MANAGEMENT OF DIABETES AND SOCIAL WELL-BEING OF PATIENTS SEEKING CARE AT ST. MARY'S HOSPITAL, NAIROBI; KENYA

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DECLARATION

This thesis is my original work and has not been presented in any other University or institution for the award of a degree or academic credit.

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DEDICATION

To the Assumption Sisters of Nairobi, The Catholic University of Eastern Africa, Diocese of Rottenburg Germany, and my family members.

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ACRONYMS AND ABBREVIATIONS

AIC	Glycated haemoglobin
AIDS	Acquired Immunodeficiency Syndrome
ASN	Assumption Sisters Nairobi
CCC	Comprehensive Care Centre
CDs	Communicable Diseases
CEO	Chief Executive Officer
CVD	Cardiovascular Disease
CME	Continuous Medical Education
DALYs	Disability Adjusted Life Years
HbA1C	Haemoglobin Glycated
HIV	Human Immunodeficiency Virus
IDF	International Diabetes Federation
KNH	Kenyatta National Hospital
KRN/M	Kenya Registered Nurse/midwife
LMICs	Low and Middle Income Countries
MDGs	Millennium Development Goals
MOPHS	Ministry of Public Health and Sanitation
NACOSTI	National Commission for Science Technology and Innovation
NCDs	Non-communicable Diseases
GCM/NCD	Global Coordination Mechanism on the Prevention and Control of Non-Communicable Diseases
SPSS	Statistical Package for Social Sciences
STMMH	Saint Mary's Mission Hospital
USA	United States of America
WHO	World Health Organization

DEFINITION OF TERMS

Diabetes: Chronic disorder that happens both while the pancreas no longer produces sufficient insulin or the body cannot utilize its insulin (WHO, 2020). The two core subtypes of diabetes are; **Type 1** and **Type 2** (Goldstein & Wieland, 2007). A deficiency of insulin characterizes **Type 1 diabetes** due to damaging lesions in pancreatic Beta-cells. **Type 2 diabetes** is attributed to insulin resistance, insulin secretion defects, or each (Goldstein & Wieland, 2007).

Social well-being: This refers to the crucial dimension of health alongside physical and intellectual aspects, and it performs an influential role in improving the quality of lifestyles, social efficacy, and overall social performance (World Health Organization viewpoint as cited in Salehi et al., 2017).

Management: In healthcare provision, this means to coordinate care, focusing on the whole clinical course of a disease (Garrido et al., 2003).

Non-communicable diseases: These are diseases, also known as chronic diseases, and are not passed from person to person. They are of long duration and generally slow progression (WHO, 2011).

Communicable diseases: These are also known as infectious diseases and are illnesses caused by living agents or their products that can be spread from one person to another (Ameli, 2015).

ABSTRACT

Diabetes is one of the non-communicable diseases (NCDs) of great global public health and development concern. These NCDs have adverse effects on the social well-being of patients, their households, and the whole society. The general objective of this study was to determine the implications of the management of diabetes on the social well-being of the patients who were seeking treatment at St. Mary's Mission Hospital in Nairobi, Kenya, during the study period. This study drew on mixed methods research design, involving basic quantitative survey and qualitative methods, particularly by using close and open-end questions. The sample size was 269 respondents 18 years of age and above. The study participants were selected through purposive and convenient sampling. These sampling techniques were preferred in this research since data was gathered from the respondents during their visits to the hospital. Data was collected through an interviewer-administered questionnaire. Qualitative data was grouped, coded, and categorized, picking on cross-cutting issues, then compiled, analysed, and interpreted, drawing on descriptive statistics and themes emerging from the qualitative data. Quantitative data was coded then entered into Statistical Package for Social Sciences (SPSS) version 22 for windows. SPSS was used to run frequency distributions and cross-tabulations for analysis and interpretation, and Microsoft Excel was used for graphical presentation. The study established that diabetes management is costly and not affordable to many patients. Hence, it affects the social well-being of the patients and their families. The study also found out that, there is inequality in the Kenyan health system in response to diabetes management across the Counties. There is also a gap in health education and screening services in local health facilities and communities. 216, 80.3% of the respondents (n=269) said there were no health education services in the community specifically for effective management diabetes and care of the affected patients and their families. The study recommends free or subsidized affordable and available medication for the patients, and continuous awareness programs for patients, family members, and the community across all Counties to address the effects of diabetes management on the patients, families, and the wider society. These initiatives would contribute to the improvement of the social well-being of the patients and their families and national socio-economic development.

CHAPTER ONE

INTRODUCTION AND STUDY BACKGROUND

1.0. Introduction

Diabetes and different non-communicable diseases (NCDs), including cancer, respiratory, and cardiovascular ailments, are the fundamental causes of morbidity and mortality worldwide (Fetahu, 2014). Diabetes mellitus is the fourth principal contributor to the deaths precipitated by NCDs (Jones, 2013). According to WHO (2016) document repository, the NCDs epidemic results in overwhelming health consequences for people, households, and organizations and impedes health systems. The socio-finance costs related to NCDs make prevention and illnesses management a critical development concern for the twenty-first century (WHO, 2016). Someone dies from diabetes-associated complications every six seconds globally (Tol et al., 2017). Diabetes influences people and their households and impacts monetary and social improvement (Tol et al., 2017). This is primarily because some household members have to resign from work to take care of their sick members; hence, they cannot contribute effectively to their economic growth and development. Additionally, some members have to accompany the patient to the hospital for clinics, whereby they spend a lot of time, social and financial capital.

Diabetes affects persons, relatives, groups of healthcare, and the authorities' agencies that provide care, and those consequences possibly disable groups and retard countrywide monetary increase (Islam et al., 2013). The extra cost in diabetes management is associated with a higher cost of treating past due diabetic complications, which lead to monetary loss due to lost person-days or misplaced financial possibility (Kapur, 2001). This is true because diabetes management requires both medication and change of lifestyle like dietary measures, which are quite expensive. A long-term illness due to diabetes reduces the incomes of family members. It can also cause other

non-working household members to begin working, often at a young age, with decreased wages and decreasing children's education with lengthy-period financial consequences for them and the family (Kapur, 2001).

1.1. Background to the study

NCDs threaten to reverse substantial health gains achieved in recent decades, and the challenge would impair sustainable development for Low-Middle-Income Countries (LMICs) (Galambos & Sturchio, 2014). Massive national income percentage is channelled towards mitigating the impacts of diseases like diabetes, which are long-term, yet their prevalence is continuing to increase across the nations. The 2030 Agenda for Sustainable Development recognizes NCDs like diabetes as significant obstacles to sustainable development (WHO, 2021). Patients and households incur catastrophic expenditure in diabetes management, which affects their income, impeding them from engaging in development activities. Diabetes also affects the work-life balance of patients and family members as they spend many hours in hospitals, which could be used for development activities. Some diabetes patients have resigned from work due to the demands for diabetes management, which affects family income and the children's education, leading to school dropouts. This, in turn, affects the overall revenue of the Country.

Once thought of as illnesses of the wealthy, NCDs now are the main reason for dying in LMICs (WHO GCM/NCD work plan, 2014–2015). Approximately 30% of NCD-associated demises in LMICs happen below 60 years. This is unlike in high-income nations, where deaths are at 13%. This inequality is likely to widen without targeted and sustained interventions, inflicting more individual, social and financial outcomes (WHO GCM/NCD work plan, 2014–2015). Mortality and extended disability associated with NCDs like diabetes have a massive economic effect on families, industries, and societies through the consumption of health services and losses

in earnings, productivity, and capital formation (WHO, 2011). This is a threat to the development efforts of nations, hence could continue making people lavish in poverty. NCDs such as diabetes are answerable for extensive out-of-pocket health prices for people and families and massive health expenses in the country's expansive budgets (Medici, Hennis & Alleyne, 2016). Diabetes, a long-term illness, entails daily medication and a lifestyle change like eating a diabetic diet, which is very expensive. The demand for diabetes management, like eating small portions of food frequently, has made some patients resign from their work. This impacts their economic development. Some family members have also had to leave work to care for their sick members, hence losing productivity and capital formation.

According to WHO (2011), the weight of NCDs in growing nations is hastened by the population getting older, and the harmful results of globalization also push it. As a result of globalization, people adopt bad habits from other countries, like eating junk foods, predisposing them to NCDs such as diabetes. In LMICs, more and more studies display associations between NCDs and specific social determinants of development, particularly education and earnings levels. The majority of people who have sustainable income are likely to engage in a sedentary lifestyle, contributing to NCDs (WHO, 2011). NCDs such as diabetes affect the education levels of households, whereby huge income expenses and household assets are sold to cater for hospital bills and the management of NCDs, including dietary measures (WHO, 2011). Household members cannot afford quality education for both present and future generations. This would put them at risk of repeated cycles of poverty. Poverty is connected with NCDs, and the increase in these prolonged diseases is anticipated to hinder poverty reduction efforts within less-revenue nations (WHO, 2011).

This is true for LMICs since they face a more incredible boom in the burden of NCDs due to hastily growing and aging populations. These sicknesses drive inequity, contribute to poorer financial outcomes for individuals, communities, and societies, and create big challenging situations for development (Medici, Hennis & Alleyne, 2016). In a World Bank qualitative survey of sixty thousand poor men and women in sixty international states, NCDs were the most common reason for downward social mobility (WHO, 2011). People regularly get confined in a precarious cycle where scarcity and NCDs continuously strengthen each other (WHO, 2011). This becomes a challenge for people to fulfil their basic needs, affecting their well-being. While determining the economic effects, NCDs stay a pretty complicated and underneath-evolved subject. They habitually affect LMICs and households more critically because they have the most miniature monetary cushion to face as much of the financial consequences of NCDs (WHO, 2011).

Financial difficulty due to NCDs is not always reserved for LMICs: approximately 4 million persons in Greece, Hungary, Mexico, Poland, Portugal, and the Republic of Korea stated kinds of monetary worry due to paying for healthcare (WHO, 2011). Direct out-of-pocket bills constitute more than 50% of extensive health expenses in a massive variety of LMICs (WHO, 2011). NCDs accentuate societal inequity because maximum payments for healthcare in LMICs are non-public and direct payments; these expenses mainly affect individuals who cannot afford to get money for them, increasing the risk of impoverishment (WHO, 2011). Suppose individuals who get ill or die are the number one income earners; NCDs can cause severe charges for meals and education for children and liquidate the circle of relatives' assets (WHO 2011). The pricey and prolonged remedy of NCDs like diabetes increases the equity problem in international locations. It contrasts in remedy opportunities within nations, among poor and rich, in towns and rural regions, and among men and women (Boutayeb & Boutayeb, 2005).

NCDs and their risk elements frequently prevent human beings from walking or looking for employment, depriving households of income (WHO, 2011). Where men are the number one income earners, widowhood or the burden of being worried for a disabled companion are routes to poverty (WHO, 2011). The immoderate fee of incapacity because of NCDs is a particular weight on women and children, resulting in school dropout, women not being able to sustain their households, and families losing their stability (WHO, 2011). This continues to accelerate poverty among families. Annual profits loss from NCDs, rising from days spent unwell and in caregiving efforts, amounted to US$ 23 billion (0.7% GDP) in India in 2004. Within the Province of Taiwan, China, the opportunity to be in the workforce had been decreased by 27% due to cardiovascular disease and 19% due to diabetes (WHO, 2011). This affected the overall families and the country's vast profits; for this reason, people were not able to cater for their primary needs. This affected the well-being of the patients and their families.

A severe public health challenge imposes an intense burden on humans and society (Beckles & Thompson, 2001). Diabetes is considered the world’s quickest-growing persistent sickness (Bird, Lemstra, Rogers & Moraros, 2015). Diabetes can cause undesirable results in the components of the human body system; consequently, overwhelming complications of this illness are evidence of the importance of its attention (Ayah et al., 2013). The WHO has expected twenty-four million cases of diabetic neuropathy, six million amputations, and five million retinopathies because of diabetes. Heart problems (myocardial ischemia, attacks, and peripheral vascular ailments) are the primary reason for losing life in people with diabetes (Tol et al., 2017). Diabetes and its complications bring about tremendous financial decrease to patients and households, health structures, and countrywide economies through direct medical expenses and lack of work and wages (WHO, 2016). The world health expenses to treat and prevent diabetes and its complications

were about 232 billion US dollars in 2007 and are expected to rise to 302 billion US dollars by 2025 (Dieren et al., 2010).

Around 422 million persons have diabetes globally. This accounts for about 8.5% of the general international's population, yet the prevalence of the disease has been unexpectedly increasing in LMICs (Ayah et al., 2013). Diabetes is a crucial motive of lack of eyesight, kidney malfunction, coronary heart attacks, stroke, and accelerated lower limb amputation (Ayah et al., 2013). Diabetes induced 1.5 million deaths in 2012, and a number of those deaths (43%) happened below 70 years; WHO predicts that diabetes might be the 7th predominant motive for loss of life in 2030 (Ayah et al., 2013). Because of diabetes complications, patients and families spend vast amounts of money, which could be used for development activities for the well-being of the members. Additionally, increased mortality rates resulting from diabetes imply a loss of productivity and income in families and the nation, affecting the socio-financial growth of families and the country. The diabetes charge repercussions to society encompass direct charges to patients, their households, and hospitals, and oblique expenses to communities and nations, which may be the productiveness fees, and insubstantial costs, bringing about the unfavourable consequence on the quality of life (Islam et al., 2013).

International Diabetes Federation (IDF) approximates that worldwide health expenses for diabetes at $ 760 billion (International Diabetes Federation, 2019). It is Anticipated that the immediate charges will be $ 825 billion in 2030 and $ 845 billion by 2045. Treating diabetes complications represent above 50% of the instantaneous healthiness cost. The untimely death, disability, and various health complications due to diabetes have a negative monetary impact globally (International Diabetes Federation, 2019). It is anticipated that 'indirect fees' of diabetes add 35% to yearly universal health prices related to the condition. The oblique charges are labour-

force dropout, mortality, absenteeism, and presentism demands (International Diabetes Federation, 2019). This is due to diabetes management demands such as frequent visits to the hospital for medication and diagnostic tests and diabetes complications.

For people living with diabetes, concerns about dealing with the situation and fears of future complications, and their ability to affect the quality of life are extensive contributors to the intangible prices of diabetes (International Diabetes Federation, 2019). These encompass fear, anxiety, discomfort, ache, loss of independence, and many crucially essential functions of living with diabetes (International Diabetes Federation, 2019). Diabetes, a lifetime disease, is very expensive to manage, mainly if the patient develops complications. This disease entails daily medication and lifestyle changes like diet, which put the patients and their families in fear and anxiety, exceptionally if they are financially constrained. People with low socio-monetary popularity and economically disadvantaged regions risk developing diabetes complications (Keotsenruijter et al., 2014). Premature loss of life (before age 60) or long-term living with an NCD or related disability has socio-economic outcomes. It constitutes a double burden to sustainable social and economic development (WHO, 2014). The decreased income and early retirement because of NCDs can lead patients and households into poverty at family and societal levels. In addition to increasing healthcare charges, there are more significant needs for social care and welfare aid and the burdens of absenteeism from school or work, decreased productiveness, and worker turnover (WHO, 2014).

Africa is experiencing a health transition characterized by NCDs' emergence in rural and urban areas, as witnessed in South Africa (Galambos & Sturchio, 2014). There are increasing numbers of deaths from diabetes, chronic kidney disease, prostate cancer, and cervix cancer. The need for regular care for both CDs and NCDs puts extraordinary demands on the South African

healthcare system and calls for new integrated models of care (Galambos & Sturchio, 2014). For comprehensive management of NCDs like diabetes, which is a burden to households and society, there is a need for a collaborative model of care between the healthcare sectors and the social structures. This is because NCDs require both the administration of medicines and social support like the family members. In Southeast Asia, NCDs cause three-fifths of all deaths, and their prevalence is mainly due to widespread tobacco use, unhealthy diets, and inadequate physical activity (Galambos & Sturchio, 2014). These risk factors are increasing due to urbanization, inaccessibility to healthful food selections, and a public health system that lacks adequate resources and surveillance systems at the primary care level (Galambos & Sturchio, 2014). With urbanization, people adopt a new lifestyle, for example, dietary habits that expose them to the risk of developing NCDs such as diabetes.

NCDs affect millions of lives among the poor in the global south nations such as Brazil, South Africa, and India. The inequality in risk factors and disease impact between groups of decreased socio-economic popularity and better socio-financial reputation appears to be a global phenomenon (Galambos & Sturchio, 2014). Diabetes influences the socio-monetary repute of all international nations (Kassahun & Mekonen, 2017). More than 12 million people in Sub-Saharan Africa have diabetes, and 330,000 deaths are associated with diabetes (Kassahun & Mekonen, 2017). Africa will account for the highest diabetes increase (forty-two million), with 4.9 million deaths in a year and more significant complications from diabetes and other NCDs (Kassahun & Mekonen, 2017). In Ethiopia, as an instance, diabetes cases are predicted at 4.84%, of which 1.6 million are undiagnosed, and 34,263 diabetic-associated demises, which will account for more than 33 billion dollars yearly (Kassahun & Mekonen, 2017).

NCDs are predicted to be the main reason for demises in Africa by 2030. NCDs, collectively with diabetes, prompted 2.8 million deaths in Africa and almost two-thirds (62%) of deaths in persons over 45 years in 2008 (Marquez & Farrington, 2013). The IDF expected the whole health expenditure of diabetes at $3.3 billion globally in 2017. Most of the existing research in Africa anticipated direct prices (Tassou et al., 2019). The estimations of the costs of diabetes in many countries in Africa could be underestimated due to the absence of information on the relative contribution of the rate of diabetes complications (Tassou et al., 2019). In Kenya, diabetes and different NCDs are widespread reasons for morbidity and mortality (El-busaidy et al., 2014). Data from the Ministry of Health in Kenya shows that a predicted 1.2 million Kenyans live with diabetes. If the trend continues, by 2025, that vast variety is anticipated to rise to no less than 1.5 million (McFerran, 2008, as mentioned in Muga & Muhati 2016: 142). Diabetes cases are increasing in Kenya, and patients are considerably diagnosed with the disease at a younger age than others in advanced worldwide places. Kenyans are more likely to develop diabetes complications because they go to health facilities while the disease has advanced (McFerran, 2008, as said in Muga & Muhati 2016: 142). According to Shannon et al. (2019), more than 8,700 diabetes-related deaths were registered in Kenya in 2015, nearly all under 60 years. The problems of diabetes and its control in Kenya embody disturbing conditions related to prognosis, care, and treatment. Additionally, there could be a deficiency of information on diabetes amongst the overall population. There is also a notion that diabetes is not always severe as other ailments distressing the nation (McFerran, 2008, as said in Muga & Muhati 2016: 142).

WHO estimates the prevalence of diabetes in Kenya at 3.3% and predicts an upward push to 4.5% in 2025, and two-thirds of diabetics may not be identified (Jones, 2013). The double burden of Communicable Diseases (CDs) and NCDs hindered Kenya from accomplishing the

Millennium Development Goals (MDGs) (Jones, 2013). Consequently, it is critical to assess the developing burden of diabetes and offer rate-powerful techniques for its prevention and management (Jones, 2013). This would ensure that the patients and their members can afford the control necessities for diabetes, subsequently improving their social well-being. As mentioned in Mwai & Muriithi (2016), Global Medicines determined that maximum NCDs like diabetes in Kenya are detected late because of a deficiency of expertise, making their remedy very expensive. According to International Diabetes Federation Atlas, as referenced in People Daily (2020), over half of 1,000,000 adults lived with diabetes in Kenya in 2019. This figure is anticipated to triple over the following 25 years. However, a high quantity of Kenyans with diabetes, a predicted 40%, are ignorant of their situation. The inadequate information about diabetes puts Kenyans at a higher mortality risk when infected with other diseases like Covid-19. The trouble is worsened by low immunity because of uncontrolled diabetes. Inadequate management of the disease results from prolonged intervals of excessive blood sugars. The white blood cells, accountable for producing immunoglobulins (an antibody that neutralizes pathogens, including microorganisms and viruses), are damaged by excess glucose and fail to multiply correctly to make immune factors (People Daily, 2020).

The excessive charge and unavailability of diabetes medicines together with insulin in Kenya and insufficient healthcare tracking contribute to wrong diabetes management (Jones, 2013). Although the Kenyan government subsidizes insulin to lessen patients' fee, assets frequently run out, and there may be miscommunication among nearby depositories and important clinical stores to restock (Jones, 2013). The “Leadership for Education and Access to Diabetes Care” Initiative (Novo Nordisk) aimed to offer insulin at decreased expenses to the least superior worldwide global locations (Jones, 2013). However, the rate is frequently marked up for income,

forcing many patients to buy drug treatments from private facilities at prices over 60% (Jones, 2013). Many patients have poor glycaemic management, and 1 / 4 of all clinic admissions in Kenya are diabetes-related (Jones, 2013). Social well-being is a crucial dimension of health that diabetes control must target. This underpins physical and mental aspects, and it performs an influential function in enhancing the quality of life, social efficacy, and average social performance (Salehi et al., 2017). Additionally, social well-being evaluates a person's scenario and activeness in society (Meyes, 2013). Pega et al. (2010) argue that health and well-being cannot be addressed solely in the health sector. Multiple social factors like relatives affect the health results of populations in general (Pega et al., 2010) and those affected by NCDs, such as diabetes. Diener et al. (2018) argue that people highest in well-being enjoy the benefits of healthy social connections. Social connectedness benefits health in a powerful way that surpasses other known public health factors: exercising, avoiding weight issues, and not smoking. Bad social relationships are the basis of societal ills (Diener et al., 2018).

The management of diabetes is relatively complex, and this has implications for the overall social well-being of both patients and their families. Patients ought to attend a couple of doctor clinics in a year; comply with medications to manage their disease; take part in many self-care factors, which may exhaust social, financial, and cultural capital. The demanding care regimens encompass domestic glucose tracking, healthy eating, and exercising. Patients and their families must negotiate boundaries to control, including the value of care and balancing work and life commitments, which have a remarkable effect on their social well-being (Baig et al., 2015). St. Mary's Mission Hospital in Nairobi is a vital diabetes management facility serving many Kenyans from different counties. According to the hospital's information files, it serves 900 diabetes patients who seek medication and care from the facility. The purpose of diabetes control is to

enhance patients' quality of life and efficiency (Ministry of Public Health and Sanitation Prevention and Control Program, 2012). The diabetes control services include giving patients and their households the essential expertise, existing abilities, assets, and aid to obtain optimal health (Sharif, 2010). Although a primary care health practitioner can efficaciously control diabetes, the complexity of the ailment and its related complications call for some multidisciplinary group techniques (Perfetti, 2013). The methods encompass scientific, physiological, instructional, technical, social, and monetary aspects of the ailment, which have implications for social well-being (Perfetti, 2013).

Diabetes is a complex, continual infection requiring non-prevent medical care with multifactorial risk-reduction strategies beyond glycaemic control (Diabetes Care, 2015). The core intention of diabetes management is to improve the quality of life and productivity of people with diabetes through early diagnosis, prevention of short-term and long-term morbidity, prevention of premature mortality, promotion of self-care practices and empowerment of people with diabetes, and reduction of the personal, family and societal burden of diabetes (Ministry of Public Health and Sanitation, 2010). The management of diabetes is complicated and challenging due to the chronicity and complexity of the ailment process (Ahmed & Yeasmeen, 2016). Fisher et al. (cited in Ahmed &Yeasmeen, 2016: 104) have recognized four categories of factors in the control of diabetes, namely affected person characteristics, stress, provider-patient relationship, and social support.

The successful establishment of a diabetes healthcare group and infrastructure is crucial for achieving diabetes control goals (Ministry of Public Health and Sanitation, 2010). This includes delivering training for healthcare professionals and people living with diabetes. According to Diabetes Care (2015), ongoing patient self-management education and support are essential to

preventing acute complications and decreasing the threat of prolonged-time period complications (Diabetes Care, 2015). Additionally, the family support regarding meal-planning, treatment reminders, glucose checking, and workouts affects the affected person's self-management adherence and the well-being of the affected person and their family (Bennich et al., 2017). Therefore, effective diabetes management strategies include collaboration between the hospital caregivers, the diabetes patients, the family caregivers, and society. The critical importance is the patient's adherence to the diabetes management strategies, which would prevent them from developing the complications associated with diabetes which would negatively affect their lives and their families hence impacting enormous social and economic burden resulting from catastrophic medical expenses.

Effective management of diabetes relies upon patients' self-care (Aladhab & Alabbood, 2019). To govern their diabetes efficaciously, patients need to adhere to remedy regimens encompassing nutritional policies, physical activity goals, and self-monitoring of glucose levels (Miller & Dimatteo, 2013). Poor adherence to remedy regimens is a complex problem, particularly for those with chronic illnesses, and it undermines the advantages of medical care considerably (Aladhab & Alabbood, 2019). Worldwide, the patients' adherence rate to medication for diabetes varies between 36 and 93% (Wabe, Hussen & Angamo, 2011). Non-adherence to medicines among diabetic patients leads to poor glycaemic control and hence increased risk of developing chronic complications, increased hospitalization, and mortality (Wabe, Hussen & Angamo, 2011). With increased hospitalization, the patients incur substantial hospital bills and, as a result, may have to sell their assets which would reduce them and their families to a state of poverty.

1.2. Statement of the Problem

Diabetes affects patients' lives and households, and its management impacts their social well-being. Lack of proper diabetes management resources and information results in socio-economic problems worsened by smoking, advanced cholesterol levels, weight problems, increased blood pressure, and scarcity of regular workouts. Diabetes causes additional social well-being difficulties resulting from complications such as persistent wounds, commas, and heart illnesses. These difficulties nearly regularly bring about long periods of hospitalization, ensuing in massive hospital payments and loss of working hours, which poses extensive financial and social demanding situations which can affect the patient's capacity to manage the ailment as well as their social well-being (Muga, & Muhati, 2016). In LMICs, for example, in Kenya, numerous patients struggle to obtain primary diabetes care (Shannon et al., 2019).

Despite the efforts and the strategies like Kenya Health Policy (2014-2030) and Kenya National Diabetes Strategy (2010-2015), through the Ministry of Health and the Ministry of Public Health and Sanitation, to make sure effective control of diabetes, more than 8,700 diabetes-associated demises were recorded in Kenya in 2015 (Shannon et al. 2019). Nearly all the deaths occurred in patients below 60 years. Diabetes patients in Kenya in recent times have encountered many obstacles to care that would consist of distance to the hospital, insufficient knowledge, drug treatments unaffordability, unavailability of diagnostic and monitoring tools, and inefficient nearby hospital structure capability.

Following the promulgation of the Kenyan constitution in 2010, the health system is expected to offer essential primary healthcare services through decentralized mechanisms. The National Ministry of Health has coverage and regulatory roles, and the 47 county health structures have provider provision roles for more efficient healthcare delivery (Oyando et al., 2019). Despite

these provisions, the barriers mentioned above to healthcare services lead to poor diabetes management among the patients. These account for increased diabetes complications and frequent hospitalizations that affect socio-economic development. These affect the social well-being of patients and their relatives, who have to incur catastrophic healthcare expenses and make several sacrifices to provide whatever services their patients require.

This study was concerned with how diabetes and its management affect patients' overall social well-being and their households as an essential dimension of livelihood resilience and development. The effects on the income status and stigma associated with diabetes lead to poor adherence to diabetes management strategies. This, in turn, leads to complications that hinder the patients' ability to manage their condition. In Kenya, initiatives to design effective diabetes management strategies to prevent the patients from progressing to adverse complications are still insufficient. Little is documented on how social roles, relationships, the responsiveness of the health system, and financial care support would enhance diabetes management and prevent the rate at which the disease threatens to destabilize the overall social well-being of the patients and their families in Kenya.

1.3. Research objectives

This section highlights the general and specific objectives of the study.

1.3.1. General objective

The general objective of this study was to explore how diabetes and its management affect the social lives and livelihood security of patients and their families who were seeking treatment and care at St. Mary’s Mission Hospital, Nairobi, during the study period.

1.3.2. Specific objectives

i) To explain the relationship between the social roles of family members and the effectiveness of diabetes management among the patients.

ii) To determine the effects of diabetes management on the patients' income and their families.

iii) To examine the effects of diabetes management on social relationships between the patients and their family members.

iv) To analyse the effects of healthcare system responsiveness on diabetes management among the patients seeking care at St. Mary's Mission Hospital in Nairobi.

1.4. Research questions

i) How do the social roles of family members relate to and influence diabetes management among the patients?

ii) What are the effects of diabetes management on the patients' income and their families?

iii) How does diabetes management affect the relationship between the patients and their families?

iv) In what ways is diabetes management among the patients affected by the healthcare system's responsiveness?

1.5. Study Assumptions

This study assumed that management of diabetes contributes to increasing poverty among patients, which leads to catastrophic expenditure. This, in turn, reduces patients' income and drastically affect their social well-being. It also assumed that management of diabetes affects the

relationship between the patients and their families hence affecting their livelihood and general contribution to socio-economic development.

1.6. Justification to the study

Several research had been done worldwide, focusing on diverse social and economic aspects of diabetes management. Such research included; a study mentioned in Islam et al. (2013), which was carried out in China and focused on the social and economic effects of diabetes; research by Tol et al. (2017) in Isfan Iran which targeted socio-economic elements and diabetes significances amongst persons who have type 2 diabetes; a study in Kenya by Mugah & Muhati (2016) which focused on social-cultural dynamics influencing diabetes management in Vihiga District hospital. However, among these studies, none had focused on determining how diabetes management affects the social well-being of the patients, which in turn affects the overall development of a nation. This study makes an essential contribution to the literature on health and development from the perspective of the implications of diabetes management. It provides a necessary overview of how diabetes affects the social well-being of patients and households as the basic units of economic production and social development. This is important for the government and relevant authorities to design effective policies and strategies for the management of diabetes that do not affect societal well-being.

1.7. Significance of the study

This study and its results are significant for health professionals in Kenya to strategize how to help diabetic patients and their household members to manage diabetes and other NCDs effectively without adversely affecting their well-being. It would also help in reviewing and designing the healthcare system in Kenya guided by the principle of equity to prevent the progression of patients

to adverse complications of diseases like diabetes. This is an essential study in development studies, specifically, Health and Development. It adds to the existing debates on how to detect the elements in the management of diabetes that impede the development of individuals, households, and the entire society hence designing strategies to address them.

This study would contribute to the scholarly materials for scholars interested in studying diabetes or other NCDs and their impacts on livelihood. The study would add new information on diabetes management and the social well-being of patients, families, and society, which had not been captured in previous studies. This study portrays the importance of integrating health-related theories such as structural violence theory to understand and solve societal issues like NCDs, which are part of development studies. This study also reveals that health issues such as NCDs are vital concerns that affect development and should therefore be incorporated into the specialty of development studies.

1.8. Scope and Delimitation of the study

This study was done at St. Mary's Mission Hospital (STMMH), Nairobi, a faith-based hospital established in 1999. The study was conducted from October 2021 to Mid-November 2021. This study referred to some bio-medical aspects of diabetes to analyse the social development issues concerning its management. The clinical elements mentioned explained how diabetes illness and control affect the patients' social well-being and livelihoods. This interdisciplinary study could add to how bio-medics treat and manage diabetic patients. This study could represent patients, families, society, and healthcare systems at St. Mary's Hospital, Kenya, and globally. The study included participants from various counties within Kenya, which gave a broader view of how diabetes is being managed across Kenya, hence would inform future action as per the counties. The study also

included respondents from other countries seeking medical care at St. Mary's Mission Hospital. This gave a clear comparison between diabetes management in Kenya and other countries.

1.9. Conceptual Framework

The conceptual framework indicated how diabetes management interacts with crucial aspects of social well-being. It demonstrated how main and intervening variables are likely to influence specific dependent variables of the social well-being of patients. The arrows in the conceptual framework indicated the directions of interactions between specific independent variables and specific intervening variables about diabetes management and how they led to the particular dependent variables concerning social well-being.

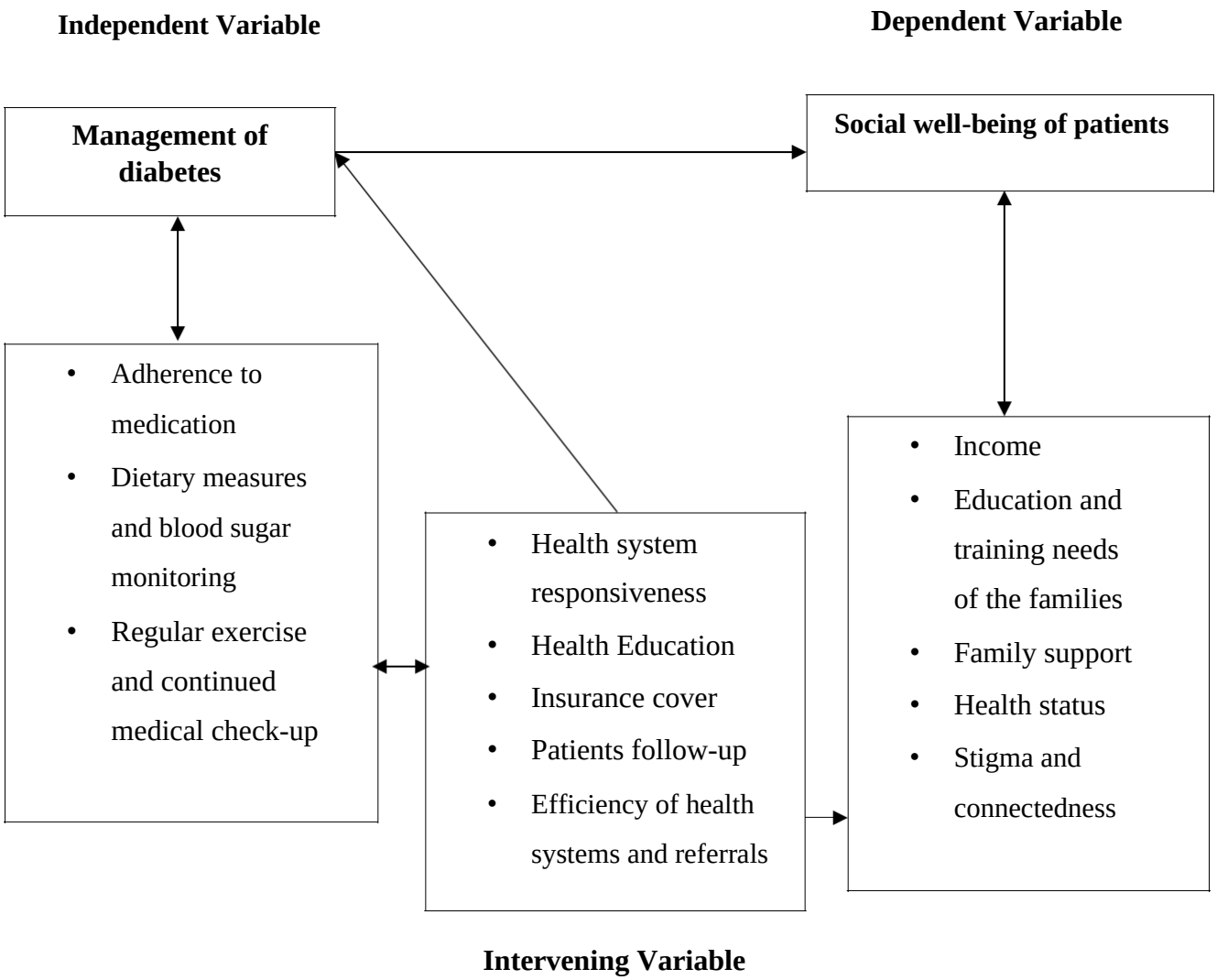

Figure 1: Conceptual framework

1.10 Operational Definition of Variables

Management of diabetes: This refers to inclusive efforts to control diabetes to levels that would prevent progress to complications, which include; adherence to medicine, lifestyle changes, and regular blood sugar monitoring.

Social roles of family members: This refers to the responsibilities of family members in helping the patient manage diabetes.

Effectiveness of diabetes management: This means the ability to control diabetes and successfully adhere to the management requirements.

Effects of diabetes management on the income: Consequences of diabetes management on the patients and their family finances.

Social relationships between the patients and their family members: Family connections that patients and family members have as they interact.

Health system responsiveness: The capability of the health systems to address health-associated issues, which include diabetes.

Social well-being: A sense of belonging where an individual feels loved, appreciated, supported, and accepted.

1.11. Chapter Summary and Conclusion

The chapter has discussed NCDs summation globally, regionally, and locally in Kenya, focusing on diabetes, indicating its complications on patients and effects on households and social well-being. It has stated the problem regarding diabetes management and the social well-being of patients. This chapter has also outlined the research questions, objectives, assumptions, study justification, scope and delimitations, and conceptual framework. This chapter points out NCDs such as diabetes as critical concerns that affect the well-being of patients, families, and nations globally.

CHAPTER TWO

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.0. Introduction

This chapter contains an evaluation of existing research and literature about how diabetes affects the social well-being of patients. It is divided into sections which are: prevalence of diabetes worldwide and in Sub-Saharan Africa, the diabetes situation in Kenya, NCDs, health and development, effects of NCDs management on the socio-economic well-being, social connection and adherence to diabetes patient care strategies, socio-economic well-being and appropriate diabetes management, social roles of family members in diabetes patient care, effects of diabetes management on patients' income and livelihood, diabetes management and social support systems, diabetes management and family relationships and connectedness, social and economic factors in diabetes management, and health system responsiveness and quality of patient care. This chapter also presents the theoretical framework upon which this study was anchored.

2.1. Prevalence of Diabetes Worldwide and in Sub-Saharan Africa

The diabetes frequency is growing globally, and it is predicted that by 2030, over 500 million adults could have diabetes. The anticipated rise in diabetes occurrence is higher in Africa and Asia due to speedy epidemiological evolution. The increase could result from urbanization and the growing aging population. The prevalence of diabetes is lower in rural compared to city populations (Sabir et al., 2018). With urbanization, people are likely to engage in sedentary lifestyles, which are contributing factors to diabetes as compared to traditional rural communities. As people age, the body's physiological functioning gets slower; hence, the pancreas may not

produce adequate insulin for the body's metabolic processes; therefore, aging people are likely to suffer from diabetes.

Diabetes is one of the ten motives of mortality in adults and is predicted to have caused four million demises globally in 2017. From 1980 to 2014, people living with diabetes globally increased from 108 million to 442 million. In 2017, the predicted figure had risen to 425 million people, and most people were in LMICs, with an instantaneous annual charge globally indicated at US $ 825 billion. Mortality from diabetes came about every 8 seconds in 2017, expected at four million amongst 20–79 year-olds. If the cutting-edge diabetes dispositions stay unchanged, the people living with diabetes and the deaths from diabetes are predicted to increase. Low-profit international locations are expected to have higher diabetes incidence (92%), accompanied by lower-middle-income global locations (57%), top -middle-income international places (46%), and better-incomes global places (25%) (Mohammed et al., 2018). In 2009 it was predicted that 285 million people had diabetes, rising to 366 million in 2011, 382 million in 2013, 415 million in 2015, and 425 million in 2017 (Saeedi et al., 2019).

The global occurrence of diabetes reached 463 million in 2019. The WHO expected that the wide variety of persons with diabetes would increase to seven hundred million by 2045 internationally (Ling et al., 2020). In 2019, diabetes was implicated in all-motive mortality, particularly in cardiovascular and cerebral vascular disease deaths. Diabetes is often related to untimely deaths from NCDs and communicable ailments, including SARS, MERS, H1N1, and the COVID-19 (Ling et al., 2020). In 2016, a predicted 1.6 million deaths had been immediate due to diabetes. Another 2.2 million deaths resulted from immoderate blood glucose in 2012 (Ling et al., 2020). These studies agree that diabetes is a severe disease causing several deaths globally, yet it is projected to increase. This is a threat to the economy of the families and the nations. The

increased number of people who have diabetes implies a decrease in the workforce, hence low productivity. This, in turn, impacts the social well-being of patients and their families as they incur huge financial expenses for diabetes management. The frequency of diabetes in sub-Saharan Africa is developing at an alarming fee. It contributes appreciably to the developing human and public health expenses of diabetes (Ministry of Public Health and Sanitation, 2010).

According to Kibirige et al. (2019), the estimate in Africa is that 15.9 million have diabetes, a prevalence of 3.1%. The diabetes increase rate for sub-Saharan Africa is predicted at 98% (12.1 to 23.9 million people) from 2010 to 2030 (International Diabetes Federation, 2009, as mentioned in Matheka, 2017). The African continent additionally has an extensive percentage of people with undiagnosed diabetes. Forecasts worldwide indicate that Africa will experience an immoderate future rise in the burden of diabetes of approximately 156% by 2045 (Kibirige et al., 2019). This developing weight of diabetes worldwide and in Africa is rising as indicated in the pooled evaluation of 751 populace-extensive studies performed in 146 global places from 1980 to 2014. The growing twin burden of NCDs like diabetes and CDs, including HIV and tuberculosis, places enormous financial stress on the triumphing aid-restrained health systems in sub-Saharan Africa, with vast financial implications for patients and their families (Kibirige et al., 2019).

2.2. The diabetes situation in Kenya

The non-communicable diseases (NCDs) in Kenya, diabetes being among the main, are essential for sickness and death (El-busaidy et al., 2014). Previous populace-based totally absolutely studies in rural and concrete Kenya located a diabetes prevalence of 3.5-5%, with better proportions amongst city regions. However, in 2015, the IDF expected the diabetes occurrence in Kenya to be 2.2% (Mohammed et al., 2018). The identical IDF 2007 (as said in the Ministry of Public Health

and Sanitation Kenya National Diabetes Strategy, 2010-2015) anticipated the occurrence of diabetes in Kenya to be 3.3%. This will rise to 4.5% by 2025 if this trend is not checked. This is based on comparative estimations and is probably an understatement as over 60% of humans identified to have diabetes in Kenya visit the healthcare centres with reputedly unrelated proceedings (IDF 2007 as said in Ministry of Public Health and Sanitation Kenya National Diabetes Strategy, 2010-2015).

The WHO estimates the prevalence of diabetes in Kenya at 3.3% and predicts an upward push to 4.5% by 2025. However, two-thirds of people with diabetes are undiagnosed (Jones, 2013). Two-thirds of humans with diabetes in Kenya do not understand they have the illness (IDF 2007 as stated in Ministry of Public Health and Sanitation Kenya National Diabetes Strategy, 2010-2015). The above research differs in the prevalence of diabetes in Kenya (3.5% - 5%, 2.2% and 3.3%). This shows that more studies need to be done in Kenya to determine the ideal incidence rate of diabetes effectively. This ought to help the government through the Ministries of Health, and Public Health and Sanitation lay effective measures to deal with diabetes. Many people with diabetes in Kenya are identified with irreversible complications (MOPHS, 2010, as stated in Waari, 2019: 2).

Foot ulcers are regularly visible at several tertiary clinics in Kenya and are associated with horrible glycaemic management and poor self-care (Nyamu et al., 2003, as stated in Waari, 2019: 2). Diabetes threatens Kenya's healthcare structure and the wider monetary scheme with the lack of labour force team (Maina, 2011, as mentioned in Waari, 2019: 2). Research has proven that the complications and related morbidity, in addition to mortality, may be reduced through strict blood sugar stage-manage (Otieno et al., 2003; Skyler, 2004, as mentioned in Waari, 2019: 3). Research accomplished at Kenyatta National Hospital (KNH) established three diabetic ketoacidosis deaths,

accounting for 8% of the hospitalized diabetic patients. Nearly 29.8% of the patients died within 48 hours of presentation (Mbugua et al., 2005, as noted in Waari, 2019:3).

2.3. NCDs, Health and Development

In latest years, NCDs, which include cardiovascular diseases (CVD), diabetes, chronic obstructive pulmonary diseases (COPD), and cancers, have turned out to be a developing pandemic globally, with disproportionately high prices in growing countries (Islam et al., 2014). NCDs constitute a significant disease burden with an extraordinary financial effect, particularly in LMICs (Abdulkadri et al., 2021). When measured in disability-adjusted lifestyles years (DALYs), six of the top 10 ailments with the greatest DALYs in 2019 were NCDs. These NCDs scored the most important reasons for DALYs from 1990 to 2019 for each age (Abdulkadri et al., 2021). According to Budreviciute et al. (2020), NCDs are the silent killers threatening health and development without displaying any signs and symptoms until the disease progresses to a complex level (Budreviciute et al., 2020).

The projections by WHO were that by 2020, NCDs were probably answerable for 80% of the worldwide burden of sickness, inflicting seven out of every ten deaths in developing global places, approximately half of them untimely demises under 70 years (Islam et al., 2014). In 2016, an expected 40.5 million (71%) of the 56·9 million worldwide deaths were from NCDs. An expected 1.7 million (4% of NCD deaths) happened in young people under 30 years of age, 15.2 million (38%) in elderly humans between 30 years and 70 years, and 23·6 million (58%) in aged humans 70 years and older (Health Policy, 2018). The loss of life means a loss of productiveness in society because many people are dying from NCDs at a young age when they should be taking part in the financial development of the nations.

According to WHO (2011), NCDs are a first-rate motive of poverty, a barrier to economic improvement, and an ignored international emergency. 60% of all worldwide deaths result from NCDs, 80% of which arise in low to centre-earnings global international locations. The monetary burden of NCDs goes beyond the direct fee of care. The oblique fee of sickness, specifically in growing global locations, should substantially shape the total price of NCDs (Abdulkadri et al., 2021). Historically, many NCDs were immediately connected to financial increases and were referred to as “ailments of the wealthy.” To date, the weight of NCDs in growing nations has prolonged. The prevalence of NCDs impedes countrywide happiness development (Budreviciute et al., 2020). Premature dying from or living long-term with an NCD and its related incapacity has positioned an increasing pressure on health systems, monetary improvement, and the well-being of significant components of the populace (WHO, 2017).

Consequently, NCDs are one of the substantial demanding conditions for sustainable growth in the 21st century, and they are the leading purpose of death globally (WHO, 2017). NCDs are a barrier to change and improvement within society. In LMICs, poverty exposes human beings to behavioural danger factors for NCDs. The socio-economic results of NCDs also affected achievement toward the MDGs, with profound consequences for poverty and financial growth (Islam et al., 2014). According to the Ministry of Health (2021), NCDs have an in-depth economic impact on families, groups, and international locations, given their chronic nature and fee of care; for this reason, exposing households to catastrophic expenses leading them into a vicious cycle of poverty.

2.4. Effects of NCDs management on the socio-economic well-being

According to Priester et al. (2005), the threat of chronic conditions like diabetes is ongoing, long-lasting, and affects patients' social, physical, psychological, and monetary stability and their families. In some situations, the social support care to the patients diminishes due to the long-time period character of the disease. Family members often get fatigued in caring for patients whose conditions are lifelong and demanding management. This is manifested in situations where patients are frequently admitted to hospitals and stay for long durations incurring high hospital bills. People with diabetes and family members should be educated on disease management to offer the necessary support to the patients in their adherence to the management of this disease.

The financial and social weight of lousy health and inequalities is enormous in nations, considering the human suffering precipitated (Dyakova et al., 2017). Out-of-pocket expenditure associated with NCDs' acute and lengthy-term outcomes is high, ensuing in catastrophic health expenditure for the families (Thakur et al., 2011). In distinctive ways and to special levels, each nation faces excessive monetary charges and broader health challenges from the intersection of disproportionate NCD incidence and the population growing older (Sweeny et al., 2015). According to Bloom et al. (2018), NCDs constitute an enormous disease burden and notably impact people, communities, and societies worldwide. NCDs are liable for half of health life years misplaced as measured in DALYs and about two-thirds of deaths globally (Bloom et al., 2018). In the Americas location, the main reason for morbidity and mortality are NCDs accounting for 80% of the demises. 35% of NCD-associated mortality arise prematurely (between the age of 30 and
70) when people are in their maximum economically effective duration of lifestyle (Bloom et al., 2018).

NCDs undermine efforts at poverty reduction and development, including striking in the efficient years, disposing of working-age adults from the workforce, and placing undue monetary and caretaking burdens on households and communities (Paho policy, 2011). Premature demise and disability because of NCDs challenge financial improvement and poverty reduction for both families and societies. Costly treatments for overdue-stage NCDs can position households at a chance of catastrophic health spending, plunging families into poverty trying to rescue the loved one's life (Paho coverage, 2011). Premature loss of life and incapacity due to non-communicable ailments task financial improvement and poverty bargain for every household and society. Disease burden can affect economic growth through numerous pathways; for instance, ill health is related to premature withdrawal from work (Dwyer & Mitchell, 1999 as referenced in Bloom et al., 2013:
4), horrible expectancies concerning employment (McGarry, 2004 as said in Bloom, et al., 2013:
4), and decreased productiveness (LopezCasasnovas, Rivera, & Currais, 2005 as mentioned in Bloom et al., 2013: 4). These elements can also reduce labour supply in the countries (Bloom et al., 2013).

The costs of treating and caring for people with NCDs are immoderate and growing unexpectedly. A few of those charges will, in all likelihood, be met from individual or public financial savings, lowering the monetary system's capability to fund new investment and growth (Sweeny et al., 2015). Increased health costs would obstruct the physical and human financial accumulation (Bloom et al., 2013). Therefore, excessive price in the management of NCDs like diabetes negatively influences the patients, their families, and the governments, which impede development techniques.

2.5. Social connection and adherence to diabetes patient care strategies

Diabetes is a complex, continual ailment requiring non-prevent hospital therapy with multi-factorial risk-reduction strategies past glycaemic management (Diabetes Care, 2015). The main reason for diabetes control is to enhance patients' quality of life and productivity. This is through early prognosis, prevention of short-time period duration and lengthy-time period morbidity, prevention of untimely mortality, promoting individual practices, empowerment of diabetes patients, and reducing the individual, circle of relatives, and societal burden of diabetes (Ministry of Public Health and Sanitation 2010). Diabetes control is complicated because of the chronicity and complexity of the illness (Ahmed & Yeasmeen, 2016). Fisher et al. (stated in Ahmed &Yeasmeen, 2016: 104) have recognized four lessons of elements in the control of diabetes, specifically affected person's characteristics, stress, involved person-provider relationship, and social help. The successful establishment of a diabetes healthcare group and infrastructure is crucial for reaching diabetes management goals (Ministry of Public Health and Sanitation, 2010). This consists of presenting health education for medical professionals and those living with diabetes. According to Diabetes Care (2015), continuous patient diabetes management education and guidance are vital for preventing severe difficulties and decreasing the risk of extended-time period complications (Diabetes Care, 2015).

Effective management of diabetes relies upon patients' self-care (Aladhab & Alabbood, 2019). The family's level of involvement in meals, reminding on treatment, glucose monitoring, and exercises influences the patients' control faithfulness to medication regimens, and their individual and family's well-being (Bennich et al., 2017). Therefore, effective diabetes management strategies include collaboration between the hospital caregivers, the diabetes patients, the family caregivers, and society. The critical importance to diabetes management strategies is

patients' adherence. This would prevent them from developing complications associated with diabetes, which would negatively affect their lives and their families, through huge socio-economic burdens resulting from catastrophic medical expenses. To govern their diabetes efficaciously, patients need to adhere to remedy regimens encompassing nutritional policies, exercises, and monitoring of sugar levels (Miller & Dimatteo, 2013). Worldwide, the patients' adherence rate to diabetes remedies varies between 36 and 93% (Wabe, Hussen & Angamo, 2011). Non-compliance to cure is a challenge, particularly for people with continual illnesses, and it undermines the efforts of hospital treatment (Aladhab & Alabbood, 2019). Non-adherence to drugs amongst diabetic patients leads to poor glycemic control and, as a result, expanded risk of developing persistent complications, accelerated hospitalization, and mortality (Wabe, Hussen & Angamo, 2011). With increased hospitalization, the patients incur substantial hospital bills and, as a result, may have to sell their assets, which would reduce them and their families to a state of poverty.

Patients' faithfulness to diabetes self-care behaviours is critical in enhancing their essential quality of life, which represents a vast assignment for patients' families and healthcare specialists (Waari, 2019). Appropriate diabetes management enables the patient to live normally, acquire a close-to-normal blood sugar state, and avoid most prolonged period complications of diabetes (Bradley & Gamsu, 1994, as stated in Waari, 2019: 11). Successful control of diabetes calls for the proper assessment and understanding of the patients' lifestyles (which includes perceived obstacles), perceptions, beliefs, and circle of relatives and social support structures (Bradley & Gamsu, 1994, as referred to in Waari, 2019: 11). Patients who experience social support have better adherence to remedy than those who do not have social help (Kalogianni, 2011). This portrays that with supportive families and social systems, diabetic patients can adhere to diabetes

management strategies and hence live productive lives and contribute to the well-being of their households and the country at large.

The complications of diabetes due to inadequate adherence affect the affected person's worth, escalate deaths and sickness, and contribute to the ailment's financial charges (Ciechanowski et al., 2001, as said in Waari, 2019:1). The scholars above agree that diabetes management entails a broad spectrum of adherence. This includes; medication like regular monitoring of blood sugar, diet, and exercise to minimize serious complications that would affect the patients' economic well-being and quality of life. These arguments are valid apart from adherence to remedy, food regimen, and exercise. The patient needs to hold on to the dietary portions and avoid other risk factors such as alcohol and cigarette smoking. Hence, prevent other NCDs such as cancer, cardiovascular illnesses, and hypertension. Developing more NCDs and diabetes could lead the patients and their families to huge economic expenses.

2.6. Socio-economic well-being and appropriate diabetes management

The medicine regimens for chronic disease management need long-term drug administration and follow-up (Kalogianni, 2011). Non-compliance to regimens can occur due to many reasons, which include; the economic limitations related to remedy, remedy aspect consequences, difficulty in dealing with complex remedy regimens, inadequate affected person health knowledge, absence of social support, and health requirements in the care of many chronic illnesses (Miller & Dimatteo, 2013). According to the WHO (as stated in Kalogianni, 2011: 157), Non-compliance to medical routine is a principal clinical problem within the control of patients with persistent complications, and costs of non-adherence with any medical remedy may additionally increase from 15% to 93%, with an average predicted rate of 50%. The treatment failure due to poor medicine adherence ends in common re-hospitalizations, negative consequences of the ailment, and accelerated healthcare

prices (Kalogianni, 2011). People have a hard time retaining their unique medicines directly and taking them as directed (Rhodes, 2017). This problem is exacerbated when medications are due to be refilled on different dates (Rhodes, 2017). This means more extraordinary journeys to the pharmacy and doctor for the affected person, increasing the chance of forgetting to take up medicine or deviating from a care plan (Rhodes, 2017). This is a severe problem for patients with chronic conditions, which results in diminished treatment effectiveness.

Adverse health effects of improper diabetes management include increased expenses associated with disease progression in the patients' families (Rhodes, 2017). This is true for diabetic patients who frequently visit hospitals every month to refute their medicines and vital blood sugar tests. This regular hospital visit implies transport costs for those living far from the hospital, and burdening poor people. Hence, this could lead to skipping hospital clinics and medication. Societal help constitutes a pivotal function in persons with diabetes and contributes to the successful management of the sickness (Ramkisson, Pillay & Sibanda, 2017). Family participants of functionally impartial patients face unique pitfalls at the same time as getting concerned. Most patients desire to be honest in a few diabetes self-control duties. Therefore, the energetic family may effortlessly overstep the affected person's barriers or provide unwanted assistance (Rosland, 2009). This can be perceived as nagging or criticizing while looking to assist, which might cause the patients to be much less assured in their functionality to attend to their ailment (Rosland, 2009).

Once the patients lose confidence, they could easily give up on their management processes. With limited economic capabilities, the patients cannot adhere to the required diet, worsening their condition. Additionally, the family members could decide to have meals that do not favour the patient; hence, they cannot adhere to their dietary requirements. Besides, the patient

may be required to fulfil their family responsibilities in a tight schedule, limiting their time for physical exercise. According to Tassou et al. (2019), as indicated in the background of the study, the diabetes epidemic and associated complications pose catastrophic financial costs in which a maximum of the prices are paid out of pocket by patients and families. This could lead to non-adherence to management strategies, especially when the patients and the families have exhausted their financial resources and sold their assets in the search for treatment. Kalogianni (2011) argues that physical impairments and cognitive obstacles might also increase the chance of non-adherence in older adults.

2.7. Social roles of family members in diabetes patient care

People with diabetes live within their families and larger social surroundings, which affects their diabetes care (Pamungkas, Chamroonsawasdi, & Vatanasomboon, 2017). According to Rad et al. (2013), demographic factors like accelerated age lower self-care, socio-economic elements like less education, low monetary level, and social factors like vulnerable individuals and family relationships notably hinder diabetes self-control (Rad et al., 2013). In the research by Vijan on 446 urban and rural patients (as stated in Rad et al., 2013: 2), one of the barriers suggested by patients concerning observing dietary suggestions was a lack of own family and social support. In that study, people who received more support from their families without problems adhered to diets. Rosland (2009) argues that family and friends affect patients' self-control because meals, exercises, and stress management occur in social settings. This is because relatives determine which food to buy or keep in their homes, what meals to cook, what sports are wholesome for the family’s timetable, and how health is positioned among family priorities.

Social assistance is needed for health behaviour change regarding diabetes self-care. According to Ahmed & Yeasmeen (2016), diabetes self-care can enhance glycaemic management and prevent the development of related demanding situations, hospitalization, and mortality. Family individuals can actively assist and take care of persons with diabetes. They can offer many help styles, which embody accompanying the patients to appointments or assisting in injecting insulin, social and emotional help resources in supporting patients with their ailments (Baig et al., 2015). According to an investigation by DiMatteo, as referenced in Miller & DiMatteo (2013), Social help is needed for health behaviour amendment regarding diabetes self-care. It promotes adherence by encouraging optimism and self-esteem, which can buffer the stress of being ill and reduce the affected individual melancholy (Miller & DiMatteo, 2013). Diabetes self-care can improve glycaemic control and prevent the development of related challenges, hospitalization, and mortality (Ahmed & Yeasmeen, 2016). There is a clear indication from this literature that family members play crucial roles in helping the patients manage diabetes. However, some patients may feel like their family members are too demanding to adhere to diabetes management. This could make the patient lose their self-motivation to manage their condition. Hence, they could follow the guidelines of their family members without inner motivation. This could affect their overall well-being and sense of belonging among their family members.

2.8. Effects of diabetes management on patients' income and livelihood

Diabetes is a costly ailment to the patients and society that is referred to as the core cause of cardiovascular sicknesses, sightlessness, complex renal malfunction, and lower limbs amputation (Tol et al., 2017). Scholars like Ayah et al. (2013) stated that the frequency of diabetes has been rising in international locations. By 2030, it is predicted that the world incidence of diabetes amongst adults could be 7.7% accounting for 439 million adults affected. The surge in occurrence

and untimely deaths because of diabetes imposes vast monetary charges on families and countries (Mutyambizi et al., 2018). The increase in health cost expenses affects the social well-being of patients and their families. In line with the argument of McFerran, 2008 (cited in Muga & Muhati 2016: 142), most people do not know that they are living with diabetes; hence they are diagnosed very late when the disease is advanced. This implies a longer duration of hospitalization and substantial financial expenses to deal with the complications. It is anticipated that the annual direct healthcare costs of diabetes globally for older adults (20-79 years) are within the range of 153 to 286 billion dollars. These figures are expected to rise to an estimate between 213 and 396 billion dollars by the year 2025, accounting for between 7% and 13% of overall healthcare spending in most countries and up to 40% in a population with an exceptionally high prevalence of diabetes (Green et al., 2005). This literature clearly shows that with time diabetes management, due to colossal healthcare expenditure, complications, and frequent hospitalization, will continue to be a significant challenge to the income of the individuals and the entire nation hence affecting the overall societal well-being.

Persons with diabetes use higher healthcare resources. The extra cost is associated with a higher cost of treating overdue diabetic complications, and the economic loss is because of misplaced person-days or lost economic opportunity. Some patients are not capable of having enough money for diabetes treatment. Hence, their functionality and quality of life are limited. This depends on the severity of the disease and whether or not there are complications (Green et al., 2005). A condition affecting the earning or active family member not only affects this person but may often have a considerable effect on others. It may additionally force nonworking family members to begin working regularly with lower earnings and reduce children's education with lengthy-period economic consequences for their families (Kapur, 2014). This literature clearly

shows that diabetes is an expensive disease, which can reduce families to a state of poverty. This is because families exhaust their resources in the search for diabetes treatment and dietary requirements for the patients. Having exhausted all their help, the patients reach a point where they cannot afford their medication and proper diet. This makes them progress to diabetes complications like kidney failure, which are costly to treat. The high costs of treatment for the complications include dialysis for kidney failure, which in Kenya costs approximately Kshs. 8,000 per session making it worse for the patients who eventually succumb to the disease.

2.9. Diabetes management and social support systems

The fulfilment of continual illnesses like diabetes treatments drastically relies upon patients' devotion to control regimens (Vahedparast et al., 2017). Daily diabetes self-control is the cornerstone to accomplishing the maximum results. Social assistance has been considered a primary element of self-management for glycaemic management and improving consequences, but the mechanism is not always continually well understood (Strom & Egede, 2012). Social support helps diabetes management and offers a manual for physical and nutritional modifications (Ramkisson, Pillay & Sibanda, 2017). Family members provide the emotional aid that enables the patients to address the stresses of the disease. Friends can also play equal roles and impact eating in social functions, be a part of the affected person in physical sports, assist patients in carrying out their social responsibilities, and avoid the stigma associated with their ailment (Rosland, 2009).

Diabetes is a persistent ailment that calls for significant behavioural modifications and adherence to a complex weight loss program. The necessary diabetes changes to each day's manner of way of life may be tough to keep without good sufficient social help, which is central to solving diabetes-related distress that derails remedy (Henderson, 2020). The social guide is a substantial element for personal care and self-discipline to remedy and illness management that may

self-care behaviours and compatibility with them (Rad et al., 2013). These scholars seem to agree that social support systems have a function to play in the management of diabetes. This is true because patients who have supportive social support structures can adhere to remedy regimens, are productive, and live a higher quality of life than the patients who have much less worried social help structures.

The diagnosis of diabetes has been described as a lifelong psychological burden on the person and their relatives due to its demanding nature, which requires ordinary management and strict adherence to remedy, diet, and exercising (Ramkisson, Pillay & Sibanda, 2017). Diabetes and its control affect the affected person and relatives, probably inflicting mental anguish and increased responsibility and collaboration in these families (Benich et al., 2017). According to Ahmed &Yeasmeen (2016), families may require to redistribute obligations, adjust everyday exercises and renegotiate family roles due to diabetes. Diabetes care consists of supporting patients' entire specific duties, scheduling hospital appointments, assisting with insulin injection as per the guidance, and emotional help, hence imparting consolation and encouragement to the patients. In contrast, patients experience distress or disappointment over a prolonged period in their diabetes care (Pamungkas, Chamroonsawasdi, & Vatanasomboon, 2017).

It is identified that relatives play a sizable component in the control of diabetes (Rintala, Paavilainen, & Kurki, 2013). Among the factors of society, the family is the smallest unit, and its people provide a great social guide for the self-care of diabetic patients (Ahmed &Yeasmeen, 2016). The social guide from the family offers patients practical assistance, which reduces the stress of the illness among the patients (Miller & Dimatteo, 2013). According to Rad et al. (2013), stricken by chronic complications of diabetes results in a decreased life expectancy and increase in loss of life, imposes an immoderate financial burden on the individual, family, society, and

influences the quality of life of the person and their family. Thus, many researchers agree that diabetes belongs to the individual and their family since suffering from this continual ailment disturbs their family life and potentialities, threatens their independence, and generates a sense of being distinct from others (Rad et al., 2013). This is true as it affects the well-being of the family members as well as colleagues at work and friends since they all have to feel with their sick member and respond to their physical, emotional, social, and psychological needs, which demands a lot of self-sacrifices

These studies bring truths about the effects of diabetes illness on the social support system for the patients like family members. Whenever a member gets sick, the entire family experiences anxieties. With a long-term disease like diabetes, the family members are in a continuous series of worries and stress, mainly whenever their sick member develops complications that need specialized care. Moreover, the family members have also to adjust their lifestyles at home like dietary measures. For example, they may have to forego white bread and adapt to brown bread for the sake of their sick member.

2.10. Diabetes management, family relationships and connectedness

Diabetes is a family sickness which, further to the complex nature of clinical control, patients and their families face psychological troubles that make extended-time stability and control very hard (Solowiejczyk, 2004). Ahmed & Yasmeen (2016) argue that diabetes self-care behaviour alleviates the weight of caregivers and makes the management of diabetes less difficult for all. Patients are faithful to remedy routine if there is less conflict and more unity within their circle of relatives. Diabetes influences relatives differently by either improving the family harmony or inflicting mental misery in a few households; the duty to assist the affected person is considered a burden (Benich et al., 2017). This literature affirms that diabetes management among the patients affects

family relationships to the extent that some families view their diabetes members as burdens. This, in turn, affects patients' adherence to their management strategies, which is a risk of developing complications associated with diabetes, which would negatively affect the overall social well-being of patients and their families.

Some patients experience stigma from relatives and society. Stigma refers to how people are concurrently discriminated against in opposition to, socially sanctioned, managed, and isolated (Phelan, Link, & Dovidio, 2008, as stated in Manago, 2015). Stigma is a common impediment to health-searching conduct, involvement in care, and faithfulness to treatment throughout various health situations (Stangl et al., 2019). Stigma influences population health results by worsening, undermining, or impeding numerous strategies, along with societal family members, aid accessibility, strain, and mental and behavioural responses, exacerbating awful health (Stangl et al., 2019). Some family members and different relations stigmatize diabetes patients. Stigma leads to social outcomes that incorporate segregation and position loss, and it has consequences for education, health, and life expectancy (Manago, 2015).

According to Liu et al. (2017), socially identifiable features associated with diabetes embody insulin injections, blood glucose tracking, nutritional guidelines, weight problems, and hypoglycaemic episodes, which can add to diabetes stigma. This literature points out that the management strategies required to treat diabetes could equally contribute to stigma among the patients. Some patients fear that if people see them taking their medicines during social functions or eating at different times with other people who do not have diabetes, they may segregate them. There is a clear indication from this literature that stigma is a contributing factor to poor diabetes management. If diabetic patients feel stigmatized, they may fail to take their medication, like injecting insulin in public. The patient may also feel embarrassed to eat in public when others are

not eating in case of sugar levels drop. This stigma may eventually worsen diabetes conditions, leading to adverse complications for the patients which affects the societal well-being.

2.11. Social and economic factors in diabetes management

Social and monetary elements are the number one effect factors in the control of diabetes (Wang et al., 2018). Many researchers have stated that incomes, education level, occupation, bodily exercise, obesity or overweight, health behaviours, environments, and splendid demographic elements have an impact on basics for diabetes management (Wang et al., 2018). The type of occupations and socio-economic status are contributing factors to diabetes management. Some occupations are demanding in terms of working hours and meeting work deadlines; hence, the patients lack time for physical exercise. Additionally, the poor people in the society experience diabetes complications more than the rich who can afford the management requirements for the illness. Esmaeil-Nasab et al. (as stated in Wang et al., 2018: 2) and Boutayeb et al. (noted in Wang et al., 2018: 2) mentioned that retired, unemployed, or single people are unlikely to acquire remedy. Diabetes can be complex among less advantaged patients in the experience that the private monetary weight of multiplied hospital fees accentuates the results of impoverishment as it consumes an extra full-size part of profits (in contrast with the ones who have more massive monetary property) (Hill et al., 2013). From this argument, there is resource inequality experienced between the rich and the poor regarding diabetes management, whereby the poor experience the ailment weight more than the rich. This is true, as the poor cannot afford the management requirements for diabetes.

According to Kapur (2014), the triumphing poverty, lack of understanding, illiteracy, and terrible health recognition gives to the disturbing situations of diabetes management. There is rising evidence that diabetes education, attention, and improving motivation for self-care enhance

care, and reduce complications and common financial costs of diabetes. Gonzalez-Zacarias et al. (2016) argue that critical constituents of diabetes self-discipline education encompass everyday sugar tracking, proper nutrients, and bodily exercise. Some diabetes patients face limitations to powerful diabetes management because of the large number of less profits and education levels, language barriers, cultural beliefs, and confined societal and clinical help (Gonzalez-Zacarias et al., 2016). Thus, education levels, income, language barriers, cultural beliefs, social assistance, and valuable clinical resources are important social-monetary factors influencing diabetes control for many patients.

2.12. Health system responsiveness and quality of patient care

Diabetes may be asymptomatic for prolonged durations earlier than diagnosis. As much as half of the persons with diabetes, mainly in LMICs, may not have been identified; many have complications at the time of diagnosis (Harris, 2008). This is probably because of inequality in healthcare structures' responsiveness. A responsive health system encourages people to take care, allows them to interact better with healthcare providers, and allows better health information communication to the affected person, enhancing the patients' health status (Sajjadi et al., 2015). Some patients in structurally underprivileged areas with lousy healthcare situations lack early prognosis compared to the most privileged locations. Individuals recognized with diabetes have to concern themselves approximately with various problems, like blood sugar levels, food regimen, and a complex medicinal drug routine, which they are no longer efficiently facilitated to cope with (Krizner, 2019). Diabetes care is complex as it consists of an aggregate of clinical monitoring, medicines, nutrition, bodily exercise, and tracking of blood glucose (Maar et al., 2011).

Diabetes patients frequently point at price, accessibility, competing priorities, or lack of information when they have a problem adhering to a remedy (Appold, 2016). Many people who have diabetes live in societies that do not recognize their scenario. The belief that people with severe diabetes inject insulin stays commonplace in the preferred population and with a few healthcare specialists (Debono & Cachia, 2007). There is a gap in health education about diabetes and its control among the healthcare providers, the families, and society. With this gap, the prevalence of diabetes is anticipated to rise over the years and hence continue to be a challenge to the patients, households, and society. The lack of know-how on diabetes management blocks the patients' capacity to manage their sickness. This is important as higher patient self-control potential is associated with progressed diabetes management (Venkaraman, Kannan & Mohan, 2009).

Perceived quality of life decreases for diabetes patients because of a lack of dramatic ailment-associated signs and symptoms and side effects of interventions, affecting patient compliance with medical advice (Venkaraman, Kannan & Mohan, 2009). The unwillingness of the family members would be, therefore, a significant challenge to the diabetic patient. Besides, the patient's perception and awareness of diabetes play a tremendous role in managing the disease (Rintala, Paavilainen & Kurki, 2013). Suppose the patient has adequate knowledge of diabetes and perceives that diabetes is a severe condition with serious complications that would affect their social well-being and that of their family and society. In that case, they will have the necessary drive to manage their condition effectively. The high financial costs of treatment are a significant challenge to the economic well-being of the patients. They could reduce them to poverty, contributing to poor adherence to remedy. Social support systems are core to patients' management of diabetes and their well-being.

Diabetes management is feasible while detected early and controlled efficiently (Shannon et al., 2019). However, if undetected or poorly maintained, the illness can result in excessive and everlasting complications, loss of eyesight, cardiovascular sickness, renal sickness, and amputation of the lower extremities (Shannon et al., 2019). The study has confirmed that low mood and melancholy are famous among men and women with diabetes (Nash, 2014). An individual with diabetes is much more likely to be considered depressed than a person not having diabetes (Barnard et al.,2006, as said in Nash, 2014:138). The burden of diabetes care, with its crucial lifestyle modifications and unremitting strength of control, can detrimentally impact the quality of life of the individual having the illness (Rubin, 2000, as noted in Nash, 2014:138). Diabetes affects patients' lives, and its presence deteriorates a person's quality of life (Trikkalinou et al., 2017). Therefore, the primary aim of diabetes early diagnosis and treatment is the quality of lifestyle (Trikkalinou et al., 2017).

The presence of diabetes management can also affect the amount and awesome of an affected individual's relationships. As patients begin to institute changes in daily conduct to control diabetes efficaciously, cherished ones might also begin to rebel (Debono & Boland, 2007). Friends or family members can also encourage modifications for self-care although the affected person may be unwilling to change, which is viable in younger, growing diabetic patients (Debono & Boland, 2007). In the preliminary stages of the ailment, the family members and the friends appear supportive and would love the patients to be well. However, because diabetes is a long-term disease, some of the family members the friends get tired of the management demands of the patient, and they subsequently surrender their initial enthusiasm to support their ill member. This diminishes the quality of life and patients' well-being since they may feel neglected and burdensome, leading them to give up their self-care management. This implies more

complications, long-period hospitalization, and drained family earnings, which would affect the family members' education and their potential to meet basic needs.

2.13. Theoretical framework

The Structural Violence theory guided the research and interpretation of the results of this study. Structural violence is a sample of variations in massive-scale communal arrangements, inclusive of versions of power, wealth, privilege, education, and health that are probably unjust and unequal (UNICEF, 2018). This form of violence additionally takes vicinity in society if establishments and recommendations are designed to create limitations or inequitable access to some items and services for a few people but no longer others (UNICEF, 2018).

2.13.1. Structural Violence Theory

The idea of structural violence first emerged in the 1960s to explain disparities in health and development between rich nations and impoverished submit-colonial states (Hirchfeld, 2017). The idea of structural violence developed out of Dependency Theory and defined poverty and ailment within the developing international, which emanated from exploitation by colonial or neo-colonial powers. This theoretical framework can display the dynamics of societal practices and structural forces that operate across a couple of dimensions of peoples' lives in approaches that may not appear right away associated with health (Page-Reeves & Janet et al., 2013:33). The term "Structural Violence" as implemented in health and healthcare studies is attributed to Farmer drawing on the work of Latin American liberation theologians and Johan Galtung (1969; 1990). The liberation theologians espoused an ethical vital for the Church in Latin America to move beyond responding to the needs of the poor people to actively undermine and challenge the social and economic inequality and promote social justice (Page-Reeves & Janet et al., 2013).

The guiding principle of a structural violence lens is the organizational forces that allow the rich to get richer at the price of the destitute, who get poorer (Page-Reeves & Janet et al., 2013). The term "structural violence" describes social preparations that position human beings and populations in a damaged way. The arrangements are structural because they are embedded in our social globe's political and economic organization; they are violent because they bring about harm to individuals (commonly, not those answerable for propagating such inequalities (Farmer et al., 2006). Gultang (1969) refers to structural violence as a form of social injustice embedded into the social structure and appears as unequal power and, consequently, as unequal lifestyles possibilities. Resources are inconsistently distributed, as at the same time as profits distributions are intently skewed, literacy or education erratically allocated, health services exist in a few districts, and so forth. Above all, the power to determine the distribution of assets is inconsistently allotted. The scenario is aggravated if the person's low profits are likewise ordinary in education, low on health, and low on power. These rank dimensions are inclined to be heavily correlated because they are tied together within the social structure.

When power relations, for instance, class, gender, race, and societal establishments like a circle of relative's unit, ethnicity, and religion systematically perpetrate and reproduce a lack of actualized capability for some people while increasing the actualized functionality of others, the violence is shielded in peoples' ordinary lives as disparity (Page-Reeves & Janet et al., 2013). Although disparity can take many forms, health disparities are one of the most tangible manifestations of inequity, regularly identifying who will live and die (Page-Reeves & Janet et al., 2013). According to Farmer (2003), inequalities of accessibility and consequence constitute the drama of modern treatment. Healthcare is either a commodity to be supplied or an important societal right. Page-Reeves & Janet et al. (2013) argue that by using of Structural Violence

Framework to recall public health contexts like diabetes, we can understand that people's health behaviour is limited through structural and institutionalized inequality that limits humans' functionality to make choices and limited options, which have an impact on health effects.

Different proponents have related structural violence thoughts to healthcare in precise techniques. For instance, Farmer et al. (2006) used this idea to offer an example of the structural violence effect on people living with HIV in the United States and Rwanda. They confirmed the feasibility of addressing structural violence via organizational interventions in each case. They argued that the distribution and final effects of persistent infectious illnesses, which embody HIV/AIDS, are related to social arrangements; therefore, it is difficult for clinicians to brush aside social elements. Although AIDS is often considered a "social sickness," health workers may have significantly specific understandings of what makes AIDS "social." Several scientific docs are interested in the "behaviours" or "existence" that positioned some at a chance for HIV illness. However, the risk has in no way been decided ultimately to be humans' behaviour (Farmer et al., 2006). Susceptibility to disease and awful effects is heightened through societal elements, including poverty, gender inequality, and racism (Farmer et al., 2006). The main argument of structural violence theory is that inequality in the distribution of services in the society, such as healthcare, is a type of structural violence, which is a social injustice to the people. This is because many people die due to a lack of medical care. In addition, chronic illnesses such as diabetes lead to poverty and a lack of family necessities like children's education. This theory is related to this study because the lack of accessibility and affordability of diabetes management regimens leads to suffering among the patients and their family members, affecting their social well-being.

Inequities in health occur due to the occasions wherein persons develop, stay, work, age, and the structures to address the disease (Commission on Social Determinants of Health [CSDH], 2008, as said in Maar et al., 2011). Maar et al. (2011) used a structural violence technique to determine the conditions wherein many Aboriginal humans develop, stay, and live. These events covered the legacy of Canadian colonial practices, imposed nutritional and lifestyle modifications on reserves and in residential schools, socio-monetary disparities, exposure to racism, and marginalization of Aboriginal problems. These problems are all essential causes of chronic sicknesses that diabetes patients experience. The study goal was to apprehend the observations of nearby diabetes care, possibilities or limitations for healthy existence, and lived evaluations of diabetes in many Aboriginal human beings in New Mexico, which intrude with many Aboriginal peoples' abilities to place into effect diabetes strength of will. The study discovered that economic, societal, and political marginalization could create limitations for Aboriginal persons with diabetes. These barriers positioned humans with diabetes in harm's manner by interfering with proof-based diabetes care, increasing the risk of the speedy onset of complications. The determinants of terrible diabetic management uncovered in this research are inseparable from the structural violence exhibited in colonial records resulting in chronic disempowerment, poverty, strain, and marginalization of first nations organizations and their health. Hence, they argued that it is essential to look at the surface and understand the reasons for non-adherence to stop unjustifiable blaming of socio-politically disadvantaged and inclined patients for their deteriorating health (Maar et al., 2011).

This structural violence theory is appropriate to this study about diabetes management and the social well-being of the patients in the sense that the social, economic, political, and religious structures contribute to the reduction of societal disparities, for example, health disparities hence

ensuring societal well-being. However, in some nations like Kenya, some Counties are more structurally developed, for instance, in healthcare facilities, than other Counties. With structural inequity, the poor and marginalized experience violence due to a lack of accessibility to timely healthcare facilities, contributing to late diagnosis of chronic diseases such as diabetes at advanced stages when the complications are irreversible. This leads to a social weight on the relatives and the community, affecting their overall well-being. This is in line with the argument in the authors of a review of the Southeast Asia situation as cited in Galambos & Sturchio (2014: 7) that NCDs affect millions of lives and often the lives of those who have the least and besides, the inequality in risk factors and disease impact between groups of lower socio-economic status and those of higher socio-economic status appears to be a global phenomenon (Galambos & Sturchio, 2014).

According to Paula et al. (2008), human beings with immoderate revenue and education levels have a propensity to be healthier and live longer than people in much lower socio-economic conditions and worldwide locations wherein incomes have a higher wholesome populace in terms of life expectancy, quality of life, and mortality rates. The economic structure impacts health in many methods, consisting of mental and societal well-being (Paula et al., 2008). Structural inequity also leads to multiple referrals from one hospital to another, which adds to the late diagnosis of chronic diseases like diabetes when the complications are already irreversible. Hence the patients cannot live to their full potential in society. Some Counties in Kenya have easy access to basic needs like proper dietary requirements compared to other disadvantaged Counties, making it challenging to manage chronic illnesses like diabetes, which requires a good diet and other management requirements.

2.14. Chapter Summary and Conclusion

This section has discussed the relevant literature concerning the study and critical review of the scholarly materials. It has also discussed structural violence theory, where the study was anchored, outlining its applicability to the study.

CHAPTER THREE

METHODOLOGY

3.0. Introduction

This chapter discusses the study techniques that guided the conducting of the research. It is divided into different sections; research design, site description, study and target population, inclusion and exclusion criteria, sampling techniques, sample size, methods of data collection, study instruments, reliability and validity, data analysis procedures, ethical considerations of the study, and the limitations to the study.

3.1. Research design

This study used mixed methods convergent design, which involved quantitative and qualitative methods. A research design refers to approaches for gathering, analysing, interpreting, and reporting evidences in studies (Creswell & Clark 2007: 58 as cited in Boru, 2018: 2). A convergent design occurs when the researcher intends to bring together the quantitative and the qualitative data analysis results so they can be compared or combined (Creswell & Clark, 2018: 116). This research design was appropriate for the study since some more explanations were needed from the respondents to coherently understand the effects diabetes management has on the social well-being of the patients and their families. However, some questions did not need explanation, such as the gender of the respondents.

In addition, the study was geared toward describing the consequences of diabetes management and the social well-being of patients at St. Mary's Mission Hospital, Nairobi. In line with Amalki (2016), blended techniques studies are the sort of studies wherein a researcher integrates fundamentals of mixed-method research strategies for scope, depth of understanding,

and validation. The quantitative method was used for the data that did not need narration, for example, the demographic data. The qualitative method was used for the data that involved narration, for example, determining the roles of family members in the diabetes management of patients.

3.2. Site description

The research was conducted at St. Mary's Mission Hospital in Nairobi City County in Kenya. This faith-based health facility was established in 1999, as indicated in the hospital's 2018-2023 strategic plan. The hospital is located in Lang'ata, alongside the Police Dog Unit Road, and has a bed capacity of 320. The Kenya Hospital Classification criteria rank St, Mary's Mission Hospital as a Level 4 or sub-county hospital. The health structure in Kenya is organized into six tiers of the hierarchy, as follows: level 1, community services; level 2, dispensaries and clinics; level 3, health centres and maternity and nursing homes; level 4, sub-county hospitals and medium-sized non-public hospitals; level 5, county referral hospitals and massive private hospitals; and level 6, countrywide referral hospitals and good sized private teaching hospitals (WHO, 2017). St. Mary's Mission Hospital is ranked a level 4 hospital in Kenya because it has fulfilled the Kenya Essential Package of Health Republic of Kenya District Hospitals/Equivalent requirements, stipulated through the Ministry of Medical Services and Ministry of Public Health and Sanitation (2009). St. Mary's Mission Hospital offers holistic services as per the requirements of level 4 hospitals. These services are outlined in Mariita (2019) as; Maternity in-patient services, Curative services, Laboratory services, Dental, Counselling, Pharmacy, Tuberculosis Clinics, Diabetes & high blood pressure clinics, Comprehensive care clinics for patients living with HIV, Baby well clinics, Antenatal and postnatal services, and issuing of referral letters to other hospitals.

From St. Mary Mission Hospital Strategic Plan (2018-2023), this hospital serves a sizable proportion of underprivileged people from the encircling slums of Kibera, Mukuru kwa Njenga, and Kuwinda, among others. It is a health-giving centre amid excessive social and economic hardships affecting the patients. The hospital presently serves about 1,200 outpatients every day, gives Comprehensive Care Centre (CCC) services to over 3,000 patients per month, conducts approximately 800 to at least 1,000 deliveries monthly, and undertakes about 500 major and 500 minor surgeries monthly. The Nursing Council of Kenya authorizes St. Mary's Mission Hospital to offer a Kenya Registered Nurse/Midwife (KRN/M) program, and by the Medical Practitioners and Dentists' Board as a Continuous Medical Education (CME) centre (St. Mary Mission Hospital Strategic Plan, 2018-2023). St. Mary's Hospital group of workers is a Kenyan Christian network specializing in healthcare ministry to the low-earnings earners. They seek to fulfil their venture through healthcare services, outreach programs in response to the encompassing communities' needs, and their willpower to medical and hospital-pastoral education.

In 2019, the facility opened a private in-patient wing. This private wing is slightly expensive as compared to general wards. This is because the rooms are self-contained with patient privacy, patients are given the privileged to be accompanied and visited by their relatives at any time in the ward if they wish, and the patients choose the food they would like to eat. The hospital can diagnose and treat CDs and NCDs like diabetes, hypertension, and cardiovascular diseases. Daily, the hospital attends close to 45 patients with NCDs. According to the hospital records, 45 diabetic patients visit the hospital daily (from Monday-Friday), accounting for 900 patients per Month (St. Mary's Mission Hospital Strategic Plan, 2018 – 2019). The study was carried out at St. Mary's Mission Hospital since this hospital has a department for chronic illnesses like diabetes offering comprehensive healthcare services. These services include; medical, nutrition,

counseling, and physical fitness like weight reduction. The hospital also admits and treats patients who have uncontrollable sugar levels. Additionally, the patients who access those services come from diverse places within Kenya. Therefore, this was an ideal place to get essential data regarding diabetes management and its effects on the social well-being of the patients. Figures 2 and 3 below present Kenya's map showing the location of Nairobi County, and Nairobi County showing the location of St. Mary's Mission Hospital, Nairobi.



Figure 2: Map of Kenya showing location of Nairobi County (Kwach, 2018)

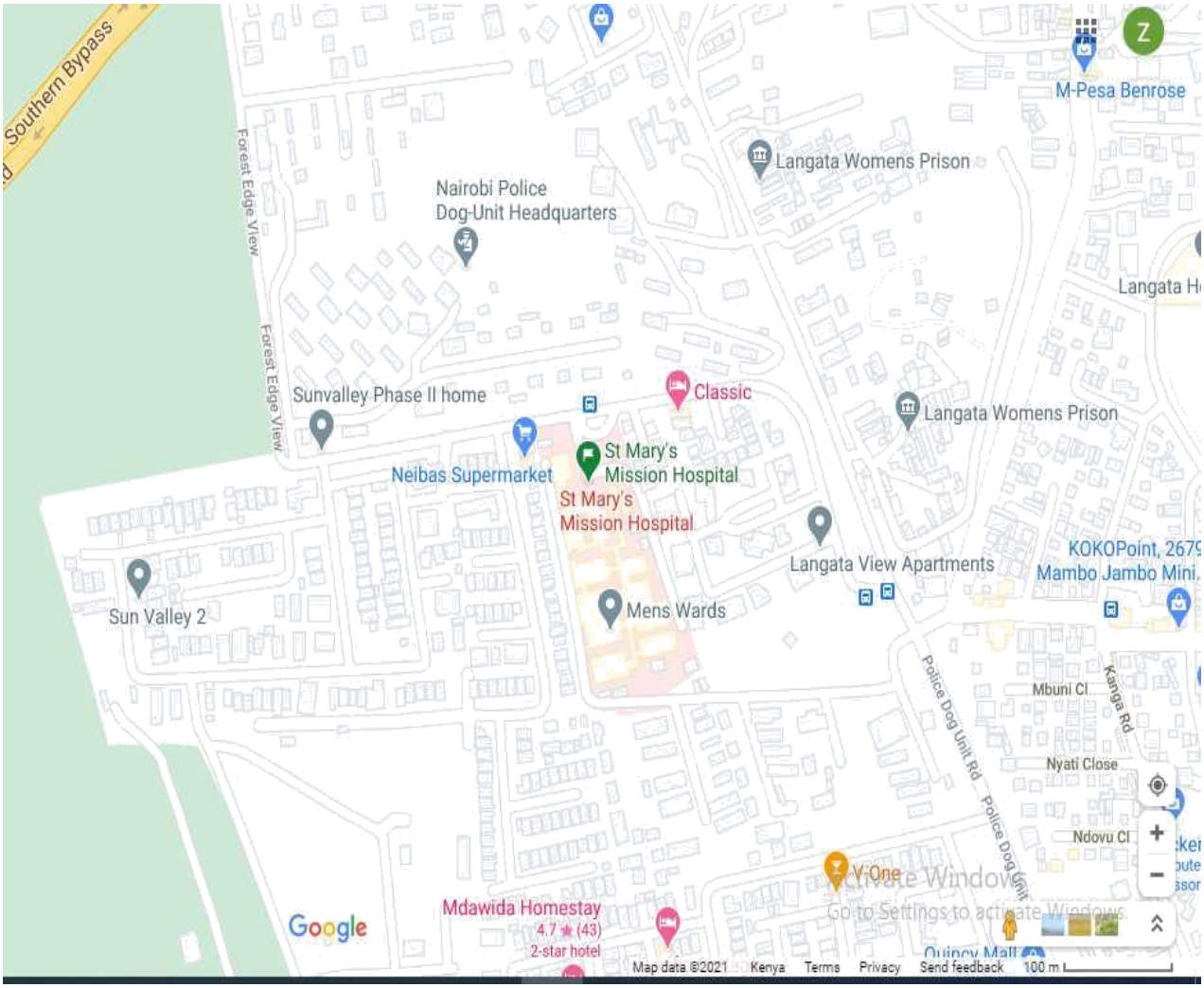

Figure 3: Map of Nairobi County showing location of St. Mary's Mission Hospital, Nairobi (source: ke.africabz.com)

3.2.1. Study population

A study population is a collection of people, items, or objects upon which samples are taken (Kombo, 2005 as cited in Loru, 2020: 1). The research population was diabetes patients aged 18 years and above who were seeking treatment in St. Mary's Mission Hospital, Nairobi, from October 2021. This population was appropriate for the study since the patients aged 18 years and above can clearly express how diabetes management has impacted their social well-being

compared to the patients aged below 18 years, who mostly are under the care of their parents and guardians, and most of the time are not aware of the cost implication of diseases like diabetes.

3.2.2. Inclusion and exclusion criteria

Inclusion criteria are features that potential subjects must have if they are to be part of the study, whereas; exclusion criteria are those features that prohibit likely participants from participating in the research (According to Yale University, 2021). This study only included the diabetes patients who attended clinics at St. Mary's Mission hospital, who were willing to participate and were present during data collection. Additionally, the study only included participants aged 18 years and above. The study excluded the diabetes patients who did not attend clinics at St. Mary's Mission Hospital and those who did not have diabetes. It also exempted the respondents unwilling to participate and not present during data collection. Additionally, the study also excluded participants below 18 years.

3.2.4. Sampling Techniques

The study used purposive and convenience sampling techniques. According to Etikan & Babatope (2019), purposive and convenient sampling are non-probability technique centred totally on information and considerate of a researcher in selecting the wished respondents from the study population. The researcher reaches out to the participants they feel can meet up with the research objective or subject of interest being investigated. This method was appropriate for this study since the diabetes patients were interviewed each during their visit to the hospital without gender segregation. In addition, the patients had different clinic days in the Month, and some came to the hospital once a Month for clinics while others came for clinics after two or three months.

3.2.5. Target population and Sample size

The target population is a collection of individuals from which the researcher intends to carry out research and draw conclusions (Barnsbee & Nghiem, 2018). A sample is a subset of a population (Etikan & Babatope, 2019). The target population and sampling frame for this research was the number of diabetes patients who seek treatment at St. Mary's Mission Hospital monthly, accounting for 900 patients. The sample size was computed using Fisher's (1998) formula and Mugenda & Mugenda (2003). This formula was necessary for this study to get the correct sample size in the target population, which was less than 10,000 respondents. The calculation was as follows;

1. Determination of the population of diabetes patients.
2. Calculation of sample size from the population of diabetes patients.

The calculation was as follows:

The overall population of diabetes patients, according to Monthly St. Mary's hospital records, was 900

Therefore;

Where: n = the desired sample size (if the target population is greater than 10,000)

z = the standard normal deviation at the required confidence level (=1.960 with confidence level of 95%)

d = the level of statistical significance set (0.05)

p = a proportion in target population (50% = 0.5)

Therefore, the desired sample size was;

$$= \frac{(1.96)^2(0.5)(0.5)}{(0.05)^2} = 384$$

Given that the target population was less than 10,000 as per the monthly hospital records, the actual sample size, according to Mugenda & Mugenda (2003), was;

$$= \frac{}{1+ /}$$

Where *nf* = desired sample size (when population is less than 10,000)

n = desired sample size (when population is greater than 10,000)

N = the estimate of population size (900 diabetes patients)

$$= \frac{}{1+ /} \qquad = \frac{384}{1+384/900}$$

$$n_f = \frac{384}{1+ 0.427} = 269$$

Therefore, the sample size for the research was **269 respondents**.

3.3. Methods of data collection

Data was collected through interviewer-administered questionnaires containing both open and closed questions. According to Roopa & Rani (2012), a questionnaire is a listing of printed questions that a respondent completes to offer their opinion. The data collection procedure entailed interviewing each respondent during their visits to the hospital. The quantitative data was keyed into SPSS as the researcher waited for the next respondent, whereas qualitative data was typed into

a word document according to the respondents. A notebook was also used to write additional responses, which were important to the research.

Quantitative data (close questions) was from objectives two and four because these objectives did not need much explanation from the respondents. Qualitative data (open questions) was from objectives one and three because these objectives needed in-depth explanation from the respondents. Qualitative data from the respondents gave more detailed experiences of how diabetes management affected their well-being. During the data collection process, some patients appeared emotional and could cry. This showed the pain and the challenges the patients experienced in diabetes management.

3.4. Study Instruments

A study instrument refers to any tool a researcher ought to use to collect or obtain data, measure data, and analyse facts applicable to the subject of the study (DISCOVERPHDS, 2020). The format of a research tool may include questionnaires, surveys, interviews, checklists, or simple exams (DISCOVERPHDS, 2020). This study used interviewer-administered questionnaires containing closed questions to gather quantitative data and open questions to collect qualitative data. For the respondents who did not understand the English language, the study instrument was translated to the Kiswahili language as indicated in Appendix 6 as per the requirements of the KNH-UoN Research and Ethics Committee.

3.5. Reliability and Validity

Reliability is the magnitude to which measurements are repeatable when different people measure on a separate occasion, beneath specific conditions, supposedly with alternative devices, which measure the construct or skill (Drost 2011 as stated in Kubai, 2019: 2). On the other hand, validity continually pertains to the quantity to which the study's facts and the strategies for finding the

information are accurate, honest, and on the course (Denscombe, 2003, as referred to in Loru, 2020). Before the actual research, a pilot study was done in a different populace at St. Michael's Parish Otiende, Lang'ata, whereby ten respondents who were not diabetes patients were selected. The study instrument was administered to test the formulated questions to ascertain that they were tailored to gather the study's relevant data. This gave a chance to evaluate consistency in the formulated questions and assess whether they were representative of the study objectives. There was a challenge in answering the Kiswahili version of the questionnaire during the pilot study. The researcher addressed this challenge by explaining to the respondents what the questions were asking.

3.6.3. Data Analysis

These are techniques related to surfacing meaning and understanding from various data gathered in a study as a foundation for further action and theory building (Coghlan & Brydon-Miller, 2014). Qualitative data was manually grouped, coded, and categorized, picking on cross-cutting issues according to the frequency of responses per question, then compiled, analysed, and interpreted accordingly. Quantitative information was coded and then keyed into Statistical Package for Social Sciences (SPSS) version 22 for windows. SPSS was used to run frequency distributions and cross-tabulations for analysis and interpretation. Microsoft Excel was used for graphical presentation. The researcher found it clearer to combine SPSS and Microsoft Excel for graphical presentation.

3.7. Ethical Considerations

Before ethical approval, there were two proposal defenses at the Department and Faculty of Arts and Social Sciences of the Catholic University of Eastern Africa. After this, a letter requesting permission for ethical review and approval was obtained from the Social Sciences and Development Studies Head of the Department. This letter from the Head of Department and the

proposal that the Supervisors signed was sent to Kenyatta National Hospital/University of Nairobi (KNH/UON) Ethics and Research Committee for review and approval. The ethical review and approval were obtained from KNH/UON (refer to the ethics review document, Appendix 8) because the study focused on the health aspects of patients and entailed their participation. Upon ethical review and approval, a letter requesting data collection at St. Mary's Mission Hospital was obtained for the Head of the Department. This letter was sent to The Chief Executive Officer (CEO) at St. Mary's Mission Hospital to seek permission for data collection.

The respondents' autonomy and rights were ensured by first defining the study's objectives, gaining consent before collecting data, and giving them the freedom to answer the questions without worrying about victimization. Engagement in the study was voluntary. The respondents who were not willing to participate were set free. The participants were required to voluntarily sign or thumbprint an informed consent form (Appendix 3). For respondents who did not understand the English language, the informed consent form and the questionnaire were translated to Kiswahili (Appendix 5 & Appendix 6) as per the KNH-UoN Research and Ethics Committee requirements. Confidentiality of the data from the participants was assured by ensuring their names were anonymous and storing the questionnaires in a safe room only accessible to the researcher. As part of the sharing of the research results, an article entitled social roles of family members and effectiveness of diabetes management of patients seeking care at St. Mary's Mission Hospital, Nairobi was published in the Journal of Advanced Sociology Vol 3, Issue 1, No.1, 1 - 17, 2022. The study's findings will also be shared with KNH-UoN Research and Ethics Committee as per their requirements and in other forums such as more article publishing, conferences, workshops, or other methods as per the requirements of the audiences.

3.8. Limitations to the study

The limitations to this study included; some patients not being willing to participate due to previous experiences on research where they wanted to know the research results as per their names but did not get the results. To solve this, the researcher clearly explained the research objectives and assured the respondents that they would get to know the results once the research was published, not as per individual responses but as per collective analysed responses of the diabetes patients. The respondents were given the freedom to participate or not participate in the study. Additionally, some respondents were sending relatives to get medicines from the hospital; hence, the researcher missed the opportunity to gather data from these respondents. To remedy this situation, the researcher had to be patient until the targeted sample size of 269 respondents was achieved.

3.9. Chapter Summary and Conclusion

This section has discussed the research methodology, such as the data analysis procedure and the respondents used to collect applicable information related to the study. It has also pointed out ethical considerations obtained before carrying out the study.

CHAPTER FOUR

DATA PRESENTATION AND INTERPRETATION OF FINDINGS

4.0. Introduction

This chapter presents data collected from the sample of 269 respondents who participated in the study. The presentation is done concurrently with analysis and interpretation of the findings. It includes an overview of respondents' demographic characteristics, analysis, and interpretation based on the primary research objectives and themes. These include explaining the relationship between social roles of family caregivers and the effectiveness of diabetes management among the patients, determining the effects of diabetes management on patients' and their households' income, and examining the impact of diabetes management on the patients' family relationships. The chapter also presents findings on the research objective to analyse the effects of healthcare system responsiveness in the management of diabetes among the patients who were seeking treatment at St. Mary's Mission Hospital in Nairobi.

4.1. Respondents' Demographic Characteristics

The demographic characteristics of the study included the data on respondents' gender, age, marital status, county of origin, level of education, sources of income, and the duration of experience with diabetes management.

4.1.1. Gender of the respondents

This section presents the gender of the respondents. Figure 4 outlines the summary of the respondents by gender.

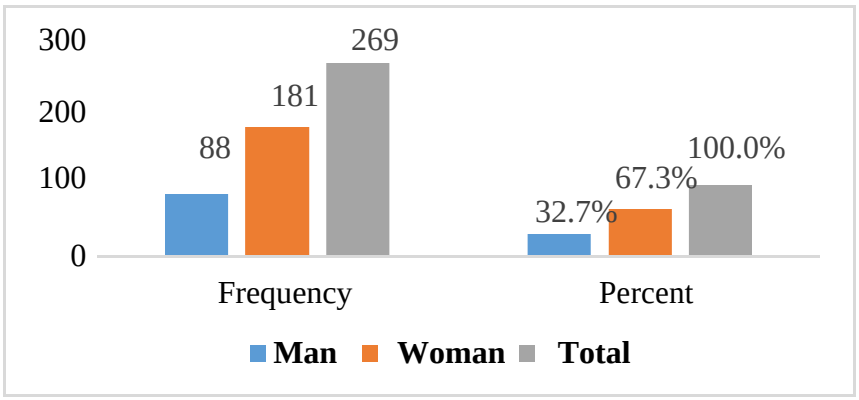

Figure 4: Summary of respondents by gender

The majority of the respondents (67.3 %, 181 n=269) were women, and 32.7% were men. These findings could imply that more women than men arrive for hospital care at the facility.

4.1.2. Age of the respondents

The section below gives the ages of the respondents. Figure 5 presents the summary of the respondents' age.

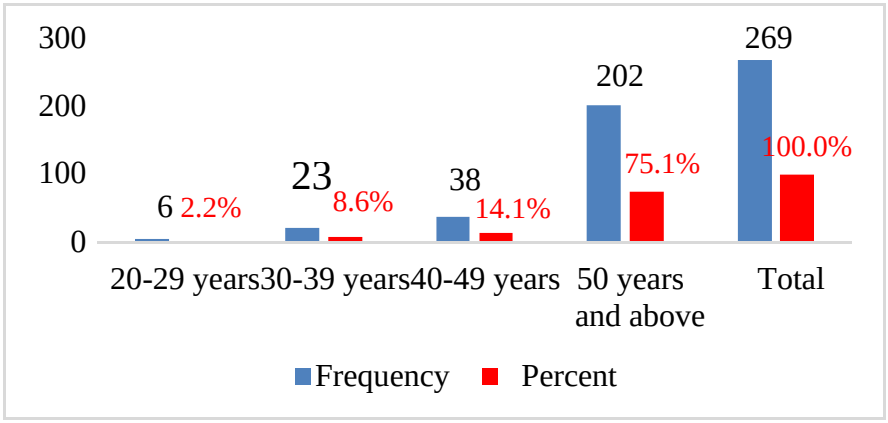

Figure 5: Summary of respondents' age

The majority (75.1%, 202 n=269) of the respondents were 50 years and above. 14.1% (38) were aged between 40-49 years, 8.6 % (23) were aged between 30-39 years, and 2.2% (6) were aged between 20-29 years. In this study, the young people with diabetes confirmed that diabetes

cuts across all ages. Most of those patients aged 50 years and above were retired and had to depend on pension or family members for their diabetes management support, such as medication and diet.

The retired citizens were not able to participate in the socio-economic development of their families and the society, which agrees with the argument by Medici, Hennis & Alleyne (2016) that LMICs like Kenya face a more remarkable boom in NCDs like diabetes burden due to hastily growing and aging populations and these sicknesses drive inequity, and contribute to poorer financial outcomes for individuals, communities, and societies.

4.1.3. County of origin of the respondents

This section presents the counties of origin of the respondents. Table 1 gives an overview of the respondents' county of origin. The majority of the respondents as indicated in table 1 below were from Murang'a county and Kiambu county, with 34 (12.6%) respondents each representing the highest number of respondents combined (68) with a percentage of (25.2%). The respondents from other countries resided in the counties indicated in the brackets in the table 1 below. These findings suggest that St. Mary's Mission Hospital, Nairobi serves patients from different counties in Kenya, giving some insight into diabetes management in the Kenyan health system. The hospital also serves patients from other countries who reside in Nairobi and Kajiado counties to access the hospital for their treatment. These patients expressed that St. Mary's Mission Hospital offers quality care for diabetes patients compared to their countries of origin. The findings also indicate that the hospital is more easily accessed from some counties than others.

Table 1: Respondents' County of origin

	Frequency	Percent
Mombasa	1	.4
Garissa	5	1.9
Wajir	2	.7
Mandera	6	2.2
Marsabit	2	.7
Isiolo	2	.7
Meru	8	3.0
Tharaka-Nithi	1	.4
Kitui	11	4.1
Machakos	20	7.4
Makueni	20	7.4
Nyandarua	5	1.9
Nyeri	11	4.1
Kirinyaga	2	.7
Murang'a	34	12.6
Kiambu	34	12.6
Turkana	2	.7
Nandi	1	.4
Laikipia	2	.7
Nakuru	6	2.2
Narok	2	.7
Kajiado	29	10.8
Kakamega	3	1.1
Vihiga	3	1.1
Busia	2	.7
Siaya	4	1.5
Kisumu	6	2.2
Homabay	2	.7
Migori	1	.4
Kisii	7	2.6
Nyamira	4	1.5
Nairobi City	24	8.9
Uganda (Nairobi)	2	.7
Ethiopia (Nairobi)	1	.4
South Sudan (Kajiado)	1	.4
India (Nairobi)	1	.4
Somalia (Nairobi)	2	.7
Total	**269**	**100.0**

4.1.4. Marital status of the respondents

This section outlines the marital status of the respondents. Figure 6 presents the summary of the respondents' marital status.

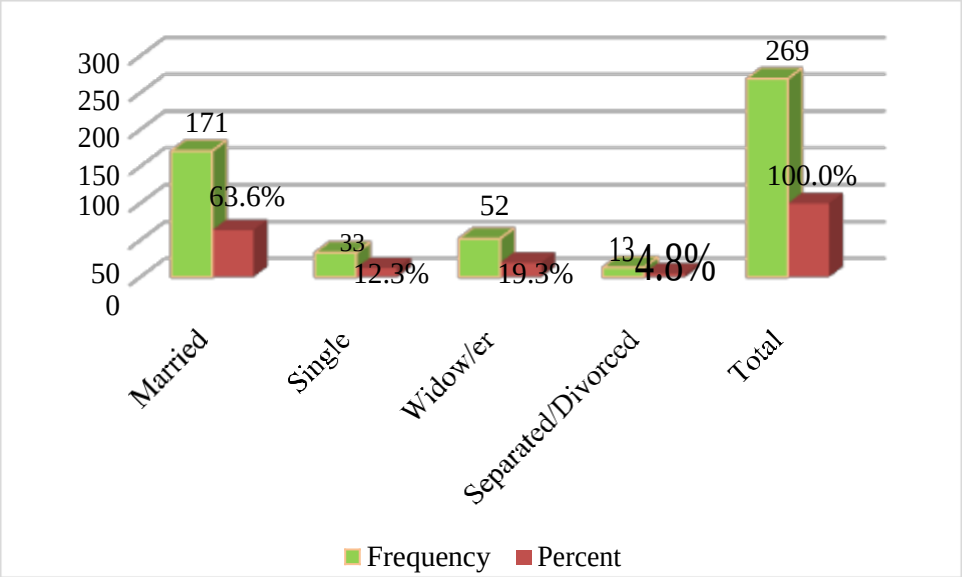

Figure 6: Summary of respondents' marital status

Majority of the respondents (63.6%, 171 n=269) were married, 12.3% (33) respondents were single, 19.3% (52) respondents were Window/er, and 4.8% (13) respondents were Separated/Divorced. Some of the married people aged 50 years and above were retired and depended on their family members for financial support for diabetes management, and others depended on pensions. The majority of these respondents cannot enjoy their pension by going on vacation because the whole amount is spent on diabetes medication and diet, which are very expensive, reducing their quality of life. As a result of these expenses, people walking on the streets, especially diabetes patients, appear angry. This agrees with the argument by Nash (2014) that a study has shown that low temper and melancholy are very common among diabetic patients.

The findings show a possibility that married couples encourage their spouses to go to the hospital for effective diabetes management compared to people of another marital status. Hence, marriage could be a basis for proper diabetes management contributing to the social well-being of patients and their families.

4.1.5. Level of education of the study participants

This section portrays the level of education of the study participants. Figure 7 outlines the education level of the respondents.

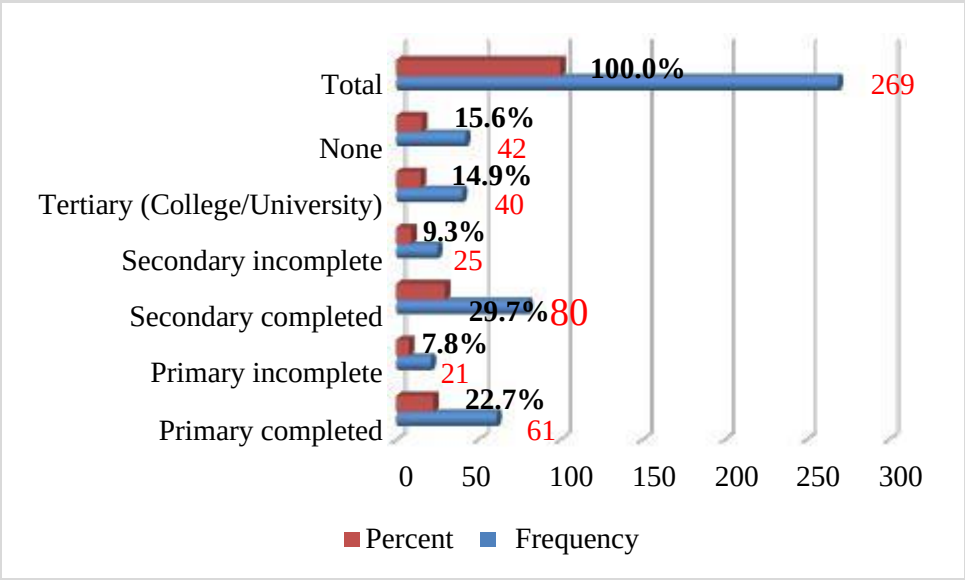

Figure 7: Education level of the respondents

The majority of the respondents (29.7%, 80 n=269) had completed secondary level accounting for the highest number of the respondents. However, these respondents had not progressed to the tertiary level of education. The findings show a difference in the prevalence of diabetes in terms of education level. With these differences, there is a likelihood that people with higher education levels tend to be healthier and live longer, as per the argument by Paula et al. (2008).

As per the findings, a low education level could indicate poor adherence to diabetes management strategies due to limited knowledge about diabetes complications and their effects on social well-being. Furthermore, according to Alwan (as cited in Khan & Khan, 2017: 2), without knowing about the diagnosis of a disease, one cannot manage an infection effectively.

4.1.6. Main sources of regular income

This section gives an overview of the respondents' main sources of regular income. Table 2 outlines the respondents' source of regular income.

Table 2: Respondents' source of Regular income

	Frequency	Percent
None	107	39.8
Self-employed	133	49.4
Salaried	23	8.6
Missionary	1	.4
Casual	5	1.9
Total	**269**	**100.0**

The majority of the respondents, 133 (49.4%), were self-employed which included; selling clothes, shop keeping, farming, and selling vegetables. 107 (39.8%) respondents had no source of regular income. They said they had stopped working due to diabetes management and related healthcare demands. Others had retired and were on a pension while staying at home and depended on their family members and well-wishers for support. This confirms the argument by Dwyer & Mitchell (1999 as referenced in Bloom et al., 2013: 4) that sickness burden can impact economic growth through numerous methods, such as early retirement and horrible expectancies regarding employment (McGarry, 2004 as stated in Bloom, et al., 2013: 4), and decreased productiveness

(LopezCasasnovas, Rivera, & Currais, 2005 as cited in Bloom et al., 2013: 4). These elements may also reduce exertions supply and grow the ratio of dependents to personnel (Bloom et al., 2013).

Some patients who depended on family members for diabetes management requirements faced significant challenges. If the family members, who had their responsibilities, did not have the financial capacity to support their sick member, the patient stayed without medication and ate the wrong diet, which put them at risk of developing diabetes complications. As observed by Ciechanowski et al. (2001 cited in Waari, 2019:1), complications of diabetes result from poor adherence to best care practices, which affect the affected person's quality of life. This, in turn, increases death, disease, and the financial price of the illness to society.

4.1.7. Duration of diabetes management

This section presents the duration that the respondents had managed diabetes in terms of years. Table 3 outlines the respondents' duration of diabetes management.

Table 3: The respondents' duration of diabetes management

	Frequency	Percent
One year	13	4.8
2-3 years	21	7.8
3-4 years	17	6.3
4-5 years	13	4.8
Five years and above	176	65.4
Less than one year	9	3.3
Newly diagnosed	20	7.4
Total	269	100.0

Most respondents had been managing diabetes for two years and above despite their inadequate income. The majority of the respondents (176) had managed diabetes for five years and above, accounting for the majority of the respondents. These findings portray that majority of the respondents had personal experiences for a substantive duration of how diabetes management

affected their social well-being over the years they had lived with it and the financial burden of diabetes management on them and their families. The following section presents the study findings and the discussion.

4.2. Family members' roles and responsibilities in diabetic Patient care

The majority of the respondents (195, 72.5% n=269) said that the most significant responsibilities of the relatives in diabetes management of the patients are financial support and diet. Some of the study participants said that the relatives do not have any duties in the diabetes management of the patients. Other respondents said they were unsure if relatives should take any roles and responsibilities to support the patients apart from joining them in prayers as they managed diabetes. Some respondents shared how their family members were very keen on what they were supposed to eat though the patient sometimes hid and ate whatever they were not supposed to eat. This enhanced their adherence to diabetes management. The findings indicated that the primary expected responsibilities and roles of relatives of the diabetes patients were to provide financial support and facilitation for proper diet. These are crucial for the appropriate management of diabetes hence contributing to the social well-being of the patients and their relatives. Some respondents (176, 65.4% n=269) said that their family members participated in their diabetes management by giving them financial support to buy medicines and go to the hospital for clinics, proper diet, and accompanying them to the hospital. Some respondents said that their family members gave them moral support. A particular respondent said, "my family members have helped provide financial support" (Male patient, 30-39 years, 5th October 2021).

Several respondents (19 % of the n=269) said that their family members did not participate in their diabetes management task. They attributed the lack of support to their relatives' financial constraints, lack of jobs, and other family responsibilities, such as paying school fees for their children. Hence, the patients were not able to observe diabetes management requirements. This is consistent with the argument in Miller & Dimatteo (2013) that non-adherence to disease management strategies can occur for many reasons. These include economic constraints related to treatment, medication facet results, difficulty in dealing with complex remedy regimens, inadequate affected person health literacy, shortage of social support, and sizeable health risks within the care of many chronic illnesses.

Family members, relatives, and friends are essential for diabetes management. Family members determine which meals to shop for or maintain across the house, what food to make, what sports activities are healthy for the household's timetable, and how health is placed among the distinct circle of relatives' priorities. Rosland (2009) argues that family and friends affect patients' self-management because daily food consumption, physical activity, and stress control occur within social surroundings. A respondent said, "my sister thinks I am pretending to be sick to eat a special diet. Therefore, she cooks food that I am not supposed to eat as a diabetes patient" (Male patient, 30-39 years, 20th November 2021).

4.2.1. Barriers to the Effective Kin Support for Diabetes management and Patient care

The issues that affected the role of relatives in helping the patients manage diabetes were categorized as; lack of jobs, financial constraints, anxiety and fear, and family quarrels. A respondent said, "my family is always anxious because they think I can drop dead any time" (Female patient, 50 years and above 17th November 2021). Another respondent shared, "due to financial constraints, I had to skip clinics and did not have medication" (Female patient, 50 years

and above, 8th October 2021). Other respondents said that the key issues that affected the role of relatives in helping the patients manage diabetes were old age. Old relatives typically lack sources of financial income and would not support their ailing family members. Other respondents shared the barriers to adequate kin support were; the deaths of breadwinners, other family responsibilities like paying school fees for the children, busy schedules, lack of time, and lack of refrigerators to store insulin.

Some respondents cited family decision-making dynamics as being among the factors that affected diabetes management. Some of the family decisions that affect diabetes management include: members deciding not to be engaged in the diabetes management of the patients and concentrating on other family responsibilities such that they ignore the diabetic patient's needs, not taking the patient to the hospital due to religion whereby the patients and family members believe that they can pray for the patient, deciding to prepare food that is not suitable for the patient or would tempt the patient to eat, choosing to use herbal medicines instead of the medicines given in the hospital. A respondent said, "family members give me sugary foods." (Female patient, 50 years and above, 21st November 2021). Adequate kin support is key to diabetes management and patient care. Therefore, as Bennich et al. (2017) argue, disruptive family behaviours, including quarrelling about nutrition, exercising, or medicines, are obstacles to the affected person's effective self-management of the disease. Figure 8 below presents stigma and its effects on diabetes management, patient care and support.

4.2.2. Effects of stigma on diabetes management

The section below presents the effects of stigma on diabetes management, patients care, and support. Figure 8 outlines stigma and its effects on diabetes management, patient care and support.

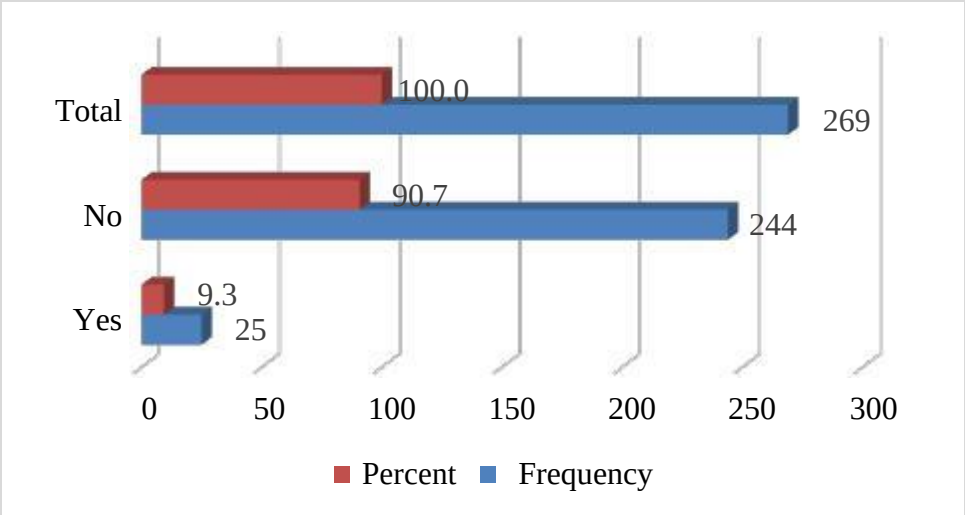

Figure 8: Stigma and Diabetes Patient Care and Support

The majority of the respondents, 244 (90.7%), said they had not experienced stigma from relatives and other people as diabetes patients. However, 25 (9.3%) respondents had experienced stigma. They said they felt like a burden to their relatives and other people. These findings imply a gap in the knowledge about diabetes and the potential of the disease to be associated with the stigma that would affect patients' care and well-being. The respondents who had experienced stigma said that they felt terrible, hopeless, isolated, outcasts, and lonely. A respondent said, "I would not wish anybody to get diabetes because one does not fit anymore with the age group by which they were moving together before diabetes" (Male patient, 40-49 years, 12th November 2021). This makes the patients feel like outcasts and want to stay alone. Another respondent said, "I do not feel like being with my relatives. They do not visit me, and they do not call me. I think they feel that if they visit me, they will contract the disease. Some do not know where I stay. I go to their homes only if they have problems because they do not want me" (Female patient 50 years and above, 7th October 2021). This makes the patient feel bad and wants to be isolated from the society.

Other sentiments that the patients associated with perceived stigma included; fear of visiting social places due to diabetes management requirements, such as (eating small portions of food many times a day, eating a different type of food, and using the washroom frequently). Some respondents described the experience of stigma related to living with diabetes as isolation from the community. They said that when they joined social gatherings, some people openly announced that those preparing food to remember "people of diabetes." Such comments were perceived as stigmatizing as they unnecessarily made them keep remembering that the disease would not be cured. As aforementioned, some respondents considered their diabetes status as a family secret to avoid stigma. Some diabetes patients had self-stigma within their families whereby they hid their medicines from people at home by locking those medicines in the cupboard. As Stangl et al. (2019) put it, stigma is an obstacle to health-seeking behaviour, involvement in care, and faithfulness to remedy many illnesses like diabetes.

4.3. Effects of diabetes management on patients' and their families' income

This section presents the effects of diabetes management on the income of respondents. Figure 9 illustrates the respondents' views about how diabetes and its management affected the income and livelihood of their families.

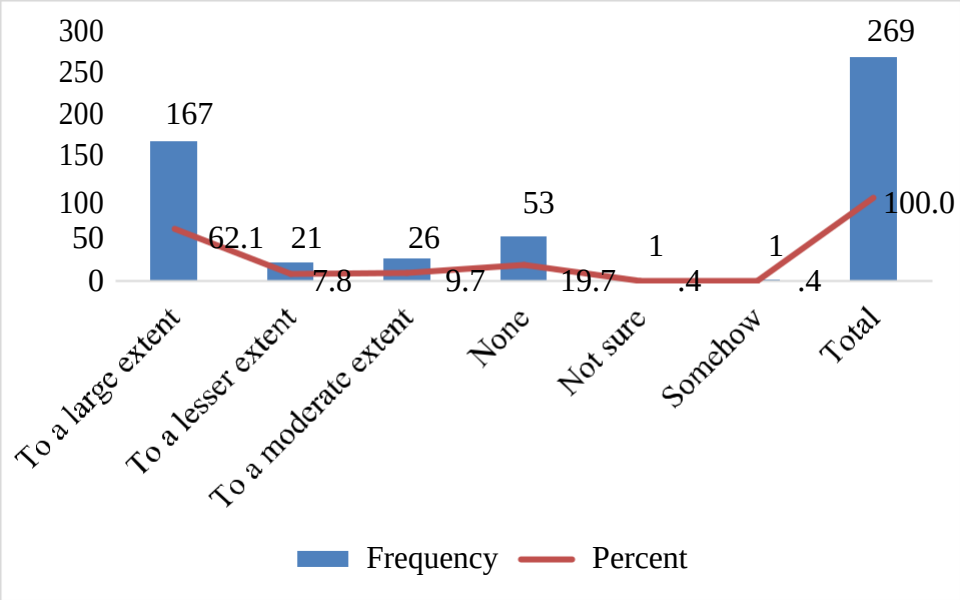

Figure 9: Diabetes Management and patients' income and family livelihood

The majority of the respondents, 167 (62.1%), said that diabetes management primarily affected their income and families. Diabetes is a lifetime disease, and patients and their families spend a lot of money on medication, continuous diagnostic tests, and diet, which are very expensive compared to people without diabetes. This agrees with Kapur (2001) that individuals with diabetes use higher healthcare resources. A respondent said, "I use a lot of money for diabetes in terms of expensive medication and transport. This money should be used for something else" (Female patient, 50 years and above, 7th October 2021). Another one said, "half of my salary now goes for the payment of drugs and diet" (Female patient, 50 years and above, 17th November 2021).

Diabetes management has led to financial constraints in the family since they use a lot of money on medication, diet, and hospitals, which could be used for other family needs. Some respondents said that due to diabetes, they resigned from work, and some do not feel like going to work due to body weakness. This affects family income, hence financial constraints. Other respondents were diagnosed with diabetes at late stages when they had already experienced

complications like loss of eyesight. A respondent said, “many people have diabetes, but they do not know, and they come to know when it has damaged the body” (Male patient, 50 years and above, 21st October 2021). Some patients had to be admitted to the hospital now and then to treat diabetes complications like diabetes wounds. This implied catastrophic expenditure on the patients and families. Some patients had died from diabetes complications, which affected the family's income if the person who died was the breadwinner.

4.3.1. Estimated spending on diabetes medication per month

This section outlines the estimated spending on diabetes medication per month. Table 4 highlights the respondents’ estimated spending on diabetes medication per month.

Table 4: Respondents’ estimated spending on diabetes medication per month

	Frequency	Percent
Kshs. 5,000-10,000	77	28.6
Below Kshs. 5,000	151	56.1
Kshs. 10,000-20,000	24	8.9
Above Kshs. 20,000	6	2.2
Not sure	9	3.3
Medicines are free in Government hospital	1	.4
I don't know	1	.4
Total	269	100.0

The majority of the respondents, 151 (56.1%), said that diabetes medication per month costed them below Kshs. 5,000. However, a good number of the respondents, 77 (28.6%), said that the cost of diabetes medication per month is between Kshs. 5,000-10,000. Some of the respondents said that they spent between Kshs. 10,000 – 20,000, and some spent over Kshs. 20,000, which could be due to the complications of diabetes. The majority of the respondents said that diabetes medication costs are below Kshs. 5,000, but this amount may be exclusive of the proper diet and

diagnostic tests like kidney and heart functioning check-ups. These costly examinations are expected for diabetes management at the cost of approximately (Kshs. 3,500 for kidney function and Kshs. 16,000 for heart function) every year at St. Mary's Mission Hospital. From the findings, diabetes management is costly, not affordable to many patients, and can drain the income of the patients and their families as every coin they get goes to medication and diet, which are very expensive. While the patients' estimate of spending which is below Kshs. 5,000 for medication seems modest; this is expensive for many of them with insecure livelihoods. Some of them said they had already retired and depended on their meagre pension wages or support from family members.

Support from relatives and well-wishers who had their responsibilities were not always prompt and guaranteed. This lack of adequate income for diabetes management and quality care often accounts for increasing complications like kidney failure and loss of eyesight. This implies more costs to the patients and their families and impacts their well-being and livelihood security. Some respondents said that they could not pay school fees for their children. A particular respondent exclaimed, "diabetes management has affected my family financially due to buying medicine and diet; hence, the family cannot cater for other needs" (Male patient, 20-29 years, 4th October 2021).

4.3.2. The duration of diabetes management and likely cost trends

This section presents the duration of diabetes management compared to cost trends among the respondents. Table 5 indicates the duration of diabetes management and potential cost trends.

Table 5: Duration of diabetes management and potential cost trends

		Cost of diabetes medication per month							
		Kshs. 5,000-10,000	Below Kshs. 5,000	Kshs. 10,000-20,000	Above Kshs. 20,000	Not sure	The medicines are free in the Government hospital	I don't know	**Total**
Duration the respondent has managed diabetes	One year	2	10	1	0	0	0	0	13
	2-3 years	4	16	1	0	0	0	0	21
	3-4 years	7	8	2	0	0	0	0	17
	4-5 years	4	6	1	1	1	0	0	13
	5 years and above	53	98	17	5	1	1	1	176
	Less than one year	1	6	1	0	1	0	0	9
	Newly diagnosed	6	7	1	0	6	0	0	20
Total		**77**	**151**	**24**	**6**	**9**	**1**	**1**	**269**

The majority of the respondents (176, 65.43%) had managed diabetes for five years and above, representing the highest number. (98, 36.43%) of these respondents said that diabetes medication costed them below Kshs. 5,000 per month. However, (53, 19.70%) of the respondents said that diabetes medication costed them between Kshs. 5,000 – 10,000 per month. (5, 1.86%) of the respondents spent above Kshs. 20,000 per month. Total (151, 56.13%) out of (269) respondents said that diabetes medication costed them below Kshs. 5,000. However, a total (77, 28.62%) respondents said that diabetes medication costed them between Kshs. 5,000 – 10,000.

As diabetes progresses in years, the study findings indicate that the cost gets so expensive costing from Kshs. 10,000 to above Kshs. 20,000 per month, which many patients and families cannot afford. The patients who do not have adequate support from families would die of

complications due to a lack of medication and proper diet. According to some respondents, diabetes expenses diminish the quality of life. Many people in society are walking on the streets angry because their money is all spent on medication. A respondent said, “people look angry in the society because they are spending all their income on medicines and after retirement, instead of enjoying going for holidays like to Mombasa, their vacation is going to the hospital” (Female patient, 50 years and above, 13th October 2021).

The above findings are consistent with Green et al.'s (2005) observation that some patients cannot afford diabetes remedies. This means that the capability to produce and consume or the quality of life, and the ability to prosper as a person, are possibly limited depending on the severity of the person’s diabetes and whether or not there are complications.

4.3.3. Source of income and views on Affordability of Diabetes Treatment and care services

This section presents the sources of income of the respondents and their views on whether diabetes is expensive and can drain the income of the patients and their families. Table 6 highlights the respondents’ source of income and their views on whether diabetes is expensive and can drain the income of the patients and their families.

Most of the respondents as portrayed in table 6 below (133, 49.44%) were self-employed, and (103, 38.29%) strongly agreed that diabetes is expensive and can drain the income of patients and families. Quite a good number of the respondents (107, 39.78%) had no source of income, and (91, 33.83%) strongly agreed that diabetes is expensive and can drain the income of patients and families. A total of (214, 79.55%) of respondents out of (269) strongly agreed that diabetes is expensive and can drain the income of patients and families. This is due to the catastrophic expenses associated with a long-term illness. Thakur et al. (2011) pointed out that out-of-pocket

expenditure related to the extremely lengthy period outcomes of NCDs like diabetes is excessive, ensuing in catastrophic health expenditure for the families. This impedes development in families and society.

Table 6: Respondents' source of income and views on Affordability of Treatment and Care

		Whether diabetes management is expensive and can drain the income of patients and families							
		Strongly agree	Agree	Disagree	Not much	Medium	Not sure	It depends	**Total**
The main source of income	None	91	7	4	4	0	1	0	107
	Self-employed	103	19	8	2	1	0	0	133
	Salaried	15	4	3	0	0	0	1	23
	Missionary	1	0	0	0	0	0	0	1
	Casual	4	0	1	0	0	0	0	5
Total		**214**	**30**	**16**	**6**	**1**	**1**	**1**	**269**

4.3.4. Source of income by views on whether diabetes management increase poverty

This section highlights the respondents' views on whether diabetes management can lead to poverty among the patients and their family members despite their sources of income. Figure 10 presents the respondents' source of income by view on whether diabetes management can lead to poverty among patients and families.

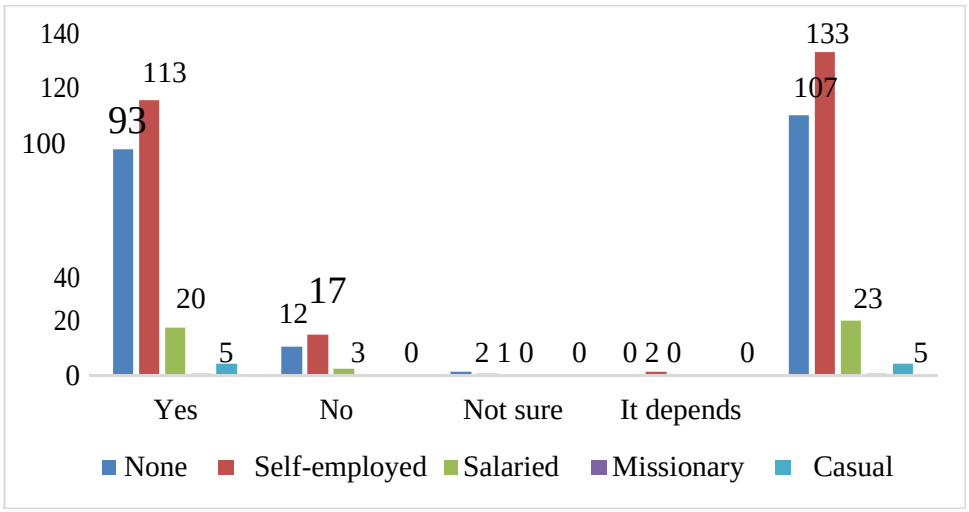

Figure 10: Respondents' source of income by views on whether diabetes management cause poverty

As referred to in table 6, a significant number of the respondents said they did not have a regular source of income. Diabetes management can therefore lead to increased poverty among patients and families. This agrees with WHO (2014) that decreased revenue due to NCDs can lead people and families into poverty at household and societal levels. The respondents spent many hours in the hospital every month or more than once a month, depending on their sugar levels and whether they had developed complications. These hours could be used for development activities in families and the government. This agrees with the argument by WHO (2011) that poverty is intently connected with NCDs such as diabetes. The quick upward push in NCDs like diabetes is predicted to avert poverty discount projects within low-earnings countries and communities. The high-priced treatments for overdue-level NCDs can put households at a chance of catastrophic health spending, plunging families into poverty (Paho policy, 2011).

4.3.5. Perspectives on Affordability of Diabetes management, treatment and care.

This section gives the respondents' views on whether diabetes management is expensive despite their sources of income. Table 7 outlines the source of income for the respondents and their opinions on whether they would describe diabetes management as very expensive and requires a steady source of income.

Table 7: Respondents' source of income and their views as to whether diabetes management is expensive

		Whether diabetes management is expensive and requires steady income for patients and families							
		Strongly agree	Agree	Disagree	Not much	I don't know	Not sure	Not very expensive	**Total**
The main source of income	None	90	10	3	2	1	1	0	107
	Self-employed	115	11	4	0	0	0	3	133
	Salaried	17	4	0	1	0	0	1	23
	Missionary	1	0	0	0	0	0	0	1
	Casual	4	1	0	0	0	0	0	5
Total		**227**	**26**	**7**	**3**	**1**	**1**	**4**	**269**

The majority of the respondents (227, 84.39% n=269) strongly agreed that diabetes management is expensive and requires steady income for patients and families. The majority of the respondents who strongly agreed (115) were self-employed. The findings indicate that diabetes is expensive and requires the patients and their families to have a steady source of income. Some respondents shared that since the economic capability of people is different, the patients buy the medicines they can afford and eat the food which they feel they can easily get and sustain. Some shared that sometimes they feel like not going to the hospital for medicines due to the hiking costs

and just waiting for whatever happens. This can lead to diabetes complications, which are costlier for the patients and their families.

4.4. Diabetes management, patient care, and family and kinship relationships

Diabetes management leads to disagreements and quarrels between the family members, especially on who to provide financial support for medication, diet, and hospital clinics. This is due to the high cost of the medication and diet, which drains the income of the patients and families. Diabetes affects patients' libido; hence, they cannot fulfil their conjugal rights, which leads to separation and divorce among some couples, especially if there is a lack of understanding between them. A respondent said, “due to diabetes, I lack energy for conjugal rights. Therefore, my wife thinks I am unfaithful” (Male patient, 50 years and above, 8th November 2021).

Some respondents shared that they feel uncomfortable eating different kinds of foods with the rest of the family members, which are very expensive. Some members think that the patient is pretending to be sick, which is why they are eating a special diet. A respondent said, “special diet makes my wife feel it is too much to prepare” (Male patient, 50 years and above, 3rd November 2021). Those family members who understand the patients support them and accompany them to the hospital for clinics. This makes the patient feel accepted, hence lessening their burden of diabetes management. This is in line with the argument by Vahedparast et al. (2017) that accesses to enough social support can enhance remedy consequences amongst patients with chronic conditions like diabetes.

4.5. The effects of healthcare system responsiveness on diabetes management

This section discusses the healthcare system's effects on diabetes management among patients. Figure 11 presents how respondents view healthcare facilities' distribution for prompt diabetes diagnosis and quality of care.

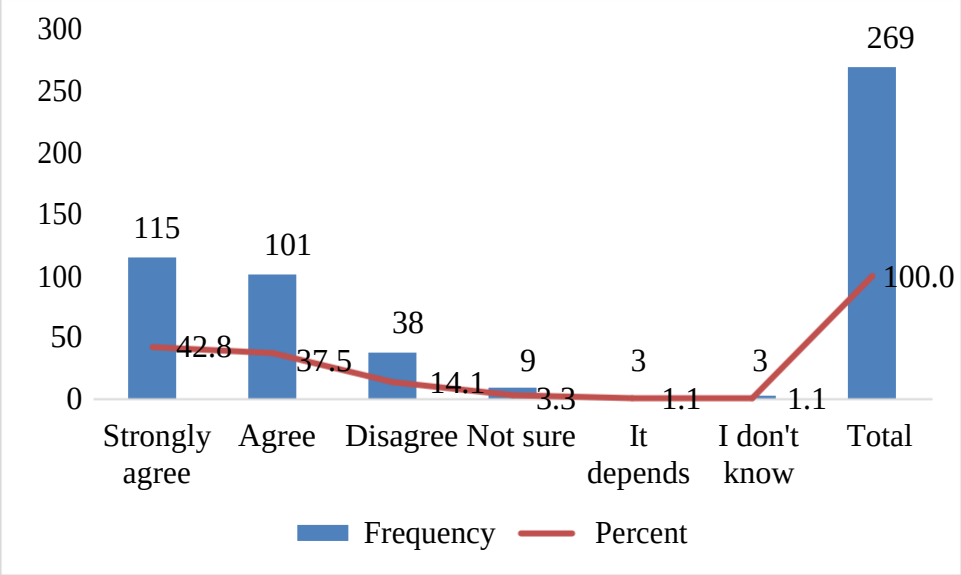

Figure 11: Respondents' views on whether diabetes management facilities were unequally distributed

The majority of the respondents, 115 (42.8%), strongly agreed that the health facilities were not equally distributed in all counties in Kenya. They also strongly agreed that unequal distribution of healthcare facilities would lead to a late diabetes diagnosis. 101 (37.5%) agreed that unequal distribution of healthcare facilities can lead to a late diabetes diagnosis.

4.5.1. Respondents' responses on easy access to county hospital services

This section presents the respondents' views on whether it is easy to access hospital services for earlier diabetes diagnosis. Table 8 highlights the respondents' responses on easy access to hospital services in the county for earlier diagnosis.

Table 8: Whether it was easy to access county hospital services

	Frequency	Percent
Strongly agree	28	10.4
Agree	152	56.5
Disagree	85	31.6
Not sure	4	1.5
Total	**269**	**100.0**

The majority of the respondents, 152 (56.5%), said that access to hospital services was easy in the counties for earlier diabetes diagnosis. However, 85 (31.6%) disagreed that it was easy for them to access hospital services in the counties for earlier diagnosis. A respondent said, "diabetes presents like Malaria, and dispensaries are not fully equipped for earlier diagnosis" (Male patient, 40-49 years, 18th October 2021). Another respondent said, "I was first told I had Amoeba" (Female Patient, 50 years and above, 26th October 2021).

4.5.2. Respondents' source of income by healthcare responsiveness

This section illustrates the sources of income of the respondents by healthcare responsiveness for diabetes management in Kenya and patients' quality of care. Figure 12 presents the respondents' sources of income by healthcare responsiveness for diabetes management in Kenya and patients' quality of care.

Despite their sources of income, the majority of the respondents, as portrayed in Figure 12 below (245, 91.08% n=269), said that the healthcare services in Kenya for diabetes management are not affordable to many patients. (19) out of (23) respondents who had monthly salaries said that the healthcare services for diabetes management in Kenya are not affordable to many patients. The findings indicate that the healthcare system in Kenya does not offer an affordable quality of care to diabetes patients.

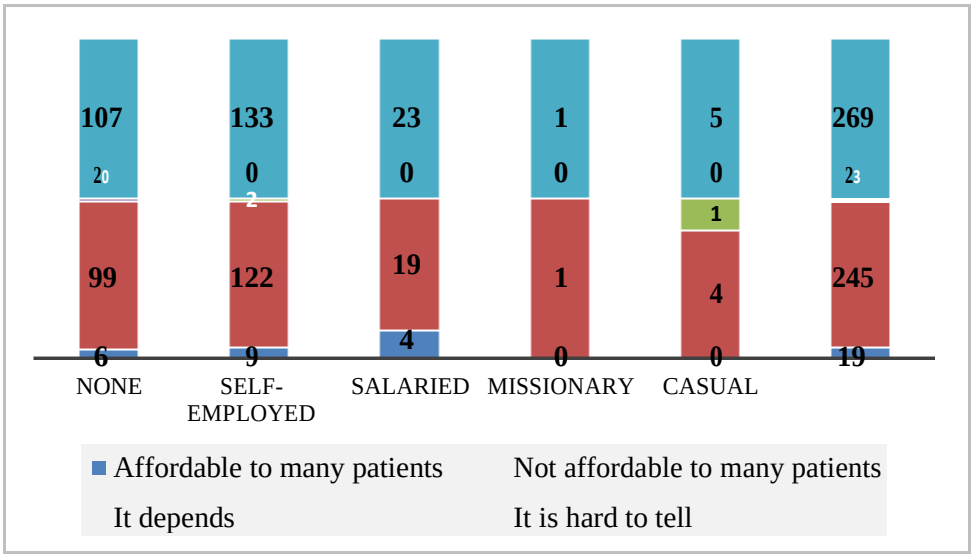

Figure 12: Respondents' sources of income by health system responsiveness diabetes management needs

4.5.3. Perceptions of the frequency with which hospital caregivers provided health education

This section outlines the respondents' views on the frequency with which hospital caregivers provided health education interactions with patients on how to manage diabetes. Table 9 presents the respondent's perceptions of the frequency with which hospital caregivers provided health education interactions with patients on how to manage diabetes.

The majority of the respondents, as portrayed in Table 9 below, 104 (38.7%), said there is no frequency on which hospital caregivers educated the patients on how to manage diabetes because they had not received education from the hospital caregivers on how to manage diabetes, or some were not sure whether the hospital caregivers effectively educated the patients on how to manage diabetes. However, 65 (24.2%) said that the hospital caregivers effectively educated the patients on managing diabetes every month. The findings imply that the hospital caregivers do not effectively educate the patients on diabetes management. The concerned authorities need to address this gap in the healthcare system.

Table 9: The frequency of education on effective diabetes management

	Frequency	Percent
Once a Month	65	24.2
Once a Year	9	3.3
More than once a year	33	12.3
N/A	104	38.7
A new patient in St. Mary's Hospital	2	.7
Newly diagnosed	10	3.7
More than once a Month	3	1.1
Patient's request	1	.4
Occasionally Not sure	38	14.1
	1	.4
It depends	1	.4
Only twice	1	.4
Thrice	1	.4
Total	**269**	**100.0**

4.5.4. Frequency of health education on diabetes management in the local communities

This section highlights the respondents' report about the frequency of health education on diabetes management in their local communities. Figure 13 presents the respondents' reports about the frequency of health education on diabetes management in their local communities.

The findings in Figure 13 below indicate a gap in the healthcare responsiveness where the healthcare workers do not adequately educate people in the community about diabetes management. The majority of the respondents (216, 80.30% n=269) said there were no health education services for diabetes management in their community. Some respondents said, "many people are dying of diabetes in the community without knowing they have it" (Male patient, 50 years and above, 21st October 2021). This is a threat to the economic development of families and the entire nation.

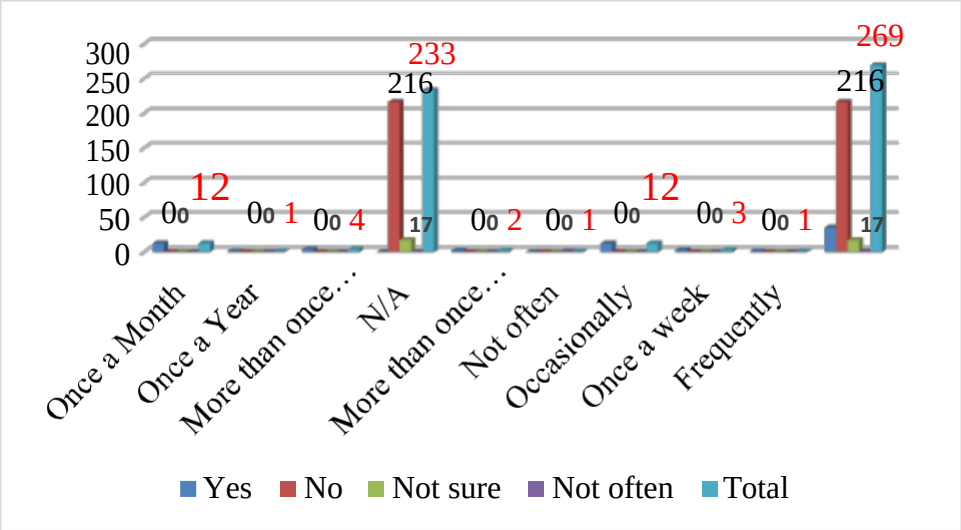

Figure 13: Frequency of the health education on diabetes in local communities

4.5.5. Respondents' awareness of local community screening services to monitor diabetes

This section outlines the respondents' report on their awareness of screening services and the frequency in their communities to monitor diabetes. Table 10 highlights the respondents' report on awareness of screening services to monitor diabetes in their communities and the frequency of the screening services.

Table 10: Availability of diabetes screening and frequency of the screening services

	Once a Month	Once a Year	More than once a Year	N/A	Occasionally	Not often	Every week	Frequently	**Total**
Yes	8	2	3	0	14	0	3	1	31
No	0	0	0	219	0	0	0	0	219
Not sure	0	0	0	18	0	0	0	0	18
Not often	0	0	0	0	0	1	0	0	1
Total	**8**	**2**	**3**	**237**	**14**	**1**	**3**	**1**	**269**

The majority of the respondents (219, 81.41% n=269) said there were no screening services to monitor diabetes management in their community. However, (31, 11.52%) of the respondents said there were screening services to monitor diabetes management in their community, and (14, 5.20%) of them said the screening services were done occasionally. The findings indicate that the healthcare system in Kenya does not adequately conduct screening for diabetes in the communities. Hence, most people in the community are diagnosed with diabetes when they already have complications.

4.5.6. Counties by whether the unequal distribution of healthcare facilities can lead to a late diabetes diagnosis

This section highlights the respondents' responses on whether the unequal distribution of healthcare facilities can lead to a late diabetes diagnosis. Table 11 presents the counties by whether the unequal distribution of healthcare facilities can lead to a late diabetes diagnosis.

The majority of the respondents (115, 42.75%) across the counties strongly agreed that unequal distribution of healthcare facilities could lead to late diabetes diagnosis, which some of them had already experienced. The respondents were residents in different counties of Kenya, as shown in table 1. Kiambu county recorded the highest with (15, 5.58%) respondents, followed by Makueni and Murang'a counties with (13, 4.83%) respondents each. (101, 37.55%) respondents agreed that unequal distribution of healthcare facilities could lead to late diabetes diagnosis, which some had also experienced. These respondents also varied across different counties, with Murang'a county and Kiambu county recording the highest with (15, 5.58%) respondents each. The respondents from other countries resided in the counties indicated in the brackets in table 11 below.

Table 11: Counties of origin by whether unequal distribution of healthcare facilities can lead to late diabetes diagnosis

	Strongly agree	Agree	Disagree	Not sure	It depends	I don't know	**Total**
Mombasa	1	0	0	0	0	0	1
Garissa	0	3	2	0	0	0	5
Wajir	1	1	0	0	0	0	2
Mandera	1	0	5	0	0	0	6
Marsabit	0	0	1	0	0	1	2
Isiolo	1	1	0	0	0	0	2
Meru	5	2	1	0	0	0	8
Tharaka-Nithi	0	1	0	0	0	0	1
Kitui	6	2	3	0	0	0	11
Machakos	11	7	1	0	1	0	20
Makueni	13	4	1	2	0	0	20
Nyandarua	2	1	1	1	0	0	5
Nyeri	2	3	1	2	2	1	11
Kirinyaga	1	1	0	0	0	0	2
Murang'a	13	15	4	2	0	0	34
Kiambu	15	15	3	1	0	0	34
Turkana	2	0	0	0	0	0	2
Nandi	0	1	0	0	0	0	1
Laikipia	2	0	0	0	0	0	2
Nakuru	2	3	1	0	0	0	6
Narok	2	0	0	0	0	0	2
Kajiado	12	14	3	0	0	0	29
Kakamega	1	1	1	0	0	0	3
Vihiga	0	2	1	0	0	0	3
Busia	0	1	1	0	0	0	2
Siaya	2	1	0	0	0	1	4
Kisumu	1	3	2	0	0	0	6
Homabay	1	0	1	0	0	0	2
Migori	1	0	0	0	0	0	1
Kisii	3	4	0	0	0	0	7
Nyamira	2	1	1	0	0	0	4
Nairobi City	11	9	3	1	0	0	24
Uganda (Nairobi)	0	2	0	0	0	0	2
Ethiopia (Nairobi)	0	0	1	0	0	0	1
South Sudan (Kajiado)	1	0	0	0	0	0	1
India (Nairobi)	0	1	0	0	0	0	1
Somalia (Nairobi)	0	2	0	0	0	0	2
Total	**115**	**101**	**38**	**9**	**3**	**3**	**269**

The respondents travel from their different counties or countries to seek treatment at St. Mary's Mission Hospital, Lang'ata, Nairobi. This is due to the lack of proper medication and diagnostic tests for diabetes management in various counties or countries and the high cost of medication in various hospitals. In contrast, there are well-equipped hospitals within Nairobi county like St. Mary's Mission Hospital, Lang'ata.

The data in table 11 above indicate the factors to the priority of inequality in healthcare services, which in line with UNICEF (2018), is a proof of structural violence. This is known as patterns of variations inside huge-scale social structures that encompass differences in power, wealth, privilege, schooling, and health that are probably unjust and unequal. This form of violence takes location in society if institutions and policies are designed in a way that creates boundaries or inequitable access to goods and services for some people but not others (UNICEF, 2018:2). This shows a gap in the healthcare responsiveness to the management of diabetes in the counties.

4.5.7. Access to Diabetes management and patient care services in the Counties

This section seeks to determine whether diabetes management services are accessible to the patients in the counties. Table 12 highlights the respondents' county of usual residence relative to their views about accessibility to hospital services for earlier diabetes diagnosis and treatment.

The majority of the respondents (152, 56.51% n=269) across all counties in the study agreed that it was easy for them to access the hospital services for earlier diabetes diagnosis. However, this 56.51% of respondents varied across different counties, with Murang'a county and Kiambu county recording the highest with (20, 7.43%) respondents each. (85, 31.60%) respondents disagreed that it was easy for them to access the hospital services for earlier diabetes diagnosis, of which some of them had been diagnosed late.

Table 12: Hospital services accessible for prompt diagnosis and care

	Strongly agree	Agree	Disagree	Not sure	**Total**
Mombasa	0	0	1	0	1
Garissa	0	5	0	0	5
Wajir	1	0	1	0	2
Mandera	2	3	1	0	6
Marsabit	0	2	0	0	2
Isiolo	0	2	0	0	2
Meru	3	2	3	0	8
Tharaka-Nithi	0	1	0	0	1
Kitui	1	6	3	1	11
Machakos	0	14	5	1	20
Makueni	3	10	7	0	20
Nyandarua	2	2	1	0	5
Nyeri	1	7	3	0	11
Kirinyaga	0	1	1	0	2
Murang'a	2	20	12	0	34
Kiambu	6	20	8	0	34
Turkana	1	1	0	0	2
Nandi	0	1	0	0	1
Laikipia	0	0	2	0	2
Nakuru	1	3	2	0	6
Narok	0	2	0	0	2
Kajiado	0	16	12	1	29
Kakamega	0	2	1	0	3
Vihiga	0	1	2	0	3
Busia	0	1	1	0	2
Siaya	0	3	1	0	4
Kisumu	0	4	2	0	6
Homabay	0	1	1	0	2
Migori	0	0	1	0	1
Kisii	1	3	3	0	7
Nyamira	1	2	1	0	4
Nairobi City	3	14	7	0	24
Uganda (Nairobi)	0	0	1	1	2
Ethiopia (Nairobi)	0	0	1	0	1
South Sudan (Kajiado)	0	1	0	0	1
India (Nairobi)	0	1	0	0	1
Somalia (Nairobi)	0	1	1	0	2
Total	**28**	**152**	**85**	**4**	**269**

Out of the (85, 31.60%) respondents who disagreed that it was easy for them to access the hospital services for earlier diabetes diagnosis, Murang'a county and Kajiado county recorded the highest number with (12, 4.46%) respondents each. The respondents from other countries resided in the counties indicated in the brackets on table 12 above. Though a majority of the respondents across various counties said that it was easier for them to access healthcare services for earlier diabetes diagnosis, some patients noted that they were first misdiagnosed. They were initially told they suffered from other diseases like Amoeba until they came to the current study hospital (St. Mary's Mission Hospital) and were admitted for hospital care. Patients travel from different counties across Kenya to go for services at St. Mary's Mission Hospital. This indicates a gap in the healthcare providers in the counties, which needs to be improved as diabetes patients spend a lot of money on transport.

The respondents reported that there were no diabetes medication and diagnostic machines in some county government hospitals and the quality of care for diabetes management was poor. They had to seek treatment in private or mission hospitals like St. Mary's Mission Hospital in Nairobi and other counties. The respondents also said that it was easier to diagnose diabetes early in some hospitals within their counties than in others within the same county. This implies that many people in the local communities of the Kenyan health system may be living with undiagnosed diabetes due to either lack of proper facilities or inaccessibility of the health facilities.

Some respondents reported that in some government hospitals, patients are not tested to see their sugar levels; they are just given medicines. In other government hospitals, some patients are told to buy medicines elsewhere only to realize that there are some of the patients who purchase the medicines from the same hospital. This makes the patients feel very bad. Some respondents

reported that they developed complications with eyesight, which made their need to go to the hospital urgent. They said they were diagnosed with diabetes when it was rather late.

4.5.8. Perceived affordability of the healthcare services for diabetes management in Kenya

This section presents an overview of the perceived affordability of the healthcare services for diabetes management in Kenya by respondents from different counties in Kenya. Table 13 gives an overview of the perceived affordability of healthcare services for diabetes management in Kenya by respondents from different counties in Kenya.

The majority of the respondents (245, 91.08% n=269) across the counties said that the healthcare services for diabetes management in Kenya are not affordable. The highest number of these (245, 91.08%) respondents were from Kiambu county with (32, 11.90%) respondents, followed by Murang'a county with (29, 10.78%) respondents, and Kajiado county with (28, 10.41%) respondents. The respondents from other countries resided in the counties indicated in the brackets in table 13 below. From the findings, the healthcare services for diabetes management are costly and not affordable to many patients. This has the same opinion as Appold's (2016) who argues that patients with diabetes regularly point to price, accessibility, competing priorities, or lack of information once they have a problem taking or sticking with medication.

Table 13: Views on affordability of diabetes management by respondents from different counties in Kenya

	Affordable to many patients	Not affordable to many patients	It depends	It is hard to tell	**Total**
Mombasa	0	1	0	0	1
Garissa	0	5	0	0	5
Wajir	0	2	0	0	2
Mandera	1	5	0	0	6
Marsabit	0	2	0	0	2
Isiolo	1	1	0	0	2
Meru	0	8	0	0	8
Tharaka-Nithi	0	1	0	0	1
Kitui	1	10	0	0	11
Machakos	0	20	0	0	20
Makueni	3	17	0	0	20
Nyandarua	1	4	0	0	5
Nyeri	1	10	0	0	11
Kirinyaga	0	2	0	0	2
Murang'a	3	29	1	1	34
Kiambu	1	32	1	0	34
Turkana	0	2	0	0	2
Nandi	0	1	0	0	1
Laikipia	0	2	0	0	2
Nakuru	0	6	0	0	6
Narok	0	2	0	0	2
Kajiado	1	28	0	0	29
Kakamega	0	3	0	0	3
Vihiga	0	3	0	0	3
Busia	0	2	0	0	2
Siaya	1	3	0	0	4
Kisumu	0	6	0	0	6
Homabay	0	2	0	0	2
Migori	0	1	0	0	1
Kisii	1	6	0	0	7
Nyamira	0	3	1	0	4
Nairobi City	3	20	0	1	24
Uganda (Nairobi)	1	1	0	0	2
Ethiopia (Nairobi)	0	1	0	0	1
South Sudan (Kajiado)	0	1	0	0	1
India (Nairobi)	0	1	0	0	1
Somalia (Nairobi)	0	2	0	0	2
Total	**19**	**245**	**3**	**2**	**269**

4.5.9. Health system responsiveness to effective diabetes management health education

This section discusses the healthcare system's responsiveness to health education needs for effective diabetes management. Table 14 highlights the respondent's opinions from different counties on whether hospital caregivers provide effective health education for the management of diabetes in Kenya.

The majority of the respondents (165, 61.34% n=269) across all counties said that the hospital caregivers effectively educate the patients on managing diabetes and the necessary diagnostic tests for diabetic patients; out of the (165, 61.34%) respondents who said that the hospital caregivers effectively educate the patients on managing diabetes and the necessary diagnostic tests for diabetic patients varied across different counties. Murang'a county recorded the highest (23, 8.55%) respondents, followed by Kiambu county and Kajiado county with (18, 6.69%) respondents each. (101, 37.55%) respondents from various counties said that the hospital caregivers are ineffective in educating the patients on managing diabetes and the necessary diagnostic tests for diabetic patients. The highest number of these (101, 37.55%) respondents were from Kiambu county (15, 5.58%). The respondents from other countries resided in the counties indicated in the brackets in table 14 below.

Table 14: Views on whether health education for diabetes management was effective

	Yes	No	Not sure	**Total**
Mombasa	1	0	0	1
Garissa	1	4	0	5
Wajir	1	1	0	2
Mandera	3	3	0	6
Marsabit	2	0	0	2
Isiolo	1	1	0	2
Meru	5	3	0	8
Tharaka-Nithi	1	0	0	1
Kitui	7	4	0	11
Machakos	14	6	0	20
Makueni	13	7	0	20
Nyandarua	2	3	0	5
Nyeri	7	4	0	11
Kirinyaga	0	2	0	2
Murang'a	23	11	0	34
Kiambu	18	15	1	34
Turkana	2	0	0	2
Nandi	1	0	0	1
Laikipia	1	1	0	2
Nakuru	4	2	0	6
Narok	1	1	0	2
Kajiado	18	10	1	29
Kakamega	0	3	0	3
Vihiga	3	0	0	3
Busia	2	0	0	2
Siaya	4	0	0	4
Kisumu	3	3	0	6
Homabay	0	2	0	2
Migori	0	1	0	1
Kisii	6	1	0	7
Nyamira	3	1	0	4
Nairobi City	13	10	1	24
Uganda (Nairobi)	1	1	0	2
Ethiopia (Nairobi)	1	0	0	1
South Sudan (Kajiado)	1	0	0	1
India (Nairobi)	1	0	0	1
Somalia (Nairobi)	1	1	0	2
Total	**165**	**101**	**3**	**269**

The findings indicate that the health education given in the hospitals is based on the diet at a cost to the nutritionist, excluding other crucial education on the diagnostic tests and prevention measures that are of vital importance for proper diabetes management. Due to the cost requirements for education on a diet, many patients cannot afford it, and therefore, they do not know what to eat for diabetes patients. The dietary requirements for diabetes patients are costly. Hence, most of the patients though they are aware of the diabetes diet, eat what they get and mostly starch, which they are supposed to reduce due to sugars.

4.5.10. Views about the availability of county health education services

This section presents the respondents' views about the availability of health education services in their local county communities. Table 15 highlights the views about the availability of health education services in their local county communities.

The majority of the respondents (216, 80.30% n=269) across all counties said there were no health education services for diabetes management in their community. (35, 13.01%) respondents said that there were health education services for diabetes management in their community across different counties, with Murang'a county recording the highest (7, 2.60%) respondents, followed by Kiambu county with (6, 2.23%) respondents. The respondents from other countries resided in the counties indicated in brackets in table 15 below. Some respondents said they were not eating well due to their daily responsibilities. They started losing weight at a very high rate, which brought delight to them at first, only to be discovered that they were losing weight because of diabetes and not failure to eat.

Table 15: Counties by perception of availability of diabetes-related health education services

	Yes	No	Not sure	Not often	**Total**
Mombasa	0	1	0	0	1
Garissa	1	4	0	0	5
Wajir	0	2	0	0	2
Mandera	1	5	0	0	6
Marsabit	0	2	0	0	2
Isiolo	0	2	0	0	2
Meru	1	7	0	0	8
Tharaka-Nithi	1	0	0	0	1
Kitui	2	9	0	0	11
Machakos	1	19	0	0	20
Makueni	1	17	2	0	20
Nyandarua	1	3	1	0	5
Nyeri	1	8	2	0	11
Kirinyaga	0	1	1	0	2
Murang'a	7	26	1	0	34
Kiambu	6	24	4	0	34
Turkana	0	2	0	0	2
Nandi	0	1	0	0	1
Laikipia	1	1	0	0	2
Nakuru	0	6	0	0	6
Narok	0	2	0	0	2
Kajiado	3	25	1	0	29
Kakamega	2	0	1	0	3
Vihiga	0	3	0	0	3
Busia	0	2	0	0	2
Siaya	1	3	0	0	4
Kisumu	0	3	3	0	6
Homabay	0	2	0	0	2
Migori	0	1	0	0	1
Kisii	1	5	1	0	7
Nyamira	0	3	0	1	4
Nairobi City	3	21	0	0	24
Uganda (Nairobi)	0	2	0	0	2
Ethiopia (Nairobi)	0	1	0	0	1
South Sudan (Kajiado)	1	0	0	0	1
India (Nairobi)	0	1	0	0	1
Somalia (Nairobi)	0	2	0	0	2
Total	**35**	**216**	**17**	**1**	**269**

The findings indicate a gap in health education in the hospitals and the communities; hence some respondents shared that they read on print materials about how to manage diabetes. Some respondents get health education once they go to the physician, and they are given time to express themselves, and then the physician explains what they should do. This depends on the patient; for example, if a patient says they are okay, the physician does not educate them. According to Venkaraman, Kannan & Mohan (2009), Patients' lack of understanding about diabetes management can obstruct their capacity to control their sickness, which is vital, as a higher affected person's self-control ability is related to stepped forward diabetes management.

4.5.11. Perception on availability of diabetes screening services in the Kenyan health system

This section gives the perception of respondents from different counties about the availability of screening services to monitor diabetes management at the community level of the health system. Table 16 outlines the perception of respondents from different counties about the availability of screening services to monitor diabetes management at the community level of the health system.

The majority of the respondents (219, 81.41% n=269) across all counties said there were no screening services to monitor diabetes management in their community. These respondents varied across different counties, with Kiambu county recording the highest with (28, 10.41%) respondents, followed by Kajiado county with (26, 9.67%) respondents, and Murang'a county with (25, 9.29%) respondents. (31, 11.52%) respondents said that there were screening services to monitor diabetes management in their community, with Murang'a county recording the highest with (8, 2.97%) of respondents. The respondents from other countries resided in the counties indicated in the brackets in table 16 below.

Table 16: Counties by perception of availability of diabetes screening services

	Yes	No	Not sure	Not often	**Total**
Mombasa	0	1	0	0	1
Garissa	1	4	0	0	5
Wajir	0	2	0	0	2
Mandera	1	5	0	0	6
Marsabit	0	2	0	0	2
Isiolo	0	2	0	0	2
Meru	1	7	0	0	8
Tharaka-Nithi	0	0	1	0	1
Kitui	2	9	0	0	11
Machakos	1	19	0	0	20
Makueni	0	17	3	0	20
Nyandarua	1	3	1	0	5
Nyeri	1	8	2	0	11
Kirinyaga	0	1	1	0	2
Murang'a	8	25	1	0	34
Kiambu	4	28	2	0	34
Turkana	0	1	1	0	2
Nandi	0	1	0	0	1
Laikipia	1	1	0	0	2
Nakuru	0	6	0	0	6
Narok	0	2	0	0	2
Kajiado	2	26	1	0	29
Kakamega	2	0	1	0	3
Vihiga	0	3	0	0	3
Busia	0	2	0	0	2
Siaya	1	3	0	0	4
Kisumu	1	3	2	0	6
Homabay	0	2	0	0	2
Migori	0	1	0	0	1
Kisii	0	6	1	0	7
Nyamira	0	3	0	1	4
Nairobi City	3	20	1	0	24
Uganda (Nairobi)	0	2	0	0	2
Ethiopia (Nairobi)	0	1	0	0	1
South Sudan (Kajiado)	1	0	0	0	1
India (Nairobi)	0	1	0	0	1
Somalia (Nairobi)	0	2	0	0	2
Total	**31**	**219**	**18**	**1**	**269**

The above findings indicate that the diabetes screening services are not adequately accessible at the community level of the Kenyan healthcare system. According to the respondents in the present study, many people can stay for many years without knowing that they have diabetes. Some come to know about their status when they have already developed complications like loss of eyesight.

Many people in rural and peri-urban communities may die of diabetes without knowing they suffer from it. According to WHO (2011: 33), inclined and socially disadvantaged people get sicker and die earlier than persons of better social positions. Some people living with diabetes, like other NCDs, are often misdiagnosed in some hospitals, putting them at risk of developing complications which entail expensive hospitalizations and debilitating treatment. This is consistent with Harris's (2018: 716) argument that diabetes may be asymptomatic for prolonged periods before diagnosis. Half of the people with diabetes have not been diagnosed, and many already have complications at the time of diagnosis. This is probably because of inequality in healthcare systems. Some patients live in structurally under-privileged regions with poor healthcare conditions and lack early diagnosis than in the more privileged areas.

4.6. Improvement of the quality of care for diabetes patients in the county health system

The majority of the respondents (83, 30.9%, n=269) said that the quality of care for diabetes patients in the county health system could be improved through the provision of free medication since the medicines are costly and not affordable to many patients, and availability of hospitals, and medication with enough and qualified health personnel. Some respondents said there is a need for health education, screening, and medical camps in the communities for earlier diagnosis. Some also noted that the county government should subsidize or reduce the cost of medication and glucometers so that patients can afford them. Some respondents (57, 21.2%) said that the county

government should give financial support to diabetes patients. The government should also provide diabetes food in the health centres since diabetes diet is costly, come up with insulin that does not need refrigeration, initiate community projects for diabetes patients, conduct a lot of research to know what is expected in diabetes management, and National Insurance Health Fund (NHIF) to cater for diabetes medication.

4.7. Chapter Summary and conclusion

This chapter has presented and discussed the data analysis from the respondents concerning the study's objectives. The analysis is supported by the arguments of some scholarly materials referenced.

CHAPTER FIVE

SUMMARY, DISCUSSION, AND CONCLUSION

5.1. Introduction

This aims to provide relevant information that could help the county and national governments, the hospitals, family, and community members come up with effective measures to effectively help diabetes patients manage diabetes and ensure their social well-being. This chapter consists of the study summary, discussion, conclusion, and study recommendations for the study objectives and findings. The chapter also contains recommendations for further research.

5.2. Summary

This section provides a summation of the study results guided by the objectives of the research as follows;

5.2.1. Effects of diabetes management on the social well-being of patients and their families

Diabetes management affects the social well-being of the patients to a large extent. According to the findings, diabetes management requirements such as diet and medication are very expensive. Patients and family members spend a lot of money seeking treatment for diabetes, a long-term disease. This spending of money is worsened by diabetes complications and the mandatory diagnostic tests for diabetes patients. Some families have ended up selling their assets. This massive spending of money has reduced some families into poverty. They cannot cater for other family needs, such as children's education. Some respondents shared that their family members are always anxious, thinking that the patient will die soon. This agrees with Rintala, Paavilainen, Kurki (2013) that besides fear, the family members and friends are often anxious, especially if the patient is hospitalized and experiencing sugar levels fluctuation. Other family members and

relatives quarrel and disagree on how to support their sick member, especially financially. This causes stress to the patient, and sometimes they have to stay without medication and proper diet. This brings a lack of peace between the patients and their families, affecting their well-being. The section below highlights how social roles contribute to the effectiveness of diabetes management.

5.2.2. Social roles and effectiveness of diabetes management

Family members, relatives, and friends are essential in the management of diabetes. The findings indicated that the primary expected responsibilities and roles of relatives of the diabetes patients are to provide financial support and facilitation for proper diet. These are important for the appropriate management of diabetes, hence contributing to the patients' social well-being and their relatives. The family members also have the role of accompanying the patients to the hospital for clinics. This helps the family members understand how to help the patients manage diabetes effectively. According to the findings, moral support from relatives plays a crucial role in diabetes management among patients. The study established that family decision-making dynamics such as diet affects diabetes management among the patients.

Some family members do not participate in the diabetes management of the patients due to financial constraints, lack of jobs, and other family responsibilities, such as paying school fees for their children, old age, and the death of breadwinners. Hence the patients are not able to observe diabetes management requirements. Rosland (2009) argues that family and friends affect patients' self-control because daily eating, bodily activity, and stress control take place within social settings. Family members determine which meals to buy or store in the house, what food to make, what sports are healthy for the household’s timetable, and how health is positioned in many of the circle of relatives’ priorities. The section below presents the implications of diabetes management for family income and livelihood.

5.2.3. Implications of diabetes management for family income and livelihood

From the findings, diabetes management is costly, is not affordable to many patients, and can drain the income of the patients and their families. Every coin they get goes to medication and diet, which are very expensive. This leads to financial constraints in the family. According to the respondents, this money could be used for other family needs. These huge expenses could eventually lead to poverty, hence impeding family development activities like children's education and investment in income-generating activities. This, in turn, affects the social well-being of patients and their families. Some respondents reported that due to body weakness from diabetes and diabetes requirements such as eating many times per day, some patients feel like not going to work, and others resign from work. This implies lost workdays, affecting the patients' income and their families and the nation's economic growth.

The findings indicated that some patients are diagnosed with diabetes at late stages when they have already experienced complications like loss of eyesight. Others have to be admitted to hospitals now and then to treat diabetes complications. This implies catastrophic expenditures on the patients and families. According to the study findings, as diabetes progresses over the years, the cost gets so expensive that many patients and families cannot afford it. This diminishes their well-being and quality of life. The patients who do not have adequate support from families would die of complications due to a lack of medication and proper diet. According to some respondents, many people in society are walking on the streets angry because the money they get is all spent on medicine. The findings indicated that diabetes management could increase poverty among patients and families. This is due to the daily spending of money on medication and diet. This affects their social well-being. The section below highlights diabetes patient care and the consequences for their family and kinship relationships.

5.2.4. Diabetes patient care and consequences for their family and Kinship relationships

The findings indicated that diabetes management leads to disagreements and quarrels between the family members, especially on who to provide financial support for medication, diet, and hospital clinics. This is due to the high cost of the medication and diet, which drains the income of the patients and families. As per the findings, diabetes affects patients' libido; hence, they cannot fulfil their conjugal rights, which leads to separation and divorce among some couples, especially if there is a lack of understanding between them. The findings also indicated that patients feel uncomfortable eating different kinds of foods with the rest of the family members, which are very expensive. Some family members think that the patient is pretending to be sick, so they are eating a special diet. Those family members who understand the patients are very supportive and accompany them to the hospital for clinics. This makes the patient feel accepted, hence, lessening their burden of diabetes management and contributing to their social well-being.

The patients feel uncomfortable among the relatives and friends who may despise them or present foods in social gatherings that are unfavourable. This puts the patients at temptations of eating the wrong food, which spikes their sugar levels and places them at threat of developing diabetes complications. According to the findings, some patients feel like a burden to their family members. Some depend on their family members for monetary support for their disease management requirements. The findings indicated that some patients fear being rejected by their family members. Therefore, they hide their medicines in locked cupboards and ensure that no family member knows they have diabetes. This could put them at risk of developing a coma in case low sugar levels, and the family members do not know about the condition. The section below presents the implications of healthcare system responsiveness on diabetes management.

5.2.5. Implications of healthcare system responsiveness on diabetes management

The findings indicated the unequal distribution of healthcare facilities for diabetes management across the counties in Kenya. This leads to a late diabetes diagnosis. The respondents reported that the healthcare system in Kenya does not offer an affordable quality of care to diabetes patients. This makes some patients skip days or weeks without medication. This places them at risk of developing diabetes complications. According to the findings, there are no screening services for diabetes in the communities. Hence, many people are dying in the community without knowing they have diabetes. The findings also indicated a gap in health education across the counties. Thus, many people can stay for many years without knowing that they have diabetes. Some people come to know when they have already developed complications. This implies enormous expenses for the patients and their families.

From the findings, the majority of the people in the community do not understand what diabetes is all about. This lack of understanding contributes to stigma among the community members toward the patients. This prevents some patients from participating in social events. Some respondents reported having been misdiagnosed in some hospitals, which implied more expenses for hospitalization to stabilize their sugar levels. The findings indicated that the health education given in the hospitals is based on the diet at a cost to the nutritionist, excluding other crucial education on the diagnostic tests and prevention measures that are of vital importance to proper diabetes management. Due to the cost requirements for education on a diet, many patients cannot afford it, and therefore, they do not know what to eat as diabetes patients. These patients eat whatever food they get hence risking their health. The section below presents insights on how diabetes care services to diabetes patients should be improved.

5.2.6. Improvement of care services to diabetes patients

The findings indicated that healthcare services to diabetes patients should be improved by providing free, available or affordable medication. Some respondents reported that the healthcare workers should provide health education and screening services in the communities to create awareness of diabetes and its management. Other respondents said that the government should embark on training and capacity building of the health workers and ensuring that they are well paid so that they may be able to offer complete services to diabetes patients. The respondents also reported that the cost for NHIF should be reduced from Kshs. 500 per month to around Kshs. 200 or Kshs. 300 per month so that all patients can be able to pay. NHIF should also cater for diabetes outpatient services such as medication and diagnostic tests since diabetes is costly and lifetime.

The findings also indicated that the care services could be improved by building hospitals for diabetes care, removing taxation for diabetes medication, conducting more research on diabetes management, converting the diabetes medicines into capsules that are easier to swallow, having projects to subsidize the cost of diabetes medication, providing financial support and food to the diabetes patients, a university with a hospital facility for diabetes care, bringing hospital facilities closer to the people in the community, and provision of water so that people could farm the right food for diabetes patients.

5.3. Discussion

Diabetes management affects the patients' social well-being due to the high cost of medication and diet. This drains the income of the families hence, causing quarrels and disagreements. This is because every money the families get is spent on diabetes management of their sick member; therefore, they cannot fulfil other family needs like paying school fees for the children or investing for future family development. This makes them feel like the patients are a burden to them. This

agrees with Bennich et al. (2017) that diabetes influences relatives differently, either by improving family harmony or inflicting mental misery. In a few households, the duty to assist the affected person is considered a burden. The lack of adequate income for diabetes management and quality care often accounts for increasing complications like kidney failure and loss of eyesight. This implies more costs to the patients and their families and impacts their well-being and livelihood security. Due to the high cost of a diabetic diet, some patients opt to eat whatever food they get. As per the findings, the most accessible food to get is carbohydrates, which they are supposed to eat in small portions due to the sugar contents in those foods.

According to the findings, the majority of the people who have diabetes are 50 years and above. Most of these people are retired and are on a pension or depend on their family members for assistance. This implies low socio-economic development in the families and the nation at large. Diabetes affects the social function of the patients by lowering their libido; hence, they cannot fulfil their conjugal rights, which leads to separation or divorce among some married couples. The family and community members do not understand diabetic patients because they think they are pretending. Hence, the patients feel uncomfortable among the relatives and friends who may despise them or present foods in social gatherings that are unfavourable. This puts the patients at temptations of eating the wrong food, which spikes their sugar levels and puts them at risk of developing diabetes complications which would imply more expenses on hospitalization. The absence of social roles from family members, as per the findings, due to financial constraints, family disagreements, stigma, and lack of understanding, contribute to poor diabetes management among the patients. This leads to diabetes complications, hence, catastrophic expenditures on hospital bills. The patients who receive family support like encouragement and moral support, among others, as per the findings, can respond to diabetes management strategies as per the

requirements. This prevents progression to diabetes complications which could affect their social well-being. Due to a lack of understanding about diabetes by family members, relatives, and society, some patients have to live with stigma, whereby they are afraid of disclosing their diabetes status.

The eateries and some shops in the communities do not have food conducive for diabetes patients. Therefore, diabetes patients are forced by the circumstance to eat the food they are not supposed to eat or stay hungry, which is a risk to their health. Family support is essential in ensuring that the patients adhere to their management strategies. Moreover, lack of education and the patient's financial situation and families determine adherence to diabetes management. As a result of the demands for diabetes management, like eating smaller portions of food many times a day and body weakness, some patients have resigned from their jobs or do not feel like going to work. This has excellent effects on the families' income and the nation's economic growth. This agrees with WHO (2011) that NCDs like diabetes and their risk elements frequently prevent human beings from strolling or looking for employment, for this reason, robbing households of income. Diabetes influences the well-being of the patients and their households due to catastrophic expenses for diabetes management; hence many people appear angry as they walk along the streets. The patients on a pension cannot enjoy their pensions like going for vacation since all the money is spent on medication and diet.

As the findings portray, there is a gap in health education and screening services across all counties; hence, many patients are dying in the community without knowing they have diabetes. Some are misdiagnosed or diagnosed late and hospitalized, which implies enormous expenses on hospital bills. Due to the expensive nature of diabetes across all counties, many patients and their families cannot afford its management. Therefore, some patients have to skip a week or two

without medication and eat the wrong diet, which puts them at risk of diabetes complications, hence catastrophic expenses on hospital bills that affect their social well-being. This confirms the argument by McFerran (2008, as mentioned in Muga & Muhati 2016: 142) that the problems of diabetes illness and management in Kenya consist of demanding situations associated with prognosis, care, and remedy, and there can be a deficiency of awareness and facts about the disease in the overall populace and belief that diabetes is not constantly essential as different illnesses distressing the nation.

Some patients in structurally underprivileged regions with poor healthcare conditions lack early diagnosis compared to the more privileged areas. Hence, patients have to travel from their counties to seek treatment at St. Mary's Mission Hospital in Nairobi, whereas there are hospitals within the counties. According to Gultang (1969) and Farmer et al. (2006), this portrays inequality in the distribution of healthcare services in structural violence theory which is a form of social injustice. As a result of this inequality, many people are dying of diabetes. These people who are dying could be the breadwinners in their families, affecting the well-being of the members, whereby they cannot meet their daily needs and could also lead to poverty and school drop-out for the children. This implies that society is losing many people who could be productive to their families and the nation hence bringing development.

The government could consider treating diabetes with the seriousness it deserves by equipping all hospitals with qualified health workers who are specialized in diabetes management as well as the diagnostic machines required for diabetes management to prevent deaths and complications. High morbidity and mortality rates in the community due to diabetes imply low socio-economic development of the families and the nation. This impacts the economy of the

families and the nation. Hence, as Jones (2013) argues, it is far, consequently important to evaluate the developing weight of diabetes and offer fee-effective techniques for its avoidance and management. The research results could assist the field of development studies to focus on addressing the lengthy-time period illnesses such as diabetes, which can affect the economy of the families and the nation since development cannot be separated from health.

5.4. Conclusion

Diabetes is a collective issue that cuts across and affects the patients and their family members and the health structures. Diabetes management affects patients' lives and their households and impacts their social well-being. This is due to the catastrophic expenses associated with it, as per the findings. Hence, in agreement with Islam et al. (2013), diabetes significantly impacts health structures and societies. The rate implications of diabetes to society are multi-fold: direct prices to humans with diabetes, their families, and the healthcare sectors, indirect expenses to society and authorities, which might be the productiveness costs; and intangible fees, which cause detrimental effects on quality of life (Islam et al., 2013). There is inequality in the healthcare services for diabetes management in Kenya which contributes to a late diabetes diagnosis. Besides, the management of diabetes is costly, and many patients cannot afford it. Therefore, the government should consider subsidizing the cost of diabetes medication or providing free medication and nutrition supplements in hospitals for patients who cannot afford the required diabetic diet. This would enhance the social well-being of the patients and their families.

5.5. Study Recommendations

The recommendations derived from this study are directed to various actors in diabetes management as described below:

5.5.1. Family members/ relatives/community

The study recommends that the family members/relatives/community provide moral support, encouragement, financial support, and accept the patient without thinking they are pretending. They should also avoid tempting the patient with what they are not supposed to do, like preparing meals that the patient is not supposed to eat. They should create a conducive environment for the patients to manage diabetes without stress or hiding their medication due to stigma. The family members/relatives should accompany the patient to the hospital for clinics to learn how to help the patient manage diabetes effectively. The eateries in the community to consider diet for diabetes patients.

5.5.2. Hospitals

The hospitals should form support groups or devise other forums for patients' education and encouragement on diabetes management. They should also look into the possibilities of having diabetes services in one building. This would ensure rapid diagnostic tests and treatment for diabetes patients. The hospitals should look into possibilities of reducing or subsidizing the cost of medication and diagnostic tests so that the patients can afford them. This would help the patient stop skipping clinic days which is detrimental to their health. The healthcare workers to move from offices and go to the community to educate and screen people for earlier diabetes diagnosis. The hospitals should ensure necessary tests are done for patients before administering medicines to them to avoid complications related to diabetes. The healthcare givers should use forums like worship places to create awareness and screen for diabetes for earlier diagnosis.

5.5.3. County & National Governments

The study recommends the government to ensure that all hospitals have quality medicines for diabetes patients at affordable costs. The government should also discuss offering free diabetes medicines since this is a costly lifetime disease and majority of the patients cannot afford its management, including the daily medication. Besides, the management is also expensive as every coin in the family goes to diabetes management. The government should have projects and social fund for diabetes patients since most are now suffering from the disease. The government should also incorporate lessons on healthcare issues like diabetes in the education curriculum. This would enhance awareness and early diagnosis.

5.6. Recommendations for further research

Further research could be done on the following areas:

1. The challenges to the management of diabetes and social well-being of patients in different counties, especially in Kiambu and Murang'a. These counties recorded the highest number of respondents who participated in the study at St. Mary's Mission Hospital in Nairobi County.
2. Factors leading to diabetes among married couples and their effects on families' socio-economic development and wider societies.
3. Factors contributing to the high prevalence of diabetes among women compared to men and their impact on their social well-being.
4. Finding out whether there is a possibility that many men who have diabetes do not want to go to the hospital and the effect on their families' social well-being.

REFERENCES

Abdulkadri, A., Floyd, S., Mkrtchyan, I., Marajh, G., Gonzales, C., & Cunningham-Myrie, C. (2021). *Addressing the adverse impacts of non-communicable diseases on the sustainable development of Caribbean countries*. Retrieved on 18/01/2022 from https://www.cepal.org/sites/default/files/events/files/s2000964_en.pdf

Ahmed, Z., & Yeasmeen, F. (2016). *Active own family participation in diabetes self-care: a commentary*. Retrieved on 20/04/2021 from report:///C:/Users/ADMIN/Downloads/lively-circle of relatives-participation-in-diabetes-self-care-a-statement. Pdf

Aladhab, R. A., & Alabbood, M. H. (2019). *Adherence of patients with diabetes to lifestyle advice and management plan in Basra, Southern Iraq*. Retrieved on 22/01/2021 from https://www.Karger.Com/Article/Pdf/500915

Amalki, S. (2016). *Integrating Quantitative and Qualitative Data in Mixed Methods Research—Challenges and Benefits.* Retrieved on 23/03/2021 from https://documents.Eric.Ed.Gov/fulltext/EJ1110464.Pdf

Ameli, J. (2015). *Communicable Diseases and Outbreak Control.* Retrieved on 11/04/2022 from file:///C:/Users/ADMIN/Downloads/Communicable_Diseases_and_Outbreak_Control.pdf

Appold, K. (2016*). Four largest demanding situations in diabetes health management.* Retrieved on 20/02/2021 from https://www.Managedhealthcareexecutive.Com/view/4-largest-demanding situations-diabetes-fitness-control

Ayah, R., Joshi, M.D., Wanjiru, R., et al. (2013). *A populace-primarily based survey of the prevalence of diabetes and correlates in an city slum community in Nairobi, Kenya*. BMC Public Health 13, 371. Https://doi.Org/10.1186/1471-2458-thirteen-371

Baig, A. A., Benitez, A., Quinn, M. T., & Burnet, D. L. (2015). *Family interventions to enhance diabetes consequences for adults.* Retrieved on 20/01/2021 from https://www.Ncbi.Nlm.Nih.Gov/percent/articles/PMC4624026/

Barnsbee, L., & Nghiem, S. (2018). *Target Population and Subgroups*. Retrieved on 24/03/2021 from https://www.Sciencedirect.Com/subjects/engineering/goal-populace

Beckles, G. L. A., & Thompson – Reid, P. E. (editors, 2001). *Diabetes and Women's Health Across the lifestyles tiers: A public Health attitude.* The US. Department of Health and Human Services, Centres for Disease Control and Prevention, National Centre for Chronic Disease Prevention and Health Promotion, Division of Diabetes Translation. Atlanta.

Bennich, B. B., Røder, M. E., Overgaard, D., Egerod, I., Munch, L., Knop, F. K., Vilsbøll, T., & Konradsen, H. (2017). *Supportive and non-supportive interactions in families with a type 2 diabetes patient: an integrative evaluation.* Retrieved on 20/04/2021 from https://dmsjournal.Biomedcentral.Com/track/pdf/10.1186/s13098-017-0256-7.Pdf

Bird, Y., Lemstra, M., Rogers, M., & Moraros, J. (2015*). The relationship between socio-economic status/earnings and incidence of diabetes and related situations: A cross-sectional populace-based totally observe in Saskatchewan, Canada.* Retrieved 20/01/2021 from record:///C:/Users/ADMIN/Downloads/s12939-1/2-0237-0.Pdf

Bloom, D. E., Cafiero, E. T., McGovern, M.E., Prettner, K., Stanciole, A., Weiss, J., Bakila, S., & Rosenberg, L. (2018). *The monetary burden of non-communicable sicknesses and intellectual fitness situations: results for Costa Rica, Jamaica, and Peru.* Retrieved on 20/02/2021 from https://iris.Paho.Org/bitstream/dealwith/10665.2/34862/v42e182018.Pdf? Sequence=1&isAllowed=y

Bloom, D. E., Cafiero, E. T., McGovern, M.E., Prettner, K., Stanciole, A., Weiss, J., Bakila, S., & Rosenberg, L. (2013). *The Economic Impact of Non-Communicable Disease in China and India: Estimates, Projections, and Comparisons.* Retrieved on 21/01/2021 from http://ftp.Iza.Org/dp7563.Pdf

Boutayeb, A., & Boutayeb, S. (2005). *The burden of non-communicable sicknesses in developing nations.* Retrieved on 21/12/2021 from https://equityhealthj.Biomedcentral.Com/articles/10.1186/1475-9276-4-2

Boru, T. (2018). *Chapter five research layout and methodology.* Retrieved on 23/03/2021 fromfile:///C:/Users/ADMIN/Downloads/Methdology.Pdf

Budreviciute, A., Damiati, S., Sabir, D. K., Onder, K., Peter Schuller-Goetzburg, P., Plakys, G., Katileviciute, A., Khoja, S., & Kodzius, R. (2020). *Management and Prevention Strategies for Non-Communicable Diseases (NCDs) and Their Risk Factors.* Retrieved on 18/01/2022. From https://www.Frontiersin.Org/articles/10.3389/fpubh.2020.574111/complete

Coghlan, D., & Brydon-Miller, M. (2014). *Data Analysis.* Retrieved on 25/03/2021 from https://methods.Sagepub.Com/reference/encyclopedia-of-action-studies/n91.Xml

Creswell, J. W., & Clark, V. L. P. (2018). *Designing and conducting mixed methods research.* 3rd edition. SAGE publications, Inc.

Debono, M., & Boland, E. (2007). *The impact of diabetes on mental properly-being and exceptional of life. The function of affected person training.* Retrieved on 21/02/2021from report:///C:/Users/ADMIN/Downloads/psychologicalwellbeingindiabetesp.C20 (1). Pdf Diabetes Care. (2015). *Standards of Medical Care in Diabetes—2015.* Retrieved on 19/04/2021 from https://www.sahta.com/docs/standardsDiabetes.pdf

Debono, M., & Cachia, E. (2007). *The effect of diabetes on psychological wellbeing and excellent of existence. The function of patient education.* Retrieved on 09/02/2022 from https://pubmed.Ncbi.Nlm.Nih.Gov/17828675/

Diabetes Care. (2015). *Standards of Medical Care in Diabetes—2015.* Retrieved on 19/04/2021 from https://www.sahta.com/docs/standardsDiabetes.pdf

Diener, E. D., Diener, R. B., Lyubchik, N. (2018). *Chapter 6 129 Social Well-Being: Research and Policy Recommendations.* Retrieved on 17/04/2021 from https://s3.Amazonaws.Com/ghc-2018/GHC_Ch6.Pdf

Dieren, S. V., Beulens, J. W.J., Schouw, Y. T. V. D., Grobbee. D. E., & Neal, B. (2010). *The worldwide burden of diabetes and its complications: a rising pandemic.* Retrieved on 17/01/2022 from https://watermark.Silverchair.Com/eurjpc00s3.Pdf?

DISCOVERPHDS. (2020). *What's a Research Instrument?* Retrieved on 21/12/2021 from https://www.Discoverphds.Com/blog/studies-device

Dyakova, M., Bellis, M., Hamelmann, C., & Besnier, E. (2017). *Investment for fitness and nicely-being: a review of the social go back on investment from public health policies to support implementing the Sustainable Development Goals with the aid of building on Health 2020.* Copenhagen: WHO Regional Office for Europe (Health Evidence Network (HEN) document 51)

El-busaidy, H., Dawood, M., Kasay, A., Mwamlole, C., Nahida Koraya, N., & Parpia, H. (2014). *How extreme is the Impact of Type II Diabetes in Rural Kenya?* Retrieved from https://opendiabetesjournal.Com/contents/volumes/V7/TODIAJ-7-1/TODIAJ-7-1.Pdf

Etikan, I., & Babatope, O. (2019). *A Basic Approach in Sampling Methodology and Sample Size Calculation. Retrieved on 23/03/2021 from http://www.Medtextpublications.*Com/open-get right of entry to/a-basic-technique-in-sampling-method-and-pattern-size-calculation-249.Pdf

Farmer, P. E., Nizeye, B., Stulac, S. & Keshavjee, S. (2006). *Structural Violence and Clinical Medicine.* Retrieved on 20/02/2021 from https://www.Ncbi.Nlm.Nih.Gov/percent/articles/PMC1621099/pdf/pmed.0030449.Pdf

Farmer, P. (2003). *Pathologies of Power: Health, Human Rights, and the New War on the Poor*. Boleslav L Lichterman Centre for the History of Medicine, Russian Academy of Medical Sciences, Moscow, Russia licht@aha.Ru

Fetahu, I. (2014*). Noncommunicable Diseases within the Developing World: Addressing Gaps in Global Policy and Research.* Retrieved on 20/01/2021from https://www.Nursingtimes.Net/opinion/e book-critiques/noncommunicable-sicknesses-in-the-growing-global-addressing-gaps-in-global-coverage-and-research-11-11-2014/

Fisher, L. D. (1998). *Self-designing medical trials*. Stat Med. Doi: 10.1002/(sici)1097-0258(19980730)17:14<1551: aid-sim868>3.0. Co;2-e. PMID: 9699229.

Galambos, L. & Sturchio, J. L. (editors, 2014*). Noncommunicable Diseases within the Developing World Addressing Gaps in Global Policy and Research.* Johns Hopkins University Press; Illustrated version. Baltimore, Maryland

Garrido, M, V., Busse, R., & Hisashig, A. (2003). *Are disease management programmes (DMPs) effective in improving quality of care for people with chronic conditions?* Retrieved on 11/04/2022 from https://www.euro.who.int/__data/assets/pdf_file/0020/74720/E82974.pdf

Goldstein, B. J., & Wieland, D. M. (2007). *Type 2 diabetes principles and exercise (2d ed).* RC Press Taylor & Francis Group: Boca Raton

Gonzalez-Zacarias, A. A., Martinez, A. M., Morales, C.E.A., Stoicea, N., & Rogers, B. (2016). *Impact of Demographic, Socio-economic, and Psychological Factors on Glycemic Self-Management in Adults with Type 2 Diabetes Mellitus.* Retrieved from https://www.Frontiersin.Org/articles/10.3389/fpubh.2016.00195/full

Green, A., Emneus, M., Christiansen, T., & Bjork, S. (2005). *The societal effect of diabetes mellitus and diabetes care.* Retrieved on 22/01/2021 from https://www.Sdu.Dk/-/media/files/om_sdu/centre/cohere/running+papers/20054christiansen+et+al.Pdf

Galtung, J. (1990). *Cultural violence.* Journal of peace studies, vol. 27, No. Three. Pp. 291-305

Galtung, J. (1969). *Violence, peace, and peace studies.* Journal of peace research, vol. 6, No3, pp. 167-191

Harris, M. (2008). *Challenges in diabetes management.* Retrieved on 20/02/2021 from https://www.Racgp.Org.Au/afpbackissues/2008/200809/200809harris.Pdf

Health Policy. (2018). *NCD count number down 2030: Worldwide tendencies in non-communicable disorder mortality and development toward Sustainable Development Goal goal three.4.* Retrieved on 18/01/2022 from https://www.Thelancet.Com/pdfs/journals/lancet/PIIS0140-6736 (18) 31992-five. Pdf

Henderson, E. (2020). *Perceived loss of social aid impacts a patient's ability to manipulate type 2 diabetes.* Retrieved on 04/03/2020 from https://www.News-medical.Net/news/20201109/Perceived-lack-of-social-assist-impacts-a-patients-capacity-to-control-type-2-diabetes.Aspx

Hill, J., Nielsen, M., & Fox, M.H. (2013). *Understanding the Social Factors That Contribute to Diabetes: A Means to Informing Healthcare and Social Policies for the Chronically Ill.* Retrieved on 20/02/2021 from document:///C:/MASTERS%20STAFF/5TH%20SEMESTERp.C20YEARp.C202p.C20Jan-Aprilpercent202021/REFERENCEpercent20MATERIALS/permj17_2p0067.Pdf

Hirchfeld, K. (2017). *Refining structural violence.* Retrieved on 03/03/2021 from https://link.Springer.Com/article/10.1007/s12115-017-0116-y

International Diabetes Federation. (2019). *The international toll of diabetes.* Retrieved on 18/02/2021from https://www.Diabetesatlas.Org/en/sections/international-toll-of-diabetes.Html

Islam, S. M. S., Tina Dannemann Purnat, T. D., Phuong, N. T. A., Mwingira, U., Karsten Schacht, K., & Fröschl, G. (2014). *Non-Communicable Diseases (NCDs) in growing nations: a symposium record.* Retrieved on 18/01/2022 from https://globalizationandhealth.Biomedcentral.Com/track/pdf/10.1186/s12992-014-0081-9.Pdf

Islam, S. M. S., Lenchner, A., Ferrari, U., Froeschl, G., Niessen, L. W., Siessler, J., & Alam D.S. (2013). *The social and financial effect of diabetics in Bangladesh : protocol for a case-management research.* Retrieved on 20/01/2021 from file:///C:/Users/ADMIN/Downloads/1471-2458-13-1217.Pdf

Jones, T. L. (2013). *Diabetes Mellitus: the increasing burden of disorder in Kenya.* Retrieved on 20/01/2021 from http://www.Southsudanmedicaljournal.Com/belongings/documents/Journals/vol_6_iss_3_aug_13/Diabetes_in_Kenya.Pdf

Kalogianni, A. (2011*). Factors affect affected person adherence to the medicine regimen.* Retrieved on 18/02/2021 from https://www.Hsj.Gr/medicine/elements-have an effect on-in-affected person-adherence-to-remedy-routine.Pdf

Kapur, A. (2014). *Influence of socio-economic factors on diabetes care.* Retrieved on 21/02/2012 from record:///C:/Users/ADMIN/Downloads/Influence_of_socio-economic_factors_on_diabetes_cap.C20 (2). Pdf

Kassahun, C.W., & Mekonen, A.G. (2017). *Knowledge, mind-set, practices and their related factors in the direction of diabetes mellitus among non-diabetes community contributors of Bale Zone administrative cities, South East Ethiopia.* A cross-sectional study. PLoS ONE 12(2): e0170040. DOI: 10.1371/journal.Pone.0170040

Keyes, C. L. M. (2013). *Social Well-being. Social Psychology Quarterly.* Vol. 61, No. 2 (Jun. 1998), pp. 121-140. American Sociological Association

Kenya Health Policy (2014-2030). Retrieved on 23/03/2021 from http://publications.Universalhealth2030.Org/uploads/kenya_health_policy_2014_to_2030.Pdf

Kenya National Diabetes Strategy (2010-2015). Retrieved on 23/03/2021 from https://www.Worlddiabetesfoundation.Org/sites/default/documents/WDF09-436p.C20Kenya%20National%20Diabetesp.C20Strategypercent202010-2015%20percent20-%20Complete.Pdf

Khan, A., & Khan, S. (2017). *Causes, Complications, and Management of Diabetes Mellitus.* Retrieved on 19/02/2021 from file:///C:/Users/ADMIN/Downloads/AftabDrSalahuddinCausesComplicationsandManagementofDiabetesMellitusPAPER.21_2.Pdf

Kibirige, D., Lumu, W., Jones, A, G., Smeeth, L., Andrew T. Hattersley, A, T., & Moffat J. Nyirenda, M, J. (2019). *Understanding the manifestation of diabetes in sub-Saharan Africa to inform healing techniques and preventive strategies: a narrative evaluate.* Retrieved on 23/03/2021 from https://clindiabetesendo.Biomedcentral.Com/tune/pdf/10.1186/s40842-019-0077-eight.Pdf

Krizner, K. (2019). *Top Challenges in Managing Diabetes*. Retrieved on 20/02/2021 from https://www.Drugtopics.Com/view/pinnacle-demanding situations-coping with-diabetes

Koetsenruijter, J., Lieshout, J. V., Vassilev, I., Portillo, M. C., Serrano, M., Knutsen, I. Roukova, P., Lionis, C., Todorova, E., Foss, C., Rogers, A., & Wensing, M. (2014). *Social support systems as determinants of self-management and pleasant of life of people with diabetes throughout Europe: study protocol for an observational observe.* Retrieved on 18/02/2021 from https://hqlo.Biomedcentral.Com/tune/pdf/10.1186/1477-7525-12-29.Pdf

Kubai, E. (2019). *Reliability and Validity of Research Instruments*. Retrieved on 24/03/2021 fromhttps://www.Researchgate.Internet/guide/335827941_Reliability_and_Validity_of_Research_Instruments_Correspondence_to_kubaiedwinyahoocom/link/5d7e3ebaa6fdcc2f0f6fe58b/download

Kwach, J. (2018). *Nairobi Sub Counties Explained*. Retrieved on 19/02/2022 from https://www.Tuko.Co.Ke/261967-nairobi-sub-counties-explained.Html

Liu, N. F., Brown, A.S., Folias, A.E., Younge, M. F., Guzman, S. J., Close, K. L., & Wood, R. (2017). *Stigma in People with Type 1 or Type 2 Diabetes.* Retrieved on 01/02/2021 from https://www.Ncbi.Nlm.Nih.Gov/p.C/articles/PMC5241772/pdf/27.Pdf

Ling, W., Huang, Y., Huang, Y, M., Fan, R, R., Sui, Y., & Hai Lu Zhao, H. L. (2020*). The global fashion of diabetes mortality attributed to vascular headaches, 2000–2016*. Retrieved on 23/03/2021 from https://cardiab.Biomedcentral.Com/song/pdf/10.1186/s12933-020-01159-five.Pdf

Loru, R. (2020). *Chapter 3-research methodology.* Retrieved on 24/03/2021 from file:///C:/Users/ADMIN/Downloads/CHAPTER_THREE_RESEARCH_METHODOLOGY_-_ROSE_LORU1.Pdf

Maar, M. A., Manitowabi, D., Gzik, D., McGregor, L., Corbiere, C. (2011). *Serious Complications for Patients, Care Providers, and Policy Makers: Tackling the Structural Violence of First Nations People Living with Diabetes in Canada.* The International Indigenous Policy Journal, 2(1). Retrieved from: http://ir.Lib.Uwo.Ca/iipj/vol2/iss1/6

Manago, B. (2015*). Understanding the Social Norms, Attitudes, Beliefs, and Behaviors closer to Mental Illness within the United States.* Retrieved on 01/02/2021 from https://sites.Nationalacademies.Org/cs/companies/dbassesite/files/website/dbasse_170042.Pdf

Mariita, A. (2019*). Kenya's Health Structure and The Six Levels of Hospitals –RoGGKenya*. Retrieved on 19/01/2022 from https://actionfortransparency.org/kenyas-health-structure-and-the-six-levels-of-hospitals-roggkenya/

Marquez, P. V., & Farrington, J. L. (2013). *The Challenge of Non-Communicable Diseases and Road Traffic Injuries in Sub-Saharan Africa. An Overview.* Washington, DC. The World Bank.

Matheka, M. F. (2017). *Management of type 2 diabetes mellitus by diabetic clients in Nyandarua County, Kenya.* Retrieved on 18/01/2022 from https://ir-library.ku.ac.ke/bitstream/handle/123456789/19066/Management%20of%20type%202%20diabetes%20mellitus%20by%20diabetic.pdf?sequence=1&isAllowed=y

Medici, A. C, Hennis, A. J, Alleyne, G. (2016*). Economic Dimensions of Noncommunicable Diseases in Latin America and the Caribbean.* Disease control priorities third edition companion volume. Retrieved on 20/01/2021 from file:///C:/Users/ADMIN/Downloads/EconomicDimensionsoftheNDCsPAHO-DCP3.pdf

Miller, T. A., & Dimatteo, M. R. (2013). *Importance of family/social support and impact on adherence to diabetic therapy*. Retrieved on 20/04/2021 from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3825688/pdf/dmso-6-421.pdf

Ministry of Health. (2021). *National Strategic Plan for the Prevention and Control of Non-Communicable Diseases 2021/22 – 2025/26*. Retrieved on 18/02/2022 from https://www.health.go.ke/wp-content/uploads/2021/07/Kenya-Non-Communicable-Disease-NCD-Strategic-Plan-2021-2025.pdf

Ministry of Health Kenya Health Policy. (2014–2030). Ministry of Health Afya House Cathedral Road. Retrieved on 23/03/2021 from http://www.health.go.ke

Ministry of Medical Services & Ministry of Public Health and Sanitation. (2009). *Kenya quality assurance model for health quality standards for Kenya essential package of health Republic of Kenya District Hospitals/Equivalent 2009 level 4 – checklist*. Retrieved on 19/01/2022 from http://guidelines.health.go.ke:8000/media/Qlevel4_Checklist-2.pdf

Ministry of Public Health and Sanitation. (2010). *Kenya National Diabetes Educators Manual.* Retrieved on 18/01/2022 from https://www.worlddiabetesfoundation.org/sites/default/files/Kenya%20National%20Diabetes%20Educators%20Manual.pdf

Ministry of Public Health and Sanitation. (2010). *National clinical guidelines for management of diabetes mellitus.* Retrieved on 19/04/2021 from https://www.worlddiabetesfoundation.org/sites/default/files/WDF09-436%20National%20Clinical%20Guidelines%20for%20Management%20of%20Diabetes%20Melitus%20-%20Complete.pdf

Ministry of Public Health and Sanitation Kenya National Diabetes Strategy. (2010-2015). Retrieved on 23/03/2021 from http://guidelines.health.go.ke:8000/media/Kenya_National_Diabetes_Strategy.pdf

Ministry of Public Health and Sanitation. (2010). *National clinical guidelines for the management of diabetes mellitus.* Retrieved on 19/04/2021 from https://www.worlddiabetesfoundation.org/sites/default/files/WDF09-436%20National%20Clinical%20Guidelines%20for%20Management%20of%20Diabetes%20Melitus%20-%20Complete.pdf

Ministry of Public Health and Sanitation Prevention and Control Program. (2012*). Diabetes prevention and management, A guide for community health workers*. Retrieved on 17/04/2021 from https://www.worlddiabetesfoundation.org/sites/default/files/WDF09-436%20Community%20Diabetes%20Control%20Participant%20Booklet%201.pdf

Mohamed, S. F., Mwangi, M., Mutua, M. K., Kibachio, J., Hussein, A., Ndegwa, Z., Owondo, S., Gershim Asiki, G., & Kyobutungi, C. (2018). *Prevalence and factors associated with prediabetes and diabetes mellitus in Kenya: results from a national survey.* Retrieved on 18/01/2022 from https://bmcpublichealth.biomedcentral.com/track/pdf/10.1186/s12889-018-6053-x.pdf

Muga, M. S., & Muhati, C. (2016). *Socio-Cultural Dynamics Influencing Diabetes Control: A Case Study of Vihiga District Hospital, Kenya.* Retrieved on 21/01/2021from https://www.ijsrit.com/uploaded_all_files/2790011991_a12.pdf

Mugenda, O.M., & Mugenda, A.G. (2003). *Research Methods, Quantitative and Qualitative Approaches. ACT, Nairobi.* Retrieved on 21/02/2022 from https://www.Scirp.Org/(S(351jmbntvnsjt1aadkposzje))/reference/ReferencesPapers.Aspx?ReferenceID=1917785

Mutyambizi, C., Pavlova, M., Chola, L., Hongoro, C., & Wim Groot, W. (2018*). Cost of diabetes mellitus in Africa: a systematic review of existing literature.* Retrieved on 18/01/2022 from https://globalizationandhealth.biomedcentral.com/track/pdf/10.1186/s12992-017-0318-5.pdf

Mwai, D., & Muriithi, M. (2016). *Economic Effects of Non-Communicable Diseases on Household Income in Kenya: A Comparative Analysis Perspective.* Retrieved on 17/01/2022 from file:///C:/Users/ADMIN/Downloads/EconomicEffectsofNon-CommunicableDiseasesonHouseholdIncomeinKenya.AComparativeAnalysisPerspective.pdf

Nash, J. (2014). *Understanding the psychological impact of diabetes and the role of clinical psychology*. Retrieved on 20/02/2021from file:///C:/Users/ADMIN/Downloads/understanding-the-psychological-impact-of-diabetes.pdf

Oyando, R., Njoroge, M., Nguhiu, P., Sigilai, A., Kirui, F., Mbui, J., Bukania, Z., Obala, A., Munge, K., Etyang, A., Barasa, E. (2019). *Patient costs of diabetes mellitus care in public healthcare facilities in Kenya.* Retrieved on 23/03/2021 from file:///C:/Users/ADMIN/Downloads/hpm.2905%20 (1).pdf

Page-Reeves, Janet et al. (2013). *Health Disparity and Structural Violence: How Fear Undermines Health Among Immigrants at Risk for Diabetes.* Journal of health disparities research and practice vol. 6, 2: 30-47.

Paho policy. (2011). *Non-communicable Diseases on global agendas.* Retrieved on 21/02/2021 from https://www.paho.org/hq/dmdocuments/2011/paho-policy-brief-2-En-web1.pdf

Pamungkas, R. A., Chamroonsawasdi, K., & Vatanasomboon, P. (2017). *A Systematic Review: Family Support Integrated with Diabetes Self-Management among Uncontrolled Type II Diabetes Mellitus Patients*. Retrieved on 23/01/2021 fromfile:///C:/Users/ADMIN/Downloads/behavsci-07-00062.pdf

Paula, E.S., Nascimento, L.C., & Rocha, S. M. M. (2008). *The influence of social support on strengthening families of children with chronic renal failure.* Retrieved on 20/02/2021 from https://www.scielo.br/scielo.php?script=sci_arttext&pid=S0104-11692008000400007

People Daily (2020). *Unraveling the link between diabetes and coronavirus.* Retrieved on 02/02/2021 from https://www.pd.co.ke/health/unravelling-link-between-diabetes-and-coronavirus-46415/amp/

Pega, F., Valentine, N., & Matheson, D. (2010). *Monitoring Social Well-being*. The case of New Zealand's Social Reports / Te Pūrongo Oranga Tangata. Social Determinants of Health Discussion Paper 3 (Case Studies).

Perfetti, R. (2013). *A comprehensive approach to the management of diabetes: offering improved outcomes for diabetics and the healthcare system*. Retrieved on 17/04/2021 from https://www.openaccessjournals.com/articles/comprehensive-approach-to-the-management-of-diabetes-offering-improved-outcomes-for-diabetics-and-the-healthcare-system.pdf

Priester, R., Kane, R, L., & Totten, A, M. (2005). How the Current System Fails People with Chronic Illnesses? Retrieved on 21/01/2021 from https://www.soa.org/globalassets/assets/files/resources/essays-monographs/financing-chronic-care/m-hb05-1_vi.pdf

Rad, G. S., Bakht, L. A., Feizi, A., & Mohebi, S. (2013). *Importance of social support in diabetes care*. Retrieved on 23/01/2021 from file:///C:/Users/ADMIN/Downloads/Importance_of_social_support_in_diabetes_care%20(1).pdf

Ramkisson, S., Pillay, B. J., & Sibanda, W. (2017). *Social support and coping in adults with type 2 diabetes.* Retrieved on 18/02/2021 from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5566130/pdf/PHCFM-9-1405.pdf

Rintala, T. M., Paavilainen, E., & Kurki, P.A. (2013*). Everyday Living with Diabetes Described by Family Members of Adult People with Type 1 Diabetes.* Retrieved on 23/01/2021 from https://www.hindawi.com/journals/ijfm/2013/967872/

Rhodes, C. (2017). *Three reasons for nonadherence.* Retrieved on 18/02/2021 from https://www.managedhealthcareexecutive.com/view/three-reasons-nonadherence

Roopa S., & Rani, M, S. (2012). Questionnaire Designing for a Survey. J Ind Orthod Soc; 46(4):273-277.

Rosland, A. M. (2009). *Sharing the care: The role of the family in chronic illness.* Retrieved on 18/02/2021 from https://www.chcf.org/wp-content/uploads/2017/12/PDF-FamilyInvolvement_Final.pdf

Sabir, A, A., Balarabe, S., Sani, A, A., Isezuo, S, A., Bello, K, S., Jimoh, A, O., & Iwuala, S, O. (2018). *Prevalence of diabetes mellitus and its risk factors among the suburban population of Northwest Nigeria.* Retrieved on 18/01/2022 from file:///C:/Users/ADMIN/Downloads/Prevalence_of_diabetes_mellitus_and_its_risk_facto.pdf

Saeedi, P., Petersohn, I., Salpea, P., Malanda, B., Karuranga, S., Unwin, N., Colagiuri, S., Guariguata, L., Motala. A. A., Ogurtsova, K., Shaw, J. E., Bright, D., & Williams, R. (2019). *Global and regional diabetes prevalence estimates for 2019 and projections for 2030 and 2045: Results from the International Diabetes Federation Diabetes Atlas, 9th edition.* Retrieved on 17/01/2022 from file:///C:/Users/ADMIN/Downloads/PIIS0168822719312306.pdf

Sajjadi, F., Moradi-Lakeh, M., Nojomi, M., Baradaran, H, R., & Azizi, F. (2015). *Health system responsiveness for outpatient care in people with diabetes Mellitus in Tehran.* Retrieved on 17/02/2022 from https://www.Ncbi.Nlm.Nih.Gov/percent/articles/PMC4764286/pdf/MJIRI-29-293.Pdf

Salehi, A., Nejabat, M., Marzban, M., & Imanieh, M. H. (2017). *Social Well-Being and Related Factors in Students of School of Nursing and Midwifery*. Retrieved on 21/02/2021 from file:///C:/Users/ADMIN/Downloads/SocialWell-BeingandRelatedFactorsin.pdf

Sedek, R. & Saari, S. N. (2019). *Knowledge of Type 2 Diabetes Mellitus among Adults with and without Diabetes in Universiti Kebangsaan Malaysia*. Pakistan Journal of Nutrition ISSN 1680-5194 DOI: 10.3923/pjn.2019.109.116

Shannon G, D., Bidgoli, H. H., Chelagat, W., Kibachio, J., & Worrall, J. S. (2019). *Innovating to increase access to diabetes care in Kenya: an evaluation of Novo Nordisk's base of the pyramid project*. Global Health Action, 12:1, 1605704, DOI: 10.1080/16549716.2019.1605704

Sharif, S. K. (2010). *Ministry of Public Health and Sanitation, National clinical guidelines for the management of diabetes mellitus.* Retrieved on 17/04/2021 from https://www.worlddiabetesfoundation.org/sites/default/files/WDF09-436%20National%20Clinical%20Guidelines%20for%20Management%20of%20Diabetes%20Melitus%20-%20Complete.pdf

Solowiejczyk, J. (2004). *The Family Approach to Diabetes Management: Theory into Practice toward the Development of a New Paradigm.* Retrieved on 20/04/2021 from https://spectrum.diabetesjournals.org/content/diaspect/17/1/31.full.pdf

St. Mary's Mission Hospital Strategic Plan 2018 – 2019

St. Mary's Mission Hospital. Retrieved from https://ke.africabz.com/nairobi/st-marys-mission-hospital-78770

Stangl et al. (2019). *The Health Stigma and Discrimination Framework: a global, crosscutting framework to inform research, intervention development, and policy on health-related stigmas.* Retrieved on 01/02/2021 from https://bmcmedicine.biomedcentral.com/track/pdf/10.1186/s12916-019-1271-3.pdf

Strom, J. L., & Egede, L. E. (2012). *The Impact of Social Support on Outcomes in Adult Patients with Type 2 Diabetes: A Systematic Review*. Retrieved on 18/02/2021 from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3490012/pdf/nihms-406410.pdf

Sweeny, K., Rasmussen, B., & Peter Sheehan, P. (2015). *The Impact of Health on Worker Attendance and Productivity in Twelve Countries.* Retrieved on 21/012021 from http://www.brazilcouncil.org/wp-content/uploads/2015/10/The-Impact-of-Health-on-Worker-Attendance-and-Productivity-in-12-countries.pdf

Tassou, C, M., Katte, J. C., Maadjihou, C. M., & Mbanya, J. C. (2019). *Economic Impact of Diabetes in Africa*. Retrieved on 21/01/2021 from https://link.springer.com/article/10.1007/s11892-019-1124-7

Thakur, J., Garg, C. C., & Prinja, S. (2011). *Social and Economic Implications of Noncommunicable diseases in India.* Retrieved on 21/01/2021 from file:///C:/Users/ADMIN/Downloads/IndianJCommunityMed_2011_SEimplications_India%20 (1).pdf

The American Journal of Managed Care. (2017). *Challenges in Diabetes Management: Glycemic Control, Medication Adherence, and Healthcare Costs.* Retrieved on 20/02/2021 from https://cdn.sanity.io/files/0vv8moc6/ajmc/223b373afa65eb1ac4395bb9ce02a464690d0b41.pdf

Tiberious, M., Mwania, J. M., & Mwinzi, J. (2016). *The Influence of Financial Resources on the integration of the National Goals of Education.* Retrieved on 23/03/2021 from https://www.ijern.com/journal/2016/September-2016/05.pdf

Trikkalinou, A., Papazafiropoulou, A. K., & Andreas Melidonis, A. (2017). *Type 2 diabetes and quality of life*. Retrieved on 20/02/2021 from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5394731/pdf/WJD-8-120.pdf

Tol, A., Sharifirad, G., Shojaezadeh, D., Tavasoli, E., & Azadbakht, L. (2017). *Socio-economic factors and diabetes consequences among patients with type 2 diabetes.* Retrieved on 20/01/2021 from https://core.ac.uk/download/pdf/143846211.pdf

UNICEF. (2018). *Structural violence against children in South Asia.* Retrieved on 20/04/2021 from https://www.unicef.org/rosa/sites/unicef.org.rosa/files/2018-07/SVACS%20report%28web%29.pdf

Vahedparast, H., Mohammadi, E., Ahmadi, F., & Farhadi, A. (2017). *The Role of Social Support in Adherence to Treatment Regimens: Experiences of Patients with Chronic Diseases.* Retrieved on 18/02/2021 from file:///C:/Users/ADMIN/Downloads/vahedparast.pdf

Venkaraman, K., Kannan, A. T., & Mohan, V. (2009). *Challenges in diabetes management with particular reference to India.* Retrieved on 21/02/2021 from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2822213/

Waari, G. K. (2019). *Assessment of medication non-adherence and associated factors among type 2 diabetes mellitus patients attending the diabetic clinic at Kenyatta National Hospital.* Retrieved on 22/01/2021 from http://ir.jkuat.ac.ke/bitstream/handle/123456789/5131/Diabetes%20Medication%20Adherence%20Thesis%2010052019.pdf?sequence=1&isAllowed=y

Wabe, N. T., Hussen, S., & Angamo, M. (2011). *Medication adherence in diabetes mellitus and self-management practices among type-2 diabetics in Ethiopia.* Retrieved on 22/01/2021 from https://www.researchgate.net/publication/221858752_Medication_adherence_in_diabetes_mellitus_and_self_management_practices_among_type-2_diabetics_in_Ethopia

Wallhagen, M. I. (1999). *Social Support in Diabetes.* Retrieved on 04/03/2021 from http://journal.diabetes.org/diabetesspectrum/99v12n4/pg254.htm

Wang et al. (2018). *Socio-economic Factors and Inequality in the Prevalence and Treatment of Diabetes among Middle-Aged and Elderly Adults in China.* Retrieved on 21/02/2021 from https://downloads.hindawi.com/journals/jdr/2018/1471808.pdf

World Food Programme. (2009*). Emergency Food Security Assessment Handbook Second edition.* Retrieved on 23/03/2021 from https://www.ennonline.net/attachments/928/wfp203246.pdf

World Health Organization. (2021). *Noncommunicable diseases.* Retrieved on 21/12/2021 from https://www.who.int/news-room/fact-sheets/detail/noncommunicable-diseases

World Health Organization. (2020). *Diabetes, key facts.* Retrieved on 21/02/2021 from https://www.who.int/news-room/fact-sheets/detail/diabetes

World Health Organization. (2017). *Fact sheets on sustainable development goals: health targets Noncommunicable Diseases.* Retrieved on 18/01/2022 from https://www.euro.who.int/__data/assets/pdf_file/0007/350278/Fact-sheet-SDG-NCD-FINAL-25-10-17.pdf

World Health Organization. (2017). *Primary healthcare systems (PRIMASYS), a case study from Kenya*. Retrieved on 19/01/2022 from https://www.who.int/alliance-hpsr/projects/alliancehpsr_kenyaabridgedprimasys.pdf

World Health Organization. (2016). *Document repository, noncommunicable diseases.* Retrieved on 21/12/2021 from https://www.who.int/health-topics/noncommunicable-diseases#tab=tab_1

World Health Organization. (2016). *Global report on diabetes.* Retrieved on 17/01/2022 from https://apps.who.int/iris/bitstream/handle/10665/204871/9789241565257_eng.pdf

World Health Organization. (2014). *Prevention and control of noncommunicable diseases in the European Region: a progress report.* Retrieved on 17/02/2021 from https://www.euro.who.int/__data/assets/pdf_file/0004/235975/Prevention-and-control-of-noncommunicable-diseases-in-the-European-Region-A-progress-report-Eng.pdf

World Health Organization. (2014). *Global status report on noncommunicable diseases 2014, Attaining the nine global noncommunicable diseases targets; a shared responsibility*. Retrieved on 20/04/2021 from https://apps.who.int/iris/bitstream/handle/10665/148114/9789241564854_eng.pdf?sequence=1

WHO Global Coordination Mechanism on the Prevention and Control of Noncommunicable Diseases GCM/NCD work plan. (2014–2015). *Final report and recommendations from the Working Group on ways and means of encouraging the Member States and non-State actors to realize the commitment included in paragraph 45(d) of the Political Declaration of the High-level Meeting of the United Nations General Assembly on the Prevention and Control of Noncommunicable Diseases.* Retrieved on 20/01/2021 from https://www.who.int/global-coordination-mechanism/poverty-and-development/en/

World Health Organization. (2011). *NCDs and Development.* Retrieved on 20/01/2021 from https://www.who.int/nmh/publications/2011-Chapter-on-NCDs-and-development.pdf?ua=1

World Health Organization. (2011). *Disaster Risk Management for Health Non- communicable diseases.* Retrieved on 18/01/2022 from https://www.preventionweb.net/files/19983_drmfactsheetnoncommunicablediseases.pdf

World Health Organization. (2011). *Introduction to NCD Epidemiology.* Retrieved on 11/04/2022 from https://www.cdc.gov/globalhealth/healthprotection/fetp/training_modules/1/intro-to-epi_ppt__final_09252013.pdf

Yale University. (2021). *Protocol Design-Inclusion and Exclusion Criteria.* Retrieved on 17/12/2021 from https://assessment-module.yale.edu/human-subjects-protection/protocol-design-inclusion-and-exclusion-criteria

APPENDICES

Appendix 1: Study Work Plan

ACTIVITY	TIME IN MONTHS			
	Jan-April 2021	May-August 2021	September 2021	October-November 2021
Proposal writing & defenses				
Ethical clearance & Data collection				
Data analysis				
Results defenses & article publishing				

Appendix 2: Study Budget

ACTIVITY/ITEM	COST BREAKDOWN (KSHS)	AMOUNT (KSHS)
Proposal printing during supervision before the defense	8 drafts @ 930/=	7,440
Proposal printing and binding for department defense	3 copies @ 930/= & binding cost at 50/=	2,840
Proposal printing and binding for Faculty defense	3 copies @ 880/= & binding cost at 50/=	2,690
Ethical review and approval fee	Paid once	2,000
Consent forms printing (English & Kiswahili)	English forms (215) & Kiswahili forms (20) @ 30/=	7,050
Printing questionnaires for patients (English & Kiswahili)	English (145 copies) & Kiswahili (20 copies) @ 60/=	9,900
Data collection, Data entry & analysis	Data collection (10,000/=), Data entry (10,000/=) & Data analysis (10,000/=)	30,000
Findings printing, binding thesis before defense	4 drafts findings printing & 1,200/= & 4 copies binding thesis @ 5000/=	24,800
Binding thesis after defense	4 copies @ 5,000/=	20,000
Transport	4 Months @ 2,500/=	10,000
Stationery	Biro pens (1,000/=), Pencils (200), Foolscaps (500/=), Thumb print ink (1,000/=), Rubbers (200/=), Note books (200/=)	3,100
Hand sanitizers	20 packaged bottles @ 100/=	2,000
Publishing	1 article at 20,000/=	20,000
	TOTAL	**141,820**

Appendix 3: Informed Consent Form for participants

Title of proposal: Management of diabetes and social well-being of patients at St. Mary's Mission Hospital, Nairobi

Principal investigator and contacts: Zipporah Wawira Njiru

Cell Phone: 0712276970

Email: wawirazipporah@gmail.com

Study introduction: My name is Zipporah Wawira Njiru, a student at The Catholic University of Eastern Africa, pursuing Development Studies. I am conducting a study on the management of diabetes and social well-being of patients at St. Mary's mission hospital, Nairobi to gather relevant information that will help in finding out the effective measures to be put in place by the relevant authorities like the Ministry of Health to lessen the burden of diabetes in society.

Purpose of the study: This study aims to determine how diabetes as well as its management affects the social well-being of patients and their families seeking care and support at St. Mary's Mission Hospital, Nairobi. I have decided to include you in this study because by the fact that you are either a patient, family caregiver or hospital caregiver, you have an experience on diabetes management and how it has been affecting the social well-being of patients and families. Your responses will help to design measures to deal with the effects of diabetes management on the social aspects of patients, and their families

Study procedure and role of participants: You are expected to voluntarily sign or thumbprint an informed consent form after which you will be interviewed and specific questions will be asked concerning the management of diabetes and social well-being of patients, family members, and society. You will voluntarily fill in your responses in a questionnaire. The participants who will not be in a position to fill in the questionnaires will be assisted. For the interview guides, the researcher will ask you questions and record your responses on the



interview guide or a note book. You are free to withdraw from the study at your convenience without being victimized.

Expected time in the study: This study is expected to take 4 months from September 2021 whereby two Months will be for data collection and the other duration will be for data analysis. After the analysis, the findings will be presented to a research panel at The Catholic University of Eastern Africa and a hardcopy will also be submitted for future reference.

Benefits and Compensations: You will not be remunerated for participating in this study and there are no direct benefits for you as an individual participant, however, the findings of this study will help in addressing the effects of diabetes management on the patients, and families' well-being.

Risks and discomforts: This study does not have risks and discomforts associated with your participation in this study because it will not involve any invasive procedure.

Confidentiality: All data will be kept under lock and key and will only be available to those involved in the data collection and analysis. There will be no way to identify individual participants. I will not identify you or use any information that would make it possible for anyone to identify you in any presentations or written reports about this study. You are also free to withdraw from the study any time you feel that you cannot continue.

If you have questions about the content of this study or your rights as a participant, please contact the following persons at The Catholic University of Eastern Africa and KNH-UoN Ethics and Research Committee:

1. Prof. B. A. Mulemi (Supervisor) – Tel: 0710100093
2. Mr. Benard Ndonga (Head of Department) – Tel: 0722973810
3. The Chairman KNH-UoN Ethics & Research Committeee – Kenyatta National Hospital, P.o. Box 207233, NAIROBI.



CONFIRMATION OF CONSENT FOR PARTICIPANTS

Are you willing to participate in this study?

Yes_____ No_____

If yes, please sign or thumbprint

Thumbprint

Sign: _____ Date: _____

CONTACT DETAILS

My contacts:

Name: Zipporah Wawira Njiru

Tel: 0712276970

Email: wawirazipporah@gmail.com/wawirazipporah@yahoo.com

Postal address: P.o. Box 14512-00800, WESTLANDS

Lead Supervisor:

Name: Prof. Dr. B.A. Mulemi

Tel: 0710100093

Email: bmulemi@yahoo.co.uk/benson.mulemi@hekima.ac.ke

Postal address: P.o. Box 46412, G.P.O.00100, NAIROBI, KENYA

KNH-UoN ERC

Email: uonknh_erc@uonbi.ac.ke

Website: http://www.erc.uonbi.ac.ke

Facebook: https://www.facebook.com/uonknh.erc

Twitter: @UONKNH_ERC https://twitter.com/UONKNH_ERCs



Appendix 4: Questionnaire

My name is Zipporah Wawira Njiru, a student at The Catholic University of Eastern Africa, pursuing Development Studies. I am conducting a study on the management of diabetes and social well-being of patients at St. Mary's mission hospital, Nairobi to gather relevant information that will help in finding out the effective measures to be put in place by the relevant authorities like the Ministry of Health to reduce the burden of diabetes in society. Whatever information you give will be confidential and will only be used for educational purposes. Please tick against each answer in the space provided and for the questions that need more elaboration, please write the answers in the space provided.

SECTION A

DEMOGRAPHIC DATA

1. Age of respondent

   1) Below 20 years ☐
   2) 20-29 years ☐
   3) 30-39 years ☐
   3) 40-49 years ☐
   5) 50 years and above ☐

2. Gender of respondent

   1) Man ☐
   2) Woman ☐

3. Marital status

   1) Married ☐
   2) Single ☐
   3) Widow/er ☐
   4) Separated/Divorced ☐
   5) N.A ☐

4. Formal education level

   1) Primary completed ☐
   2) Primary incomplete ☐
   3) Secondary completed ☐
   4) Secondary incomplete ☐
   5) Tertiary (College/University) ☐
   6) None ☐

23 SEP 2021

5. The main source of income

1) None ☐ 2) Self-employed ☐

3) Salaried ☐ Specify.....

6. Religion

1) Christian ☐ 2) Muslim ☐

3) Other ☐ Specify.....

7. Which County do you come from? .....

8. For how long have you been managing diabetes illness?

1) One year ☐ 2) 2-3 years ☐

3) 3-4 years ☐ 4) 4-5 years ☐

5) 5 years and above ☐

SECTION B

FAMILY MEMBERS ROLES IN DIABETES MANAGEMENT

9. What are the responsibilities of relatives in diabetes management of the patients?

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10. How do your family members participate in your diabetes management requirements?

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11. What issues affect the role of your relatives in helping you manage diabetes?

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12. What are some of the diabetes management strategies you are aware of?



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13. What factors affect your family in supporting your adherence to diabetes management guidelines?

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14. What family decisions affect diabetes management?

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15. Do you experience stigma from relatives and other people as a diabetes patient?

1) Yes ☐ 2) No ☐

16. How has stigma affected your life as a diabetes patient?

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17. Suggest ways in which family support for diabetes patients can be improved

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SECTION C

EFFECTS OF DIABETES ON THE INCOME STATUS OF PATIENTS AND THEIR FAMILIES

18. To what extent has diabetes management affected your own income?

1) To a large extent ☐ 2) To a lesser extent ☐

3) To a moderate extent ☐

19. How has diabetes management affected your family income?

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.....
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20. How much does diabetes medication cost per Month?

1) Kshs. 5,000 – 10,000 ☐ 2) Below Kshs. 5,000 ☐

3) Kshs. 10,000 – Kshs. 20,000 ☐ 3) Above Kshs. 20,000 ☐

21. Diabetes management is expensive and can drain the income of the patients and their families

1) Strongly Agree ☐ 2) Agree ☐ 3) Disagree ☐

22. Do you think diabetes management contributes to poverty among patients and families?

1) Yes ☐ 2) No ☐

23. Diabetes management is very expensive hence requires patients and families to have a steady source of income.

1) Strongly Agree ☐ 2) Agree ☐ 3) Disagree ☐

SECTION D

DIABETES MANAGEMENT AND KIN RELATIONSHIPS

24. How has diabetes management affected your relationship with your family members and relatives?

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SECTION E

HOW DIABETES MANAGEMENT IS AFFECTED BY RESPONSIVENESS OF THE HEALTH CARE SYSTEM

25. Unequal distribution of health care facilities leads to late diabetes diagnosis in your county

1) Strongly agree ☐ 2) Agree ☐ 3) Disagree ☐

26. It was easy for me to access the hospital services in my County for earlier diabetes diagnosis

1) Strongly agree ☐ 2) Agree ☐ 3) Disagree ☐

27. How can you rate the health care services for diabetes management in Kenya?

1) Affordable to many patients ☐ 2) Not affordable to many patients ☐

28. Do the hospital caregivers effectively educate you on how to manage diabetes and the necessary diagnostic tests for diabetic patients?

1) Yes ☐ 2) No ☐

29. If yes, how often?

1) Once a Month ☐ 2) Once a year ☐

3) More than once a year ☐

30. Are health education services for diabetes management available in your community?

1) Yes ☐ 2) No ☐

3) Not sure ☐

31. If yes, how often do patients and their families access the health education services?

1) Once a Month ☐ 2) Once a year ☐

3) More than once a year ☐

32. Are there screening services to monitor diabetes management in your community?

1) Yes ☐ 2) No ☐

3) Not sure ☐

33. If yes, how often is screening for diabetes conducted?

1) Once a Month ☐ 2) Once a year ☐

3) More than once a year ☐

34. In your view, what needs to be done to improve the quality of care for diabetes patients in your county health system?

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35. How should the provision of care services to diabetes patients in Kenya be improved?

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Appendix 5: Fomu ya idhini ya washiriki

Mada ya utafiti: Udhibiti wa ugonjwa wa kisukari na ustawi wa kijamii wa kiuchumi wagonjwa katika Hospitali ya Misheni ys St. Mary's, Nairobi.

Mtafiti mkuu: Zipporah Wawira Njiru

Simu ya rununu : 0712276970

Barua pepe : wawirazipporah@gmail.com

Utangulizi wa utafiti : Jina langu ni Zipporah Wawira Njiru. Mimi ni mwanafunzi wa uzamifu katika Chuo Kikuu cha Katoliki cha Afrika Mashariki, katika idara ya sayansi ya kijamii na masomo ya maendeleo. Ninafanya utafiti kuhusu udhibiti wa ugonjwa wa kisukari na ustawi wa kijamii wa kiuchumi wa wagonjwa katika Hospitali ya Misheni ya St. Mary's, Nairobi kukusanya taarifa muhimu ambazo zitasaidia katika kutafuta hatua madhubuti zinazowekwa na mamlaka husika kama Wizara ya Afya ili kupunguza mzigo wa ugonjwa wa kisukari katika jamii. Habari yoyote unayotoa itazingatiwa kuwa siri na itatumika tu kwa madhumuni ya kielimu.

Kusudi la utafiti : Utafiti huu una lengo la kujua jinsi gani ugonjwa wa kisukari na vile vile usimamizi wake unavyoathiri ustawi wa kijamii wa wagonjwa na familia zao zinazotafuta huduma na msaada katika Hospitali ya Misheni ya St. Mary', Nairobi. Nimeamua kukujumuisha katika utafiti huu kwa sababu kwa ukweli kwamba wewe ni mgonjwa, mlezi wa familia, au mlezi wa hospitali, una uzoefu katika usimamizi wa ugonjwa wa kisukari na jinsi imekuwa ikiathiri ustawi wa kijamii wa wagonjwa na familia. Majibu yako yatasaidia kuja na hatua za kushughulikia athari za usimamizi wa ugonjwa wa kisukari juu ya masuala ya kijamii ya wagonjwa, na familia zao

Muda unaotarajiwa katika utafiti : Utafiti huu unatarajiwa kuchukua miezi 4 kutoka Septemba 2021 ambapo miezi miwili itakuwa kwa ajili ya ukusanyaji wa habari na muda mwingine utakuwa kwa uchambuzi wa habari. Baada ya uchambuzi, matokeo yatawasilishwa kwa jopo la utafiti

katika Chuo Kikuu cha Katoliki cha Afrika Mashariki na nakala ngumu pia itawasilishwa kwa kumbukumbu ya baadaye. Ninatarajia kuchukuwa muda wa dakika kumi na tano kwa kila mshiriki.

Faida na fidia : Hutalipwa fidia kwa kushiriki katika utafiti huu na hakuna faida za moja kwa moja kwako kama mshiriki binafsi. Hata hivyo, matokeo ya utafiti huu yatasaidia katika kushughulikia athari za udhibiti wa ugonjwa wa kisukari kwa wagonjwa, na ustawi wa familia.

Hatari na usumbufu : Hakuna hatari na usumbufu unaohusishwa na ushiriki wako katika utafiti huu kwa sababu hautahusisha utaratibu wowote wa kukudhuru.

Usiri : Habari zote zitahifadhiwa kwa kufungiwa na zitapatikana tu kwa wale wanaohusika katika ukusanyaji na uchambuzi wa habari hiyo. Hakutakuwa na njia ya kutambua washiriki binafsi. Sitakutambua au kutumia habari yoyote ambayo itafanya mtu yeyote kukutambua katika mawasilisho yoyote au ripoti zitakazoandikwa kuhusu utafiti huu. Wewe pia uko huru kujiondoa kwenye utafiti wakati wowote unahisi kuwa huwezi kuendelea.

Ikiwa una maswali kuhusu maudhui ya utafiti huu au haki zako kama mshiriki, tafadhali wasiliana na watu wafuatao katika Chuo Kikuu cha Katoliki cha Afrika Mashariki :

1. Prof. B. A. Mulemi (Msimamizi) – Simu : 0710100093
2. Mr. Bernard Ndonga (Mkuu wa Idara) – Simu: 0722973810
3. Mwenyekiti Kamati ya Maadidili na Utafiti ya KNH-UoN – Sanduku la Posta, 207233, NAIROBI.



UTHIBITISHO WA IDHINI YA MSHIRIKI

Je, uko tayari kushiriki katika utafiti huu?

Ndiyo_____ Hapana_____

Kama ndiyo,

Tafadhali tia sahihi au kidole gumba

Sahihi: .....Tarehe:.....

Kidole

MAELEZO YA MAWASILIANO

Anwani zangu:

Jina: Zipporah Wawira Njiru

Simu: 0712276970

Barua pepe: wawirazipporah@gmail.com/wawirazipporah@yahoo.com

Sanduku la posta: P.o. Box 14512-00800, WESTLANDS

Msimamizi mkuu:

Jina: Prof. Dr. B.A. Mulemi

Simu: 0710100093

Barua pepe: bmulemi@yahoo.co.uk/benson.mulemi@hekima.ac.ke

Sanduku la posta: P.o. Box 46412, G.P.O.00100, NAIROBI, KENYA

KNH-UoN ERC

Barua pepe: uonknh_erc@uonbi.ac.ke

Tovuti: http://www.erc.uonbi.ac.ke

Facebook: https://www.facebook.com/uonknh.erc

Twitter: @UONKNH_ERC https://twitter.com/UONKNH_ERCs

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Appendix 6: Dodoso

Jina langu ni Njiru Zipporah Wawira, mwanafunzi katika Chuo Kikuu cha Katoliki cha Afrika Mashariki, katika idara ya sayansi ya kijamii na masomo ya maendeleo. Ninafanya utafiti kuhusu udhibiti wa ugonjwa wakisukari na ustawi wa kijamii wa kiuchumi wa wagonjwa katika Hospitali ya Misheni ya St. Mary's, Nairobi kukusanya taarifa muhimu ambazo zitasaidia katika kutafuta hatua madhubuti zinazowekwa na mamlaka husika kama Wizara ya Afya ili kupunguza mzigo wa ugonjwa wa kisukari katika jamii. Habari yoyote unayotoa itakuwa ya siri na itatumika tu kwa madhumuni ya kitaaluma. Tafadhali chagua jibu miongoni mwa majibu yaliyoainishwa au toa jibu linalofaa kwa maswali ambayo yanahitaji ufafanuzi zaidi.

SEHEMU A

HABARI YA KIBINAFSI

1. Umri wako

   1) Chini ya miaka 20 ☐
   2) Miaka 20-29 ☐
   3) Miaka 40-49 ☐
   4) Miaka 30-39 ☐
   5) Miaka 50 na zaidi ☐

2. Jinsia

   1) Mwanaume ☐
   2) Mwanamke ☐



3. Hali ya ndoa

   1) Nimeolewa ☐
   2) Mjane ☐
   3) Nimetengana na mchumba ☐
   4) Sijaolewa/sijaoa ☐

4. Kiwango cha elimu

   1) Shule ya Msingi imekamilika ☐
   2) Shule ya Msingi haijakamilika ☐

3) Sekondari imekamilika ☐

4) Sekondari haijakamilika ☐

5) Tertiary (Chuo / Chuo Kikuu) ☐

6) Sikuenda shule ☐

5. Asili ya mapato

1) Hakuna ☐

2) Kujiajiri ☐ Kama ni kujiajiri, fafanua:.....

3) Biashara ☐

6. Dini

1) Mkristo ☐

2) Mwislamu ☐ Kama nyingine itaje.....

3) Nyingine ☐

7. Ni kaunti gani unayotoka? .....

8. Umeugua / umesaidia kudhibiti ugonjwa wa kisukari kwa muda gani?

1) Mwaka mmoja ☐

2) Miaka 2-3 ☐

3) Miaka 3-4 ☐

4) Miaka 4-5 ☐

5) Miaka 5 na zaid ☐

SEHEMU B

WAJIBU WA WANAFAMILIA KATIKA UDHIBITI WA KISUKARI

9. Ni majukumu gani ya wanafamilia katika kusaidia wagonjwa wa kisukari kudhibiti wagonjwa huu?



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10. Wanafamilia wako wanashiriki vipi katika kutimiza mahitaji yako ya udhibiti wa ugonjwa wa kisukari? (Tafadhali eleza kadri uwezavyo)

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.....

.....

11. Ni masuala gani yanayoathiri jukumu la jamaa katika kukusaidia kudhibiti ugonjwa wa kisukari?

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.....

12. Ni nini baadhi ya mikakati ya udhibiti wa ugonjwa wa kisukari unayoifahamu?

.....

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.....

.....



13. Ni mambo gani yanayoathiri shughuli za familia yako kukusaidia kufuata miongozo ya udhibiti wa ugonjwa wa kisukari?

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.....

.....

14. Ni maamuzi gani ya familia yanayoathiri usimamizi wa utabibu wa ugonjwa wa kisukari?

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.....

15. Je, umewahi kuhisi unyanyapaa kutoka kwa jamaa na watu wengine kama mgonjwa wa kisukari?

1) Ndiyo ☐ 2) Hapana ☐

16. Unyanyapaa umeathiri vipi maisha yako kama mgonjwa wa kisukari?

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17. Pendekeza njia ambazo msaada wa familia kwa wagonjwa wa kisukari unaweza kuboreshwa

.....

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SEHEMU C

MADHARA YA UGONJWA WA KISUKARI KWA MAPATO YA WAGONJWA NA FAMILIA ZAO

18. Adhari ya udhibiti wa ugonjwa wa kisukari umeathiri mapato yako mwenyewe kwa kiwango gani?

1) Kwa kiasi kikubwa ☐ 3) Kwa kiwango cha wastani ☐

2) Kwa kiwango kidogo ☐

19. Udhibiti wa ugonjwa wa kisukari umeathiri vipi mapato ya familia yako?

.....

.....

.....

20. Dawa ya kisukari inakugharimu kiasi gani kwa mwezi?

1) Kshs. 5,000 - 10,000 ☐ 3) Kshs. 10,000 - Kshs. 20,000 ☐

2) Chini ya Kshs. 5,000 ☐ 4) Juu ya Kshs. 20,000 ☐

21. Udhibiti wa ugonjwa wa kisukari ni ghali na unaweza kupunguza mapato ya wagonjwa na familia zao

1) Nakubali ☐

2) Sikubali ☐ 3) Sikubali hata kidogo ☐ 4) Nakubali sana ☐

22. Je, unadhani usimamizi wa ugonjwa wa kisukari unachangia umaskini miongoni mwa wagonjwa na familia?

1) Ndiyo ☐ 2) Hapana ☐



23. Usimamizi wa kisukari ni ghali sana hivyo inahitaji wagonjwa na familia kuwa na chanzo cha kutosha cha mapato.

1) Nakubali ☐

2) Nakubali sana ☐ 3) Sikubali ☐ 4) Sikubali hata kidogo ☐

SEHEMU D

UDHIBITI WA KISUKARI NA MAHUSIANO YA JAMAA

24. Udhibiti wa ugonjwa wa kisukari umeathiri vipi uhusiano wako na jamaa zako ?

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.....

SEHEMU E

JINSI UDHIBITI WA UGONJWA WA KISUKARI UNAATHIRIWA UAJIBIKAJI WA MFUMO WA HUDUMA ZA AFYA

25. Usambazaji usio sawa wa vituo vya huduma za afya husababisha kuchelewa kugundua ugonjwa wa kisukari wa marehemu katika kaunti yako

1) Ndio ☐ 2) Ndio hasa ☐ 3) Sikubali ☐ kabisa

26. Ilikuwa rahisi kwangu kupata huduma za hospitali katika Kaunti yangu kwa utambuzi wa mapema wa ugonjwa wa kisukari

1) Nakubali sana ☐
2) Nakubali ☐
3) Sikubali ☐



27. Unawezaje kutathmini vipi huduma za afya katika udhibiti wa ugonjwa wa kisukari nchini Kenya?

1) Ninaafuu kwa wagonjwa wengi ☐ 2) Sio nafuu kwa wagonjwa wengi ☐

28. Je, wahudumu wa hospitali wanakuelimisha vyema jinsi ya kudhibiti ugonjwa wa kisukari na vipimo muhimu vya kudhibiti kwa wagonjwa wa kisukari?

1) Ndiyo ☐ 2) Hapana ☐

29. Ikiwa ndiyo, ni mara ngapi ?

1) Mara moja kwa mwezi ☐ 3) Zaidi ya mara moja kwa mwaka ☐
2) Mara moja kwa mwaka ☐

30. Je, huduma za elimu ya afya kwa usimamizi wa ugonjwa wa kisukari zinapatikana katika jamii yako ?

1) Ndiyo ☐ 3) Sina uhakika ☐
2) Hakuna ☐

31. Ikiwa ndiyo, ni mara ngapi wagonjwa na familia zao wanapata huduma za elimu ya afya?

1) Mara moja kwa mwezi ☐ 3) Zaidi ya mara moja kwa mwaka ☐
2) Mara moja kwa mwaka ☐

32. Je, kuna huduma za uchunguzi wa kufuatilia udhibiti wa ugonjwa wa kisukari katika jamii yako ?

1) Ndiyo ☐ 3) Sina uhakika ☐
2) Hakuna ☐

33. Ikiwa ndiyo, uchunguzi wa ugonjwa wa kisukari hufanywa mara ngapi?

1) Mara moja kwa mwezi ☐
2) Mara moja kwa mwaka ☐
3) Zaidi ya mara moja kwa mwaka ☐

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34. Kwa maoni yako, huduma kwa wagonjwa wa kisukari katika mfumo wako wa afya unaweza kuboreshwaje katika kaunti yako ?

.....

.....

.....

35. Je, huduma kwa wagonjwa wa kisukari nchini Kenya unapaswa kuboreshwa vipi ?

.....

.....

.....



Appendix 7 : Letter to KNH-UoN Ethics and Research Committee for ethical approval request

THE CATHOLIC UNIVERSITY OF EASTERN AFRICA

A.M.E.C.E.A

Office of the
Head of Social Sciences and Development Studies Department
FACULTY OF ARTS AND SOCIAL SCIENCES

Our Ref: CUEA/FASSc/BN/Rec/048/2021

28th April 2021

The Chairman
KNH – UON Ethics & Research Committee
Kenyatta National Hospital
P O Box 207233
NAIROBI

Dear Sir/Madam,

RE: REQUEST FOR ETHICAL REVIEW AND CLEARANCE FOR NJIRU WAWIRA ZIPPORAH, REG. NO. 1039317

This is to confirm that the above mentioned is an MA – Development Studies student in the Department of Social Sciences and Development Studies in the Faculty of Arts and Social Sciences at the Catholic University of Eastern Africa, Nairobi.

We humbly request you to grant her clearance to collect data for her thesis. Her research is on ***"Management of Diabetes and Social Well-being of Patients at St. Mary's Mission Hospital, Nairobi."***

Please accord her the necessary assistance she may require to complete her work.

Thank you.

Yours faithfully,
for: ***The Catholic University of Eastern Africa***

THE CATHOLIC UNIVERSITY OF EASTERN AFRICA HEAD OF DEPARTMENT 23 APR 2021 DEVELOPMENT STUDIES P. O. Box 62157 - 00200, NAIROBI

Mr. Bernard Ndenga
HoD - Social Sciences and Development Studies

Appendix 8: Letter for ethical approval from KNH-UoN Ethics and research committee

UNIVERSITY OF NAIROBI
COLLEGE OF HEALTH SCIENCES
P O BOX 19676 Code 00202
Telegrams: varsity
Tel:(254-020) 2726300 Ext 44355

KNH-UON ERC
Email: uonknh_erc@uonbi.ac.ke
Website: http://www.erc.uonbi.ac.ke
Facebook: https://www.facebook.com/uonknh.erc
Twitter: @UONKNH_ERC https://twitter.com/UONKNH_ERC

KENYATTA NATIONAL HOSPITAL
P O BOX 20723 Code 00202
Tel: 726300-9
Fax: 725272
Telegrams: MEDSUP, Nairobi

Ref: KNH-ERC/A/333

23rd September, 2021

Sr. Zipporah Njiru Wawira
Reg. No.1039317
Dept. of Social Sciences and Development Studies
Faculty of Arts and Social Studies
The Catholic University of Eastern Africa

23 SEP 2021

Dear Sr. Zipporah

RESEARCH PROPOSAL: MANAGEMENT OF DIABETES AND SOCIAL WELL-BEING OF PATIENTS AT ST. MARY'S MISSION HOSPITAL, NAIROBI (P307/05/2021)

This is to inform you that the KNH- UoN Ethics & Research Committee (KNH-UoN ERC) has reviewed and **approved** your above research proposal. The approval period is 23rd September 2021 – 22nd September 2022.

This approval is subject to compliance with the following requirements:

i. Only approved documents (informed consents, study instruments, advertising materials etc) will be used.
ii. All changes (amendments, deviations, violations etc.) are submitted for review and approval by KNH-UoN ERC before implementation.
iii. Death and life threatening problems and serious adverse events (SAEs) or unexpected adverse events whether related or unrelated to the study must be reported to the KNH-UoN ERC within 72 hours of notification.
iv. Any changes, anticipated or otherwise that may increase the risks or affect safety or welfare of study participants and others or affect the integrity of the research must be reported to KNH- UoN ERC within 72 hours.
v. Clearance for export of biological specimens must be obtained from KNH- UoNERC for each batch of shipment.
vi. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. (Attach a comprehensive progress report to support the renewal).
vii. Submission of an executive summary report within 90 days upon completion of the study.

This information will form part of the data base that will be consulted in future when processing related research studies so as to minimize chances of study duplication and/ or plagiarism.

For more details consult the KNH- UoN ERC website http://www.erc.uonbi.ac.ke

Yours sincerely,

PROF. M.L CHINDIA
SECRETARY, KNH- UoN ERC

c.c. The Principal, College of Health Sciences, UoN
The Senior Director, CS, KNH
The Chair, KNH- UoN ERC
The Assistant Director, Health Information, KNH
The Chair, Dept. of Social Sciences & Development Studies, The Catholic University of E.Africa
Supervisors: Prof. Dr. B.A. Mulemi, Dept.of Social Sciences and Development Studies, CUEA
Dr. Mary Njoki Ndiba, Dept.of Social Sciences and Development Studies, CUEA

Protect to discover

Appendix 9 : Letter of request for data collection

THE CATHOLIC UNIVERSITY OF EASTERN AFRICA
A. M. E. C. E. A.
P.O. Box 62157
00200 Nairobi - KENYA
Telephone: 8891601-6, +254-20-2525811-5,
+254-722 509811/2, 0724-253733/4
Fax: 254-2-891260

FACULTY OF ARTS AND SOCIAL SCIENCES

29th September 2021

The Chief Executive Officer
St. Mary's Mission Hospital
Nairobi

Dear Sr. Dr. Carren Owuor

M.A DATA COLLECTION LETTER FOR:
NJIRU WAWIRA ZIPPORAH REG. NO. 1039317

The above mentioned person is a post graduate student at THE CATHOLIC UNIVERSITY OF EASTERN AFRICA (CUEA) in the Faculty of Arts and Social Sciences. She is pursuing a Master's degree in Development Studies.

Her research Proposal Topic is: ***"Management of Diabetes and Social Well-being of Patients at St. Mary's Mission Hospital, Nairobi***

The Supervisors are: Prof. B. A. Mulemi
Dr. Njoki Ndiba

I therefore request you to grant her permission to collect data. In case of any further information, please do not hesitate to contact the undersigned.

Thanking you in advance.

Yours faithfully,

21 SEP 2021

Bernard Ndonga
HoD, Social Sciences and Development Studies