

# **KIBOGORA POLYTECHNIC**

## **FACULTY OF HEALTH SCIENCES**

### **DEPARTMENT OF GENERAL NURSING**

#### **ASSESSMENT OF SELF –CARE MANAGEMENT OF DIABETIC PATIENTS ATTENDING NON COMMUNICABLE DISEASES SERVICE AT KIBOGORA DISTRICT HOSPITAL IN NYAMASHEKE DISTRICT**

Undergraduate research thesis submitted in partial fulfillment of the requirements for Bachelor degree with honor in general nursing.

**PAPER PREPARED BY:**

KAMANAYO Fortunée

Reg: NO: 2000441

BAYISENGE Ancille

Reg: NO: 1900390

**SUPERVISOR:**

TWAHIRWA Jean Claude (RN,BSN)

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**DECLARATION**

We, KAMANAYO Fortunée, BAYISENGE Ancille hereby declare that this is our own original work and not a duplication of any similar academic work. It has therefore not been submitted to any other institution of higher learning. All materials cited in this paper which are not our own have been duly acknowledged.

KAMANAYO Fortunée

BAYISENGE Ancille

Signed.....

Signed.....

Date.....

Declaration by the Supervisor

I declare that this work has been submitted for examination with my approval as KP Supervisor

Supervisor's name: TWAHIRWA Jean Claude

Signed.....

Date.....

## ABSTRACT

**Background of the study :**In 2014, 8.5% of adults aged 18 years and older had diabetes. In 2019, diabetes was the direct cause of 1.5 million deaths and 48% of all deaths due to diabetes occurred before the age of 70 years. (WHO, 2021)The global prevalence of type 2 diabetes mellitus (T2DM) was estimated to be approximately 9% among adults in 2015

**Problem Statement:**The problematic of the study presented here, was that the lack of self-care management in patients with Diabetes Mellitus which leads to complications then increase the number of hospitalizations in different hospitals then high rate occupation at last the death occurs when patients are not getting the appropriate care.

**Research Objectives:**The objectives are to assess the level of self-care management among patients with Diabetes Mellitus at Kibogora Hospital in service of NCDS (Non-communicable diseases Services).

**Research Methodology:**Cross section study was used as research Design,Quantitative Research approaches was used . the target population was 172 Patients of NCDS Service.the sample size was 50 people.

**The Findings of our study :**Basing on the respondent's views, the outcome of this study has shown that our objectives were attained and the research questions were answered. Considering knowledge about self-care of patients living with diabetes the majority of our respondents shown that they have no materials for self-examination while others do not record their blood sugar result,the challenges of self-care management faced by patients with diabetes,the majority of the respondents are very poor at a range of 40 %, of all respondents,30 % of all respondents face the problem of ignorance about self-care

**Conclusion:**Considering knowledge on diet, we found that many of respondents confirmed that they do not respect the standard diet preparation

**Recommendation:**Patients should participate actively in the care provided to them and attend the teaching regarding their disease.

## **DEDICATION**

This work dedicated to:

Our parents;

Our brothers and sister;

Our colleagues, relatives Families and real friends.

For their love, prayers, encouragements and support during our studies and to all people who directly or indirectly contributed to the completion of this work.

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## **LIST OF ABBREVIATIONS AND ACCRONMS**

IM:Internal Medicine

NCDS: Non- Communicable Diseases

DKA: Diabetic ketoacidosis

T1DM: Type 1 diabetes mellitus

T2DM: Type 2 diabetes mellitus

IDF: International Diabetes Federation

IGT: Impaired Glucose Tolerance

ADA: American Diabetes Association

WHO: World Health Organization

RDA: Rwanda Diabetic Association

DH: District Hospital

MOH: Ministry of Health

FBS: Fasting Blood Sugar

SPSS: Statistical Package for the Social Sciences

OGTT: Oral glucose tolerance test



## **CHAPTER ONE: GENERAL INTRODUCTION**

### **1.0 Introduction**

This chapter one of our study covers background of the study, problem statement, the purpose of the study, research questions, the objective of the study, the significance of the study, limitation of the study and the scope of study.

### **1.1 Background to the study**

Diabetes mellitus (DM) consists of a group of common non-communicable diseases, affecting the health of a significant proportion of the population throughout the world. The most common types of diabetes mellitus are type 1 diabetes (T1DM) and Type 2 diabetes (T2DM). Both types of DM have a complex etiology, and can be caused by mutations in multiple genes, often accompanied by environmental factors (CF, 2017).

In 2014, 8.5% of adults aged 18 years and older had diabetes. In 2019, diabetes was the direct cause of 1.5 million deaths and 48% of all deaths due to diabetes occurred before the age of 70 years. (WHO, 2021)The global prevalence of type 2 diabetes mellitus (T2DM) was estimated to be approximately 9% among adults in 2015, with around 75% of people living with diabetes in low-income and middle-income countries. Uncontrolled diabetes mellitus is a major cause of chronic morbidity including stroke, renal failure, visual impairment and neuropathy. It has significant impacts on the quality of life and prosperity of individuals, households and communities (association, 2009)

According to the International Diabetes Federation (IDF, 2017) reports, more than 425 million people worldwide are reported as diabetic type 2 patients and nearly 80% of them are living in low and middle-income countries including Ethiopia. Globally, more than 212 million people with diabetes are not aware of their disease and there are above 352 million people with impaired glucose tolerance (IGT) which puts them at high risk of developing diabetes and its complications like cardiovascular diseases, stroke, kidney failure, foot ulcer, visual impairment and nerve damage. Total: 37.3 million people have diabetes (11.3% of the US population) Diagnosed: 28.7 million people, including 28.5 million adults undiagnosed: 8.5 million people (23.0% of adults are undiagnosed) (CDC, january 2022).

According to the study done at Baghdad Iraq showed that most participants agreed to the importance of self-management practices especially healthy eating, exercise, taking medications, and healthy coping with stress to control Diabetes Mellitus and prevent its complications. Healthy eating and physical activity recommendations were inadequately practiced by most of the participants. Most participants reported irregular self-monitoring of blood glucose. Most of the participants properly adhered to the anti-diabetic medications. They generally lack proper information/knowledge about the importance of self-management practices of foot care and managing diabetes during sick days and how such practices should be implemented. Most participants have positive attitudes toward diabetes self-management practices. Face-to-face educational sessions are preferred by most patients. (WHO, 2016)

Although Diabetes Mellitus was once considered as a rare disease in sub-Saharan Africa, over 12 million people of the continent were estimated to have the disease. In the year 2010, about 330,000 people were estimated to die from diabetes mellitus-related conditions. It is predicted that sub-Saharan Africa as Ethiopia will acquire the highest number of people with Diabetes Mellitus of any region in the world, reaching up to 23.9 million by 2030. Ethiopia is located at the horn of Africa, with a total population of over 90 million, most of them living outside of big city. (In 2019, a total of 463 million people is estimated to be living with diabetes, representing 9.3% of the global adult population (20–79 years). This number is expected to increase to 578 million (10.2%) in 2030 and 700 million (10.9%) in 2045. The prevalence of diabetes in women in 2019 is estimated to be 9.0%, and 9.6% in men (given by age group in Fig. 1). The increase of diabetes prevalence with age leads to a prevalence of 19.9% (111.2 million) in people aged 65–79 years. (Dominic et al., 2019-2045)

According to the Diabetes Atlas the prevalence of diabetes in Rwanda is about 3.16% of the population with 1,918 diabetes related deaths per year. Diabetes mellitus complications in Rwanda are still highly prevalent and are mostly attributed to the lack of self-care knowledge and Practices Patients' self-care management will reduce the risk of these complications; In 2015, there were estimates of 194300 cases diabetes mellitus in Rwanda. Diabetes burden on community is significant and can cause significant morbidity, increasing the risk of non-traumatic lower limb amputations by ten-fold, as a leading cause of renal failure and visual impairment and as a major risk factor for cardiovascular disease across the world. The number of people with diabetes rise

from 108 million in 1980 to 422 million in 2014. Prevalence has been rising more rapidly in low- and middle-income countries than in high-income countries. (WHO, 2021)

In to improve self-care to patients living with diabetes, the government of Rwanda in collaboration with partners and supporters created RWANDA DIABETIC ASSOCIATION (RDA) in 1997. The RDA was founded with the mission of promoting diabetes care, preventing and curing diabetes in Rwanda, supporting diabetics and their families and joining the global efforts to advocate for diabetic people.

The current research seeks to assess the knowledge on self-care ATTITUDE among diabetic patients at KIBOGORA HOSPITAL.

## **1.2 PROBLEM STATEMENT**

The lack of self-care management on diabetic patients leads immediately to complication then increase the number of hospitalizations in different hospitals then high rate occupation at last the death occurs when patients are not getting the appropriate care.

Information of knowledge on self-care management to patient with diabetes mellitus comes from different sources including health care providers support and their high prevalence in future of diabetes mellitus in Rwanda. The World Health Organization (WHO) attributes NCD burden to four main lifestyle risk factors: unhealthy diet, lack of physical activity, tobacco use, and harmful alcohol use our patient population, (WHO) 2014 predominantly rural based, does not have high proportions of the typical lifestyle risk factors of smoking, harmful alcohol use, sedentary lifestyle or obesity. The very low proportion of overweight and obese individuals (15.5%) is consistent with findings of rural communities' in other settings but contrasts with 68% prevalence observed in the United States' general population in 2007 and 94% prevalence observed among type 2 diabetics followed at secondary care clinics in the United Kingdom (who, 2014).

However, there is no study on the accuracy and content of knowledge on patient self-care management that has been reported in Rwanda. (Lohse, 2011) and (Enoru, 2010), found that Type 2 diabetes is estimated to comprise well over 90% of cases in Africa, in 2015, there were estimates of 194300 cases diabetes mellitus in Rwanda.



This study revealed also that increased longevity is a major contributor to the high and steadily the lack of such evidence might hinder efforts to address self-care management concerns and the designing of interventions to improve self-care management (ADA, 2009). In addition, the service of NCDs at KIBOGORA HOSPITAL is still receiving new cases of patient having diabetes mellitus on increased rate. That why the researcher was motivated to find out the level of knowledge on self-care management among patient with diabetes mellitus at KIBOGORA HOSPITAL. Until now, it has been showed that the implication of patient self-care management to prevent complications are very important. Reason why we choose this topic as the research proposal in order to improve the quality of care provided to patients with diabetes mellitus to improve their quality

### **1.3. The purpose of the study**

Our study was designed to define quality of self- care management, among diabetic patients attending kibogora District Hospital in NCDS Department

### **1.4 Objectives of study**

#### **1.4.1 General objective**

To assess the knowledge, and practices on self-care management among diabetic patients attending Kibogora District Hospital in Nyamasheke District I NCDS Department.

#### **1.4.2 Specific objective**

1. To identify self-care knowledge among diabetic patients attending NCD service at Kibogora District Hospital in Nyamasheke District.
2. To identify the knowledge on diet in selfcare management of diabetic patients attending NCDS SERVICE at Kibogora district Hospital in Nyamasheke District.
3. To identify challenges to self-care as reported by diabetic patients attending NCD SERVICE at Kibogora District Hospital in Nyamasheke District.

## **1.5 Research questions**

### **1.5.1 General research question**

What is the knowledge, attitudes, and practices on self-care management among diabetic patients attending Kibogora District Hospital in Nyamasheke District?

### **1.5.2 Specific research questions**

1. What is the level of knowledge on self-care management among diabetic patients attending NCD SERVICE at Kibogora District Hospital in Nyamasheke District?
2. What is the role of diabetic patient in preparation of their daily diet at Kibogora District Hospital in Nyamasheke District?
3. What are the challenges to self-care of diabetic patients attending NCD service at Kibogora District Hospital in Nyamasheke District?

## **1.6 Significance of the study**

This study was provided the basic information to Diabetes Mellitus type 2 and to provide support for patients live with the mentioned disease in both hospitals and families. It would also provide the framework by which specific knowledge could be used to identify the danger signs of diabetes mellitus and diet for patient effective self-care management.

The research findings could be useful for KIBOGORA HOSPITAL and MOH in setting of policies regarding DM management leading to the reduction of DM complications in patients. Reduction of hospitalization time, less cost of care and increase of economy as well.

## **1.7 Limitation of the study**

This study is limited by its methodology in space; first the sample population is too small only patients with diabetes mellitus come to consult service in at KIBOGORA district hospital in NYAMASHEKE district, secondly, the research will be concerning only the patients with Diabetes Mellitus who consult KIBOGORA Hospital only in services of NCDS service during that given period of research. Tertiary, the questionnaire itself is designed to measure the knowledge on self-

care management of patient with diabetes mellitus (type 2diabete). Lastly, the response will be subjective no objectivity of the researcher.

### **1.8 Scope of The study**

we conducted this study to patients with diabetes mellitus come to consult KIBOGORA hospital mean while the data collection in period of February to August 2022. Kibogora hospital is located in NYAMASHEKE DISTRICT Western province of Rwanda nearest the lake Kivu. The hospital is serving 13 health centers. NYAMASHEKE district has average number of 332,000 habitants and 90% are living of agriculture. As rural hospital, KIBOGORA has 274 beds serving about 250,000 people in the south west of the country and many others are coming in

surrounding district searching service of specialty delivered by specialist of orthopedic and general surgeon which now are permanent.

The study is conducted on patient with diabetes Mellitus come to consult the hospital ancient cases. Our study is in medical nursing scope with high collaboration with NCDS unity, to assess the self -care management of patients with Diabetes Mellitus to prevent the complications, which are very dangerous to patients, families and whole society as well.

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.0 Introduction**

The second chapter of our work highlights the information from various theories about of self-care management of patient with diabetes mellitus. It will talk about Theoretical Literature, Empirical Literature, Critical Review and Research Gap identification, Theoretical framework, Conceptual framework.

### **2.1 Theoretical Literature**

Diabetes mellitus (DM) is a chronic progressive metabolic disorder characterized by hyperglycemia mainly due to absolute (Type 1 DM) or relative (Type 2 DM) deficiency of insulin hormone. World Health Organization estimates that more than 346 million people worldwide have DM. This number is likely to more than double by 2030 without any intervention. The needs of diabetic patients are not only limited to adequate glycemic control but also correspond with preventing complications; disability limitation and rehabilitation. There are seven essential self-care behaviors in people with diabetes which predict good outcomes namely healthy eating, being physically active, monitoring of blood sugar, compliant with medications, good problem-solving skills, healthy coping skills and risk-reduction behaviors. All these seven behaviors have been found to be positively correlated with good glycemic control, reduction of complications and improvement in quality of life. Individuals with diabetes have been shown to make a dramatic impact on the progression and development of their disease by participating in their own care. Despite this fact, compliance or adherence to these activities has been found to be low, especially when looking at long-term changes. Though multiple demographic, socio-economic and social support factors can be considered as positive contributors in facilitating self-care activities in diabetic patients, role of clinicians in promoting self-care is vital and has to be emphasized. Realizing the multi-faceted nature of the problem, a systematic, multi-pronged and an integrated approach is required for promoting self-care practices among diabetic patients to avert any long-term complications (Jegadeesh Ramasamy, 2013).

### **2.1.1 Knowledge of self-care among diabetic patients**

**Knowledge** is the fact or condition of knowing something with familiarity gained through experience or association. (Merriam-Webster, 2022)

**Self-care** is further defined as the ability to care for oneself through awareness, self-control, and self-reliance in order to achieve, maintain, or promote optimal health and well-being. Three attributes were identified: awareness, self-control, and self-reliance. (Patricia calero, 2021).

Globally, the number of people with type 2 diabetes is rising rapidly. This rise is associated with population growth, economic development, ageing populations, increasing urbanization, dietary changes, obesity, reduced physical activity and changes in other lifestyle patterns.<sup>1,2</sup> The International Diabetes Federation<sup>3</sup> indicated a global estimate of more than 371 million people living with diabetes in 2012, with a prevalence of 8.3%. Half of these people are not even aware that they have it. In Africa, with diabetes census of 15 million, cases are expected to almost double over the next 20 years. Sadly, about 81.2% of people in this region do not even know they are living with the disease.<sup>3</sup> In Nigeria with a national prevalence of 4.83%, over 3 million people are currently living with diabetes.<sup>3</sup> Diabetes is one of the major causes of morbidity and mortality; it has a significant impact on the patients' quality of life, productivity and involves enormous health costs for virtually every society.<sup>4</sup> One in twenty adult deaths in developing countries is diabetes-related<sup>5</sup> , with Africa having the highest mortality rate due to diabetes.<sup>3</sup> Complications due to diabetes are implicated in disability, increased cost of care, reduced quality of life and death.<sup>6</sup> Most of these medical problems can however, be prevented with proper self-care, as emphasized in the standard treatment guidelines of Nigeria.

For effective management of diabetes, patients must be actively involved in their care: this requires performance of many complex self-care behaviors including lifestyle modifications (such as dietary control, regular exercise and psychosocial coping skills) and medical self-care (medication use and self-monitoring of blood glucose (SMBG)). Importantly, adequate self-care needs to persist over time if it is going to lessen complications and prolong life.<sup>8</sup> The increase in severity of diabetes every year has been linked to patient's lack of knowledge and practice of proper self-care.<sup>9</sup> According to Inzucchi<sup>10</sup>, a well-informed patient will have the best advantage to attain and maintain glycemic and cardiovascular risk factor control. Consequently, poor knowledge of self-

care can cause poor long-term metabolic control which may lead to the development of diabetic complications (Chinwe V. UKWE, 2014).

Knowledge of and coping with diabetes is still poor in some communities in Rwanda. Approximately 425 million adults age 20 to 79 years have diabetes worldwide. In 2045, this number is expected to rise up to 629 million. In Africa, the number of patients with diabetes is expected to rise from 16 to 41 million (+156%). According to the World Health Organization, 2.8% of the Rwandan population are estimated to have diabetes (Peter E. H. Schwarz, 2019).

### **2.1.2 Self-care practices among diabetic patients**

Self-care in diabetes has been defined as an evolutionary process of development of knowledge or awareness by learning to survive with the complex nature of the diabetes in a social context. Because the vast majority of day-to-day care in diabetes is handled by patients and/or families, there is an important need for reliable and valid measures for self-management of diabetes. There are seven essential self-care behaviors in people with diabetes which predict good outcomes.

Diabetes self-care, which includes activities such as healthful eating, regular physical activity, foot care, medication adherence, and self-monitoring of blood glucose, is very important to keep the disease under control (Mehiret Zerihun Sahile, 2021).

Effective management of diabetes requires strong and consistent cooperation of patient. The complication related to diabetes management are highly resulted to the failure to comply with self-care recommendation.

For instance, Rwanda is highly ranked in implementation of home grown health policies and strategies such as Mutuelle de sante (communal health insurance), particularly foundation of RWANDA DIABETIC ASSOCIATION (RDA) in 1997 to lift diabetes care.

### **2.1.3 Medical self-care attitude**

Medical self-care in diabetes means a long-term commitment to avoiding health complications of diabetes mellitus in the absence of a medical provider.

The doctor may also order a blood sugar test as part of a routine checkup. They may also be looking to see if you have diabetes or prediabetes, a condition where your blood sugar levels are higher than normal (Maria P, 2019)

#### **2.1.4 The complications of diabetes**

The complications of diabetes can be classified as:

Acute problems: (Otherwise termed the diabetic medical emergencies) The acute complications of diabetes: There is sometimes confusion about how to deal with a diabetic patient who becomes unwell in the clinic setting; we have included a short description of the two most important acute emergencies, diabetic ketoacidosis and hypoglycemia.

These can happen at any time and may lead to chronic, or long-term, complications.

**Hypos** when your blood sugars are too low

**Hypers** when your blood sugars are too high

Hyperosmolar Hyperglycaemic State (HHS) a life-threatening emergency that only happens in people with type 2 diabetes. It's brought on by severe dehydration and very high blood sugars.

**Diabetic ketoacidosis (DKA)** – a life-threatening emergency where the lack of insulin and high blood sugars leads to a build-up of ketones. Diabetic ketoacidosis is a serious complication of diabetes that occurs when your body produces high levels of blood acids called ketones. Diabetic ketoacidosis (DKA) is the most common hyperglycemic emergency in patients with diabetes mellitus. DKA most often occurs in patients with type 1 diabetes, but patients with type 2 diabetes are susceptible to DKA under stressful conditions, such as trauma, surgery, or infections (abbas E. KITABCHI, 2003).

#### **Chronic complications**

These are long-term problems that can develop gradually, and can lead to serious damage if they go unchecked and untreated.

**Eye problems** (retinopathy)

Some people with diabetes develop an eye disease called diabetic retinopathy which can affect their eyesight. If retinopathy is picked up – usually from an eye screening test - it can be treated and sight loss prevented.

**Foot problems**

Diabetes foot problems are serious and can lead to amputation if untreated. Nerve damage can affect the feeling in your feet and raised blood sugar can damage the circulation, making it slower for sores and cuts to heal. That's why it's important to tell your GP if you notice any change in how your feet look or feel.

**Heart attack and stroke:** When you have diabetes, high blood sugar for a period of time can damage your blood vessels. This can sometimes lead to heart attacks and strokes.

**Kidney problems:** (nephropathy):Diabetes can cause damage to your kidneys over a long period of time making it harder to clear extra fluid and waste from your body. This is caused by high blood sugar levels and high blood pressure. It is known as diabetic nephropathy or kidney disease.

**Nerve damage** (neuropathy) Some people with diabetes may develop nerve damage caused by complications of high blood sugar levels. This can make it harder for the nerves to carry messages between the brain and every part of our body so it can affect how we see, hear, feel and move.

**Gum disease** and other mouth problems: Too much sugar in your blood can lead to more sugar in your saliva. This brings bacteria which produces acid which attacks your tooth enamel and damages your gums. The blood vessels in your gums can also become damaged, making gums more likely to get infected.

**Related conditions, like cancer** If you have diabetes, you're more at risk of developing certain cancers. And some cancer treatments can affect your diabetes and make it harder to control your blood sugar.

**Sexual problems in women:** Damage to blood vessels and nerves can restrict the amount of blood flowing to your sexual organs so you can lose some sensation. If you have high blood sugar, you are also more likely to get thrush or a urinary tract infection.

**Sexual problems in men:** The amount of blood flowing to your sexual organs can be restricted which may cause you to have difficulty getting aroused. It may lead to erectile dysfunction, sometimes called impotence (Diabetes UK, 2016). Diabetic microvascular



(involving small vessels, such as capillaries) and microvascular (involving large vessels, such as arteries and veins) complications have similar etiologic characteristics (W. Todd Cade, 2008).

According to (ADA, 2009) these complications occur because of the chronic exposure of the body's tissues to hyperglycemia, hyperinsulinemia or their associated metabolic disturbances.

The potential chronic complications of diabetes are those that most people with diabetes fear; however, over 40% of patients with type 1 diabetes survive for over 40 years after the disease has been diagnosed, half of them without developing significant complications.

### **2.1.5 Prevention and Management of diabetes complications**

They're not inevitable. Keeping blood sugar, blood pressure and blood fats under control will hugely help to reduce your risk of developing complications. This means going to your diabetes health checks and finding out from your diabetes healthcare team how to look after you between appointments. You can prevent or delay the complications of diabetes. But you need to take action and it's all about managing your diabetes well.

#### **Manage your diabetes**

Keeping your HbA1c within the target range set by your healthcare team is really important for reducing your risk complications. If your blood sugar levels are rising, talk to your doctor. Your treatment may need to change to get your HbA1c back in target to avoid the complications of high blood sugar.

#### **Stop smoking**

Smoking makes it harder for blood to flow around your body to places like your heart and your feet. If you smoke, then stopping is a key part of reducing your chances of complications. Again, your GP and diabetes team will be able to help you quit.

## **Keep active**

Doing more physical activity helps reduce your chance of getting complications. If you struggle to get about, there are still ways you can keep active. We've got lots of type 2.

## **Go to all of your appointments**

Everyone with diabetes is entitled to a series of test and checks each year to monitor their diabetes, look out for any problems and see if any further support is needed. Making sure you get all of them will mean you know how you're doing and about your type 1 and type 2 diabetes health risks (Diabetes UK, 2016).

## **2.2 Knowledge on diet**

Pattern among type 2 DM patients visiting PHC in Majmaah city, which is According to descriptive cross-sectional study, was done Saudi Arabia to assess of dietary located to the north west of Riyadh, Saudi Arabia. Data collection had been done with a structured, pre-coded, pre-tested, and self-administered questionnaire. The questionnaire was translated into the local Arabic language. The questionnaire consisted of four parts: socio-demographic data, knowledge, attitude, and practice. Collected data were further analyzed by using the Statistical Package for the Social Sciences (SPSS) software version 23. Data validation was performed by using doubleentry option offered by SPSS software. All the data were double-checked to reduce error in statistical calculation (Funnell MM, 2004).

Results in this study conducted among type 2 DM patients assessed for them of dietary pattern, the baseline characteristics of the age ranged from 40 to 94 years in the sample. The mean age of patients was 54.46 + 12.000. The mean age of indicated that the majority were with neutral attitudes. When the assessment of practices was done in the present which have 155 diabetics patients, the majority 87 (56.1%) patients of them were found not following any special diet.

Diabetic diet was followed only by 24 (15.5%) of 186 the patients (Table 2). On the other hand, the breakfast was the most regularly eaten meal by 60 (38.7%) patients among patients along with few subjects who had the Brunch meal 60 (38.7%), But in this study, the consumption of fat, 32.9%

of them do not include fat in their diet and 32.3% use just 1 or less serving. In the case of starch, only 26.5% of patients followed WHO recommendations. In the fruits, 63.2% had a poor intake. In the water intake, we were amazed and surprised to see that only 7% take the recommended amount which is at least six cups and 93% have an inadequacy of it that could reflect in their physiological function. Ethnic or age groups. But we found that in the Middle East, there is a similar result of having poor knowledge due to lack of clarification. (AUSSILI, 2016)

### **2.3 self-care management of diabetes mellitus**

Diabetes mellitus refers to a group of diseases that affect how the body uses blood sugar (glucose). Glucose is an important source of energy for the cells that make up the muscles and tissues. It's also the brain's main source of fuel (Regina castro, 2022).

#### **2.3.1 Diabetes self-care management education.**

Though genetics play an important role in the development of diabetes, monozygotic twin studies have certainly shown the importance of environmental influences. Individuals with diabetes have been shown to make a dramatic impact on the progression and development of their disease by participating in their own care. This participation can succeed only if those with diabetes and their health care providers are informed about taking effective care for the disease. It is expected that those with the greatest knowledge will have a better understanding of the disease and have a better impact on the progression of the disease and complications.

The American Association of Clinical Endocrinologists emphasizes the importance of patients becoming active and knowledgeable participants in their care. Likewise, WHO has also recognized the importance of patients learning to manage their diabetes. The American Diabetes Association had reviewed the standards of diabetes self-care management education and found that there was a four-fold increase in diabetic complications for those individuals with diabetes who had not received formal education concerning self-care practices. The study conducted at university of southern California in 2018 identified seven self-care practices help patients with diabetes avoid hospital visits and serious health complications: Healthy eating, Being physically active, Monitoring blood sugar levels, Complying with medications, Using problem-solving skills, Developing healthy coping skills and Practicing risk-reduction behaviors

### **2.3.2 Self-care in diabetes**

These are healthy eating, being physically active, monitoring of blood sugar, compliant with medications, good problem-solving skills, healthy coping skills and risk-reduction behaviors. These proposed measures can be useful for both clinicians and educators treating individual patients and for researchers evaluating new approaches to care. Self-report is by far the most practical and cost-effective approach to self-care assessment and yet is often seen as undependable. Diabetes self-care activities are behaviors undertaken by people with or at risk of diabetes in order to successfully manage the disease on their own. All these seven behaviors have been found to be positively correlated with good glycemic control, reduction of complications and improvement in quality of life. In addition, it was observed that self-care encompasses not only performing these activities but also the interrelationships between them. Diabetes self-care requires the patient to make many dietary and lifestyle modifications supplemented with the supportive role of healthcare staff for maintaining a higher level of self-confidence leading to a successful behavior change.

### **2.4 Challenges faced by diabetic patients about self-care**

Some challenges identified by the study are grouped into two categories:

- **Social challenges**

**Lack of resources:** Lack of access to resources interfered with optimal diabetes management.

**Lifestyle modification:** Challenges to lifestyle modification due to low health literacy, difficulty in changing established habits, and perceived lack of symptoms were also reported.

**Lack of family support:** Adults with T2D and providers also perceived that a lack of family support as well as competing demands with work and family contributed to challenges for adults with T2D, particularly women, to follow treatment recommendations, including attending clinic appointments.

**Mental health:** The last personal challenge to T2D management expressed by providers and adults with T2D was mental health issues, particularly depressive symptoms.

### **Health care system-level challenges**

**Clinic resources and quality of care:** There were several system level challenges to T2D management. Providers and adults with T2D identified that clinic resources and perceived quality of care contributed to difficulties with T2D management.

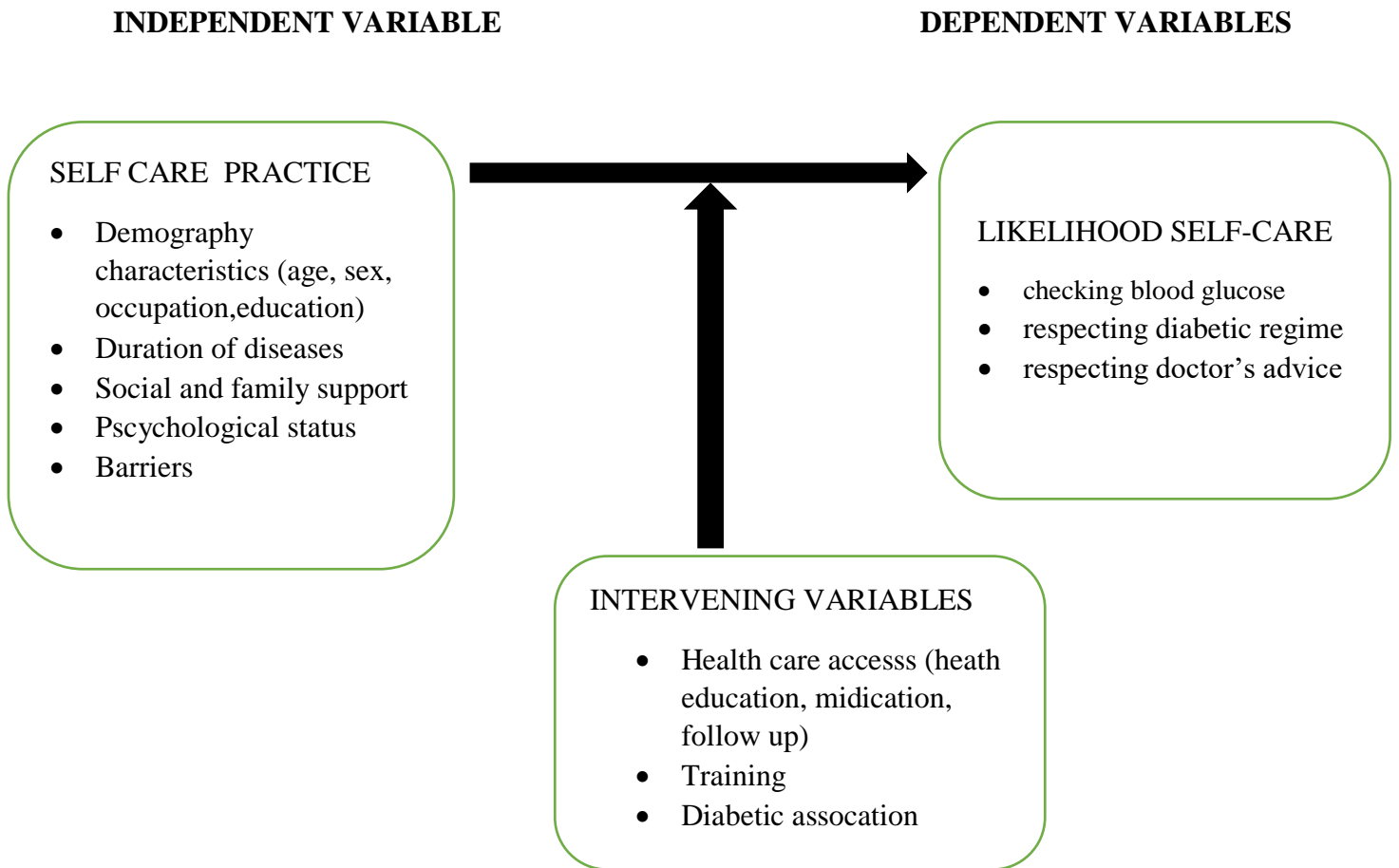
**Staff insensitivity:** Some adults with T2D reported that perceived staff insensitivity to their illnesses and concerns contributed to distress and discouragement.

**Patient engagement barriers:** Lastly, providers identified that there were barriers to patients' consistent engagement in clinical care (denise marron, 2019).

### **2.5 Conceptual framework.**

Conceptual frameworks below in this study: Figure 1: Conceptual framework the figure illustrates the interaction between factors from independent variable, intervening variable that all has effect to dependent variable those are like level of education, age of patient, health education received and duration of disease to the patient all these factors with amplification from clinical intervening factors directly control the health of a diabetic patient. However, none of the two factors are to be neglected though their degree of effect is not the same, they all have impact to knowledge on self –care management and they should be managed at fully for better success. (Houghton, 2014)

**Figure 1: CONCEPTUAL FRAMEWORK.**



The Figure above show the independent variable is self care Practice that following factors Demography included age, sex, Occupation and education, Duration of diseases, Social and family support, Psychological status and Barriers of tools used ,Independent Variable is Likelihood Self-care like Checking blood glucose, Respecting Diabetic Regime and Respecting Doctors Advice and intervening Variable were Association of diabetics, Training and Political Polices and also the relationship of the factors related with patient level of education, advanced age, health education received on diabetes mellitus and duration of the disease on the patient have the great impact on patient's self-care management in identification of danger signs, different facts related to their

daily life in knowing if there are from the disease underlying. Where is very important to teach the community with such patients through their association and trainings of refresher to add the self-care management in their daily life in order to reduce complications of diabetes mellitus and have the strong population, is needed to be applicable in western region especially in NYAMASHEKE district where this study is being done and why not the whole country if this method is helping our population.

## **CHAPTER THREE: RESEARCH METHODOLOGY**

### **3.1 INTRODUCTION**

This chapter describes the research design, target population, sample size calculation, sampling techniques, data collection techniques, data processing and data analysis techniques and reliability and validity measures.

### **3.2 RESEARCH DESIGN**

A research design is a logical and systematic plan prepared for conducting a research study. It is comparable to blue print which the architect prepares for construction of the building commences. In this study the researchers used both research approaches and research design.

#### **3.2.1 Research approaches**

Quantitative was used in research. We used quantitative approach for numerical and measurement of data collected and qualitative approach to explain and generate the data quality.

### **3.3 TARGET POPULATION**

Bakkabulindi (2004) defines population as the mass of units of analysis example (respondents) about which the researcher will measure his or her variable. The target population is all members of a special group to which the investigation relates. The accessible population refers to the elements in the group within the reach of the researcher. Hence, the target population of this study was 172 informants who included 172 diabetic patients involved in non communicable diseases. According to data manager of KIBOGORA Hospital (2022), it receives an average of 172 diabetic patients taken as target population of this study.

#### **3.3.1 Inclusion Criteria**

The current study was include diabetic patients attending KIBOGORA Hospital who will not be in critical state. Willing to participate in the study.



### 3.3.2 Exclusion Criteria

The study was exclude non-diabetic patients and very critical diabetic patient hospitalized.

### 3.4 Sample Size

Sample procedure is the process of selecting a number of individual (a sample) from population in a way that individuals are representative of large group from which are selected. The sample size for diabetic patients' respondents was calculated using Talo Yamane Formula. While administration staff of NCD service were selected purposively in KIBOGORA Hospital. This sample size was assumed by researchers to be representative enough of the entire population basing on Yamane formula as follows:

$$n = \frac{N}{1+Ne^2}$$

n= sample size

N= population size

e= margin of error or error tolerance

population size=172

margin of error 0.1%

means

$$n = \frac{172}{1+172 \times 0.1^2} = 50 \text{ respondents}$$

### 3.4.2 Sampling techniques

A total sampling technique was used to select representative sample of diabetic patients in this study.

### 3.5 Data collection methods

#### 3.5.1 Data collection instrument

A self-administered questionnaire will be used to collect data for this study. The questionnaire comprises of close-ended. It consists of three sections namely Section A: Demographic

characteristics, section B: knowledge and attitude of patients about self-care and section C: challenges faced by patients living with diabetes mellitus 2. The questionnaire has 17 items.

### **3.5.2 Administration of data collection instrument**

After obtaining ethical approval letter from KIBOGORA POLYTECHNIC and KIBOGORA Hospital, diabetic patients will be approached in catchment area for introduction of the study and explanation of the role and purpose of the study to them and seek their consent to participate in the study. Those who will agree to participate will be taken through the consent process. Questionnaires will be administered face to face in Kinyarwanda to those who will sign consent to participate in this study.

### **3.6 Validity and reliability.**

#### **3.6.1 Validity**

Validity is defined as the extent to which a concept is accurately measured in a quantitative study (Heale & Twycross, 2015). The questionnaire will be carefully elaborated to ensure the consistency, non-ambiguity, relevance and clarity of its contents. A supervisor evaluated and made necessary adjustment to ascertain that these qualities were met in accordance with the objectives assigned to the study.

#### **3.6.2 Reliability**

To insure reliability, a pilot study will be conducted among 10% of the sample size i.e. 8 diabetic patients who will not be included in the study sample. A researcher corrected identified errors and difficulties accordingly.

<b>Reliability Statistics</b>	
<b>Cronbach's Alpha</b>	<b>N of Items</b>
.835	18

### **3.7 Data analysis procedure**

Data will be analyzed using SPSS version 21. Descriptive statistics in the form of frequencies and percentages will be computed.

### **3.8 Ethical consideration.**

The ethical approval for this study was obtained from the KIBOGORA POLYTECHNIC and KIBOGORA Hospital. However, participants will be given information about the purpose of the study and will sign the consent to participate in the study.

The researcher will maintain protection of human rights during this study. In respect to right to self-determination, participants will be included in the study only after them being informed about the study. To ensure confidentiality, the returned questionnaires will not be identified by number or name and the identification of participants will not be known or revealed. The results of this study will be for academic purpose only. The participants will be informed that they can withdraw any time from the study without any consequence or punishment.

## **CHAPTER FOUR: DATA PRESENTATION, ANALYSIS, INTERPRETATION AND SUMMARY**

### **4.0 INTRODUCTION**

The fourth chapter of our study describes the demographic characteristics of respondents, Data analysis, the research findings discussion. The research findings were analyzed from primary data. In order to present research findings, tables, frequencies and percentages have been used. Responses were collected from simple size of 50 (diabetic patients attending kibogora district hospital in NYAMASHEKE district.

### **4.1 DATA PRESENTATION AND ANALYSIS**

This point describes the demographic characteristics of respondents, self-care management and challenges faced by diabetic patients.

#### **4.1.1 DISTRIBUTION OF DEMOGRAPHIC VARIABLES.**

##### **4.1.1.1 Respondents according to their age**

This part shows the age distribution of diabetic mellitus patients at kibogora district hospital in NYAMASHEKE District. Their ages are distributed from 18 years to above 35 years old. The result obtained during field study is presented in the table below:

**Table 1: Respondents according to their age**

<b>Valid</b>	<b>Frequency</b>	<b>Percent</b>
under 18 years	5	10.0
19-35 years	20	40.0
above35 years	25	50.0
<b>Total</b>	<b>50</b>	<b>100.0</b>

Source: primary data

The table one shows the distribution of respondents according to the age. The findings revealed that the majority of respondents lie in the range of above 35 years old with the percentage of

50.0% of the total number of respondents. The study also shows that the second age range is 19-35 years old with the percentage of 40.0%, the third age range is under 18 years old with percentage of 10.0%.

#### 4.1.1.2 Respondents according their gender

In this research, both men and women made up the accessible population(sample). In the table below, the researchers present the statistics of both of them.

Table 2: **Respondents according their gender**

<b>Valid</b>		<b>Frequency</b>	<b>Percent</b>
	Male	20	40%
	Female	30	60%
<b>TOTAL</b>		<b>50</b>	<b>100.0%</b>

Source: primary data

The table two was indicated that female respondents make a big part of respondent as they contribute to the highest percentage of 60% of the total number of respondents while male is represented by 40% of all respondents. This implies that female constitute the majority of diabetic mellitus patients at kibogora district hospital in NYAMASHEKE district.

#### 4.1.1.3 Respondents according to their profession

This part present profession of respondents. It shows profession, public sector, private sector and respondent without any profession

**Table 3: Respondents according to their profession**

VALID		
	Frequency	Percent
Professional	10	20
public sector	16	32
private sector	12	24
None	7	14
Other	5	10
<b>Total</b>	<b>50</b>	<b>100.0</b>

Source: primary data

The table 3 shows that the majority of respondents are public sectors with the percentage of 32% the second is private sectors which is 24% the third is professional with the percentage of 20% the next is those who do not have profession with the percentage of 14% the last is those who had other occupation with percentage of 10%.

#### 4.1.1.4 Respondents according their educational level

The following table describes the respondents according their educational level.

**Table 4: Respondents according their educational level**

VALID		Frequency	Percentages
	Primary	16	32
	Secondary	24	48
	University	7	14.0
	NONE	3	6
<b>Total</b>		<b>50</b>	<b>100.0</b>

Source: primary data

The table four show that the majority of respondent has secondary level of education with percentage of 48% and the second is primary level with 32% and last are those who have studied university equal to 14% and 6% of respondent didn't mention their level of education.

#### 4.2. DISTRIBUTION OF ITEMS OF QUESTIONS RELATED TO KNOWLEDGE ABOUT SELF MANAGEMENT AND CHALLENGES OF DIABETIC PATIENTS' SELF-CARE MANAGEMENT.

**Table 5: The attitude of diabetic patients about self-care management**

<b>VALID</b>	<b>Frequency</b>	<b>Percent</b>
<b>Since when do you suffer for diabetes?</b>		
• Under 1 year	13	26
• Between 1 and 3 years	24	48
• Between 3 and 5 years	4	8
• Above 5 years	9	18
<b>Total</b>	50	100
<b>When did you start medication?</b>		
• Under 1 year	16	32
• Between 1 and 3 years	24	48
• Between 3 and 5 years	5	10
• Above	5	10
<b>Total</b>	50	100
<b>The health diet preparation of diabetes patient must contain much water, much vegetables, low proteins and very low carbohydrate. Choose the best answer for.</b>		
• I respect standard during preparation of diet	17	32
• Not respect	16	34
• Respect sometimes	9	19
• Never	8	16

• <b>Total</b>	50	100
<b>Do you keep all doctors' appointments recommended?</b>		
• <b>Yes</b>	27	54
• <b>No</b>	23	46
• <b>Total</b>	50	100
<b>Do you take your diabetes medication (e. g. insulin, tablets) as prescribed?</b>		
• <b>Yes</b>	40	80
• <b>No</b>	10	20
• <b>Total</b>	50	100
<b>How do you test your blood sugar levels?</b>		
• <b>Regularly</b>	21	42
• <b>Irregularly</b>	13	26
• <b>Sometimes</b>	5	10
• <b>Never</b>	11	22
• <b>Total</b>	50	100
<b>Do you have basic materials for self-examination Health diet (fruit, grain, protein)</b>		
• <b>Yes</b>	9	18
• <b>No</b>	41	82
• <b>Total</b>	50	100
<b>The availability of the Medical Support is:</b>		
• <b>On call</b>	14	28
• <b>Home visit</b>	13	26
• <b>appointment</b>	20	40
• <b>None</b>	13	26
• <b>Total</b>	50	100
<b>What is your role in self-care?</b>		
• <b>Doing regular checking of blood sugar</b>	4	8
• <b>Doing regular sport</b>	5	10



• <b>Diet control</b>	8	18
• <b>Follow IEC about diabetes</b>	33	66
<b>Total</b>	50	100

Source: primary data

The findings revealed that the majority of respondents lie in the range of between 1 to 3 years with the percentage of 48.0% of the total number of respondents. The study also shows that the second range is under 1 years with the percentage of 26.0%, the third range is above 5 years with percentage of 18.0% the last is the range of 3 to 5 years with percentage of 8%.

The findings revealed that the majority of respondents lie in the range of between 1 to 3 years on treatment with the percentage of 48.0% of the total number of respondents. The study also shows that the second range is under 1 years on treatment with the percentage of 32.0%, the third range is between 3 to 5 years with percentage of 10.0%. and above 5 years with 10%.

The study done shown that 42% of respondents' record irregularly their blood sugar level while 26% of respondents record their blood sugar level regular. There also others who record their blood sugar level sometimes which represent 10% of the population sampled. 22% of respondents do not record their blood sugar level

During study, researchers found that 34% of asked people respect the standard when preparing diet, 30% of respondents do not respect it while 18% of respondent do it sometime and 16% never respect it.

This study shows the distribution of respondents according to the availability of medical support. The findings revealed that the majority of respondents respond to the appointments, with the average of 40 percent, 28 percent of all respondents are followed on call, those who receive home visit are representing 27 percent, and 6 percent of the respondents do not respond to medical availability.

According to the role of respondents in their self-care, we found that 66% do not care themselves, 26% try themselves while only 8% take care themselves on excellent level.

**Table 6: The knowledge of diabetic patients about self-care management**

<b>Valid</b>	<b>Frequent</b>	<b>percent</b>
<b>Do you record your blood sugar levels on own agenda?</b>		
• <b>Yes</b>	20	40
• <b>No</b>	30	60
<b>Total</b>	50	100
<b>Do you know how to use materials for self-examination?</b>		
• <b>Yes</b>	9	18
• <b>NO</b>	41	82
<b>Total</b>	50	100
<b>Do you know how to evaluate the results of blood sugar?</b>		
• <b>Yes</b>	11	22
• <b>No</b>	39	78
<b>Total</b>	50	100
• <b>Do you take decision after results?</b>		
• <b>Yes</b>	10	20
• <b>No</b>	40	80
<b>Total</b>	50	100

Source: primary data

In this study, the majority of respondents do not know how to use materials for self-examination, they represent 82 % of all the respondents and those who remain know how to use those materials are 18 percent of all respondents

The study has shown that the majority of the respondents do not know how to evaluate the results of their blood sugar with the average of 78 %, of the respondents whereas 22 % remaining know it.

The study has shown that the majority of the respondents do not know how to take decision after the results of their blood sugar with the average of 80 % , of the respondents whereas 20 % remaining know it.

**Table 7: The challenges of self-care management faced by patients with diabetes .**

Valid	Frequency	Percent
Poverty	20	40
ignorance about self-care	15	30
long distance	8	16
lack of health care and family support	7	14
Total	50	100.0

Source: primary data

In this study, the majority of the respondents are very poor at a range of 40 %, of all respondents,30 % of all respondents face the problem of ignorance about self-care,16%have to walk a long distance to arrive at health care post, and 14 % of all respondents lack the health care provider.

#### **4.3. DISCUSSION OF FINDINGS**

Patient’s demographic characters have direct impact level of knowledge and attitude on patient self –care management and give more information on diabetes, half of the risk of type 2 diabetes can be attributed to environmental exposure and the other half to genetics. Central themes for prevention are the risk factors overweight, sedentary lifestyle, certain dietary components and perinatal factors. Overweight is the most critical risk factor, and should be targeted for prevention of type 2 diabetes. (Hussain et al, 2007).the majority of respondents lie in the range of between 1 to 3 years with the percentage of 48.0% of the total number of respondents. The study also shows that the second range is under 1 years with the percentage of 26.0%, the third range is above 5 years with percentage of 18.0% the last is the range of 3 to 5 years with percentage of 8%,Respondents lie in the range of between 1 to 3 years on treatment with the percentage of 48.0% of the total number of respondents. The study also shows that the second range is under 1 years on treatment with the percentage of 32.0%, the third range is between 3 to 5 years with percentage of 10.0%. and above 5 years with 10%,The study done shown that 42% of respondents’ record irregularly their blood sugar level while 26% of respondents record their blood sugar level regular. There also others who record their blood sugar level sometimes which represent 10% of the population sampled. 22% of respondents do not record their blood sugar level

Researchers found that 34% of asked people respect the standard when preparing diet, 30% of respondents do not respect it while 18% of respondent do it sometime and 16% never respect it, according to the availability of medical support. The findings revealed that the majority of respondents respond to the appointments, with the average of 40 percent, 28 % of all respondents are followed on call, those who receive home visit are representing 27 %, and 6 percent of the respondents do not respond to medical availability and According to the role of respondents in their self-care, we found that 66 % do not care themselves, 26% try themselves while only 8% take care themselves on excellent level.

The majority of respondents do not know how to use materials for self-examination, they represent 82 % of all the respondents and those who remain know how to use those materials are 18 percent of all respondents, The majority of the respondents do not know how to evaluate the results of their blood sugar with the average of 78 %, of the respondents whereas 22 % remaining know it and The majority of the respondents do not know how to take decision after the results of their blood sugar with the average of 80 % , of the respondents whereas 20 % remaining know it.

According to the challenges of self-care management faced by patients with diabetes, the majority of the respondents are very poor at a range of 40 %, of all respondents, 30 % of all respondents face the problem of ignorance about self-care, 16% have to walk a long distance to arrive at health care post, and 14 % of all respondents lack the health care provider.

#### **4.4 SUMMARY OF FINDINGS**

The study conducted shown that a considerable number of respondents ignore the way of testing their blood sugar level and do not have materials for self -testing. Nutrition/Diet remains a key player in diabetes prevention and management, and rightly so, one of the focuses of international diabetes federation centers on healthy eating as a key factor in the management of type-2-diabetes, the prevention of type 2 diabetes and other related complications. We still have some respondents who do not have adequate knowledge about diet of diabetic patients, we agree on recommendation of Quassim university research paper that the stakeholders (health-care providers, health facilities, agencies involved in diabetes care, etc.).

## CHAPTER FIVE: CONCLUSIONS AND RECOMMENDATIONS

### 5.0 Introduction:

This chapter contains the summary of findings, the conclusion and recommendation

### 5.1 CONCLUSION

By demographic characteristics of respondents, we found the female of respondents were dominant with 60% over 40% of male respondent. respondents between 18 and 35 years old represented a large number with 50% over 40% and 10% of above 35 years old and under 18 respectively.

In our research we interviewed more respondents which has public occupation than others areas of work. We also meet more respondents with secondary level than others levels.

Considering knowledge about self-care of patients living with diabetes the majority of our respondents shown that have no materials for self-examination while others do not record their blood sugar result, this can increase complication of the described disease.

Considering knowledge on diet, we found that many of respondents confirmed that they do not respect the standard diet preparation; others did not get any training about diabetic's diet

Some challenges shown by respondents includes; lack of health care and family support, long distance, ignorance about self-care and Poverty.

The study found that, the diabetes mellitus is a concern of adults and have not enough knowledge on DM self-care management. the socio-demographic data shows us that female respondents were highly affected by diabetes than male and people over 35 are victims than rest of population. The employed and literate still low comparatively to rest.

All these statistics give to the researchers the information about the gap in diabetics' self-care to patients attending KIBOGORA Hospital which confirm also the need of increased Knowledge to patients with DM self-care management in maximum in order to have good result on patient self-care management of cause; Nutrition/Diet remains a key player in diabetes prevention and management, and rightly so, one of the focuses of international diabetes federation centers on healthy eating as a key factor in the prevention of type 2 diabetes and other related complications.

## **5.2 RECOMMENDATIONS**

Based on findings obtained in the study, the researchers made the followings recommendation to patients with diabetes mellitus and KIBOGORA Hospital.

### **1. To patients**

- Patients should participate actively in the care provided to them and attend the teaching regarding their disease.
- Test and record their blood sugar regularly to they agenda using Blood sugar Machine Called Glucometer.
- Keep blood sugar device and other related materials in their home
- Respecting doctors' appointments and contact them in complications

### **2. To KIBOGORA hospital**

- Planning home visit to patients
- To recruit a qualified nutritionist
- Make available call line reserved for diabetes patients
- Encourage cooperatives and associations of diabetes patients attending hospital in other to help and to share the experience of self management.

### **3. To Ministry of Health**

- Distribution of specialized doctors (internist) in district hospitals for better management of diabetic patients
- Provide financial support to diabetic patients' associations and cooperatives.

## **5.3 Suggestions for further study**

This research is not ended itself, that why we invite other researchers to complete us for other ignored aspects like:

- ✓ The role of local government on self-care management of diabetes patients
- ✓ Financial and medical support to diabetes patients

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# APPENDIX

**Appendix 1: INTRODUCTORY LETTER**

Dear respondent,

Our names are KAMANAYO Fortunée and BAYISENGE Ancille. We are currently completing our Bachelor’s Degree in general Nursing at KIBOGORA POLYTECHNIC. On the basis of our degree requirements, we intend carrying out a study assessment of self –care attitude in management of diabetic patients attending KIBOGORA district hospital in NYAMASHEKE district in 2022.

We will ensure that no clues to your identity appears in the thesis. Any extracts from what you say that are quoted in the study will be entirely anonymous. The data will be kept confidential for the duration of the study.

The results will be presented in the study. They will be seen by our supervisors. The thesis may be read by future students on the course. The study may be published in a research journal.

If you agree to take part in the study, please sign the consent form overleaf.

Thank you!!!

KAMANYO Fortunée                      date..... signature.....

BAYISENGE Ancille                      date..... signature.....

**CONCERT FORM**

I..... agree to participate in study of Mrs KAMANAYO **Fortunée and BAYISENGE Ancille** as it explained above.

I am participating voluntary.

I understand that I can withdraw from the study without repercussions, at any time, whether before it starts or while I am participating.

I understand that I can withdraw permission to use data within two weeks of the interview, in which material will be deleted.

I understand that anonymity will be ensured in the written-up disguising my identity.

I understand that disguised extracts form my interview may be quoted in the theses and any subsequent publications if I give permission bellow:

Please tick one box

I agree to quotation/ publication of extracts my participation

I do not agree to quotation/publication of extracts my participation

Signed by ..... date .....

Signed Investigators: ..... date-----

If you need any other information, you can contact us, the below contact

- 0786810466 (Fortunée)
- 0782853789 (Ancille)

## QUESTIONNAIRES

### I QUESTIONS RELATED DEMOGRAPHIC

1. How old are you?

- a) Under 18 years
- b) 19- 35 years
- c) Above 35 years

2. What is your sex?

- a) Male
- b) Female

3. What is your profession?

- a) Professional
- b) private sector
- c) Public sector
- d) None
- e) Other

4. What is your education level?

- a) None
- b) Primary
- c) Secondary
- d) University

### II QUESTIONS ABOUT KNOWLEDGE ON BIABETES

5. Time of illness of diabetes is

- a) <1 year
- b) ]1-3[years
- c) ]3-5[y ears
- d) >5years

6. Time on treatment

- a) <1year
- b) ]1-3[ years
- c) ]3-5[years

d) >5years

7.how do you regularly check your blood sugar level

a) Irregular

b) Regular

c) Sometimes

d) not done

7.The health diet preparation of diabetic patient must contain much water, much vegetables, low proteins, and very low carbohydrate. Choose the best answer for you

a) I respect standard during preparation of diet

b) Not respect

c) Respect sometimes

d) never

8.Do you keep all doctors' appointments recommended for your diabetes treatment?

a) No

b) Yes

9. Do you take your diabetes medication (e. g. insulin, tablets) as prescribed?

a) Respect dose at time

b) Not respect dose and time

c) Sometimes

d) Never

10.how do you record your blood sugar levels?

a) Regularly

b) Irregularly

c) Sometimes

d) Never

11.Do you have basic materials for self-examination

a) Yes

b) No

12. Do you know how to use materials for self-examination?

a) Yes

b) No

13. Do you know how to evaluate the results of blood sugar?

a) Yes

No

14. Do you take decision after results.

a) Yes

b) No

15. The availability of the Medical Support is:

a) On call

b) Home visit

c) appointment

d) None

16. What are the challenges of self-care management do you face?

a) Poverty

b) Ignorance about self-care

c) Long distance to health facilities

d) Lack of health-care advices

17. What is your role in your self-care?

a) Doing regular checking of blood sugar

b) Doing regular sport

c) Diet control

d) Follow IEC about diabetes

e) all above

This is the end

Thank you for your collaboration.

## Appendix 2: KIBOGORA DISTRICT HOSPITAL GEOGRAPHIC LOCATION



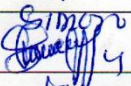

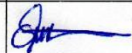






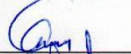

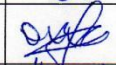




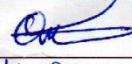
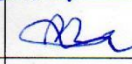
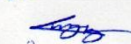
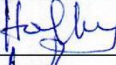

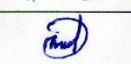

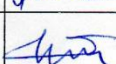
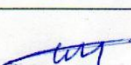
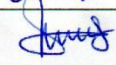







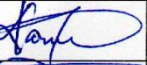

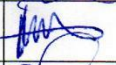
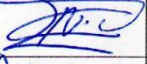




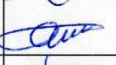
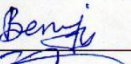
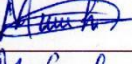
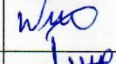
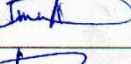


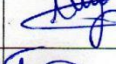
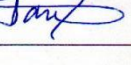




### Appendix 3: Research letter




**Appendix 4: LIST OF RESPONDENTS**

**LIST OF RESPONDENTS (PATIENTS RESPONDENTS)**

PR	signature	RESP	signature	RESP	signature
PR1		PR18		PR35	
PR2		PR19		PR36	
PR3		PR20		PR37	
PR4		PR21		PR38	
PR5		PR22		PR39	
PR6		PR23		PR40	
PR7		PR24		PR41	
PR8		PR25		PR42	
PR9		PR26		PR43	
PR10		PR27		PR44	
PR11		PR28		PR45	
PR12		PR29		PR46	
PR13		PR30		PR47	
PR14		PR31		PR48	
PR15		PR32			
PR16		PR33			
PR17		PR34			

STAF RESPONDENTS

STR	SIGNATURE
STR1	
STR2	