



**UNIVERSITY of
RWANDA**

**LIFESTYLE FACTORS ASSOCIATED WITH TYPE 2 DIABETIC PATIENTS AT
MASAKA DISTRICT HOSPITAL.**

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School of Nursing and Midwifery
Masters of Nursing Sciences/ Medical Surgical Track

October, 2019



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October, 2019

DECLARATION

I hereby, declare this research thesis which has the title of lifestyle factors associated with type 2 diabetic patients at Masaka district hospital is my original work.

Kura Mary Agnes

DEDICATION

To Almighty God for guidance and keeping me strong during this time of studying Masters degree. My pleasure goes to my family for their support, to my parents, relatives and other friends who played a big role during my course work.

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I thank the almighty God for his providence, and keeping me in good health to attain this Masters degree in Nursing. I also appreciate UR/Remera campus through HRH program which encouraged me by mentoring me throughout this course for the completion of this program. I also acknowledge my supervisor Dr. Lakshmi Rajeswaran who guided me to accomplish this thesis by her massive support. I deeply want to thank my classmates and all the people who gave a hand during the struggle and endure this journey

God bless you!

ABSTRACT

Background: Diabetes is a major public health problem that is increasing daily. This persistent non-communicable syndrome affects people of high income countries as well as low income countries of all age groups.

Aim: The aim of current study was to determine lifestyle associated factors of type 2 diabetic patients at Masaka District Hospital, Rwanda.

Methods: Descriptive, cross-sectional design by quantitative approach was used in this study. Participants (114) were selected by means of simple random sampling method. Data collection was conducted from Non-Communicable disease clinic of Masaka hospital after obtaining informed consent. A semi-structured questionnaire was used to collect data from participants. Data were analyzed using SPSS (Statistical Package for the Sciences) version 21. Descriptive inferential statistics and chi-square were used to analyze the data. The results were presented by using tables.

Findings: The majority of participants represented 70.2% were males with the age between 51 to 60 years representing 40.4% , 52.6% were self employed, 87.7% were married, 86.8% had irregular source of income, 61.4% were in 2nd category of economic status according Rwandan ranking of economic status of the citizens and 48.2% had 81-100 kg, 57.0% of respondents 161-170 Cm measurements, 66.7% had Hypertension. 47.4% shows lack of physical exercise, 35% drink alcohol, and 43.9% eat sugary bread. 39.5% take local milk which contains a lot of fats. Almost 72.8% take medications and 64.5% have poor vision.

Conclusion: From the findings of the study, it was found that some patients used to smoke, drink alcohol, eat rich carbohydrate food and take local milk with high proportion of fats. More effort is needed to teach the patients how they can modify dietary practices, exercise and managing the chronic related conditions which can affect the management of type 2 diabetes.

Keywords: Life style, type2 diabetic patients, district Hospital Rwanda.

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LIST OF ACRONYMS AND ABBREVIATIONS

BMI: Body mass index

CVD: Cardiovascular diseases

DLB: Diabetes lifestyle behavior

DM: Diabetes mellitus

HBM: Health believe model

HEC: Higher Education Council

HRH: Human resource for health

IDF: International diabetic federation

MOH: Ministry of health

NCDs: Non communicable diseases

NCNM: National Council of Nurses and Midwives

RDA: Rwanda diabetic association

RNMU: Rwanda Nurses and Midwives Union

T2DM: Type two diabetes mellitus

WHO: World health organization

CHAPTER ONE: INTRODUCTION

1.0.Introduction

This chapter is comprised of the background of the study, the problem statement, the purpose of the study, the research objectives, the significance of the study, and the conclusion of this chapter. This study is about the association between factors affecting the lifestyle behavior of type 2 diabetic patients at Masaka District Hospital Kigali, Rwanda.

1.1 Background of the study

Diabetes is the foremost global public health challenge, estimated to be round 425 million, and is probably going to be 5.4% by 2025 and 14% by 2030 international(WHO, 2017).This slow non-communicable disease in people of developed countries as well as developing countries in all age groups (Kennedy, et al., 2018). Results from a study conducted in Kuwait in 2010 showed that 20% of populations were diabetic and have complications associated with diabetes, such as neuropathy, retinopathy, and cardiovascular disease, and are associated with high morbidity and mortality (Martin, et al, 2017).

In addition, factors inspiring life performance between diabetic patients merged in ever-changing long-term habits specifically for bothering or bodily movement and support new conduct for months or years. Routine attitude adjustment can be used to prevent and treat a range of diseases, including obesity (Guariguata, 2014). Lifestyle plays a major role in the management of diabetes mellitus.

The World Health Organization (WHO) Study have shown that physical inactivity, reduced diet, people history, soft and size, alcohol spending, and smoke are all allied with danger factor for diabetes (Widyhening, et al., 2014). It accounts for 300,000 premature deaths each year in the United States alone due to inactivity and urbanization (Dube, et al., 2015). WHO highlights factors affecting lifestyle behavior such as diet habits, physical activity, and diabetes mellitus use. Concerning diet, the WHO places of interest the use of daily vegetable oils that cause an

increase in cholesterol, possibly leading to diabetes. It recommends that the population reduce the use of vegetable oil (WHO, 2016). There is also an increase in diabetes in the 20th century (Affar, 2017). More that, the lifestyle and social socio-economic inequities in type 2 diabetes commonly conveyed resulting in low-income countries as sound as major elements which is threat through 40-60% complex related to the low society with type 2 diabetic complications to mention but a few (Blisser,2013). Education of wellbeing actions in Australia initiate that individual through short socio-economic standing could obligate an enlarged danger of evolving type 2 diabetes. One hesitating assumption that bigger revenue could be minor the hazard of T2D if go together with by proper transformation in nourishment and control (Kennedy,et al, 2018).

It looks to be expected that the same mild change of life in quick and situation in nations would be answerable for socio-economic, cultural, environmental and lifestyle conditions. Though it is apparent that collection of routine and illness has enlarged frequency of maximum vital type 2 diabetes danger factor unclearly and BMI in impressive populaces. Immobile fatness appears to be the vigorous derivation of a abdomen obesity in a 13-year observational exercise in the USA.

In England education revealed that over 70% of grown-ups fixed in one of the undesirable activities engaged in negative activities with full danger end up with type 2 diabetes (Yuanyuan, et al. ,2017).

In sub-Saharan Africa the consistency and occurrence of diabetes severely bigger in the people of these countries (Snack, et al, 2017). This diabetes beyond compare to aspect the part structures very strong syndrome in which neglected custom of fitting routine and variation among the civic and isolated sectors. Outstanding to these difficulties diabetes partakes difficulty frequency of disease and death connected with Sub-Saharan Africa than other countries in the world (Snack, et al, 2017).

In Rwanda diabetes foremost studies revealed the discomfort and development in the 21st century of type 2 diabetes. This lasting and chronic sickness is frequently difficulty and responsible for masses of diseases per annum and limitless additional serious difficulties (MOH, 2017). The occurrence of diabetes in Rwanda is about 3.16% of the population with 1,918 diabetes-related diseases per year (MOH, 2017).

Diabetes is identified with adjustable and non-modifiable factors such as diet, exercise, mutual with genetic causes and being obese it is enough for somatic movement and of type 2 diabetes (MOH,2016).

More so, type 2 diabetes is the third principal source of sudden termination since non-communicable viruses mid 120 patients intermittently certain from 400 patients who seemed Kirehe District Hospital (MOH, 2015). The study conducted by evaluating the effectiveness of lifestyle modifications in the management of diabetes mellitus. The findings revealed that lifestyle modifications play a major role in keeping diabetes under control, especially when they are well implemented. Studies have shown that frequency, duration and intensity of physical activity may be influenced by positive control and management of diabetes (MOH, 2015). According to Rwanda's strategic plan from 2014 to2019, it is a well-known fact that both health care providers and patients have been informed and set (MOH, 2016).

1.2. Problem statement

Diabetes in Rwanda has high proportion of 3.16% (Rwanda Diabetes Association), according to the Ministry of Health Rwanda; the prevalence of diabetic mellitus is 80% among non-communicable diseases (MoH, 2016). The highest burden is represented by the diabetes mellitus, also known as type 2 diabetes, which is highly treatable with good success rate but expensive to be treated. In addition, limited studies have evaluated lifestyle factors associated with type 2 diabetic patients in Rwanda (MoH, 2016). The role of life style behavior among diabetic patient in improving the quality of life is yet to be studied in Rwanda. The key target of Rwanda Ministry of Health 2016 to 2019 is the reduction of 80% of deaths due to Non Communicable disease in 40 years old and younger by 2020, through improved access and quality of care, and general knowledge about prevention of risk factors and early detection (MoH, 2016). During working experience at Masaka Hospital, 2018, the researcher encountered many patients of non communicable diseases among them 328 were type 2 diabetic patients and 131 were not adhering on diabetic mellitus treatment, that prompted the researcher to conduct this study for assessing the factors affecting life style behavior among type 2 diabetic patients at Masaka District Hospital (MoH, 2016). Patients are taught in the NCDs clinic by use of charts and

posters to demonstrate the NCDs especially type 2 diabetes in clinic, provided by ministry of health but there are no charts or documents given to be taken home as teaching aid. This may create a gap in following the lifestyle factors associated with type 2 diabetic patients.

1.3. Aim of the study

To determine lifestyle factors associated with type 2 diabetic patients at Masaka District Hospital of Kigali, Rwanda.

1.4. Research objectives

1. To identify social demographic characteristics of type 2 diabetes at Masaka District Hospital
2. To determine the lifestyle factors associated with type 2 diabetic mellitus at Masaka hospital,
3. To examine the relationship between socio-demographic and life style factors associated with type 2 diabetic patients.

1.5. Research questions

1. What are the social demographic characteristics of type 2 diabetes at Masaka District Hospital
2. What are the lifestyle factors associated with type 2 diabetic patients at the District Hospital?
3. What are the relationships between the socio-demographic and the life style factors associated with type 2 diabetic patients?

1.6 Significance of the study

Nursing research

This study's findings would be used as an important document for reference for future researchers. In education it would be used as guideline for future researchers to do further research on effectiveness of lifestyle behavior and incorporate in the curriculum addition to information on Diabetes.

Nursing education

The findings of this study can help nursing students and registered nurses to know the life style factors associated with type 2 diabetic patients. It can also be a source of literature for other students to use it in their own study.

Nursing practice

The findings of this study would help health care providers especially nurses and physicians working in NCD clinic and medical wards to be aware of factors contributing to life style factors associated with type 2 DM and devise strategies to educate the patients based on the gap identified in this research.

1.7. Definition of concepts

Type 2 diabetes mellitus is a disease in which the body's ability to produce or respond to the hormone insulin is impaired, resulting in abnormal metabolism of carbohydrates and elevated levels of glucose in the blood (Cefalu, et al., 2016).

Lifestyle is the interests, opinions, behaviours, and behavioral orientations of an individual, group, or culture (Woźniak, 2016)

Lifestyle behavior: It is a set of attitudes, behavior or possessions associated with a particular person or group or comprise the methods used by individuals to stay healthy and prevent diseases along with beliefs about health (Dictionary, 2017).

Factors: a circumstance, situation or influence that contributes to a result (Bahçekapili, et al., 2013).

CHAPTER TWO: LITERATURE REVIEW

2.1. Introduction

This section of the research provides theoretical, empirical, identification of gaps, theoretical and conceptual frameworks on all prevalent types of diabetes mellitus with an emphasis on type two.

2.2 Theoretical Literature

2.2.1 Risk factors for type 2 diabetes

The risk factors for type 2 diabetes include the following; high blood pressure, gestational diabetes, high alcohol intake, family history, sedentary life (inactivity), high fat and carbohydrate intake, obesity, ethnicity such as African Americans, Native Americans, Asian Americans, Hispanic Americans are high risk to have type 2 diabetes than non Hispanic Americans, the next factor is aging begin to rise significantly at 45 years (Bellou, et al., 2018 and Marinho, et al., 2013).

2.2.2. Diabetic complications

Type 2 diabetes has been sign to problem and is very single in affecting all people of all ages with associated sickness like vascular difficulties (cardiac disease, cerebrovascular disease diseases (diabetic nephropathy, diabetic retinopathy and diabetic peripheral neuropathy) and diabetes-associated co-morbidities (Hypertension, hyperlipidemia and metabolic syndrome) (Jun, et al., 2017).

2.2.3. Principles of dietary management of Type 2 diabetes mellitus

Dietary with nutritionist was noticed in diabetes mellitus. To realize model mass loss a appropriate diet should be arranged sideways with body building treatment. Caloric limitations should be modest yet to run a composed diet. The regime would be modified grounded on drinking homemade drinks with less sugar.

According to life style factors associated with type 2 diabetes, it is important to adjust on plant food with lower energy density food, dietary risk, diabetes mellitus supplementary appreciated than non-fermented ones (Zubiaga, et al., 2017). It requires good dietary control including the restriction of calories with increased consumption of complex carbohydrates and fiber. In addition, regular physical exercise help to decrease insulin resistance and burn excessive glucose,

reduce some effects of stress and these are important factors in control and preventing complications of diabetes (Feldman, et al., 2017). Furthermore, smoking is one of the risk factors that can cause cardiovascular disease (CVDs), people with type 2 diabetes to avoid smoking (Chong, et al., 2017).

2.2.4. Effective strategies for encouraging life style factors associated with diabetic patients

Diabetes management is complex and demanding is also dynamic with changing medications, technologies and approaches. One constant diabetes management is behavior are involved whether ,people with diabetes is implementing a new treatment regime task ,getting to an appointment or attempting ,to reduce distress associated with having diabetes behaviors common to people ,with administration of medications calculating dose based on available information and data ,taking with others about diabetes ,taking supplies and being prepared for un expected events, for making appointments and ordering supplies (Monica,et al ,2018).

2.2.6. Economic factors

The social economic inequalities of the population and taking of sweet diet can lead to obesity (Ndetei, 2017).Local contexts, of the effects of diabetes, and the effects of disability to surrounding immigration and personal securities, these factors have been closely linked to obesity and diabetes (Ndetei, 2017).

2.2.7. Social factors

Social factors, including difficulty paying for food, medicines, monitoring and other supplies, medical care, housing or utilities, negatively affect metabolic control and increase resource use. When basic living needs are met, diabetes self management becomes increasingly difficult. Basic living needs include food security, adequate housing, safe environment, and access to medicines and health care (Barsley, 2017). Education staff can address these issues, provide information, and collaborate with the patient. When complicating factors are present during the initial training or maintenance session, diabetes self management and education can either directly address these factors or arrange for additional resources. Also complicating factors may at any time providers be prepared for immediate referral to patients with complications or other issues for diabetes (Barsley, 2017).

2.2.8. Social culture

Socio-cultural factors, such as gender inequality, racism, and social networks, also influence stress, and the incidence and experience of NCDs. Anthropological research reveals that diabetes interacts differently with one or two of the disorders in the context of social and cultural differences. Social and economic factors contribute to psychological distress (Mendenhall, 2017). As diabetes increases among low-income populations in structural and social factors, (Mendenhall, 2017).

Diabetes self management education is a process that facilitates the development of knowledge, skill, and ability for diabetes self care. Diabetes self management support although it is important for the health care team and community to be involved in the process. Health care providers and their practice of providing a systematic referral process to ensure that patients with type 2 diabetes receive both diabetic self-control and education in a consistent manner (Funnel, 2017). Diabetes self-management and education is typically provided by a health professional while ongoing support can be provided by staff. Diabetes self-management and education programs are designed to address the patient's needs, including, mental health, financial health, financial awareness, and other factors, meet the challenges of self management (Duker,2017).

2.3. Empirical literature.

Based on demographic factors affecting the lifestyle of type 2 diabetic patients it is state that, gender; marital status; occupation; religion; source of income; category diabetic patients. Based on gender some researchers like (Muhabuura, 2014) found that among 150 participants, 43% were males and 57% were females. As a result, most of the participants were females, 58.7% of female participant in Nigeria. The grasp of participant (36.7%) were aged 50-59 years followed by age group 60-69 years (23.3%) and 20.7% for age group 40-49 years (Muhabuura, 2014).

Marital status was 62.7% of the population while 13.3% were divorced or estranged. A analogous study (Ganiyu, 2014) reported that 41.3% of participants were married, 14.4% co-habiting, and 26% were single. Ganiyu was discussion about erudition saw that most of the participant had resulting lessons (42%) while only 4.67% had tertiary education.

A study by (Umeh, et al., 2018) showed that similar results were attained at enlightening levels in Ermulo, Mpumalanga Province where 8% of participant had tertiary schooling and 37% had

resultant tutoring (Umeh et al, 2018), referring to source of revenue professional and family history. A total of 290 Type 2 diabetes mellitus participant were recruiting into the study 39.3%, civil servants 20.7%, farmer 11.4% casual labor 5.2%, small scale 21.4% others 2.1%. More so, religion (Christians 97.6% & Islam 2.1%), alcohol very strong (yes 4.2% & 95.8%), and smoke habits (Yes 1.2%, never 79.7% & used but not stopped 18.6%) can also have an impact on standard of living wage deeds of type 2 diabetic patients (Waari, 2018).

The experience of people with type 2 diabetes are under researched across the region pointing to gap in knowledge ,interpretation ,analysis and synthesis it suggested three priority areas for policy makers and implementers. There are certainties related to access to diabetes treatment need to be reduced (Mikaela, et al., 2018).

More so, needs to be done to acknowledge and alleviate the economic struggles that those with diabetes face. Highly information education would improve rendition and management of type 2 diabetes (Mikeala, et al., 2018).

In one of the study reported that information would sometimes buy their medications directly from local pharmacies without attending non communicable clinic to obtain an appropriate prescription to avoid healthcare and transportation costs (Cidy, et al., 2018).

Furthermore, the methods of managing type 2 diabetes under financial constraints were focus on prolonged medication supplies, in Tanzania, this included reducing dosage or sharing medications with other type2 diabetes patients (Cindy, et al., 2018). The drugs are not affordable besides doesn't come alone, there is cholesterol hypertension that come along and the struggle to cover all that with civil servants earnings (Mikaela, et al,2018).

2.4 Critical review and research gap identification regarding lifestyle factors associated with type 2 diabetes in management of diabetes.

There are few studies done on factors affecting style behavior of type 2 diabetic patients. Various articles that were consulted revealed that most diabetes patients were not adequately adhering to lifestyle behavior of type 2 diabetes mellitus. There were some inconsistencies in the articles about type 2 diabetic patients (Mclawhorn, 2016).Health care professionals should emphasize the key role of weight loss, increased physical activity, and healthy diet in preventing metabolic syndrome and diabetes.(Mclawhorn, 2016). Health care provider's evidence based

medicine and nutrition in well controlled clinical trials, lifestyle changes have been shown to be more effective than diabetes in high-risk groups (Uusitupa, 2014).

There is progress needs to be accredited in the size and people with diabetes . In many countries, up to 30% (Rathmann,2014), people are at increased risk, and it has been predicted that the prevalence of diabetes in an increase within the next 20 years. According to the Ministry of Health strategic plan2014 to 2019 communities were made aware of NCDs messages (MoH, 2014). In Rwanda, there is a car free day program where people join for sports every two weeks. This draft program is very valuable to the nation, since broadcast and open minded out of any non communicable diseases and think about are given. More so, the Government of Rwanda has put an Order for Civil Servants on every Friday afternoon to go for sports.

2.5. Conceptual framework

The Health Belief Model (HBM) application has long been used as a reliable research tool to improve lifestyle behavior in patients with type 2 diabetes. Many studies have evaluated HBM in design and prevention programs. The model enhances understanding of lifestyle behavioral factors among diabetic patients (Al-mutairi., 2015).

The HBM highlights how the programs are supposed to be. HBM is best used when promoting individual precautionary behaviors, such as sticking to guidelines provided by healthcare providers, focusing on the beliefs and perceptions of individuals that are not heavily influenced by society and social norms. It highlights both the negative and positive consequences of current behavior and the suggested alternative behavior (Adeniran, 2012). This model has been applied in this study to evaluate factors affecting lifestyle behavior among diabetic patients at Masaka District Hospital.

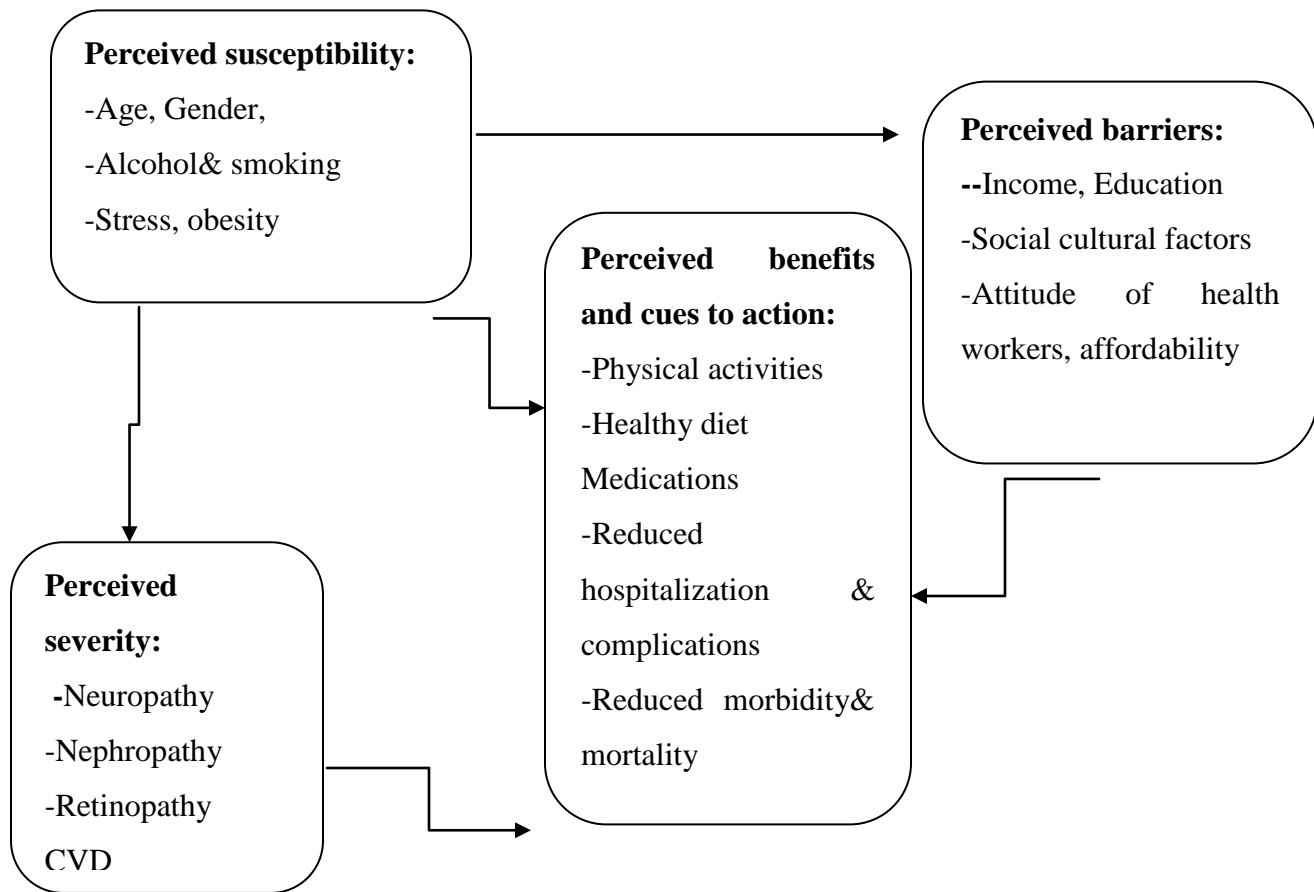


Figure. 2.1: Health Belief Model (HBM)(Modified) adapted from (Conner and Norman, 2017).

Conclusion

Diabetes mellitus affects individuals; health care systems, and worldwide societies, diabetes has become a prime public health threat, lifestyle involvement programs, these tactics represent opportunities where practitioners, communities, and health care systems are available to afford individuals with education, support and occasions to continue free diabetes lifestyles.

CHAPTER THREE: RESEARCH METHODOLOGY

3.0. Introduction

This chapter includes research design, approach, and setting, population, sampling strategies, sample size, data collection methods, instrument, data analysis, ethical consideration, data management, data dissemination, limitations and challenges.

3.2. Research design

Research design is accessible with typical variables. Research studies can be described or classified in a variety of ways. Ideally increase the point of knowledge. Design is based on science theory (Briskat, et al. 2016). Descriptive, cross-sectional design was used in this study.

3.3 Research approach

A quantitative research has been utilized in this study. According to Burns & Grove, (2013), quantitative research is a formal, objective organized process.

3.4. Research Setting

The study was conducted in Masaka District Hospital, located in Kicukiro District, Kigali City. Rwanda is a small landlocked country of 26,338square kilometers and is located in East Africa.

Rwanda country profile

Rwanda is a small landlocked country of 26,338square kilometers and is located in East Africa. It is also known as "The Land of a Thousand Hills" bordered by four countries named for Uganda the North, East of Tanzania, Burundi to the South and the Democratic Republic of the Congo. Rwanda has a population of 10.5 million people (2012 General Census) with a female predominance of 51.8% of the total population (Rwanda Country Profile, 2016)

Description of Masaka Hospital

Masaka District Hospital is located in Kicukiro District, in Murambi village, Cyimo cell, Masaka sector; it was built on 19th September, 2011 with support from Rwandan Military Hospital located in Kicukiro District.

3.5. Study Population

The study population is all people that a researcher was interested in learning and defining specific common characteristics (Rebar et al. 2011). The study included type 2 diabetes patients

enrolled in the Register of Non-Communicable Diseases (NCD), which is the NCD clinic at Masaka District Hospital in March 2019, and approximately 611 diabetic patients adhered to the program (Masaka Book Register), District Hospital, 2019.

3.5.1. Accessible Population

Accessible population is a sub set of target population (Asiamah, et al., 2016). The accessible population was 160 patients who come from different areas to the Clinic on a daily basis. It is from the accessible population that the researcher draws their sample.

3.6. Target Population

In research, the target population means the population that a researcher is planned in the study (Asiamah, et al.,2016), thus it must be identified and agreed upon. The target population used in the study was 114 type 2 diabetes patients.

3.7. Sampling

3.7.1 Sampling Strategy

Simple random sampling method was used in this study to recruit the participants. The researcher distributed the number to participants and the interval was 5 was considered during sample selection which was performed as 5, 10, 15, 20Until 114 participants.

3.7.2 Sample Size

A sample is a subgroup of the population (Kumar, 2011) .Thus the population for the study was 611diabetc patients in the Masaka NCDs clinic; the sample size was114 patients used in this study that was calculated using the following formula:

$$n= \frac{N}{1+N (e)} 2$$

$$N = \text{total population } 160. N = \frac{160}{1+0.4} = \frac{160}{1.4} = 114 \text{ participants}$$

n: Sample size

e: Margin of error: 5%

N: Population

3.7.3 Inclusion criteria

All type 2 diabetic patients who consented to participate in the study.

3.7.4. Exclusion criteria

Special population like pregnant mothers, children between 7-20 years with type 1 diabetic were excluded.

Type 2 diabetic patients who cannot read and write.

3.8. Data collection

Before data collection all participants were informed about the purpose of the study. All those who agreed to fill in the questionnaires, were put in a secured place. The completed questionnaires were collected on the same day by a researcher.

3.8.1. Data collection tools

Data collection tool focused on socio-demographic characteristics of lifestyle behavior of diabetic patients. The tool was a self administered questionnaire. The researcher preferred to use this tool because it makes use of large samples over a short period of time (Bowles,2012). This tool has close-ended questions, because the closed ended questions are easy to analyze since they are in an immediate form, so each item was followed by statement. The questionnaire was modified by a researcher. In addition, some terms were simplified to make it clear. It was taking 10 to 15 minutes to fill it. Questionnaires were in English language and translated into Kinyarwanda and back translation was done to maintain accuracy.

Independent Variable	Dependent Variables
Food Physical Exercises Medication Monitoring of blood sugar Alcohol use Smoking	type 2 diabetes

3.8.2 Data collection Procedures

Prior to data collection the researcher obtained ethical approval and ethical clearance from research Institutional Review Board of Rwanda College of Medicine and Health Sciences. A researcher then went to Masaka District Hospital to conduct a study in the hospital. After explanation, the questionnaire was randomly administered. The questionnaires were self-administered and then filled in, a researcher checked their unity and collected them. All questionnaires were coded to protect the confidentiality of participants.

3.8.3 Reliability of the instruments

Reliability refers to the consistency, stability, and repeatability of the results (Mohajan, 2017). Reliability in the study was to test-retest reliability. In this regard, a researcher first conducted pre-testing of the instrument among 10 diabetic patients.

Table 3.1 Indicates that good quality of alpha content ranges from 0.70 to 0.90

Cronbach's alpha	Internal consistency
$\alpha \geq 0.9$	Excellent
$0.7 \leq \alpha < 0.9$	Good
$0.6 \leq \alpha < 0.7$	Acceptable
$0.5 \leq \alpha < 0.6$	Poor
$\alpha < 0.5$	Unacceptable

Indicators	Alpha
Demographic	0.73
Exercise	0.62
Alcohol	0.68
Drinks	0.76
Bread	0.70
Medications	0.65

Table 1: Indicates that good quality of alpha content ranges from 0.70 to 0.90

In Table 3.3. It was revealed from pilot study that the cronbach alpha of 0.6 to 0.8 was internally consistent

3.8.4 Validity of the instruments

Validity is the extent to which any measure is applied (Juan, et al., 2018). To ensure the validity of the study tools, a researcher obtained the sample questionnaire developed by Rwandan experts in the context of the researcher and supervisor. The questionnaire was submitted to the supervisor for content validity assessment. They provided the input to improve the questionnaire. Content validity is sometimes referred to as logical or rational validity. External validity is the generalization of the population. Test validity is an indicator of how much value can be placed on a set of test results (Martyn, 2018).

3.8.5 Data analysis

All data were analyzed using SPSS (Statistical Package for Social Sciences) version 21. Descriptive and inferential (Chi-square) statistics were used to analyze the data.

3.9. Ethical considerations

Ethical authorization was obtained from the Rwanda campus and from Masaka District Hospital where a research was conducted. Participants were informed about the general nature of the study. The written consent was signed by each participant before completing a questionnaire. All participants were given the code numbers that were entered on the questionnaire: They were informed not to write their names on the questionnaire to maintain anonymity.

It would be explained to the participant that in attendance would be no unswerving remuneration to them. Participation was voluntary. The data was kept in a safe place by a researcher.

3.9.1. Consent form

Participants in this study were voluntary and there was no inconvenience for those who did not choose to attend. The informed consent was detailed so that participants would be informed of the purpose of the study.

3.9.2. Confidentiality

The data from this study were kept safe by maintaining their confidentiality. The completed questionnaires and observation form were locked in the cupboard and kept confidential so that the data could be accessed by the researcher only.

3.9.3. Anonymity

Both questionnaires did not bear the participant's names. Instead, only the codes were used on questionnaires and on observation forms.

3.9.4 Risk protection

There were no known risks associated with this study.

3.10. Data management

The collected was stored in a secure database and valid for 5 years. Hard copies were secured in a double locked cupboard and accessed by a researcher alone. Each completed questionnaire was checked for errors, completeness and readability. Filled questionnaires were safely stored in a cupboard under lock and key. Pre-coded data was directly entered into a computer. Codes were assigned to the responses. Data entry was done using SPSS software. Entries and mistakes made were verified. Consistency checks were performed to verify if errors were corrected.

3.11. Data dissemination

The fallout from this review was a few words exchange with the NCDs of Masaka District Hospital. For public and researcher's awareness, Rwanda's Journal of Medicine and Health Sciences and google scholar will be published in the Rwanda Remera Campus and Masaka District Hospital, Kigali City of Kigali, Rwanda.

3.12. Limitations and challenges:

The study was conducted in one district hospital hence the results cannot be generalized to the other hospitals in Rwanda. The qualitative research approach would have brought more information on the factors influencing the life style behavior among diabetic patients. More sample of patients would have been assisted the researcher to explore the factors affecting the life style behaviors among diabetic patients.

For that reason, a researcher couldn't generalizable the results for the whole country; instead, the study results were applicable to the NCDs clinic of Masaka District Hospital.

3.13 Conclusion

This study is a cross-sectional study with a quantitative approach. The study was conducted in Masaka District Hospital, NCDs Clinic of Masaka Hospital and a total of 114 patients were randomly selected and eligible participants.

CHAPTER FOUR: RESULTS

4.0 Introduction

This chapter focuses on 114 data from the diabetic participants at Masaka District Hospital, Rwanda. The data is presented in tables and analyzed. The chapter is chronologically arranged to give a statistical answer to the research questions. The statistical analysis was made using the statistical package for social sciences (SPSS) version 21. This chapter is mainly based on two types of diabetic patients.

4.1 Demographic characteristics of respondents

To analyze the profile of the respondents, to describe the information regarding respondents' gender, age, marital status, occupation, religion, source of income, and how long have they been with diabetic The following table summarizes the results of the profile of respondents:

Table 2: Social-demographic characteristics

	Variables	Frequency	Percentage
Gender	Male	80	70.2
	Female	34	29.8
Age	41-50 Years	18	15.8
	51-60 Years	46	40.4
	61-70 Years	30	26.3
	Above 70 years	20	17.5
Marital status	Married	100	87.7
	Divorced	14	12.3
Occupation	Self employed	60	52.6
	Peasant	30	26.3
Religion	Christian	95	83.3
	Muslims	19	16.7
Source Income	Irregular	99	86.8
	None	15	13.2
Category	1st level	14	12.3
	2nd Level	70	61.4
	3rd Level	30	26.3
	Primary	80	70.2
Level of education	Secondary	24	21.1
	Tertiary	10	8.8
	length of the diseases	36	31.6
Weight	11-15 Years	40	35.1
	Above 15 Years	40	35.1
	40-60 kg	14	12.3
	61-80 kg	28	24.6
	81-100 kg	55	48.2
Height	101kg and above	17	14.9
	150-160 Cm	25	21.9
	161-170 Cm	65	57
	171-180 Cm	21	18.4
	181 and above	3	2.6

Table 3: Social-demographic characteristics

Table 1 indicates that out of the total 114 respondents, 80 respondents representing 70.2% were males, while 34 respondents representing 29.8% were female. Out of the total 114 respondents, as indicated in table1, 18 respondents representing 15.8% of total respondents had the age of 41-50 years, 46 respondents representing 40.4% of the total respondents had the age between 51 to 60 years , 30 respondents representing 26.3% of the total respondents had the age of 61-70 years

and 20 respondents representing 17.5% of the total respondents had the age above 70 years old. This implies that the respondents were mature enough and able to analyze the lifestyle behavior of type 2 diabetic mellitus. Out of the total 114 respondents, 100 respondents representing 87.7% were married, while 14 respondents representing 12.3% were divorced. Out of the total 114 respondents, 24 respondents representing 21.1% were not employed, 60 respondents representing 52.6% were self employed, while 30 respondents representing 26.3% were peasant. Out of the total 114 respondents, 95 respondents representing 83.3% were Christians, while 19 respondents representing 16.7% were Muslims.

Out of the total 114 respondents, 100 respondents representing 87.7% were married, while 14 respondents representing 12.3% were divorced. Out of the total 114 respondents, 24 respondents representing 21.1% were not employed, 60 respondents representing 52.6% were self employed, while 30 respondents representing 26.3% were peasant. Out of the total 114 respondents, 95 respondents representing 83.3% were Christians, while 19 respondents representing 16.7% were Muslims.

Out of the total 114 respondents, 99 respondents representing 86.8% have irregular source of income, while 15 respondents representing 13.2% had no source of income. Out of the total 114 respondents, 14 respondents representing 12.3% were in 1st category of economic status, 70 respondents representing 61.4% were in 2nd category of economic status while 30 respondents representing 26.3% were in 3rd category of economic status. Out of the total 114 respondents, 99 respondents representing 86.8% have irregular source of income, while 15 respondents representing 13.2% had no source of income. Out of the total 114 respondents, 14 respondents representing 12.3% were 1st category of economic status, 70 respondents representing 61.4% were in 2nd category of economic status while 30 respondents representing 26.3% were 3rd category of economic status.

The table 1 also indicates that out of the total 114 respondents, 80 respondents, representing 70.2% had primary level, 24 respondents representing 21.1% had secondary level, and 10 respondents representing 8.8% had a tertiary level. This is an indicator that high education facilitates an individual's self-care and monitoring of his or her diabetes condition adequately.

The duration of how long they had diabetic; the research found that 19 respondents representing 16.7% of respondents were diabetic between 1-5 years, 19 respondents representing 16.7% of respondents had diabetic between 6-10 years, 36 respondents representing 31.6% had diabetic

between 11-15 years, and 34 respondents representing 35.1% had diabetes above 15 years. This means that most of the respondents have been diabetic many years

Concerning the measurement; the research revealed that 14 respondents representing 12.3% of respondents had 40-60 kg, 28 respondents representing 24.6% of respondents between 61-80 kg, 55 respondents representing 48.2% had 81-100 kg, and 17 respondents representing 14.9% have 101kg and above. This means that the majority of respondents have 81-100kg.

The research revealed that 25 respondents were representing 21.9% of the respondents had 150-160 Cm, 65 respondents representing 57.0% of respondents 161-170 Cm, 21.4% had respondents representing 171-180 Cm and 3 respondents representing 2.6% 181cm and above. This means that the majority of respondents have 161-170 cm.

4.2 Presentation of findings as aligned with the objectives

Table 4: Life style factors associated with type 2 diabetic patient

Items	Variables	Frequency	Percentage	
Smoking	Yes	15	13.5	
	No	99	86	
Alcohol use	Yes	15	13.2	
	No	99	86.8	
Food	Green leafy vegetables	Every day	114	100
	Sweet Potato	Every day	20	17.5
	Beans	Every day	114	100
	Cassava	One in a week	30	26.3
	Yams	Twice a week	40	35.1
	Matoke	Every day	114	100
	Fruits	One a week	10	8.8
	Mutton		13	11.4
	Beef		82	71.9
	Physical exercise:	Mild walking	Once in a week	114
Brisk walking		Once in a week	114	100
Bicycle Riding		Every day	75	65.8
Digging		Every day	60	52.6
Sun flower oil			40	35.1
Fat or oil	Mukwano oil		60	52.6
	Other oils		14	12.3
Dietary habits	Adding the salt in the food occasionally		14	12.3
	Rarely, or never adding salt in the food		100	87.7
	Every day		15	13.2
Factory juice	Once in a week		19	16.7
	Once in 15 days		30	26.3
	Once in 30 days		50	43.9
	Once in a week		14	12.3
	Once in 15 days		31	27.2
	Once in 30 days		69	60.5
	Every day		15	13.2
	Once in a week		19	16.7

	Once in 15 days	26	22.8
	Once in 30 days	54	47.4
Type of bread	Don't eat any type of bread	20	17.5
	Sugary bread	50	43.9
	Salty bread	44	38.6
Type of milk	Local milk	45	39.5
	Low fat milk	29	25.4
Failure of drug use	Do not drink milk	40	35.1
	Yes	31	27.2
	No	83	72.8
Reason for not taking Medication	Lack of motivation	11	35.5
	Poor vision	20	64.5
	Total	31	100
Interval	6-12 months	14	12.3
	13-24 months	30	26.3
	Above 24 months	70	61.4
Name of drug	Yes	110	96.5
	No	4	3.5
Type of drug	Dao nil(oral)	100	87.7
	Rapid insulin(injections)	7	6.1
	Lent insulin	7	6.1
Health facility	Masaka hospital	80	70.2
	pharmacy		
	Retail Pharmacy	34	29.8
Reason for treatment	Yes	114	100
Frequency of medication	b.d (2 times a day)	114	100
duration of treatment	Lifetime	114	100
Side effect awareness	Yes	114	100
	No	14	87.5
Storage of medicine	Others	114	100
Missing of dose	Take as soon as I remember	20	17.5
	Wait for the duration of the next dose	14	12.3
	I don't miss doses	80	70.2
Home self-testing	Yes	5	4.4
	No	109	95.6
Knowledge on blood sugar	Yes	114	100
Access to suppliers	Yes	114	100

Testing urine	No	114	100
Experiencing complication	Tingering sensation	30	26.3
	Poor vision	29	25.4
	Body weakness	31	27.2
	Heart problems	24	21.1
	Diabetic deity &	100	87.7
	Diabetic diet & insulin	10	8.8
	Diabetic diet insulin & anti diabetic tablets	4	3.5
	HIV	5	5.6
	Hepatitis C	15	16.6
	Chronic conditions	Hepatitis B	10
Hypertension		60	66.7
Nephropathy		5	4.4
Retinopathy		79	69.3
Impotency		10	8.8
CVD		20	17.5

Table 5: Life style factors associated with type 2 diabetic patient

Out of 114 respondents, 15 respondents representing 13.2% they were smokers, and 99 respondents representing 86.8% did not smoke at all, which implies that the majority do not smoke because of a good lifestyle factors for a diabetic patient 35% of respondents drink alcohol, and 64% do not drink Alcohol, which is a good lifestyle. 100% of respondents take Green leafy vegetables Every day, 17.5% of respondents take Sweet Potato Everyday, 100% of respondents take beans Everyday, 26.3% respondents take Cassava everyday, 35.1% respondents Take Yams every day, and 100% of respondents take Matoke every day while 8.8% respondents take fruits once a week. According to the diabetic nutrition, taking sweet potatoes, cassava every day it's not the best diet since they are carbohydrates and contains a lot of sugars.

Fruits, Green leafy vegetables and Yams are very important for diabetes patients because they stabilizing blood sugar levels. 100% of respondents do a physical exercise, 65.8% respondents do bicycle riding as a physical exercise exercise every day. In conclusion, all participants do exercises on daily basis. 11.4% respondents often eat meat, and 71.9% respondents often eat biscuits because it adds fats containing cholesterol. Out of 114 respondents, 35 respondents represent 35.1% use, for example, it has vegetables, 60 respondents representing 52.6% use, and 14% respondents representing 12.3% use other oils for cooking. The majority of respondents use mukwano oils that contain a lot of cholesterol is not the best for diabetic patients because it adds

fats on a body. Out of 114 respondents, 14 respondents represent 12.3% at the table, and then respond occasionally, and respondents 100% 87.7% rarely, or never, add salt at the table.

The research revealed a great result, whereby, 14 respondents were occasionally adding salt at the table when eating the food while 100 respondents never added salt to their food on the table. Out of 114 respondents, 15 respondents representing 13.2% each day drink factory juice, 19 respondents represented 16.7% drink factory factory in 15 days, 30 respondents represented by 26.3% drink factory juice once in 30 days. This implies that respondents take factory suits, so they should be advised to stop taking them.

Out of 114 respondents, 15 respondents represented by 13.2% every day drink homemade juices, 19 respondents presented 16.7% drink homemade juices one in the week, 26 respondents represented by 22.8% drink domesticated juices once in 15 days and 54 respondents represent 47.4% homemade juices once in 30 days. The respondents should be advised by taking their own homemade juices since they are nutritious and contain rough crops.

Out of 114 respondents, 14 respondents represented by 12.3% drink Coke once in a week, 31 respondents represented by 27.2% drink Coke once in 15 days and 69 respondents represent 60.5% Coke once in 30 days. Diabetic patients should be advised not to take these drinks because they contain caffeine which is dangerous for their lives. Out of 114 respondents, 20 respondents represented by 17.5% do not eat any type of bread, 50 respondents represented by 43.9% common eat sugary bread, and 44 respondents represent 38.6% common eat salty bread. Many of the respondents eat sugar and this raises the blood sugar levels.

Out of 114 respondents, 39 respondents represented 39.5% commonly used local milk, 29 respondents represented by 25.4% commonly used low fat milk, and 40 respondents rather than 35.1 percent. In the research, most of the respondents were taking local milk, which included cholesterol, so they should be advised to take low fat milk or to dilute the local milk.

Out of 114 respondents represent 27.2% sometimes fail to take medication, and 83 respondents represent 72.8% do not fail to take medication. The majority of patients take their medications, while others do not take it sometimes.

Out of 31 respondents, 35 respondents 34.5% sometimes fail to take medication because of lack of motivation, and 20 respondents represented 65.5% sometimes fail to take medication due to poor vision.

Out of 114 respondents, 14 respondents represent 12.3% have been on anti-diabetes mellitus between 6 and 12 months, 30 respondents represented by 26.3% had an anti-diabetes between 13 and 24 months and 70 respondents represent 61.4% have been on anti-diabetic medications above 24 months. The majority of respondents had diabetes mellitus for a long time, so they knew how to control symptoms of hyperglycemia and hypoglycemia.

Out of 114 respondents, 110 respondents represent 96.5% they knew the names of anti diabetic drugs they are taking.

Out of 114 respondents, 87 respondents represent 87.7% use Dao nil oral, 7 respondents represent 6.1% use rapid insulin injection, and 7 respondents represent 6.1% use lent insulin. The majority of participants were on oral hyperglycemic.

Out of 114 respondents, 80 respondents represent 70.2% of their medication from Masaka Hospital Pharmacy, and 34 respondents represent 29.8% of their medication from retail Pharmacies. The majority of patients get their medications from Masaka Hospital pharmacy. All respondents knew why they were taking anti diabetic drugs. The participants were well educated on their diabetes status and were able to monitor their condition.

All respondents take their medications b.d (2 times a day). Most people have been taking medications twice a day so this facilitates their daily activities. All participants responded that they were taking diabetic drugs for the rest of their lives. All respondents knew the most common side effects of anti diabetic medications.

Out of 16 respondents, 12 respondents were interviewed, 12.5% knew how to inject themselves with insulin, and 14 respondents were represented by 87.5%. The majority of patients were not able to inject themselves. The proper place for storing insulin before use is in the refrigerator (2- 80⁰C), but insulin can be kept safe from anywhere in the house. safe place in their houses.

Out of 114 respondents, 20 respondents represented by 17.5% when they miss a dose, 14 respondents represented by 12.3% respondents when they missed a dose, 80 respondents represented by 70.2% do not miss the dose of anti diabetic drug. The majority of respondents do

not miss their daily anti diabetic medications. Out of 114 respondents, 5 respondents represented by 4.4% they tested blood sugar at home, and they did not keep a record of blood sugar and 109 respondents were 95.6% they do not tested their blood sugar at home, they rely on blood sugar. It is very important to have a complication of type 2 diabetes.

Most respondents knew the normal range of blood sugar that is between 70 to 130 mg / dl. This is very important for all of the respondents who know the normal range of blood glucose in the body. All respondents have access to diabetes supplies and most of the respondents get their diabetes from Masaka Hospital.

All respondents do not test blood for sugar or ketones. It would have been good for the respondents, if not able to buy glucose.

Out of 114 respondents, 26 respondents 26.3% had tingeing sensation, 29 respondents represented 25.4% of them poor vision, 31 respondents represented by 27.2% had body weakness, and 24 respondents represented by 21.1% had heart problems. In the study, the results revealed the complication of diabetes form all the participants.

Out of 114 respondents, 100 respondents were 87.7% on diabetes mellitus and tablets, 10 respondents represented by 8.8% were on diabetes mellitus and insulin and 4 respondents represent 3.5% of the diabetic deity, insulin & anti diabetic tablets. The majority of respondents were on oral hypoglycemic.

Out of 114 respondents, 90 respondents represented by 78.9%, apart from type 2 diabetes they have other chronic diseases. In this study, the study found that most of the type 2diabetic participants had also other chronic conditions. Out of 90 respondents, 5 respondents were represented by 5.6% had HIV, 15 respondents represented 16.6% had Hepatitis C, 10 respondents represented 11.1% Hepatitis B, and 60 respondents represented 66.7% with Hypertension. Majority of respondents had other chronic conditions that affected their life style too.

Out of 114 respondents, 5 respondents 4.4% have nephropathy complication from diabetes, 79 respondents represented by 69.3% have retinopathy complication from diabetes, 10 respondents represented by 8.8% have impotency from diabetes, and 20 respondents represented by 17.5% have CVD from diabetes. The study revealed how much diabetes affected the life style of

respondents a great deal. Relationship between socio-demographic factors and lifestyle behavioral type 2 diabetic patients.

Table 4: Life style factors associated with type 2 diabetic patient

Variables	Alcohol intake		Chi-square	p-value
	Yes n (%)	No n (%)		
Gender			7.321	0.007
Male	20(95.2)	61(65.6)		
Female	1(4.8)	32(34.4)		
Age			18.132	0.000
41-50	6(28.6)	5(5.4)		
51-60	2(9.5)	18(19.4)		
61-70	7(33.3)	61(65.6)		
Above 70	6(28.6)	9(9.7)		
Marital status			7.323	0.062
Single	0(0)	1(1.1)		
Married	8(31.0)	63(67.7)		
Divorced	4(19.0)	7(7.5)		
Widow	9(49)	22(23.7)		
Occupation				
Employed	5(23.8)	5(5.4)	9.461	0.051
Non employed	0(0.0)	4(4.3)		
Retired	4(19.9)	17(18.3)		
Self employed	5(23.8)	41(44.1)		
Farming	7(33.3)	26(28.0)		
Religion			1.792	.0408
Christian	11(52.4)	61(65.6)		
Moslem	9(42.9)	35(30.7)		
Source of income			2.401	.301
Regular	4(19.0)	31(33.3)		
Irregular	14(66.7)	45(48.4)		
Category of income			8.401	0.37
Level 1	7(33.3)	9(9.7)		
Level 2	6(28.6)	41(44.1)		
Level 3	1(4.8)	10(10.8)		
Level 4	7(33.3)	33(35.5)		
Education level			9.173	0.57
Illiterate	5(23.8)	18(19.4)		
Primary	0(0.0)	16(17.2)		
Secondary	3(14.3)	22(23.7)		
University	7(33.3)	28(30.1)		
Tertiary	6(28.6)	9(9.7)		

Table 6: Life style factors associated with type 2 diabetic patient

There are no significant relationships between gender, education status, marital status and alcohol. Since p values are greater than 0.005. The significant relationship was found between alcohol and age (p value less than 0.005).

Table6: Relationship between socio-demographic lifestyle factors and exercises

Variables	Exercises				Chi-square	p-value
	Mild walking	Brisk walking	Bicycle riding	Digging		
Gender					15.565	.001
Male	12(15.2)	17(63.0)	26(68.4)	26(100.0)		
Female	11(47.8)	10(37.0)	12(31.6)	0(0.0)		
Age					84.591	.000
41-50	7(30.4)	4(14.8)	0(0.0)	0(0.0)		
51-60	7(30.4)	10(37.0)	3(7.9)	0(0.0)		
61-70	4(17.4)	3(11.1)	35(92.1)	26(100.0)		
Above70	5(21.7)	10(37.0)	0(0.0)	0(0.0)		
Marital status					18.524	0.030
Single	1(4.3)	0(0.0)	0(0.0)	0(0.0)		
Married	9(39.1)	14(51.9)	31(81.6)	17(65.4)		
Divorced	3(13.0)	3(11.1)	4(10.5)	1(3.8)		
Widow	10(43.5)	10(37.0)	3(7.9)	8(30.8)		
Occupation					79.866	0.000
Employed	4(17.4)	6(22.2)	0(0.0)	0(0.0)		
Non employed	0(0.0)	4(14.8)	0(0.0)	0(0.0)		
Retired	6(26.1)	6(22.2)	1(2.6)	8(30.8)		
Self employed	2(8.7)	0(0.0)	33(86.8)	11(42.3)		
Farming	11(47.8)	11(40.7)	4(10.5)	7(26.9)		
Religion					29.308	0.000
Christian	16(69.6)	17(63.0)	18(47.4)	21(80.8)		
Moslem	5(21.7)	10(37.0)	20(52.6)	0(0.0)		
None	2(8.7)	0(0.0)	0(0.0)	5(19.2)		
Source of income					16.178	0.013
Regular	10(43.5)	11(40.7)	13(34.2)	1(3.8)		
Irregular	10(43.5)	9(33.3)	19(50.0)	21(80.8)		
None	3(13.0)	7(25.9)	6(15.8)	4(15.4)		

Category of income					42.073	0.000
Level 1	3(13.0)	4(14.8)	5(13.2)	4(15.4)		
Level 2	4(17.4)	10(37.0)	13(34.2)	20(76.9)		
Level 3	8(34.8)	3(11.1)	0(0.0)	0(0.0)		
Level 4	8(34.8)	10(37.0)	20(52.6)	2(7.7)		
Education level					99.143	0.000
Illiterate	6(26.1)	2(7.4)	2(5.3)	13(50.0)		
Primary	12(52.2)	1(3.7)	3(7.9)	0(0.0)		
Secondary	0(0.0)	17(60.0)	8(21.1)	0(0.0)		
University	5(21.7)	7(25.9)	18(47.4)	5(19.2)		
Tertiary	0(0.0)	0(0.0)	7(18.4)	8(30.8)		

Table 7: Relationship between socio-demographic lifestyle factors and exercises

The significance of the relationship between education and income category, age, occupation and religion has been found since the p value is less than 0.005. Other factors are not significantly related to exercises.

Table7: Relationship between socio-demographic lifestyle factors and drinks

Variables	Drinks		Chi-square	p-value
	Yes n (%)	No n (%)		
Gender			27.967	.000
Male	45(97.8)	35(52.2)		
Female	1(2.2)	32(47.8)		
Age			28.022	.000
41-50	3(6.5)	8(11.9)		
51-60	0(0.0)	20(29.9)		
61-70	38(82.6)	30(44.8)		
Above 70	5(10.9)	9(13.4)		
Marital status			11.727	.068
Single	0(0.0)	1(1.5)		
Married	26(56.5)	45(67.2)		
Divorced	5(10.9)	5(7.5)		
Widow	15(32.6)	16(23.9)		
Occupation			18.8822	.016
Employed	2(4.3)	8(11.9)		
Non employed	0(0.0)	4(6.0)		
Retired	14(30.4)	6(9.0)		
Self employed	21(45.7)	25(37.3)		

Farming	9(19.6)	24(35.8)		
Religion			7.195	..126
Christian	32(69.6)	39(58.2)		
Moslem	9(19.6)	26(38.8)		
None	5(10.9)	2(3.0)		
Source of income			22.973	.000
Regular	6(13.0)	29(43.3)		
Irregular	35(76.1)	24(35.8)		
None	5(10.9)	14(20.9)		
Category of income			21(.912)	.001
Level 1	22(47.7)	25(37.3)		
Level 2	22(47.8)	25(37.3)		
Level 3	0(0.0)	11(16.4)		
Level 4	13(28.3)	27(40.3)		
Education level			65.595	.000
Illiterate	19(41.3)	4(6.0)		
Primary	2(4.3)	14(20.9)		
Secondary	0(0.0)	25(37.3))		
University	10(21.7)	24(35.8)		
Tertiary	15(32.6)	0(0.0)		

Table 8: Relationship between socio-demographic lifestyle factors and drinks

Gender, age, source of income, category of income and education level variables is significantly related to the type of drinks.

Table8: Relationship between socio-demographic life style factors and kind of bread

Variables	Diet(kind of bread)			Chi-square	p-value
	Brown n(%)	Salt n(%)	No n (%)		
Gender				17.606	.000
Male	3(25.0)	5(50.0)	73(79.3)		
Female	9(75.0)	5(50.0)	19(20.7)		
Age				27.784	.000
41-50	3(25.0)	0(0.0)	8(8.7)		
51-60	7(58.3)	0(0.0))	13(14.1)		
61-70	2(16.7)	10(100.0)	56(60.9)		
Above70	0(0.0)	0(0.0)	15(16.3)		
Marital status				9.985	.125
Single	0(0.0)	0(0.0)	1(1.1)		
Married	6(50.0))	10(100.0)	55(59.8)		

Table8: Relationship between socio-demographic lifestyle factors and kind of bread

Divorced	3(25.0)	0(0.0)	28(30.4)		
Widow	3(25.0)	0(0.0)	8(8.7)		
Occupation				37.054	.000
Employed	2(16.7)	0(0.0)	8(8.7)		
Non employed	0(0.0)	0(0.0)	4(4.3)		
Retired	0(0.0)	00.0()	21(22.8)		
Self employed	0(0.0)	10(100.0)	36(39.1))		
Farming	10(83.3)	0(0.0))	23(25.0))		
Religion				5.070	.280
Christian	10(83.3)	8(80.0)	54(58.7)		
Moslem	1(8.3)	2(20.0)	32(34.8)		
Source of income				3.881	.422
Regular	4(33.3)	5(50.0)	26(28.3)		
Irregular	5(41.7)	5(50.0)	49(53.3)		
Non	3(25.0)	0(0.0)	17(18.5)		
Category of income				39.986	.000
Level 1	0(0.0)	0(0.0)	16(17.4)		
Level 2	2(16.7)	5(50.0)	40(43.3)		
Level 3	7(58.3)	0(0.0)	4(4.3)		
Level 4	3(25.0)	5(50.0)	32(34.8)		
Education level				7.112	.000
Illiterate	2(16.7)	0(0.0)			
Primary	10(83.)	0(0.0)	6(6.5)		
Secondary	0(0.0))	1(0.0)	24(26.1)		
University	0(0.0)	9(90.0)	26(28.3)		
Tertiary	0(0.0)	0(0.0)	15(16.3)		

Table 9: Relationship between socio-demographic life style factors and kind of bread

Gender, age, occupation, and education level and other factors are not statistically related to the fact that their values are larger than 0.005.

Table9: Relationship between socio-demographic lifestyle factors and medication

Variables	Medication		Chi-square	p-value
	Yes n(%)	No n(%)		
Gender			.096	.757
Male	27(69.2)	54(72.0)		
Female	12(30.8)	21(28.0)		
Age			14.205	.003
41-50	2(5.1)	9(12.0)		
51-60	14(35.9)	6(8.3)		
61-70	19(48.7)	49(65.3)		
Above 70	4 (10.3)	11(14.7)		
Marital status			16.922	.001
Single	0(0.0)	1(1.3)		
Married	28(71.8)	43(57.3)		
Divorced	8(20.5)	3(4.0)		
Widow	3(7.7)	28(37.3)		
Occupation			7.48	.133
Employed	4(10.3)	6(8.0)		
Non employed	1(2.6)	3(4.0)		
Retired	5(12.8)	16(21.3)		
Self employed	12(30.8)	16(21.3)		
Farming	17(43.6)	16(21.3)		
Religion			4.461	.108
Christian	28(71.8)	44(58.)		
Moslem	11(28.2)	24(32.0)		
Non	0(0.0)	7(9.3)		
Source of income			8.020	.018
Regular	8(20.5)	27(36.0)		
Irregular	19(48.7)	40(53.3)		
None	12(30.8)	8(10.7)		

Table9: Relationship between socio-demographic lifestyle factors and medication sometimes

Category of income		1.089	.780
Level 1	7(17.9)	9(12.0)	
Level 2	14(35.8)	33(44.0)	
Level 3	4(10.3)	7(10.3)	
Level 4	14(34.0)	7(9.3)	
Education level		7.112	.130
Illiterate	9(23.1)	14(18.7)	
Primary	8(20.5)	8(10.7)	
Secondary	11(28.2)	14(18.7)	
University	9(23.1)	26(34.7)	
Tertiary	2(5.1)	13(17.3)	

Table 10: Relationship between socio-demographic lifestyle factors and medication

There is a significant relationship between medication and age and marital status since the p value is less than 0.005. Other factors are not statistically significant, since P values are greater than 0.005.

Conclusion

In the current study, 64% did not drink alcohol which was a good lifestyle, and apart from diabetes participants had other chronic conditions which also affected the lifestyle.

CHAPTER FIVE: DISCUSSION

5.0. Introduction

This chapter discusses the findings and results. The discussion was made by comparing the results of the study with elsewhere in the world. The implications of the outcome of the study are also discussed in this discussion. The current published literatures retrieved from various search engines, such as Hinari, Pub med, Google scholar, and the websites of health systems such as WHO website were used in the discussion.

5.1. Socio demographic characteristics of respondents.

The study involved diabetic patients attending Masaka District Hospital outpatient clinic. Three quarters of patients were from urban area. Regarding the profile of the respondents the findings have shown that 70.2% of participants are males and 29.8% of the participants are female contrary the study done at Kirehe Hospital in Eastern province Rwanda found that the demographic variables of the diabetes prevalence of woman were higher than males with 54.7% of females and 47.3% for males (Tugizimana, 2016). The high age range of respondents was 51-60 years old, scored by 40.4% similarly to the study done in Middelburg sub-district of Mpumalanga in south Africa shown that the age range 50-59 years were at 36.7% (Umeh and Nkombua, 2017) . The marital status of most of the participants was 87.7% were married likely to the study done in South Africa shown that the married participants were high 62.7% than separated with 18% (Umeh and Nkombua, 2017).

In addition the study showed that the occupation self employed was high with 52.6% then 26.3% were peasants contrary to the study done in other part of Rwanda at Kirehe district hospital where the number of farmers were at high rate(Tugizimana, 2016).

5.2. Life style factors associated with of the respondents

In the study demographic characteristics revealed that BMI between 50-69 years which was 26 were overweight with 72%, between 40-49 years were 37 and had BMI of 24.6 which is normal body weight. Above 70 years were 11 equal to 12.54% were obese.

The study conducted in Nairobi found that only 3% of the patient said they were current smokers. All smokers were significantly more than two thirds (67%) of the smokers daily and

almost half (43%) of them, smoke more than 10 sticks per day (Muhabuura, 2014) while in the study the majority 86.8% have responded that they were smokers but now they are no longer smoking which is a good life style behavior. The majority of participants had irregular income and this affects the daily monitoring of diabetic patients in their daily needs for self care. Most respondents knew why they were taking anti diabetic drugs. The participants were well educated on their diabetes status and were able to monitor their condition. In most participants, the patients were above 60% between 61 to 70 years , the least 15% of them were in the age group 41-50 years. This findings confirms WHO's concern that by 2030, while most people with diabetes in high income countries will be aged 43 years or more, in middle age countries, 45-50 years are affected by their most productive age (WHO, 2017).

On diabetic medications, most respondents did not fail to take medication with a score of 72.8% and those who failed to take medications of respondents had an anti - diabetes medication above 24 months with a score of 61.4% .For the knowledge of the name of their drugs, most of the respondents were 96.5%. The type of drugs they use, the majority of respondents used oral doses with 87.7%. Masaka Hospital Pharmacy with 70.2% of the place where they get medication. In the study respondents were taking the anti-diabetic drugs twice a day with score of 100%. On the duration of taking anti-diabetic medication, the respondents said that they had to take it lifetime and responded. Furthermore, for the injection of insulin, most of the respondents were on insulin with a score of 87.5%. 70.2% of the doses of anti-diabetic drugs,% 70.2% of the respondents were drowned in the dose.

In the current study, most of the respondents did not test the blood glucose at 87.5%, they relied on glucose tested at Masaka District Hospital. In a similar study found that the respondents had poor glycemic control (Hui, et al., 2012). Out of 114 respondents in use of fat and oil, 40 respondents represent 35.1% use of sun flower oil or vegetable oil, 60 respondents representing 52.6% use of Mukwano oil with high cholesterol and 14% respondents representing 12.3% use other oils for cooking. In addition related to the diets and nutrient generally, the research shows that drinking habit, majority of respondents drinking locality brewed beer in a week with 63.8%. Dietary participants, most respondents take green leafy vegetables, beans, and matoke every day with 100% and ate beef with score 71.9%. On the issue of drinking juices, most respondents drunk homemade juice once in 30 days with score 47.4%. Taking of coke, most of respondents' drunk coke once in 30 days with score 60.5%. According to the type of bread consumed, most of

the respondents used a sugar with 43.9%, while the majority of respondents used local milk with a score of 39.5%, where it was seen that less than 12% were used for physical exercise, most respondents did mild walking, and brisk walking, with 100% in the study, contrary to the Multiethnic Cohort study showed that overweight, physical inactivity, high meat intake, no alcohol consumption and smoking was greatest among the participants (Lv et.al, 2017).

5.3. Relationship between socio-demographic and life style factors associated with type2 diabetes

According to, the research findings showed that men were more than female in doing exercise; in a similar study done in Saudi Arabia on health beliefs related to type 2diabetes, men were higher than females in doing physical exercises (Al-Mutairi, 2015). In addition, males also tended to weigh more than females (72.3 kg versus 57.0 kg) and smoking was more common among males than females (Al-Mutairi, 2015).

Furthermore, in the study findings shown gender, age, category of income and education level variables are statistically significant to the type of drinks contrary to the study done in Kenya on factors associated with non adherence to diet and exercise lifestyle among type 2 diabetes revealed that there was no significant difference between age and life style (Muhabuura, 2014).

More to this, from the research study elaborated that the age of participants between 51-60 years had a high number of affected by type 2diabetes and male respondents are more than women with a ratio of 70.2 to 29.8 respectively, then it was contrary to the study done in South Africa on knowledge and practice of lifestyle modification of patients with type 2 diabetes where, it revealed that type 2 diabetes was more prevalent among females and the age group 50-59 years was mostly affected (Umeh and Nkombua, 2018).

Conclusion therefore, there is great need to emphasis on public health issues to address the effect of type 2 diabetes through providing primary health care such as adhering on diet, physical exercise and medications, regularly and effectively advising life style factors associated with type 2 diabetes by improving patients' condition and prevention of complications.

CHAPTER SIX: CONCLUSIONS AND RECOMMENDATIONS

6.0. Introduction

This chapter provides the explanations of the findings, which are supplemented by other parts of the world. The main objective of this research project is to investigate the relationship between the type 2 diabetes and the behavior of the diabetic patients at Masaka district hospital.

6.1. Conclusion

In conclusion, the study found that most respondents were males, a large number of people who were subjected to a high degree of BMI (body mass) index). There are different factors affecting type 2 diabetic life style such as physical exercises, social economic and diet, which is the first issue of affording the diet (fruits, low fats) for a diabetic patient and most of them consume carbohydrates which increase the BMI due to low income as shown in the study. On exercise factor, most respondents are good at practicing physical exercises. More so, the study revealed that respondents were good at adhering to medication principles, some who did not take medications were due to retinopathy and lack of motivation. Despite the fact that the study was on type 2 diabetes, it was found out that diabetic patients had other chronic conditions such as HIV, Hepatitis B, Hepatitis C and Hypertension were also afflicting the same patients.

6.2. Recommendations

To Masaka District Hospital

Life style, diabetes prevention, should start in the clinical practice. The lifestyle related healthcare providers should be widely implemented. Barriers to lifestyles, such income generating activities should be supported. Planned frequent screening for non communicable diseases should be put in place accompanied by counseling, education, and organizational resources.

Recognizing these strategies to integrate lifestyle diabetes prevention in clinical can be identified.

To the Patients

It is recommended for the patients to consume, plant food which is associated with lower type 2 diabetes mellitus, low energy density food, dietary risk, diabetes mellitus may be more beneficial than non -fermented ones. The refined grains or sugar sweetened beverages are

consistently appear to promote obesity and diabetes risk. Daily consumption of a handful of nuts maybe some of the protection from Type 2 diabetes, although nuts representing a high energy density food. There is a need to emphasize the importance of evaluating the impact of confusing factors. Diabetes Mellitus program guidelines.

To Nursing education in Rwanda

The schools of nursing need to be trained to increase the credits and take part in the curriculum review. To allocate the nursing students to know about diabetes mellitus management.

To organize the seminar and invite guest speaker to know about diabetes mellitus

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APPENDIXES

APPENDIX I: INFORMED CONSENT

This up to dated consent is for going over desertaion titled ,Factors affecting life style behavior among type 2 diabetic patient at Masaka District Hospital.

Researcher: Kura Mary Agnes, University of Rwanda

Part I: Information Sheet

Introduction:

I am Kura Mary Agnes , A student of University of Rwanda persuing Masters degree in Nursing sciences in (Medical Surgical track in school of nursing and Midwifery college of Medicine and health science. I am salaried research on my authorize subject to the factors affecting lifestyle behavior among types 2 diabetes so that I am encouraging you to participate to fill the questionnaire asked you. Please just be free for asking more explanation about complicated words in this questionnaire.

Purpose of the study:

This study aims to study factors affecting lifestyle behavior among type 2 diabetic patients in Masaka district the study results will be to identify effective strategies to raise the health care for these patients.

Selection of Participants:

The people with NCDs clinic should participate in this research hence make some approach or ways by increasing types 2 diabetic complication for health care workers.

Voluntary Participation:

Therefore , someone who attend to participate in this research , There is no punishment for those participant regarding to them whoever no attendance just depend on your felling unquestionable.

Who to contact:

Even if you have some thing to ask , you may ask now or after below there is contact you can call Kura Mary Agnes on 0788517416, email: maryagneskura@gmail.com.

This study has been approved with college of medicine and health science institution (CMHS IRB) and ethical committee undermanaged toward research in school. Otherwise in order to avoid some risk bellow there are contact of IRB

CONTACT: Chairperson: + 250788490522, Deputy Chairperson: +250783340040

Part II: Certificate of Consent;

Certificate of Consent:

I obligate read the preceding material about this schoolwork and I require had the opening to question

Interrogations about it and any inquiries I must prefer to be enquired been rejoined to my fulfillment. I gladly consensus to share as a contestant in this schoolwork.

Name of participant: _____

Signature of participant: _____

Date (Day / Month / Year): _____

Proclamation by the canvasser / person taking content:

I confirm that the member was prearranged an opening to ask interrogations about the schoolwork and all the inquiries asked by him / her were responded decorously and to the unsurpassed of my facility. I approve that the different has not been compelled into open-handed consensus, and that accord has been easily and willingly specified,

Name and Signature of the Researcher: _____

Date (Day / Month / Year): _____

SECTION A: DEMOGRAPHIC PROFILE QUESTIONNAIRE OF FACTORS AFFECTING LIFE STYLE BEHAVIOR FOR TYPE 2 DIABETES MELITUS

I am KURA Mary Agnes Student at University of Rwanda, College of Medicine and health sciences, doing masters in nursing sciences in Medical/ Surgical Track and I am doing question on factors affecting lifestyle behaviors among TYPE 2 diabetes. I humbly request you to consent for the homework to support me to realize this schoolwork. There is no requirement of lettering your name only pulsation the proper riposte on the form.

1. Gender:

Male	Female

2. Age

41 - 50	51 -60	61- 70	Above 70

3. Marital Status:

Single	Married	Divorced

4. Occupation

Employed	Non Employed	Retired	Self Employed	Farming

5. Religion

Christian	Muslim

6. Source Income:

Regular	Irregular	None

7. Category of economy status (Ubudehe)

1 st Level	2 nd Level	3 rd Level	4 th Level

8. Level of Education

Primary level	Secondary level	University level	Tertiary Level

9. For how long have you been with diabetic

- a) 1-5years
- b) 6-10 years
- c) 11-15 years
- d) 16 years and above

Measurements (to be taken by researcher 0788517416)

10. Weight (m)

- a) 40-60 Kg
- b) 61-80 Kg
- c) 81-100 Kg
- d) 101 and Above

11. Height (m)

- a) 150-160 Cm
- b) 161-170 Cm
- c) 171-180 Cm
- d) 181 and Above

BMI:_____

SECTION B: LIFE STYLE BEHAVIORS OF TYPE 2 DIABETIC PATIENTS

(Perceived susceptibility and perceived severity)

12. Do you smoke?

Yes No

13. If Yes

- a) I smoke daily
- b) I Smoke occasionally but not everyday
- c) I use to smoke daily but don't at all nowadays

14. Do you drink alcohol? Yes No

15. What is your drinking habit?

	Every day	Once in a week	Once in 15 days	Once in 30 days
Beer				
Wine				
Locally brewed beer				

Exercise (PERCEIVED BENEFITS AND CUES)

16. Do you do physical exercise? Tick the right answer

	Every day	Once in a week	Once in 15 days	Once in 30 days
Mild walking				
Brisk walking				
Bicycle Riding				
Digging				

C. DIETARY HABITS

17. How often do you take the following food items on regular basis?

	Every day	Twice a week	Once in a week	Once in 15 days	Once in 30 days
Green leafy vegetables					
Potato					
Beans					
Cassava					
Yam					
Matoke					
Fruits					

18. How often do you eat these foods ?

Chicken

Fish

Mutton

Beef

19. What sort of fat or oil do you use for cooking?

- a. Sun flower oil
- a. Mukwano oil
- b. Others oil

20. At the table do you...

- a) Add salt to your food without tasting it first
- b) Taste the food, but then generally add salt
- c) Taste the food, but then occasionally add salt
- d. Rarely, or never, add salt at the table

21. How often do you drink the following drinks?e

	Every day	Once in a week	Once in 15 days	Once in 30 days
Factory Juice				
Homemade Juices				
Coke				

22. What kind of bread, do you usually eat?

- Don't eat any type of bread
- Sugary bread
- Brown
- Salty bread

23. What kind of milk do you usually use? Tick collect answer

- Local milk
- Low fat milk
- Do not drink milk

D. Medication (PERCEIVED BARRIER)

24. Do you fail to take your medication sometimes?

Yes No

25. Reason for not taking your diabetic medications?

- a .Lack of motivation

- b. Loss of memory
- c. Too many tablets
- d. Non availability of the drugs
- e. Poor vision

26. How long have you been on anti-diabetes medication?

- a) 6-12 months
- b) 13-24 months
- c) Above 24 months

27. Do you know the names of your drugs?

yes, No

28. Tick the right answer

- a) Dao nil
- b) Metformin
- c) Rapid insulin
- b) Lent insulin

29. Where do you get your medication from?

- a) Hospital Pharmacy
- b) Retail Pharmacy
- c) Local clinic

30. Do you know why you are taking the drugs?

Yes
No

31. How many times in a day do you take your medication?

- a) O.D (once a day)
- b) b.d (2 times a day)
- c) t.i.d (3 times a day)

d) q.i.d (4 time a day)

32. How long are you supposed to take the diabetic medication?

a) less than 6 months

b) 6- 12 months

c) 1-2 years

d) lifetime

e) I don't know

33. Do you know at least one side effect or common side effects of the medications?

Yes

No

34. Do you know how to inject insulin the medication?

Yes

No

35. Where do you store your diabetic medicines?

a) Fridge (2-8⁰C)

b) Freezer

c) Other

36. What do you do when you miss a dose?

a) Take as soon as I remember

b) Wait for the next dose

c) I don't miss doses

E. Monitoring

37. Do you test your blood for sugar at home?

Yes

No

38. Do you have any problems with your monitor?

Yes

No

39. Do you keep a record of you sugar?

Yes

No

40. The normal range of blood sugar is 70 to 130mg/dl

Yes

No

41. Do you have access to your diabetes supplies?

Yes

No

42. Do you test your urine for sugar or ketenes'?

Yes

No

43. Do you ever experience complications of diabetic?

a. Tingeing sensation

b. Difficulty in seeing

c. Body weakness

d. Heart problems

44. Which type of regime are you on these days?

a) Diabetic deity

b) Dietetic deity & tablets

c) Diabetic deity & insulin

d) d)Diabetic deity ,insulin& anti diabetic tablets

e)

45. Apart from type 2 diabetes do you have any other chronic diseases?

Yes

No

46. Which other chronic condition do you have ?

a) HIV

b) Hepatitis C

c) Hepatitis B

d) Hypertension

47. Have you ever had any complications from diabetes?

a) Nephropathy

b) Retinopathy

c)Importance

d) CVD

Thank you very much for your participation and completing this questionnaire

IFISHI Y'IBAZWA KU BUSHAKASHATSI

Nitwa **KURA Mary Agnes**, umunyeshuri muri kaminuza y'u Rwanda koreji y' buvuzi nubuzima.

Niga kuvura indwara zumubiri nindwara zibagwamu kicro cya 3 cya kaminuza, Nkabandimugukora ubushakashatsi kundwara Diyabeti yubwoko bwa 2. Nabasabaga kwemera kugira uruhare muri ububushakashatsi

kugirango mbashe gusoza amashuri. Singombwa komwandika amazina yanyu, koresha akamenyetso kabugenewe usubiza ibibazo birimurizi mpapuro.

IGICE CYA A: IBIRANGA UGIZE URUHARE MU BUSHAKASHATSI

1. Igitsina:

Gabo

Gore

2. Imyaka: hagati ya:

40-49

50-59

60-69

Hejuru ya 70

3. Irangammerere:

Ingaragu

Ndubatse

Twaratandukanye

Gupfakara

4. Ukora iki?

Nkorera leta

Ntakazi mfite

Pensiyo

Ndikorera

Umuhinzi

5. Idini:

Gatorika

Umuporoso

Umudivantisite

Umuyisilamu

Nta dini ngira

6. Amafaranga uyabona:

Kuburyo buhoraho

Rimwe na rimwe

Ntayo mbona

7. icyiciro cy'ubudehe:

Icya 1 Icya 2 Icya 3 Icya 4

8. Amashuri wize:

Sinize Imyuga Abanza
Ayisumbuye Kaminuza

9. Ibiro:

Kg **Uburebure**

10. Ni iyihe rejime urigufata ubu?

Ibiryo gusa Ibiryo + Ibinini Ibiryo + Inshinge
Ibiryo+Inshinge+Ibinini

11. Uretse diabeti hari ubundi burwayi budakira ufite?

Yego Oya

Niba ari yego, bivuge:

12. Wigeze ugira ibibazo bikurikira?

Kumva utuntu tukujombagura Ikibazo cyamaso
Gucika intege Kutihagarika
Ikibazo cy' umutima

Ibisindisha (Alcohol):

13. Unywa ibisindisha ubu?

Yego Oya

14. Unywa inzoga burimunsi:

Yego Oya

15. Waba warigeze kunywa itabi, cyangwa ubundi bwoko bwitabi?

Yego Oya

16. Unywa itabi ubu?

Yego Oya

17. Hitamo ikikuranga kurusha ibindi?

Nywa itabi burimunsi Nywa itabi ariko si buri munsi
Narinywaga burimunsi ariko narariretse

narinywaga rimwe na rimwe ariko narariretse

**IGICE CYA B: IMIBEREHO YUMURWAYI WA DIABETI CYUBWOKO BWA 2,
IMIRIRE NIBIRYO**

Hitamo igisubizo nyacyo:

18. Ukunze kurya ubuhe bwoko bw'umugati?

Sindya umugati Umugati w'isukali
umukati w'ikigina Umukati w'umunyu

19. Ujya urya inyama:

Yego Oya

20. Ni ubuhe bwoko bw' inyama urya kandi uburya ryari?

Ubwoko bw'inyama	Burimunsi	1 Kucumucumweru	1 Muminsi 15	1 Muminsi 30	Rimwe na rimwe
Inyama zitukura					
Inyama (zumweru/zintama)					
Amafi					

21. Unywa ibi binyobwa?

Incuro	Umutobe wo muruganda	Umutobe wikoreye murugo	Fanta
Rimwe ku munsi			
Kabiri ku munsi			
Rimwe mu			

cyumweru			
Rimwe mu minsi 15			

22. Unywa ubuhe bwoko bwamata?

Amata asanzwe Amata bavanyemo ibinure

Amata y'ifu Ntabwoko bwihariye nkoresha

23. Uteksha ubuhe bwoko bwamavuta?

Amavuta ya Mukwano Amavuta yibihwagari

Amavuta yinka Amavuva ya Oliva

24. Ibi biryo bikurikira ubirya kangahe mucyumweru?

Imyumbati; ibijumba; amateke	ibitoki; ibirayi,	Umuceri; makaroni	Ibishyimbo; amashyaza; ubunyobwa	Imboga rwatsi ni mbuto

25. Wigera wongera umunyu mubiryo urimo guteka?

Yego Oya

Nkoresha umunyu mucye cyangwa ibiwusimbura

26. Wigera wongera umunyu mubiryo kumeza yawe?

Nongeramo umunyu mbere yuko urya Ndabanza nkarya nkongeramo

Nongeramo rimwe na rimwe Sinongeramo

IMIRIMO YINGUFU

27. Ese akazi Ukora gasaba ingufu kuburyo bituma uhmagira cyangwa umutima utera cyane (guterura ibiremereye nkimizigo, gucukura cyangwa kubaka) nibura bimara iminota 10?

Yego Oya

28. Sporo ikurikira uyikora kangahe mucumweru?

Kungyenda urugendo rwi minota 30

Kunyonga igari

Kwiruka isaha

Koga

IMITI

29. Umaze igihe kingana iki ufata imiti ya diyabeti?

Hagati y'amezi 6 na 12 13 na 24 Hejuru y'amezi 24

30. Uzi amazina yimiti ufata ?

Yego Oya

Niba ari yego, yivuge:.....

31. Wigeze ubwirwa aho ushobora gukura imiti?

Yego Oya

32. Imiti yawe uyikurahe?

Farumasi yibitaro Farumasi yigenga

Ivuririro ryigenga

33. Waba uzi impamvu ufata iyo miti?

Yego Oya

Niba ari yego sobanura:

34. Hari umuganga wagusobanuriye impamvu ufata iyo miti ivura diyabeti?

Yego Oya

35. Uzi Ingano y'umuti ufata?

Yego Oya

Niba ari yego , yivuge:.....

36. Umuti wawe uwufata kangahe kumunsi?

Rimwe k'umunsi Kabiri k'umunsi

Gatatu k'umunsi Kane k'umunsi

37. Biteganyijwe ko uzafata imiti mugihe kingana gute?

Munsi yamezi 6 Hagati yamezi 6 na 12

Hagati yumwaka 1na 2 Ubuzima bwawe bwose

Simbizi

38. Waba uzi byibura ingaruka imwe ikunze guterwa n'umuti?)

Yego

Oya

39. Uzi uko bafata umuti?

Yego

Oya

40. Umuti wawe uwubika he?

Firigo (2-8°C)

Firizeri

Ahandi

41. Ukoriki iyo utafashe umuti?

Ndawufata aho mbyibukiye

Ntegereza indi saha yabugenewe

Ntibirambaho

42. Ninde ukwigisha kubijyanye nimiti?

Farumasiye wibitaro

Farumasiye wikorera

Muganga

Umuforomo

Murandasi

Gukurikirana

43. Wipima diabeti?

Yego

Oya

44. Igipimo cyawe harikibazo gifite?

Yego

Oya

45. Iyo wipimye urandika?

Yego

Oya

46. Igipimo nyacyo diabete mu mubiri ni hagati ya 70 to 130mg/dl?

Yego

Oya

Niba ari oya igipimo nyacyo ni kangaha:.....

47. Ibyo ukoresha mu burwayi bwa diabeti ubibona kuburyo bworoshye?

Yego

Oya

48. Ujya upima diabete munkari?

Yego

Oya

49. Ibindi bijyanye nuburwayi bwa diabete

50. Uburwayi bwa diabete ubumaranye igihe kigana iki?.....

51. Nubuho buryo ukoresha mukwita ku buzima bwawe bwa diabete?

- i. Ibiryo gusa
- ii. Ibiryo ni miti yo kumira
- iii. Ibiryo ni inshinge
- iv. Ibiryo , inshinge ni miti yo kumira

52. Uretse uburwaye bwa diabete harubundi burwaye ubana nabwo

Yego

Oya

53. Nubuhe

54. Hari garuka wagize kurubu burwayi bwa diabete?

Yego

Oya

55. Ni izihe?

Brian Muhabuura Mujuni

+256771491779

mujunibrian@yahoo.co.uk

Dear Sir/Madam

Re-Granting Mary Agnes Kura Permission to Use My Research

I am writing to let you know that I have given Mary Agnes Kura of the University of Rwanda permission to use my research titled; "Prevalence and Factors Associated with Non Adherence to Diet and Exercise Life Style Recommendations Among Type 2 Diabetic Patients at Kenyatta National Hospital" on condition that she makes proper citation(s) and/or reference (s) of any part of my work she wants to use.

Kind Regards



Brian Muhabuura Mujuni



COLLEGE OF MEDICINE AND HEALTH SCIENCES

CMHS INSTITUTIONAL REVIEW BOARD (IRB)

Kigali, 12/02/2019
Ref: CMHS/IRB/088/2019

KURA Mary Agnes
School of Nursing and Midwifery, CMHS, UR


Dear KURA Mary Agnes

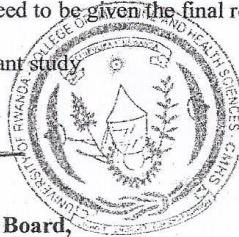
RE: ETHICAL CLEARANCE

Reference is made to your application for ethical clearance for the study entitled "*Factors Affecting Life Style Behavior among Type 2 Diabetic Patients at Masaka District Hospital*".

Having reviewed your protocol and found it satisfying the ethical requirements, your study is hereby granted ethical clearance. The ethical clearance is valid for one year starting from the date it is issued and shall be renewed on request. You will be required to submit the progress report and any major changes made in the proposal during the implementation stage. In addition, at the end, the IRB shall need to be given the final report of your study.

We wish you success in this important study.


Professor Jean Bosco GAHUTU
Chairperson Institutional Review Board,
College of Medicine and Health Sciences, UR



Cc:

- Principal College of Medicine and Health Sciences, UR
- University Director of Research and Postgraduate studies, UR

REPUBLIC OF RWANDA

Masaka 01/03/2019
REF ~~2019~~²⁰¹⁸/MSK/DH/2018



KIGALI CITY
DISTRICT KICUKIRO
HOPITAL MASAKA
B.P 3472 KIGALI
E-mail: masaka.hospital@moh.gov.rw

TO: KURA Mary Agnes

Re: **PERMISSION TO CONDUCT DATA COLLECTION
IN MASAKA DISTRICT HOSPITAL**

Dear Madam,

Referring to the letter written on 15th February 2019 requesting to collect data on «**Factors affecting lifestyle behavior among type II diabetics patients at Masaka District Hospital**» the management of Masaka District Hospital is pleased to inform you that you have authorization to conduct data collection in our Hospital from 25/03/2019 to 25/04/2019.

Sincerely

A handwritten signature in black ink, appearing to read 'Dr. Marcel Uwizeye', written over the official seal of the Masaka District Hospital. The seal is circular and contains the text 'DISTRICT DE KICUKIRO - HOPITAL MASAKA' around the perimeter and a central emblem with a staff and a snake.

Dr. Marcel UWIZEYE
Director General Masaka Hospital