

Effects of Diabetes Management on the Patients' Income and Their Families Seeking Care

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Abstract

Diabetes and different non-communicable diseases, including cancer, respiratory and cardiovascular ailment, are the fundamental causes of morbidity and mortality worldwide. Diabetes affects persons, relatives, groups in health care, and the authorities' agencies that provide care, and those consequences possibly disable groups and retard countrywide monetary increase. 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. The overall objective of this study was to determine the effects of diabetes management on the patients' incomes and their families seeking care at St. Mary's Mission Hospital, Nairobi. This study drew on descriptive study design, involving quantitative and qualitative methods, particularly closed and open questions. The sample size was 269 respondents included in the study through purposive and convenient sampling. These sampling techniques were preferred in this research since data was gathered from the respondents during their visit to the hospital. The researcher collected data through interviewer-administered questionnaires containing both open and closed questions. Qualitative data was grouped, coded, and categorized, picking on cross-cutting issues, then compiled, analyzed, and interpreted 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 recommends free or affordable and available medication for diabetes patients, and continuous awareness programs for patients, family members and the community across all Counties to address the influence of diabetes management on the patients, families, and the Nation. This would contribute to the social well-being of the patients and their families and the Nation's economic development.

Keywords: influence of diabetes management, patient's income, families

1. Introduction

Once thought of as illnesses of the wealthy, NCDs like diabetes now are the main reasons for dying in LMICs (WHO GCM/NCD work plan, 2014–2015). Approximately 30% of NCD-associated demises in LMICs happen below 60 years of age. 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, in addition to massive health expenses in country 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 take care of their sick members, hence losing productivity and capital formation.

Around 422 million persons have diabetes globally. This accounts for about 8.5% of the general international population, yet the prevalence of the disease has been unexpectedly increasing in LMICs (Ayah et al.,

2013). International Diabetes Federation (IDF) approximates that worldwide health expenses on diabetes are 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 labor-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. This implies catastrophic expenditures on patients and their families.

1.1 Statement of the Problem

Diabetes affects patients' lives and their households, and its management impacts their social well-being. Lack of proper diabetes management resources and information results in socioeconomic 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, comas, and heart illnesses. These difficulties regularly bring about long periods of hospitalization causing massive hospital payments and loss of working hours, which poses extensive financial and socially 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, Kenya, numerous patients struggle to obtain primary diabetes care (Shannon et al., 2019). Despite the efforts and the techniques 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, unaffordable drug treatments, 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 health care 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 health care delivery (Oyando et al., 2019). Despite these provisions, the barriers mentioned above to health care services led to poor diabetes management among the patients. These account for increased diabetes complications and frequent hospitalizations that affect socioeconomic development. These affect the social well-being of patients and their relatives who have to incur catastrophic health care expenses and make several sacrifices to provide whatever services their patients require. Diabetes cases are on the increase in Kenya, and patients are suffering from the illness at an earlier age than those in evolved worldwide nations. Kenya's public health care is organized into six tiers. Each of these is predicted to provide preventive, promotive, curative, and rehabilitative services, as noted in the Kenya Essential Package for Health, which incorporates interventions and services aimed at diabetes control (Oyando et al., 2019). Kenyans are at a threat of acquiring complications because they go to hospitals when the ailment has progressed (McFerran, 2008 as noted in Muga & Muhati 2016: 142). However, consistent with the Ministry of Public Health of Kenya (as said in EL-busaidy et al 2014: 1), above 50% of health centers hospitalizations and 55% of health facilities demises in Kenya are from NCDs and diabetes is one of the main ones. This has led to an increased social burden, particularly in low-income households. Some patients have progressed to adverse diabetes complications like kidney failure, loss of eyesight, and amputation of body parts. This reduces productivity in affected families with adverse outcomes at the social and economic improvement of the nation.

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.

1.2 Research Objective

To determine the effects of diabetes management on the patients' incomes and their families.

1.3 Theoretical Review

1.3.1 Structural Violence Theory

The idea of structural violence first emerged within the 1960s to provide an explanation for disparities in health and development between rich nations and impoverished submit-colonial states (Hirschfeld, 2017). The idea of structural violence developed out of Dependency Theory and defined poverty and ailment within the humanitarian development agencies. This theoretical framework can display dynamics of societal practices and structural forces that operate across a couple of dimensions of peoples' lives in approaches that may not right away appear 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 at 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 desires 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 term "structural violence" is a manner of describing social preparations that position human beings and populations in damaging way. The arrangements are structural because they are embedded in our social globe's political and economic organization; they are violent due to the fact they bring about harm to individuals (commonly, not those answerable for propagating such inequalities (Farmer et al., 2006).

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 health care facilities than other Counties. With structural inequity, the poor and marginalized experience violence due to lack of accessibility to timely health care facilities, which contributes to late diagnosis of chronic diseases such as diabetes at advanced stages when the complications are irreversible. This leads to a social weight to 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 socioeconomic status and those of higher socioeconomic status appears to be a global phenomenon (Galambos & Sturchio, 2014).

1.3.2. Effects of Diabetes Management on Patients' Incomes and Their Families

Diabetes is a costly ailment to the patients and society that is referred to as the core cause for cardiovascular sicknesses, sightlessness and complex renal malfunction, and lower limbs amputation (Tol et al., 2017). Scholars like Ayah et al. (2013) stated that the prevalence 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 (Mutymbizi 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) 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 health care expenditure, complications, and frequent hospitalization, will continue being a significant challenge to the income of the individuals and the entire nations, hence affecting the overall societal well-being.

Persons with diabetes use higher health care 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 now affects this person and may often have a considerable effect on others. It may additionally force nonworking contributors to begin working, regularly upfront a lower earnings, 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 is 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 makes it worse for the patients who eventually succumb to the disease.

1.4 Conceptual Framework

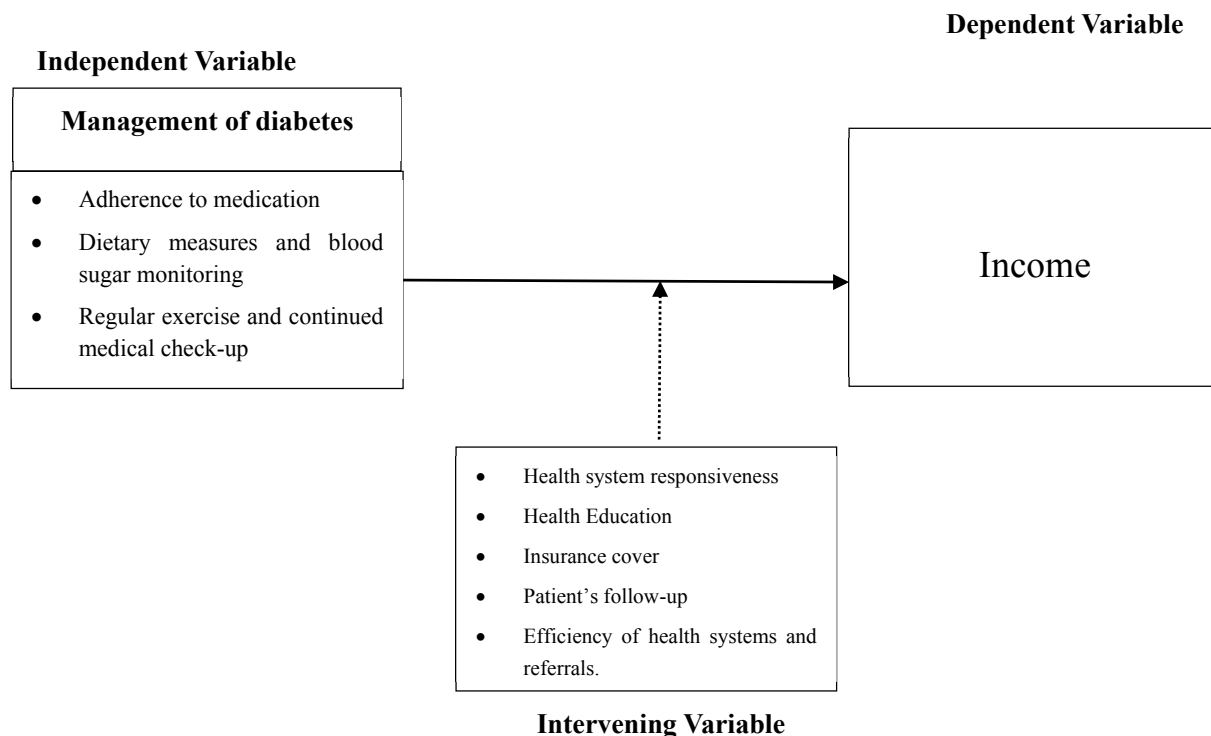


Figure 1. Conceptual framework

2. Research Methodology

This study used mixed methods descriptive research design, which involved quantitative and qualitative methods. The research population was 900 diabetes patients aged 18 years and above who were seeking treatment in St. Mary's Mission Hospital, Nairobi, from October 2021 through April 2022. The study used purposive and convenience sampling techniques. Purposive sampling is an effective method when dealing with small samples, but it is also an inherently biased method. For this reason, convenience sampling technique was also used so as to triangulate the two methods with an intent to address the biases of each. The sample size of 269 respondents was derived using Fisher's (1998) formulation and Mugenda & Mugenda (2003). Data was collected through interviewer-administered questionnaires containing both open and closed questions. Qualitative data was manually grouped, coded, and categorized, picking on cross-cutting issues according to the frequency of responses per question, then compiled, analyzed, and interpreted accordingly. Quantitative information was coded 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.

3. Results

3.1 Respondents' Demographic Characteristics

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

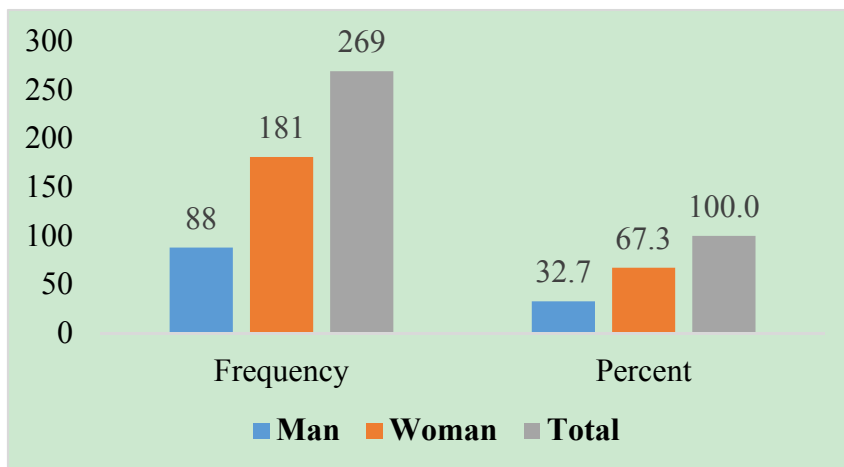


Figure 2. Summary of respondents by gender

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.

3.2 Respondents' Age

The study participant's age is shown in figure 3 below:

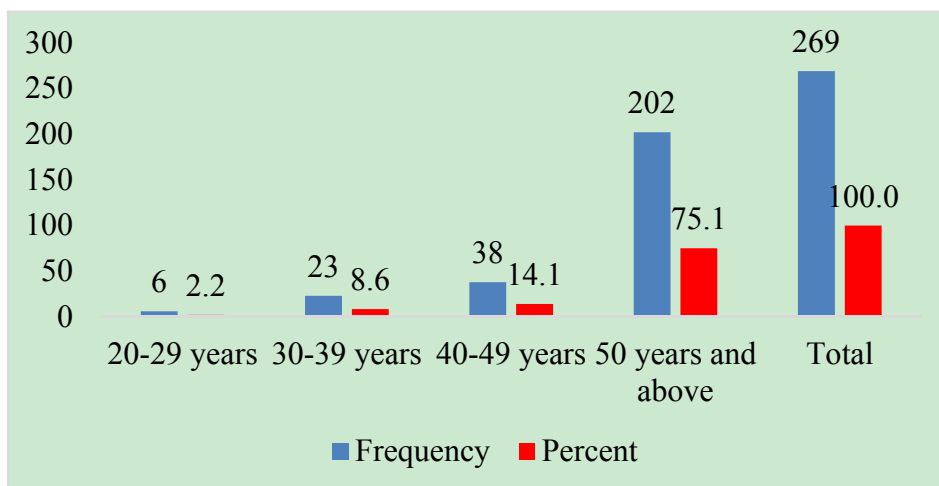


Figure 3. Summary respondents' age

The majority (75.1%, 202 n=269) of the respondents were 50 years of age and above. Thirty eight (14.1%) 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 are 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, make contributions to poorer financial outcomes for individuals, communities, and societies.

Table 1. Respondent's County of Origin

Number of Counties Targeted	Frequency	Percentage
26	269	100

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 notion can also be attributed by the fact that the hospital is in the capital city which is a cosmopolitan county. 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 the 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.

3.3 Respondents’ Marital Status

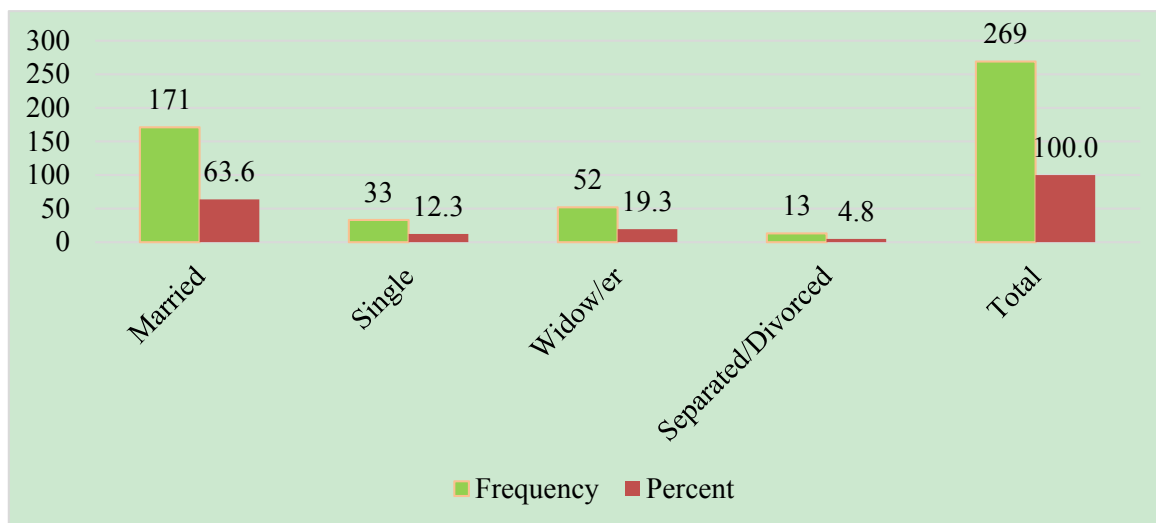


Figure 4. Summary of respondents’ marital status

The majority of the respondents (63.6%, 171 n=269) were married, 12.3% (33) respondents were single, 19.3% (52) respondents were Widow/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 on diabetes management, and others depended on pension. 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 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.

3.4 Study Participant's Level of Education

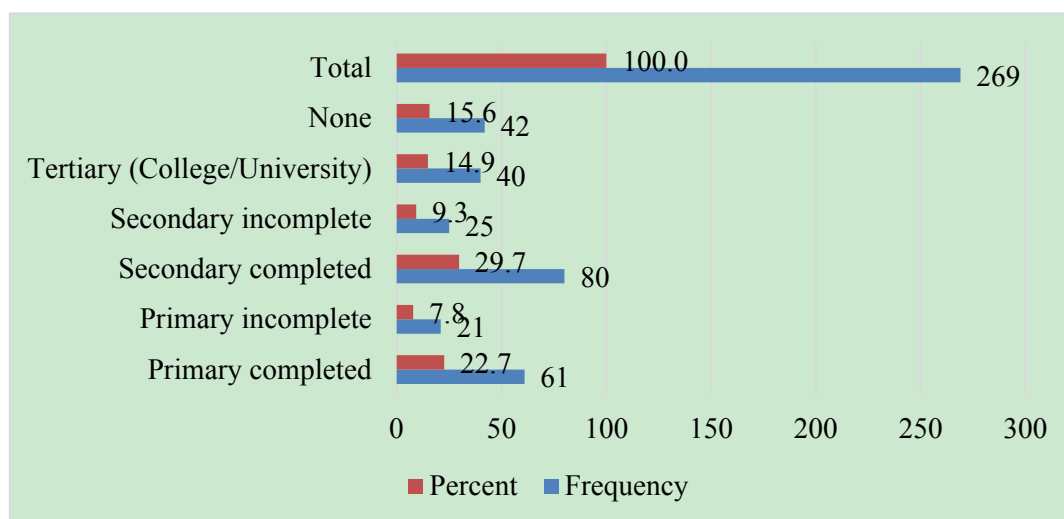


Figure 5. Education level of the respondents

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, as per the argument by Paula et al. (2008), people with higher education levels have a tendency to be healthier and live longer. A low education level as per the findings 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.

3.5 Main Sources of Regular Income

Table 2. Respondent's 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 in jobs such as selling clothes, shopkeepers, farming, and selling vegetables. One hundred seven (39.8%) of the respondents had no source of regular income. They said they had stopped working due to the demands for diabetes management and related health care. 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 increase 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). 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, increase death, disease, and the financial price of the illness to society.

Table 3. The respondents's 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

As indicated in Table 3 above, 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 the majority of the respondents had personal experiences for a substantive duration of how diabetes management has affected their social well-being over the years and the financial burden of diabetes management on them and their families. The following section presents the study findings and the discussion.

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 are very keen on what they are supposed to eat though the patient sometimes hides and eats whatever they are 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 give them moral support. A particular respondent said, *"They have helped provide financial support."*

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 are 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 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 shared 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."*

3.6 Effects of Diabetes Management on Patients' and Their Families' Income

This section presents the effects of diabetes management on the income of respondents. Figure 6 below illustrates the respondents' views about how diabetes and its management affected the income and livelihood of their families.

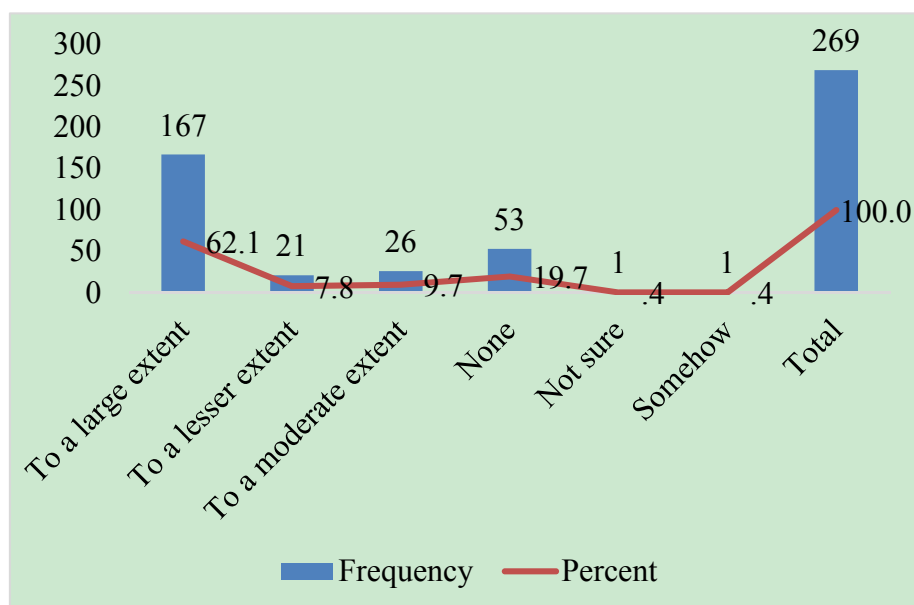


Figure 6. Diabetes management and patients’ income and family livelihood

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 health care resources. A respondent said, *“I use a lot of money for diabetes in terms of medication and transport, which are expensive. This money should be used for something else.”* Another one said, *“half of my salary now goes for the payment of drugs and diet.”*

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 losing eyesight. Some 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. A respondent said, *“I went to a hospital, and I was told I had typhoid, but when I came to St. Mary’s Mission Hospital, I was diagnosed with diabetes, and the sugar level was very high, so I was admitted, and I used a lot of money for hospitalization.”* Some patients have died from diabetes complications, which affects the family’s income if the person who died was the breadwinner. Table 4 below highlights the respondents’ estimated spending on diabetes medication per month.

Table 4. Respondent’s 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 costs them below Kshs. 5,000. However, a good number of the respondents, 77 (28.6%), said that the cost for 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, is not affordable to many patients, and can drain the income of the patients and the families as every coin they get goes to medication and diet, which are very expensive. While the patients' estimate of spending 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 meager 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. Certain respondents exclaimed, *"half of my salary now goes for the payment of medicines and diet."* Table 5 indicates the duration of diabetes management and likely cost trends.

Table 5. Duration of diabetes management and potential cost trends

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

The majority of the respondents (176, 65.43%) had managed diabetes for five years and above, representing the highest number of the respondents. Ninety-eight (36.43%) of these respondents said that diabetes medication costs them below Kshs. 5,000 per month. However, (53, 19.70%) of the respondents said that diabetes medication costs 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 cost them below Kshs. 5,000. However, a total (77, 28.62%) respondents said that diabetes medication costs them between Kshs. 5,000 – 10,000.

As diabetes progresses in years, the study findings that the cost gets more 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 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 the money they get is all spent on medication. A respondent said, *"people are annoyed as they walk along the streets because they use all their pension and savings on medication and hospitals. They cannot*

afford to go for holidays to relax.”

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. Table 6 highlights the respondent’s source of income and their views on whether diabetes is expensive and can drain the income of the patients and their families.

Table 6. Respondents’ source of income and their views on whether diabetes is expensive and can drain the income of the patients and their families

		Whether diabetes management is expensive and can drain the income of patients and families							Total	
		Strongly agree	Agree	Disagree	Not much	Medium	Not sure	It depends		
The source of income	main of	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	

Most of the respondents (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%) 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 extreme lengthy period outcomes of NCDs like diabetes is excessive, ensuing in catastrophic health expenditure for the families. This impedes development in families and society. Figure 9 presents the respondents’ source of income by view on whether diabetes management can lead to poverty among patients and families.

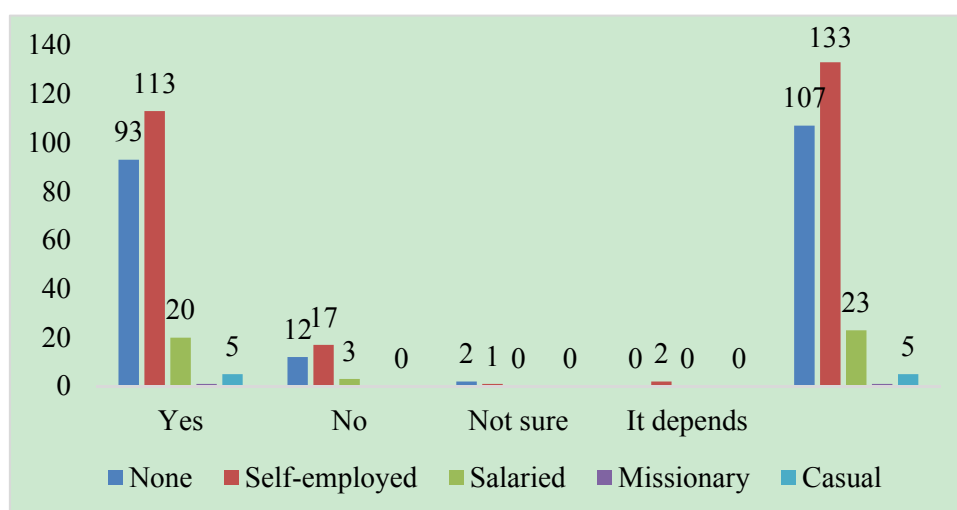


Figure 7. Respondents’ source of income by view on whether diabetes management can lead to poverty among patients and families

As referred in table 6, a significant number of the respondents said that 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 households 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 chance for catastrophic health spending, plunging families into poverty (Paho policy, 2011). Table 7 below outlines source of income for the respondents, and their views as to whether they would describe diabetes management as very expensive.

Table 7. Respondents' source of income and their views as to whether they would describe diabetes management as very 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 source of income	main of	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. Summary

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 do feel like not going to work, and others resign from work. This implies lost days of work, hence affecting the patients' and families incomes 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 in years, the cost gets so expensive, which many patients and families cannot afford. This diminishes their well-being. The patients who do not have adequate support from families would die of complications due to 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. Conclusion

Diabetes is a collective issue that cuts across and affects the patients and their family members and the health structures. Diabetes management affects the lives of patients 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 imposes a big weight on health structures and societies. The rate implications of diabetes to society are multi-fold: direct prices to humans with diabetes, their families, and the health care sectors, indirect expenses to society and authorities, which might be the productiveness costs; and intangible fees, cause detrimental effects on quality of life (Islam et al., 2013).

6. Study Recommendations

The study recommends that the County and National Governments 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. The majority of the patients cannot afford its management, including the daily medication. The management is expensive as every coin in the family goes to diabetes management. The government should have projects and social funds for diabetes patients since the majority are now suffering from the disease. The government should also incorporate lessons on health care issues like diabetes in the education curriculum. This would enhance awareness and early diagnosis.

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