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Original article

Barriers faced during the management of Diabetic patients with comorbidities at Jinja regional referral Hospital. A cross-sectional study.

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Abstract

Background

Patients with comorbidities also require more frequent hospitalizations, emergency department visits, and outpatient appointments**.** The study aims to assess the barriers faced during the management of patients with comorbidities at Jinja Regional Referral Hospital.

Methodology

A descriptive cross-sectional study that employed quantitative data techniques was used. Simple random sampling was used to select participants in the study. Descriptive statistics was used to assess the frequency distribution of the three risk categories. A Chi-square test assessed the categorical variables and trends in the prevalence of diabetic comorbidities.

Results

Most patients were married 191(67.3%), majority came from rural areas 167(58.8%), majority of the patients were employed 144(50.7%), Patients with type 1 DM were 41(14.4%) and type 2 DM were 243(85.6%). The number of diabetic patients who faced difficulties in transportation to the health facility was 41, those who had limited self-care services were 36, patients who faced a delay in care seeking were 55, patients who could not afford medicines were 103 and lastly, patients who had a poor attitude towards health workers were 54

Conclusion

The barriers faced in the management of patients with diabetes were transport difficulties, limited self-care services, delayed care seeking, unaffordable medical care, and poor attitudes of health workers.

Recommendation

The Ministry of Health through health workers at all levels implements nationwide screening programs for diabetes and its comorbidities, especially among high-risk populations to reduce the risk of developing diabetic comorbidities.

Keywords: *Barriers, Comorbidities, Management of Diabetic patients, Self-care services*
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Background

Patients with comorbidities also require more frequent hospitalizations, emergency department visits, and outpatient appointments. Managing comorbidities also leads to additional expenses for medications, tests, and procedures. This requires healthcare providers to allocate more time, staff, and resources to manage complex cases. Comorbidities also increase the burden on primary care adding to the workload of health care workers. The increased demand for services can strain healthcare infrastructure including facilities, equipment, and technology. Several barriers in Uganda have been identified for creating awareness regarding diabetes in society. Poor economic status, lack of accessibility to health services, and inadequate follow-up are the barriers to diabetes identified (Balasaheb, 2017). In the West side of Buffalo, New York, USA, lifestyle behaviors, informational, psychological, and financial factors; patient education processes, financial protection, service delivery, family support, social support, and environmental factors have been identified as the major barriers to the individual, health system, and context influence T2D management among slum-dwellers (Ghammari, 2023).

In Belarus, among 814 adults aged 18 years and over who visited outpatient health care units and hospitals revealed that the main barriers to adherence were insufficient

knowledge of diabetes and its treatment and an underestimation of the role of behavioral risk factors in health, combined with financial difficulties (Sachkouskaya, 2022). Among slum-dwellers, barriers, and facilitators to type 2 diabetes management among slum-dwellers found that health system factors consisting of three themes: patient education processes, financial protection, and service delivery, and contextual factors consisting of three themes: family support, social support, and environmental factors were the major barriers in the management of diabetic patients (Ghammari et al., 2023). In Zealand, barriers to diabetes self-management in a subset of New Zealand Adults with Type 2 Diabetes were found poor glycemic control, biopsychosocial factors, and knowledge about diabetes. Specifically, financial concerns, social stigma, medication side effects, and cognitive impairment due to hyperglycemia were commonly reported as barriers to medication use, other barriers included a lack of knowledge about their condition, poor relationships with healthcare professionals, and a lack of relevant resources to support diet and weight loss (Chepulis et al., 2021). The study aims to assess the barriers faced during the management of patients with comorbidities at Jinja Regional Referral Hospital.

Methodology

Study Design

A descriptive cross-sectional study that employed quantitative data techniques was used to enable the researcher to get information from the selected population and describe the functional relationships that describe the prevalence of comorbidities among patients with diabetes. This design enabled the researcher to collect data at a single point in time without follow-up.

Study setting

The research was carried out from Jinja Regional Referral Hospital in Jinja district because of the increase in the number of people with diabetes. The hospital is located in the South Eastern region of Uganda in Jinja Central Division, Jinja Municipal Council near the source of the Nile. The hospital was founded in 1962 and has a bed capacity of 600. The hospital serves several patients across the region some of who are referred from other hospitals and health center IVs while others are self-referred.

Among the services provided include Eye services, medical, surgical, orthopedic, private wing, gynecology, pediatric, dental, ENT, lab, X-ray, scan, immunization, HIV testing, counseling, reproductive health services, and safe male circumcision.

The hospital has 15 wards which include; surgical female/male, medical male/female, TB, Eye, Urological, Grade A, An annex, psychiatric and children's wards, intensive care unit, postnatal, and maternity wards. The clinic for patients having diabetes is located in the patient Department. The diabetic clinic receives on average 100 patients every Thursday of the week and that gives approximately 400 patients monthly.

The patients who come to attend this clinic mainly reside in the areas neighboring Jinja town like Bugembe, Wanyange, Njeru, and Mafubira, and within the Municipality. The people in the Jinja area feed on staple foods like sweet potatoes, cassava, yams, and matooke. The main economic activities carried out by the people include subsistence farming, sugar cane planting, bricklaying, and fishing especially those staying near the lake shores.

Study population

The study was carried out among patients with diabetes at the diabetic clinic of Jinja Regional Referral Hospital.

Sample size determination

Since the outcome(dependent) of the prevalence of comorbidities will be reported in proportions, Kish and Leslie's sample size technique will be used to calculate the number of participants. The study will assume the use of a 95% confidence interval, a 5% margin of error, and use proportion of 50% will be used.

Therefore, sample size will be calculated as follows;

$$N = Z2pq/d2$$

n= target population

Z= 1.96 (the standard normal deviation at 95% confidence interval)

p= proportion that will give maximum sample size (50%)

q= 1-p, =1-0.5 = 0.5

d= level of confidence at 95% = 0.05

n= Z2pq/d2

= 1.96*1.96*0.5*0.5/0.05*0.05

= 284

A sample size of 284 was used.

Sampling procedure

A simple random sampling method was used to select participants in the study. In this case, the researcher wrote numbers A and B on a paper, folded them, and put them in a box, and each respondent was allowed to choose. The respondents who chose A fell in the study population and those who chose B were eliminated from the study. Sampling was done for 14 days and 20 respondents were selected per day to get the required number of respondents.

Inclusion criteria

Patients having diabetes attending Jinja Regional Referral Hospital were included in the study

Exclusion criteria

The study excluded patients who were not of sound mind.

Variables
Barriers faced during the management of patients with comorbidities

Data collection instruments
The questionnaire used in this study was developed from the Canadian Diabetes Risk Assessment
tool, commonly known as CANRISK developed to detect prediabetes and diabetes in a multi-ethnic population living in Canada and it is adapted for the Uganda population.

Quality control
It was done through pre-visiting, training of research assistants, and pretesting of data abstraction tools.

Storage
Data was stored on a computer and a flash disc.

Pre-testing
The study tool was tested on 5 patients in the diabetic clinic from JRRH and necessary adjustments were made to ensure validity and reliability. The researcher outlined his objectives, developed a test guide, conducted a pretest, analyzed data, interpreted it then summarized the findings. Its main purpose is to identify problems during data collection.

Pre -visiting
During pre-visiting, the researcher went to the clinic for patients having diabetes to check how the health workers record and receive the patients.

Data collection procedure
After receiving the introductory letter from James Lind Institute, the researcher took it and submitted it to the IRBS of Jinja Regional Referral Hospital for permission to carry out data collection in the hospital. The information from primary data was obtained through a paper-based questionnaire with 26 questions. As a researcher having the objectives of the study mentioned in the first chapter; this enabled me to explain certain items on the questionnaire to the respondents so that it would be properly filled. The questionnaire was administered by the researcher face to face to the respondents. When the researcher reached the diabetic clinic where there were many people, she talked to those people by introducing both herself and the study, people received
information about the purpose of the study, the criteria of the study, what the study looks for like
responding to close questions and anthropometric measurements. Each person motivated and who
met the criteria received the information sheet and signed consent then responded to the study
questions.

Data management
This included data cleaning, entering, editing, and coding by the researcher before leaving the study setting to ensure that there were no mistakes and to ensure timely checking for completeness of the questionnaire before leaving the data collection site.
If any are found, they are corrected before leaving the study setting. The data was stored on the computer.

Data analysis and presentation.
Descriptive statistics was used to assess the frequency distribution of the three risk categories. A
The chi-square test assessed the categorical variables and trends in the prevalence of diabetic comorbidities. Further analysis was done using SPSS (Version 24). Blood pressure, smoking, and alcoholism were
analyzed separately from the CANRISK questions as these parameters are not included in the
eleven scored questions from the used tool.
quantifiable data was analyzed using graphs, tables, and pie charts. Descriptive statistics, frequencies, percentages, and mean/standard deviations were used.

Ethical considerations
Before the researcher went to collect data, a research proposal was submitted to the James Lind Institute research committee for approval. An introductory letter was given to the researcher to take to the relevant authority of their research area to seek permission to carry out the research.
The researcher ensured to get informed consent from the respondents and coded the data collected for confidentiality. Privacy will be ensured by using initials for the names of participants who would have voluntarily consented to be part of the study.

Results
Socio-demographic characteristics of patients

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Table 1 Sociodemographic characteristics of patients

Variable	category	frequency	Percentage (%)
sex	Male female	99 185	34.9 65.1
Place of residence	Urban rural	117 167	41.2 58.8
Occupation status	Employed unemployed	144 140	50.7 49.3
Marital status	Single Married	93 191	32.7 67.3

Table 1, The number of females was 185(65.1%) and males were 99(34.9%), majority of the patients came from rural areas 167(58.8%), majority of the patients were employed 144(50.7%), majority of the patients were also married 191(67.3%)

Table 2: Demographic and clinical characteristics of patients with diabetic comorbidities

Variable		Mean (±s.d)	+/-SD
Age		49.7	13.09
BMI		27	9
		Frequency	Percentage frequency
Sex	Male Female	99 185	34.9 65.1
Type of DM	Type 1 Type 2	41 243	14.4 85.6
Type of treatment	insulin Oral both	32 187 65	11.3 65.8 22.9
Duration of DM	Below 5yr More than 5 years	92 192	32.4 67.6
Smoking	Yes No Quit	32 203 49	11.3 71.5 17.3
Alcohol	Yes No Quit	113 128 43	39.8 45.1 43
Adequate physical activity	Yes No	105 179	37.0 63.0
Cholesterol levels	Yes No	94 190	33.1 66.9
HIV Status	Positive Negative	67 217	23.6 76.4

Eye problems	Yes	64	22.5
	No	220	77.5
Kidney problems	Yes	51	18
	No	233	82
Heart or brain problems	Yes	78	27.5
	No	206	72.5
Footing problems	Yes	36	12.7
	No	248	72.5
Peripheral neuropathy	yes	75	26.4
	No	209	73.6

Table 2, the mean age was 49.7 and the mean BMI was 27, the number of patients who were females was 185(65.1%) and males were 99(34.9%). The number of patients with type 1 DM was 41(14.4%) and type 2 DM was 243(85.6%). The number of patients on oral treatment for DM was 187(65.8%) and insulin was 32(11.3%). The number of patients who had DM for less than 5 years was 92(32.4%) and for more than 5 years was 192(67.6%). The number of patients who were smoking was 32(11.3%) and 113(39.8%) were taking alcohol.
The number of patients who engaged in adequate physical activities was 105(37%). The number of patients with high cholesterol levels was 94(33.1%). The number of patients who were HIV positive was 67(23.6%). The patients who had eye problems were 64(22.5%). The number of patients with kidney problems was 51(18%) and heart or brain problems were 78(27.5%). The number of patients with footing problems was 36(12.7%).
The number of patients with DPN was 75(26.4%).

Barriers to management of diabetic patients

Table 4; a table showing the barriers faced by patients in the management of diabetes.

barrier	category	frequency	Percentage frequency
Transport difficulties	Yes	41	14.5
	No	241	85.5
Limited self-care services	Yes	36	12.3
	No	248	87.7
Delayed care seeking	Yes	55	19
	No	229	81
Unaffordable medicine	Yes	103	36.5
Poor attitude of health workers	No	180	64.5
	Yes	54	19
	no	230	81

Table 4 shows the number of diabetic patients who faced difficulties in transportation to the health facility was 41, those who had limited self-care services were 36, patients who faced a delay in care seeking were 55, patients who could not afford medicines were 103 and lastly patients who had a poor attitude towards health workers were 54

Discussion

Barriers faced in the management of diabetic patients.

The barriers faced by respondents in the management of DM were transport difficulties, limited self-care services, delayed care seeking, unaffordable medicines, and poor attitudes of health workers. This is because Uganda is low low-income developed country and as a country, the budget allocated for health care is still small and cannot meet the health needs of the population.

From the study, most respondents were from rural areas with poor roads and therefore they could not access the hospital in time. The cost of treatment for DM involves many drugs that the patients cannot afford hence facing difficulties in getting care.

The health workers are equally paid less salary compared to the patient's demands and large numbers hence they can't attend to the patients with care.

These findings are contrary to a study done by (Habib et al., 2020) which found that patient education processes, financial protection, service delivery, family support, social support, and environmental factors were the main barriers faced in the management of DM patients.

Conclusion

The barriers faced in the management of patients with diabetes were transport difficulties, limited self-care services, delayed care seeking, unaffordable medical care, and poor attitudes of health workers.

Recommendation

The Ministry of Health through health workers at all levels implements nationwide screening programs for diabetes and its comorbidities, especially among high-risk populations to reduce the risk of developing diabetic comorbidities.

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List of abbreviations

DM	Diabetes mellitus
T2DM	Type 2 Diabetes Mellitus
BMI	Body Mass Index

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Conflict interest

The author did not declare any conflict of interest

Author Biography

Violet Alimwenda is a student of the Master of Public Health Management

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