospitals
P.O Box 50110
Lusaka, Zambia

9th March, 2021

The chairperson,
UNZABREC,
The University of Zambia,
Ridgeway campus,
Lusaka.

Dear Sir/Madam,

RE: SUBMISSION OF RESEARCH PROPOSAL TO UNZABREC

Following the presentation of Jones Chisha Simuyemba's's research proposal entitled, 'information needs and self-care practices of diabetic patients in Mbala, Northern Province, Zambia', the supervisor has confirmed that the necessary corrections to the research proposal have been done.

The student can now proceed and present to the UNZABREC

Yours faithfully

Ms. Brenda N. Sianchapa
ASSISTANT DEAN POSTGRADUATE

Cc, Head, Department of Mental Health and Psychiatric Nursing