Factors Associated with Control Among Patients with Diabetes Mellitus Attending Selected Healthcare Facilities in Bomet County Kenya: A Systemic Review

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ABSTRACT

Introduction

Diabetes mellitus is a long-term illness that requires regular treatment and lifestyle changes to keep blood sugar levels under control and glycated hemoglobin at below 6.0%. Despite some patients find it difficult to manage condition because of challenges such as cost of medication, dietary habits, forgetting to take drugs and difficulties accessing healthcare services. When blood sugar levels remain high patients develop complications that affect their health and daily lives.

Objectives

Study aimed to assess factors affecting glycemic control among diabetic patients attending Longisa County Referral Hospital in Bomet County, Kenya.

Methods

We used a descriptive cross-sectional design. Study was done among diabetic patients visited Longisa County Referral Hospital. Data was collected using questionnaires and information from patients' medical records. Study look at how food patients eat, physical activity, taking medicines as prescribed, knowledge about diabetes, how long have had the disease and access to healthcare affect their blood sugar levels.

Result

Study aim to find out the problems diabetic patients face when trying to control their blood sugar. It also look at whether patients take their medicines as advised, eat well, exercise and get care they need at hospital.

Conclusion

Study helps shows problems diabetic patients face when managing the condition. Findings will help hospital understand where patients need help. This include giving patients better information about diabetes, helping them take their medicines correctly and encouraging them to attend clinic visit as scheduled. This will help patients control their blood sugar and reduce risk of other health problems.

Keywords: Diabetes mellitus, blood sugar control, medicines

INTRODUCTION

Diabetes mellitus is a disease cause high blood sugar levels. When blood sugars stays high for a long time cause other health problems. Some patients develop kidney problems, poor eyesight, or nerve damage. Others

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suffer from heart disease or stroke. Some also develop wounds on their feet that are difficult to heal. In serious cases part of the foot or leg need to be removed.

Living with diabetes is difficult for some patients, they struggle to eat the right foods, exercise regularly, or take their medicines every day. Some have trouble paying for medicines or travelling to the hospital for check-ups. These problems make it hard to control blood sugar. When diabetes is not well controlled patient become seriously ill and need more treatment. Patients need to understand their condition, take their medicines as advised, eat well and attend their clinic visits to help keep their blood sugar under control.

. For some the illness can also affect their ability to work and support their families (ADA, 2024).Poor glycemic control has also been linked to more frequent hospital admissions and a lower quality of life (Davies et al., 2022). In sub-Saharan Africa many people are getting diabetes making it a health problem. Changes in foods people eat, lack of exercise and increase obesity contributes to this problem. Number of adults living with diabetes in region is expected to increase in coming years (Genitsaridi et al., 2026). One of challenges is many people have diabetes without knowing some live with this disease for years before they notice any signs. Others go to hospital when they start feeling unwell. By this time some already have develop complications making treatment more difficult. In Kenya diabetes is becoming concern as more people are affected by non-communicable diseases. At same time infectious diseases remain a problem in the country (Ministry of Health Kenya, 2021). The Kenya Stepwise Survey (2015) estimates diabetes affects about 3% to 5% of the population. However figures vary among different groups of people. Studies have shown that finding diabetes early and helping patients continue with treatment are important in preventing further health problems (Pastakia et al., 2017).

For people living with diabetes managing disease is part of everyday life they need to take their medicines, watch what they eat, exercise and go to hospital for check-ups. However not everyone finds this easy. Some patients fails to buy their medicines because they do not have enough money others struggle to pay for transport to hospital or afford the foods they are advised to eat. These problems make it difficult for patients to follow their treatment and keep their blood sugar under control (Tegegne et al., 2024).

Glycemic control means keeping blood sugar levels within the recommended range this is important because high blood sugar over a long period can damage different parts of the body it lead to problems with the kidneys, eyes, nerves and heart. Healthcare workers use blood glucose tests to check sugar levels they also use a test called HbA1c which shows average blood sugar level over previous two to three months. This helps them know how well a patient has been managing diabetes (ADA, 2024). Although treatment for diabetes is available patients still struggle to control their blood sugar reasons are not same for every patient. Some forget to take their medicines, while others unable to afford them. There are also patients who do not fully understand importance of taking medicine every day, even when they feel well. Problems with eating habits, exercise and attending clinic appointments also affect their progress. Longisa County Referral Hospital provides diabetes care to patients from Bomet County and nearby areas. According to the Bomet County Health Department (2024), the services include testing, treatment, follow-up visits, advice on healthy eating and care for patients who develop complications. However, patients experience difficulties keeping their blood sugar under control. Attending a health facility does not always mean that a patient can afford the prescribed medication, follow dietary recommendations or attend every appointment. The reasons behind poor glycemic control may be related to a patient's health, behaviour or living conditions. For example, the length of time a person has had diabetes, the treatment prescribed and the presence…

Although studies have examined glycemic control in different healthcare facilities, the factors linked to poor control may differ depending on the patients and the setting. Little is known about problems diabetic patients face when trying to control their blood sugar at Longisa County Referral Hospital. Patients finds hard to manage condition because of different problems in their daily lives. Knowing problems help health workers understand what patients go through and how they are helped.

This study aims to find out what affects blood sugar control among diabetic patients attending Longisa County Referral Hospital. It will look at foods patients eat, how they exercise, whether they take their medicines as advised, their health condition, ability to pay for treatment. Study will also look at other problems that make

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it hard for patients to control their blood sugar. Findings help hospital know where patients need more help give them better advice on diabetes and improve the care they receive during clinic visits.

Objective

To asses factors affecting glycemic control among diabetic patients attending Longisa Referral Hospital.

Research questions

- What are the clinical factors affecting glycemic control among diabetic patients attending Longisa county referral hospital?
- What are the behavioral factors affecting glycemic control among diabetic patients attending Longisa county referral hospital?
- What are the social-economic factors affecting glycemic control among diabetic patients attending Longisa county referral hospital?

Search strategy and selection criteria

A descriptive cross-sectional research strategy was used to assess the factors affecting glycemic control among diabetic patients attending Longisa County Referral Hospital. The study involved adult diabetic patients attending the diabetic clinic at Longisa County Referral Hospital. Data will be gathered through structured questionnaire, interviews and direct observation checklists.an observation checklist allowed us to determine whether there is availability of medications and equipment, availability of diabetic care and services, patient education and healthcare environment.

Table 1: Boolean search operations

Concept	Search terms	Boolean operation	Combine search string
Diabetes mellitus	Diabetes mellitus, diabetes, diabetic patients	or	"Diabetes mellitus" or diabetes or "diabetic patients"
Glycemic control	Glycemic control, glycaemic control, blood glucose control	or	"Glycemic control" or "glycaemic control" or "blood glucose control"
Factors affecting glycemic control	Factors, Determinants, blood control	or	Factor or determinant or predictors or "associated factors"
Medication adherence	Medication adherence, treatment adherence, medication compliance	or	"Medication adherence" or "treatment adherence" or "medication compliance"
Lifestyle factors	Dietary habits, physical activity, exercise	or	"Dietary habits" or "physical activity" or exercise
Sociodemographic factors	Age, sex, education, income, socioeconomic status	or	Age or sex or education or income or "socioeconomic status"
Healthcare access	Access to healthcare, availability of medicines, healthcare services	or	"Access to healthcare" or "availability of medicines" or "healthcare services"

Inclustion Criteria

- Adults aged 18 years and above.
- Confirmed diagnosis of diabetes mellitus Type 2 among patients attending LCRH for at least 6 months
- Those willing to give informed consent

Exclusion Criteria

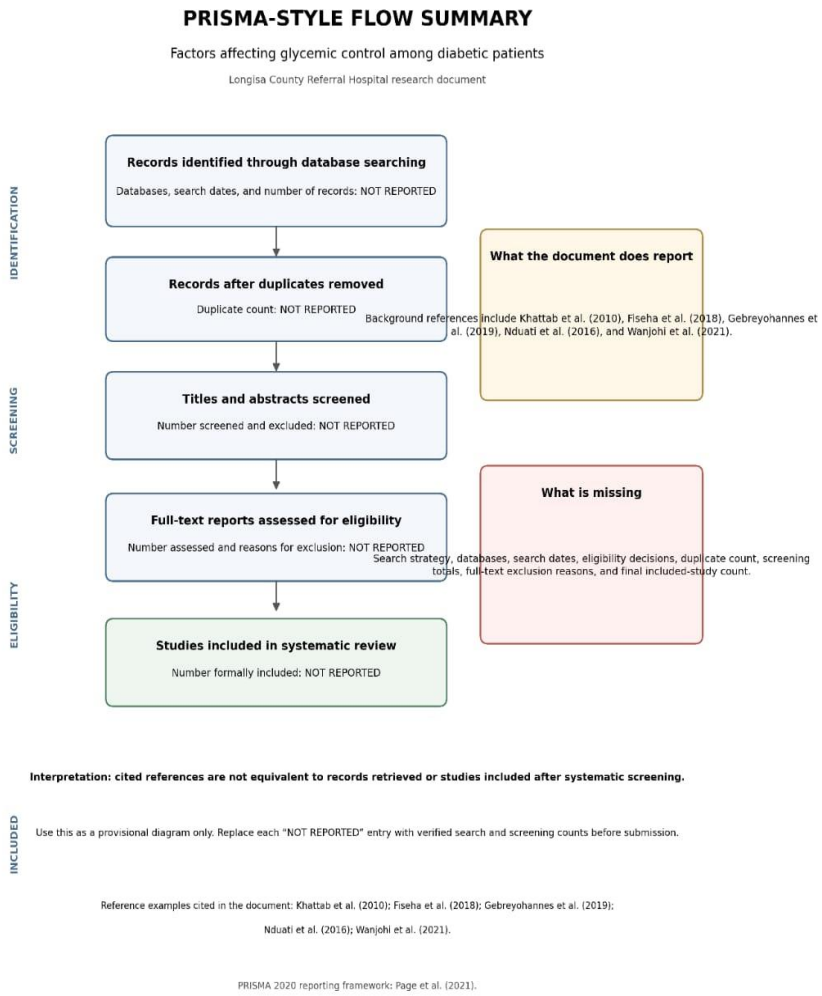
- Critically ill patients.
- Patients unwilling to participate.
- Newly diagnosed patients on first clinic visit

Data Extraction Procedure

Researchers will read selected articles and pick out information that is relevant to the study

To make sure information is correct researchers will check recorded details against original articles. findings will be arranged according to different factors affecting glycemic control and used to guide discussion of the research.

Prisma flow summary and image



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RESULTS

This module presents the finding of the study from 50 proposed sample size.

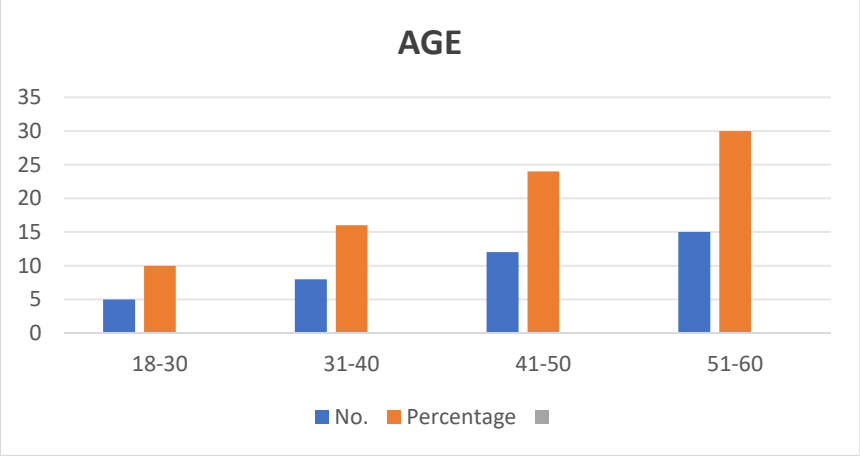
Response rate

A total of 50 questionnaires were distributed and all were successfully completed and returned, giving a response rate of 100%.

Response Category	Frequency	Percentage (%)
Returned questionnaires	50	100
Unreturned questionnaires	0	0
Total	50	100

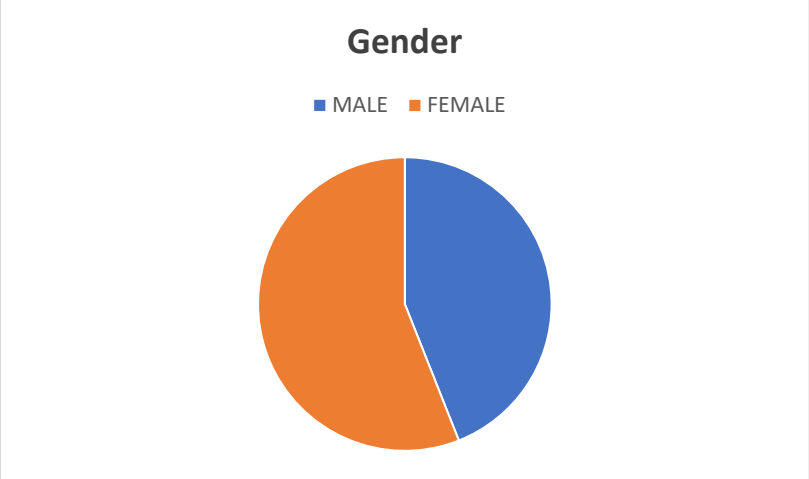
Socio-demographic Characteristics of Respondents

Table 2: Distribution of Respondents by Age



Distribution by Gender

Table 3: Distribution by Gender



Female respondents constituted the majority 56% while male participants constitute 44%.

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Educational Level

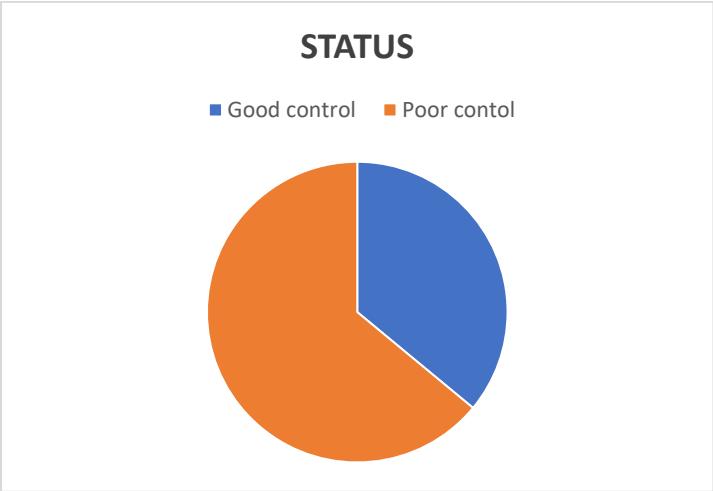
Table 4.: Educational Level

Education Level	Frequency	Percentage (%)
No formal education	5	10
Primary	15	30
Secondary	18	36
Tertiary	12	24
Total	50	100

Most respondents had attained secondary education (36%).

Glycemic Control Status

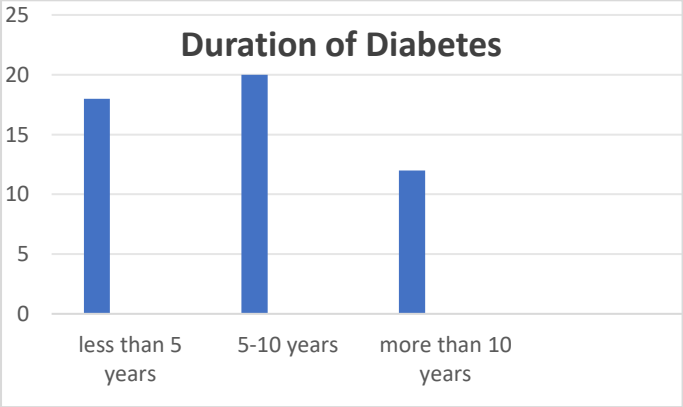
Table 5: Glycemic Control Status



The study found that 64% of respondents had poor glycemic control while only 36% achieved good glycemic control.

Duration of Diabetes

Table 1: Duration of Diabetes



Most respondents (40%) had lived with diabetes for 5–10 years.

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Medication Adherence

Table 7: Medication Adherence

Adherence Status	Frequency	Percentage (%
Adherent	20	40
Non-adherent	30	60
Total	50	100

The majority of respondents (60%) reported poor adherence to prescribed medication.

Presence of Comorbidities

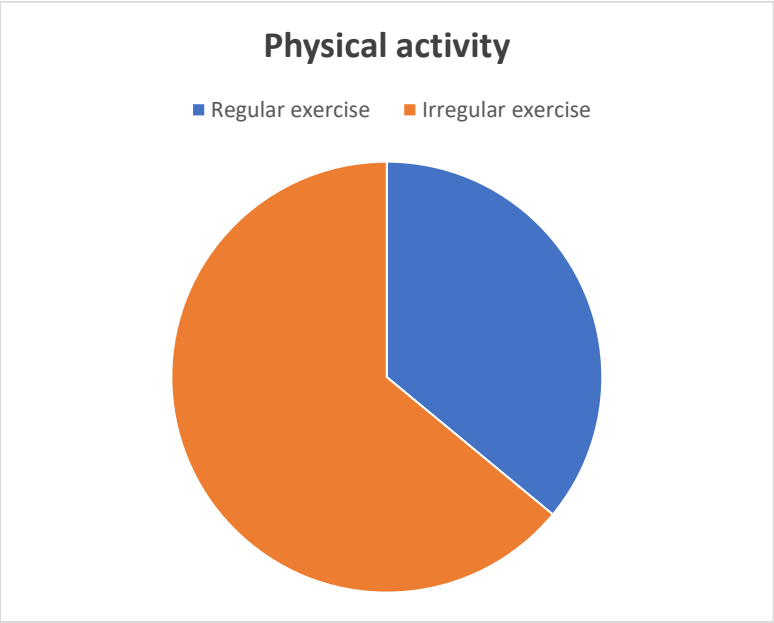
Table 8: Presence of Comorbidities

Comorbidity Status	Frequency	Percentage (%)
Present	29	58
Absent	21	42
Total	50	100

More than half of respondents had at least one comorbid condition

Physical Activity Level

Table 9: Physical Activity Level



Most respondents (64%) did not engage in regular exercise.

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Dietary Adherence

Table 10: Dietary Adherence



Most respondents reported poor adherence to dietary recommendations.

Clinic Attendance

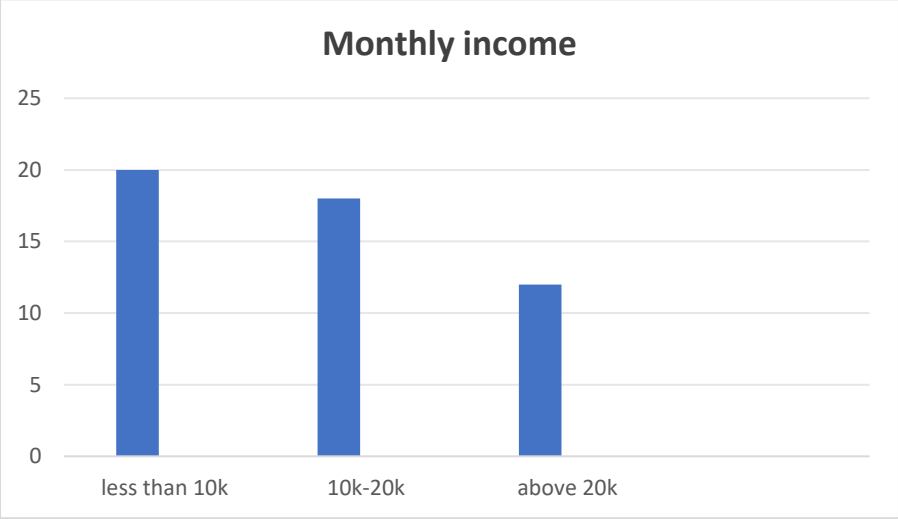
Table 3.12: Clinic Attendance

Clinic Attendance	Frequency	Percentage (%
Regular	21	42
Irregular	29	58
Total	50	100

Irregular clinic attendance was reported by 58% of participants.

Monthly Income

Table 3.13: Monthly Income



Most respondents had monthly incomes below KSh 20,000.

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Distance from Health Facility.

Table 3.14: Distance from Health Facility

Distance	Frequency	Percentage (%) |
Less than 5 km	14	28
5–10 km	16	32
Above 10 km	20	40
Total	50	100

Most respondents lived more than 10 km from the hospital.

DISCUSSION

Introduction

This chapter looks at the factors that affect blood sugar control among diabetic patients attending Longisa County Referral Hospital. It explains how these factors can make it easier or harder for patients to manage their diabetes and keep their blood sugar levels under control.

Factors affecting glycemic control

Taking medicines as prescribed is important in managing diabetes. When patients miss doses or stop taking their medicines without advice from a healthcare worker, their blood sugar may remain high(Gieroba et al., 2025). Some patients may also struggle to get their medicines when they cannot afford them or when the drugs are not available. Regular taking of medication has importance and proper treatment in managing diabetes (ADA, 2024).

The length of time a person has had diabetes may also affect their blood sugar levels. Some patients may find it more difficult to control their blood sugar as the disease progresses(Manyara & Musotsi, 2024). They may need changes in their treatment to help manage the condition. Other illnesses, such as high blood pressure and obesity, can also make diabetes harder to manage(kyalo et a 2022). Obesity affects how the body responds to insulin, which can lead to high blood sugar levels ((Fiseha et al., 2018).

In caring for diabetic patients, healthcare workers need to understand the problems they face in their daily lives. Some patients may struggle to afford their medicines, while others may have difficulty attending clinic appointments ((Wanjohi et al., 2025)). Regular check-ups, proper treatment and advice on managing diabetes at home can help patients control their blood sugar. Listening to patients and understanding their difficulties can also help healthcare workers provide care that suits their needs (Nduati, 2016).

Behavioral Factors Affecting Glycemic Control

Kind of food a patient eats affects how well their blood sugar is controlled for example Eating a lot of sugary foods and drinks or even missing meals may make it harder to manage diabetes (WHO, 2020). Some patients may also find it difficult to follow a recommended diet because of the cost of food. It is therefore important to help patients choose healthy foods that are available and affordable to them(Abel et al., 2024).

Physical activity is also important. Regular exercise helps the body use insulin better and can help patients control their weight(Ke et al., 2022). Patients who do very little physical activity may have more difficulty managing their blood sugar (ADA, 2024). However, each patient should choose activities that suit their health and physical ability.

Socioeconomic Factors Affecting Glycemic Control

Money affects how patients manage diabetes. Patients need money to buy drugs, pay for tests, travel to hospital and buy healthy food. Some patients do not have enough money to meet these needs as a result they miss clinic visits or fail to take their drugs as advised this make it hard for them to control their blood sugar (Yin et al., 2023).

Education is also important when managing diabetes. Patients need to know what diabetes is, how to take their drugs and what foods they should eat. Some patients do not understand the advice given to them by healthcare workers (Muhindo Muyisa et al., 2026). Healthcare workers should explain things in simple words and give patients a chance to ask questions this helps patients understand their illness and how to manage it.

Distance from home to hospital is also a problem. Patients who live far away spend a lot of money on transport. Some miss clinic visits because they cannot afford fare or have other things to do at home or work. When patients miss their appointments, they do not get their drugs and check-ups on time. This makes it harder for them to control their blood sugar (WHO, 2024).

Previous studies looked at some of problems affecting diabetes care in sub-Saharan Africa. Their work helps explain why patients finds it hard to get care they need (Pastakia et al., 2017). Study that help when looking at how income, education and other factors links to blood sugar control (Khattab et al., 2010).

Some patients struggle to manage diabetes because they do not have enough money or cannot easily reach a health facility. Others do not understand how to care for themselves. These problems affect their treatment even when they want to get better (Gebreyohannes et al., 2019). Health facilities helps by making drugs and tests more affordable and giving patients' clear information about diabetes. Patients who live far from the hospital also benefit from follow-up care in their local communities (Lamptey et al., 2023).

Overall Interpretation

Findings of this study shows patients face many problems when managing diabetes. Some patients forget to take their medicines, find it hard to follow the right diet or fail to attend clinic appointments. Others do not have enough money to buy medicines or pay for transport to hospital. These problems make it hard for them to keep their blood sugar levels under control (Pastakia et al., 2017).

Patient know that taking medicine is important but lack money to buy it. Another patient miss clinic appointments because the hospital is far from home. This shows that knowing how to manage diabetes is not always enough. Patients also need money and support to follow the advice given by healthcare workers (Mwangasha et al., 2021).

Healthcare workers should not only check patients' blood sugar levels. They should also ask if patients are taking their medicines, eating as advised and attending clinic appointments.

Implications for Practice and Policy

Study shows that people with diabetes face many problems when taking care of their health. At Longisa County Referral Hospital, healthcare workers should check patients' blood sugar levels and ask if they take their medicines as told. If a patient is not taking the medicines as advised, healthcare worker should ask why and help them find a way to follow up treatment.

Patients also need to learn how to take care of themselves at home. They should know how to take their medicines, eat well and exercise. During clinic visits, healthcare workers should give patients time to ask questions and talk about the problems they face.

Some patients have little money and struggle to pay for treatment. They find it hard to buy medicines, pay for tests or get money for transport to hospital. Hospital and county health department should look for ways to lower the cost of diabetes care so that patients can continue with their treatment.

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CONCLUSION

People with diabetes face different problems when trying to control their blood sugar. Some find it hard to take their medicines every day, eat the right food or go to the hospital for check-ups. Others do not have enough money to buy medicines, pay for tests or cover transport costs. These problems make it hard for them to take care of their health.

Healthcare workers need to listen to patients and understand what they go through. They should help patients deal with these problems and explain how to manage diabetes at home. Patients also need to get their medicines and attend clinic visits so that their blood sugar can be checked.

Managing diabetes is not always easy. Some patients know what they are supposed to do but struggle to follow the advice because of the problems they face in their daily lives. It is therefore important to look at these problems when caring for diabetic patients.

RECOMMENDATION

Longisa County Referral Hospital

Hospital should teach patients how to live with diabetes and take care of themselves at home. During clinic visits, patients should be taught how to take their medicines, eat healthy food they can afford and control their blood sugar.

Healthcare workers

Healthcare workers should ask patients about problems they face when managing diabetes. Some patients do not have enough money to buy medicines, while others find it hard to eat the recommended foods or attend clinic visits. Healthcare workers should listen to patients and help them find ways to deal with these problems

Bomet County health department

County health department should work towards making diabetes medicines and blood sugar testing supplies available in health facilities. Encourage community education so that people can learn more about diabetes recognize its symptoms and seek medical care early. This will help prevent some patients from developing serious complications before receiving treatment.

Source of Funding

This study was conducted without external funding

Competing Interest

The authors declare that they have no competing interest

Authors' contributions

All authors participated in the development of the study, reviewed and approved the final manuscript and agreed to be accountable for the accuracy and integrity of the work.

Ethical approval

Ethical approval for the study was sought and obtained from the relevant authorities before commencement of data collection. Approval was obtained from the Kenya Medical Training College (KMTC), Bomet County

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Department of Health, Moi Teaching and Referral Hospital Institutional Research and Ethics Committee (MTRH-IREC), and National Commission for Science, Technology and Innovation (NACOSTI).

Participation in the study was voluntary.

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