

Healthcare system factors hindering effective utilization of diabetic medications among patients aged 45 years and above attending the DM clinic at Mpigi HCIV in Mpigi district. A cross-sectional study.

Page | 1

Precious Bronia N Matovu, Jimmy Okwany*, Dr. Jane Frank Nalubega
Mildmay Institute of Health of Sciences

Abstract

Background

Limited access to healthcare services can significantly impact medication utilization among older patients with diabetes. The study aims to assess the healthcare system factors hindering the effective utilization of diabetic medications among patients aged 45 years and above attending the DM clinic at Mpigi HCIV in the Mpigi district.

Methodology

The study employed a cross-sectional observational study design. Simple random sampling was used to select participants the study involved simple random sampling. A sampling frame was prepared, consisting of eligible patients attending the diabetic clinic at Mpigi HCIV. Quantitative data was analyzed using appropriate statistical techniques such as descriptive statistics like frequencies, percentages, means, and standard deviations, which were calculated to describe

Results

Most of the 27 participants were married, accounting for 54%, 14 participants reported having a high income, comprising 38%, and the majority that is 31 participants had a low income, making up 62% of the group. 34% that is 17 of the participants mentioned the distance from the health facility was a challenge, 24% that 12 of the participants mentioned the availability of drugs at a health facility as a challenge, 42% that is 21 of the participants mentioned that the waiting time is too long at the facility.

Conclusion

The study also highlights the healthcare system-related challenges, including limited access to healthcare services. Addressing these barriers is crucial to improving medication utilization and overall diabetes management.

Recommendations

Encourage family involvement and peer support groups to provide a strong social support network, which can positively impact medication utilization.

Keywords: Effective utilization of diabetic medications, DM clinic at Mpigi HCIV, Healthcare system-related challenges.

Submitted: 2023-11-15 **Accepted:** 2024-06-30 **Published:** 2025-07-01

Corresponding Author: Jimmy Okwany[†]

Email: jimmy.okwany@mihs.ac.ug

Mildmay Institute of Health of Sciences.

Background

According to the International Diabetes Federation (IDF), an estimated 537 million adults aged 20-79 years had diabetes in 2021, and this number is projected to rise to 642 million by 2040 (International Diabetes Federation, 2021). The prevalence varies across different regions of Uganda, with higher rates observed in urban areas compared to rural areas (MOH, 2019). However, the specific prevalence of diabetes in the Mpigi district is not well-documented, highlighting the need for local studies to

provide accurate data. Limited access to healthcare services can significantly impact medication utilization among older patients with diabetes. Factors such as long waiting times, lack of transportation, and the availability of clinics can hinder regular visits to the DM clinic, leading to suboptimal medication adherence (Arcury et al., 2021). Effective communication between healthcare providers and patients is vital for medication adherence. Complex medical terminologies or inadequate explanations of treatment plans can lead to misunderstandings and non-

adherence (Chew et al., 2019). Enhancing communication skills, promoting patient education, and utilizing clear, patient-friendly language can improve medication utilization among this population. The cost of diabetic medications and limited insurance coverage can present significant barriers to medication adherence among older patients (Turchin et al., 2018). Patients may be forced to make difficult financial decisions, leading to medication non-adherence or the use of cheaper, less effective alternatives. Addressing affordability issues and expanding insurance coverage can facilitate better medication utilization. Inadequate medication management and lack of follow-up can contribute to medication non-adherence. Older patients may forget to take their medications or run out of supplies without timely refills (McHorney et al., 2018). The study aims to assess the healthcare system factors hindering the effective utilization of diabetic medications among patients aged 45 years and above attending the DM clinic at Mpigi HCIV in the Mpigi district.

Methodology

Study Design and Rationale

The study employed a cross-sectional observational study design. This design involves collecting data at a single point in time from a sample of participants to examine associations between variables by collection and analysis of quantitative data, providing a more comprehensive understanding of the research topic. The rationale of this design was to capture the complexity of factors that impact medication utilization and to explore the perspectives of both patients and healthcare providers which is a snapshot of medication utilization patterns and associated factors among diabetic patients at Mpigi HCIV.

Study Area

The study was conducted in the Mpigi district, Uganda. Mpigi is located in the Central Region of Uganda. It is approximately 37 kilometers southwest of Kampala, the capital city of Uganda. The study area specifically focused on the diabetic clinic within Mpigi HCIV (Health Center IV), which serves as the primary healthcare facility for diabetes management in the district.

Study Population

The study population comprised diabetic patients who were currently receiving treatment at Mpigi HCIV. The inclusion criteria encompassed patients above 45 years and both genders, and healthcare providers involved in the care and management of diabetic patients, including doctors, nurses, and pharmacists.

The study excluded patients who were unable or unwilling to participate in the research.

Sample Size Determination

The sample size (n) was calculated as below,

$n = QR/O$

Q= Total number of days that will be spent on data collection (10)

R= maximum number of respondents to be worked on per day (5)

O= maximum time that will be spent on each respondent (1 hour)

$n = (10 \times 5)/1$

$n = 50$

Therefore, the sample size was 50 participants

Sampling Techniques

Simple random sampling was used to select participants from the diabetic patient population at Mpigi HCIV. This involved randomly selecting participants from the sampling frame. Each eligible patient had an equal chance of being selected, ensuring fairness and reducing bias in the sample, enabling the findings to be generalized to a larger population.

Sampling procedure

The sampling procedure for the research study involved simple random sampling. A sampling frame was prepared, consisting of eligible patients attending the diabetic clinic at Mpigi HCIV. Participants were randomly selected from the sampling frame, ensuring each eligible patient had an equal chance of being chosen. The selected patients were contacted and invited to participate, obtaining their informed consent. Data was collected using appropriate methods. Simple random sampling ensures fairness and minimizes bias, allowing for the generalizability of findings to the broader population of patients attending the clinic.

Data Collection Methods

Data will be collected using a combination of quantitative surveys and qualitative interviews. The surveys will provide quantitative data on medication adherence, knowledge about diabetic medications, and perceived barriers to utilization. Qualitative interviews will explore the perspectives of healthcare providers on the factors influencing medication utilization.

Data Collection Tools

The quantitative data was collected using questionnaires administered to diabetic patients. The questionnaires were designed to gather information on medication adherence, knowledge about diabetic medications, perceived barriers to utilization, and socio-demographic details. The qualitative data was collected through in-depth interviews with healthcare providers, using open-ended questions to

explore their perspectives and experiences. The questionnaires underwent pilot testing to ensure clarity and appropriateness before full-scale data collection.

Data Collection Procedure

The data collection procedure involved approaching eligible diabetic patients and seeking their voluntary participation in the study. Participants were informed about the purpose and nature of the study, and their consent was obtained before data collection. Surveys were administered to patients, and interviews were conducted with healthcare providers. All data collection was conducted in a private and confidential setting.

Study Variables.

The study variables were categorized as independent and dependent variables. The independent variables encompassed the level of knowledge about diabetes and its management, demographic factors (age, gender, education level, income), duration of diabetes, previous diabetes education, access to healthcare resources, perceived barriers to medication utilization (cost, side effects), social support, and healthcare provider communication. These variables served as factors that could influence the dependent variable, which is medication utilization (adherence or non-adherence). Additionally, the presence or absence of diabetes-related complications was considered an outcome variable that is dependent on medication utilization. Through the use of surveys, interviews, and structured questionnaires, the study aimed to explore the associations between these variables and medication utilization to enhance diabetes management outcomes in Mpigi HCIV

Quality Control

To ensure data quality, standardized data collection tools were used, and pilot testing was conducted to assess the clarity and appropriateness of the questionnaires and

interview guides. Regular supervision and monitoring were implemented to ensure adherence to the research protocols and data quality standards. Additionally, data entry was conducted by trained personnel, and data cleaning procedures were implemented to detect and correct any errors or inconsistencies in the data.

Data Analysis and Presentation

Quantitative data was analyzed using appropriate statistical techniques such as descriptive statistics like frequencies, percentages, means, and standard deviations, which were calculated to describe the characteristics of the study population and medication utilization patterns and regression analysis. The qualitative data from the interviews was transcribed verbatim and subjected to thematic analysis to identify key themes and patterns. The findings from both quantitative and qualitative analyses were integrated to provide a comprehensive understanding of the factors influencing medication utilization. The results were presented using tables, charts, and narrative descriptions to facilitate data interpretation and communication.

Ethical Considerations

Ethical considerations were upheld throughout the research process. The study obtained ethical clearance from the relevant institutional review board or ethics committee. Informed consent was obtained from all participants, ensuring their voluntary participation and confidentiality. Participants had the right to withdraw from the study at any time without facing any negative consequences. The research team also adhered to data protection and privacy regulations when collecting, storing, and analyzing the data.

Results

Socio-demographic Characteristics of the Respondents

Table 1: socio-demographic characteristics of the participants (n=50)

VARIABLE	CATEGORY	FREQUENCY	PERCENTAGE
AGE	45-50	17	34
	Above 50	33	66
		50	100
GENDER	Male	34	68
	Female	16	32
		50	100
EDUCATION LEVEL	None	1	2
	Primary	32	64

	Secondary	10	20
	Tertiary	7	14
		50	100
MARTIAL STATUS	Married	27	54
	Single	14	28
	Divorced	9	18
		50	100
INCOME LEVEL	High	19	38
	Low	31	62
		50	100

Table 1: 17 participants fell within the age group of 45-50, accounting for 34%, whereas most that is 33 participants were above the age of 50, making up 66% of the group. The majority, 34 participants identified as male, representing 68%, and 16 participants identified as female, comprising 32% of the group. 1 participant reported having no formal education, accounting for 2%, however, the majority that is 32 participants had a primary education, making up 64%, 10 participants held a secondary education,

representing 20%, 7 participants had a tertiary education, comprising 14% of the group. Most that is 27 participants were married, accounting for 54%, 14 participants were single, making up 28%, and 9 participants were divorced, representing 18% of the group. 19 participants reported having a high income, comprising 38%, and the majority that is 31 participants had a low income, making up 62% of the group.

Healthcare System-Related Factors Hindering Effective Utilization of Diabetic Medication

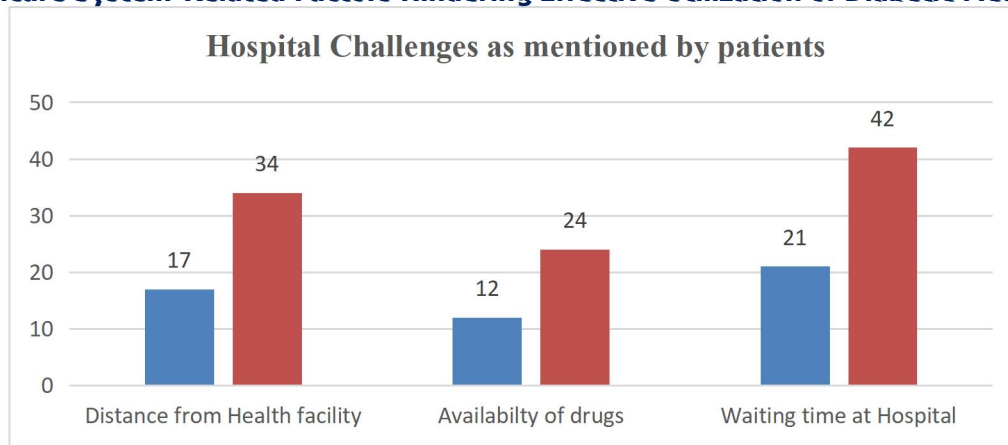


Figure 1, 34% that is 17 of the participants mentioned the distance from the healthy facility was a challenge, 24% is 12 of the participants mentioned the availability of drugs at the healthy facility as a challenge, 42% that is 21 of the participants mentioned that the waiting time is too long at the facility.

Discussion

Healthcare System Factors

The study identifies healthcare system-related factors that hinder the effective utilization of diabetic medications, including limited access to healthcare services, communication issues, and cost barriers. These findings

align with the literature, which discusses how access to healthcare services, communication, and affordability can significantly impact medication utilization.

Conclusion

The study also highlights the healthcare system-related challenges, including limited access to healthcare services. Addressing these barriers is crucial to improving medication utilization and overall diabetes management.

Study Limitation

Several limitations were encountered during the research study. Firstly, the study was conducted in a specific health

center and was not generalizable to other healthcare settings. Secondly, self-report measures used for medication adherence and knowledge may have been subject to recall bias or social desirability bias. Additionally, the qualitative findings may have been influenced by the perspectives and experiences of the selected healthcare providers.

Page | 5

Recommendations

Encourage family involvement and peer support groups to provide a strong social support network, which can positively impact medication utilization. Explore strategies to make diabetic medications more affordable for individuals with low income.

Address barriers to healthcare access, including long waiting times and transportation issues, to ensure regular clinic visits and medication refills.

Enhance communication between healthcare providers and patients, utilizing patient-friendly language and providing clear explanations of treatment plans.

Simplify treatment plans and conduct regular medication reviews to reduce the complexity of medication regimens, especially for patients with multiple comorbidities.

Implement systems for regular follow-up with patients to monitor their adherence, address concerns, and provide ongoing support.

Recognize the influence of psychological factors, such as depression and anxiety, on medication utilization and provide mental health support and counseling as needed.

Acknowledgment

My sincere gratitude goes to the Almighty God whose unwavering presence has illuminated my academic journey and bestowed blessings beyond measure. To my beloved family, you are the heart and soul of my life. Your love, encouragement, and support have been my anchor through every challenge and triumph. I extend heartfelt appreciation to all those dedicated souls who tirelessly strive to ensure the well-being of others. Your selflessness and commitment inspire hope and make the world a better place. With immense gratitude and a renewed sense of purpose, I acknowledge the importance of unity, empathy, and support offered by my colleagues and my supervisor, both at school and while in the field. The staff of Mpigi HCIV and participants, thank you for being so welcoming

and cooperative. Thank you, May the Almighty bless you all.

Abbreviations

DM:	Diabetes Mellitus
IDF:	International Diabetic Federation
SSA:	Sub-Saharan Africa

Abbreviation

DM:	Diabetes Mellitus
HCIV:	Health center IV

Source of funding

There was no source of funding.

Conflict of interest

The author did not declare any conflict of interest.

Author Biography

Precious Bronia N Matovu, Jimmy Okwany
Mildmay Institute of Health of Sciences

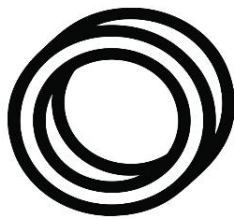
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Page | 2

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