Journal of World Health Research
Vol. 2 No. 5 (2025): May 2025
https://doi.org/10.71020/jwhr.v2i5.27
Original Article

FACTORS AFFECTING TREATMENT ADHERANCE AMONG PATIENTS ON SURGICAL WARDS SOROTI REGIONAL REFERRAL HOSPITAL. A CROSS-SECTIONAL STUDY.

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Abstract

Background

Non-treatment adherence has compromised the quality of care, strained healthcare resources, and resulted in poor health outcomes. Therefore, this study was conducted to determine the factors affecting treatment adherence among patients in surgical wards at Soroti Regional Referral Hospital.

Methodology

A descriptive cross-sectional study design was conducted, which utilized quantitative data collection and analysis techniques. The study was conducted at SRRH, surgical wards, with a sample size of 40. Questionnaires were used to collect data, which were simply randomly sampled. The data collected was analyzed by SPSS version 22, and the results are presented in tables and figures.

Results

The sample size was 40, and most of the respondents were (57.5%) were above 45 years old, resided in rural areas (62.5%), attained primary-level education (52.5%), married (40%), unemployed (57.5%), and had low-income status (52.5%). Many respondents (70%) sometimes forgot to take medication, (60%) rarely experienced side effects, (45%) believed in spiritual healing, (37.5%) in traditional beliefs, and (52.5%) deemed drug costs expensive. A significant proportion (62.5%) reported poor relationships with healthcare providers, and 57.5% received occasional education on prescribed treatment. Access to essential drugs was inconsistent, with 50% reporting difficulties.

Conclusion

There was poor treatment adherence among patients on surgical wards, SRRH. There is a need for continuous patient health education and improved patient-health-provider relationships.

Recommendation

The health workers should provide personalized support and education to patients, considering their socioeconomic background and health beliefs, emphasize medication adherence, and provide reminders to patients.

Keywords: *Treatment Adherence, Surgical Wards, Soroti Regional Referral Hospital, Soroti City.*
Submitted: *2024-08-12* ***Accepted:*** *2025-01-10* ***Published:*** *2025-05-30*

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Background of the study

The World Health Organization defines treatment adherence as the degree to which a patient follows their healthcare provider`s prescribed treatment plan, including taking medication as directed (Kołtuniuk et al., 2022). The WHO highlights five key factors that affect treatment adherence, including the healthcare system's effectiveness, the individual's health status, the treatment regimen, socioeconomic circumstances, and personal characteristics (Tibble et al., 2021). Poor treatment adherence may lead to increased morbidity, mortality, and costs to the healthcare system. Therefore, it is important to understand the patient's true adherence to treatment, understand the causes of low adherence, and take actions to improve adherence (Kubica et al., 2017).

Rashid et al 2020) define adherence as "the extent to which a person's behavior corresponds with the agreed recommendations of a Health care provider". Treatment adherence requires a multifaceted approach that tackles systemic barriers and prioritizes the patient-provider relationship, which is crucial for identifying adherence issues and tailoring interventions to individual patient needs from a practical and practitioner-focused perspective (Poulter et al., 2020).

Non-adherence is influenced by a range of factors, including patient demographics, socioeconomic status, other health conditions, treatment specificities, healthcare team and system-related factors, and patient individuality (Burnier et al., 2019).

From a global view, about 40% to 60% of patients with chronic diseases are non-adherent to treatment (Persaud et al., 2020). Globally, 11.4% was the percentage for non-adherence among male patients in a study conducted in Japan and indicated age as a risk factor for increased non-adherence (Akamine et al., 2022). In the study conducted in China using the Morisky medication Adherence scale (MMAS), about 50% is the mean treatment non-adherence rate for chronic diseases in developed countries, and it is 20% to 30% among inflammatory bowel disease (IBD) patients in Asia (Xu et al.,2022)

A study conducted in Ethiopia revealed that nearly one-third (27.4%) of patients undergoing anti-tuberculosis treatment failed to adhere to their medication regimen (Bereda et al., 2021). The study conducted in various African countries revealed the following treatment adherence rates among glaucoma patients: Nigeria 63.5%, Ghana 60.1%, and Ethiopia in two separate studies –Jima University Specialized Hospital was 32.5% and Menelik II referral hospital 42.6 % (Birhanie et al., 2019).

According to a survey done in Kenya, approximately half of the patients (46.6%) reported not taking their medications as prescribed. Further analysis revealed that men tend to have a slightly higher rate of non-adherence compared to women, although this difference was not statistically significant (Mutual et al.,2023). About 62.3% of inpatients with prescribed antibiotics, mostly from the User group of antibiotics (ceftriaxone, metronidazole, or ampicillin–cloxacillin). The general antibiotic adherence prescriptions to the Tanzania STG were high (84.0%), apart from Sekou Toure Regional Referral Hospital (68.0%) and Maweni Regional Referral Hospital (57.8%) (Seni et al., 2020).

Methodology

Study Design and rationale

This was a descriptive cross-sectional study design with quantitative data collection and analysis. It was descriptive as it enabled respondents to explain their feelings and experiences well from their point of view. It was a cross-sectional study because data was collected at a single point; thus, it was cheap, exhaustive, and time-saving for data collection.

Study setting.

The study was conducted in Soroti Regional Referral Hospital (SRRH), one of the 13 referral hospitals in Uganda and located in Soroti City. Soroti City is found in the eastern part of Uganda. Soroti Regional Referral Hospital is located in the Northern division of Soroti, approximately 296km by road northeast of Kampala. It is a referral hospital for the districts of Amuria, Kaberamaido, Bukedia, Katakwi, Kumi, Ngora, Serere, and Soroti. Soroti Hospital is located in the central business district of the city of Soroti, about 102km (63 mi) by the road, northwest of Mbale Regional Referral Hospital, in the city of Mbale. This is approximately 123.5km (77 mi), southeast of Lira Regional Referral Hospital, in the city of Lira. Soroti Regional Referral Hospital is located about 294km(183 mi), by road, northeast of Mulago National Referral Hospital, in Kampala, the capital city of Uganda.

The coordinates of SRRH are 1042`58.0''E (latitude: 1.716111; Longitude:33.613056). It serves a population of 296833 people with a capacity of over 300 beds, but more patients than it can accommodate due to high demand in the eastern region of Uganda.

Services provided included ART clinic services, medical and surgical services, ENT services, mental health services, and gynecological services, among others.

SRRH has surgical wards with 50 patients, 20 patients being discharged and 25 patients coming for review. Therefore, the researcher interviewed 40 patients.

The area was chosen because it gave the researcher firsthand information and real experience about treatment adherence among surgical patients, therefore, it was also cost-friendly and easily accessible to the researcher from school, and it serves a large population of people from districts around.

Study population

The study population included all inpatients admitted in surgical wards 1 and 2 and health staff at SRRH.

Sample size determination

According to Keish and Leslie 1965, a sample size of 30-200 suffices if 20-80% of the attributes were present. Based on this statement, a sample of 40 respondents was used because it was within the range.

Sampling procedure

A simple Random Sampling (SRS) method was used to select the required respondents. First, the researcher identified the participants who were inpatients and health workers at SRRH. The researcher on the first day cut 20 equal-sized pieces of paper of the same appearance and then purposely labeled 10 of them "YES'' and the other "NO. The pieces of paper were folded uniformly, put in a container, and mixed thoroughly. Then, the researcher invited the participants one by one to pick a paper. Those who picked "YES'' were congratulated and qualified for the study. However, those who picked "NO" were thanked for showing interest and released. This process was repeated daily for 4 consecutive days until the sample size of 40 respondents was achieved.

https://doi.org/10.71020/jwhr.v2i5.27

Inclusion Criteria
Respondents were inpatients 17 years and above in surgical wards of sound mind who consented to participate in the study.

Exclusion criteria
Inpatients less than 17 years old and health staff who were discharged before the data collection

Independent variables
These easily manipulate or change and are assumed to directly affect the dependent variables. These are factors affecting treatment adherence, which were patient-related factors and health facility-related factors.

Dependent variable
Treatment adherence

Research instruments
In the study, a researcher developed a self-administered questionnaire. The questionnaire consisted of open and closed-ended questions to elicit the experience of the respondents without discrimination.
The tools were reviewed by the researcher with the help of the supervisor for validity and reliability.

Data collection procedure
The researcher submitted a research proposal to the academic registrar of Soroti School of Registered Comprehensive Nursing.
The researcher was given an introductory letter from the Soroti School of Registered Comprehensive Nursing.
Permission was granted from the medical superintendent of Soroti Regional Referral Hospital, and two research assistants were trained on the conduction of research, data collection, and use of the tools.
The researcher introduced himself, the topic, and the purpose of the study to the respondents to create trustworthiness and confidentiality.
The researcher administered the structured questionnaire by himself to the respondents.

Data management
Upon collection of data, sorting, coding, and proper arrangement were performed. Data was reviewed, entered in Excel, and underwent quality control measures.

Data analysis
The data collected was analyzed with the help of the Statistical Package of Social Sciences (SPSS) program version.

Ethical considerations
The researcher observed the ethical code of conduct for nursing and professional health workers at all levels during the study. The researcher acquired a human introductory letter from the school, introducing him to the study area for permission to conduct the research study. The researcher introduced himself and obtained consent from the respondents before administering the questionnaire. The respondents were assured of privacy throughout the study, and the responses were kept confidential.

Informed consent
All the study respondents consented to this study.

Results

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Socio-Demographic Data of Participants Table 1: Socio-demographic data (n=40)

Variable	Frequency (n=40)	Percentage (%)
Age		
18-25years	8	20
26-35 years	6	15
36-45 years	3	7.5
Above 45 years	23	57.5
Place of residence		
Rural setting	25	62.5
Urban setting	15	37.5
Educational level		
Primary	21	52.5
Secondary	9	22.5
Tertiary/university	10	25
Others	0	0
Marital status		
Married	16	40
Single	12	30
Divorced	8	20
Widowed	4	10-
Employment status		
Unemployed	23	57.5
Self employed	8	20
Civil servant	4	10
Others specify (peasant)	5	12.5

N = 40, primary data (2024).

From table1, Majority 23/40(57.5%) of the respondents were above 45years of age. The majority 25/40(62.5%), were from a rural setting. The majority 21/40(52.5%), attained the primary level. 16/40(40%) were married and12/40(30%) were single. The majority, 23/40 (57.5%), were unemployed.

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Patient-related factors affecting treatment adherence among patients

Table 2 shows some patient-related factors affecting treatment adherence among patients in surgical wards.

Variables (responses)	Frequency (n=40)	Percentage (%)
Cultural norms		
Stigma	6	15
Family influence	13	32.5
Community norms	9	22.5
Influenced treatment decisions	13	32.5
Side effects of drugs		
Always	5	12.5
Sometimes	7	17.5
Rarely	24	60
Never	4	10
Forgetfulness		
Always	7	17.5
Sometimes	28	70
Rarely	3	7.5
Never	2	5
Religious beliefs		
Spiritual beliefs	18	45
Traditional beliefs	15	37.5
Others	7	17.5

N = 40, primary data (2024).

From Table 2, the Majority, 13/40 (32.5%) of respondents reported that they had hindrances from both family and treatment decisions. The majority, 24/40 (60%) of respondents, reported having side effects rarely. The majority, 28/40 (70%) of respondents reported that they could forget sometimes to take drugs. The majority 18/40(45%) of respondents, reported that their beliefs in spiritual healing hindered them, followed 15/40(37.5%) who had hindrances from traditional beliefs.

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Figure 1, showing people responsible for reminding respondents of their treatment (n=40)

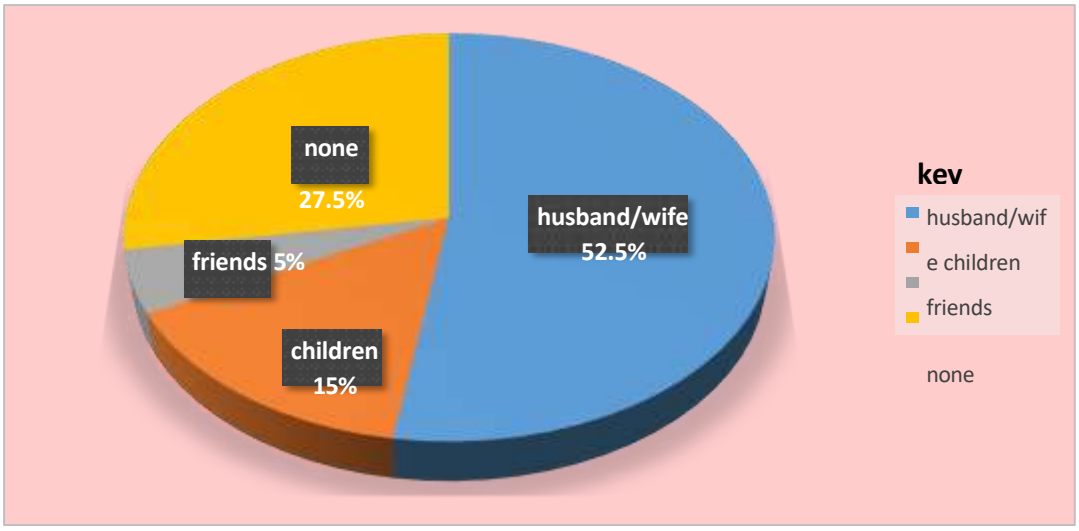
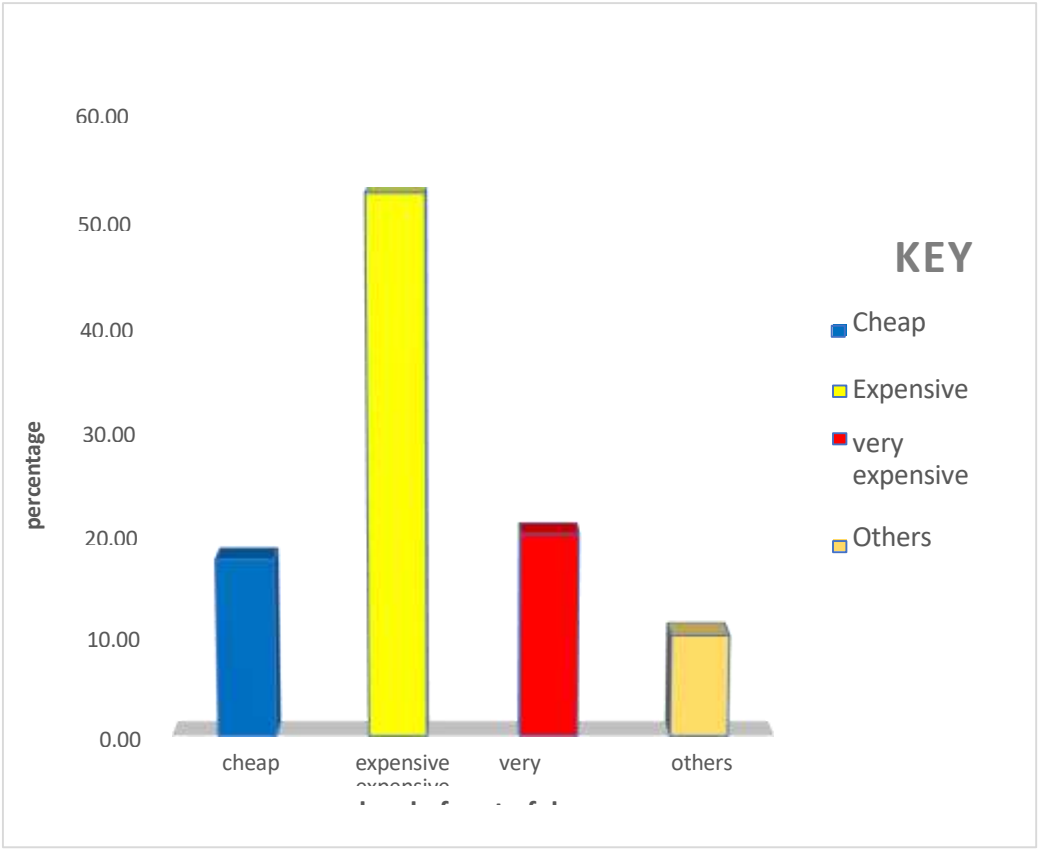


Figure 1 shows that the majority, 21/40 (52.5%), of respondents reported being reminded by their husband/wife of their medication.

Figure 2, presenting costs of drugs prescribed in the health facility by respondents (n=40)



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The majority 21/40(52.5%) of respondents, reported that the cost of drugs was expensive.

Figure 3, showing treatment duration of respondents (n=40)

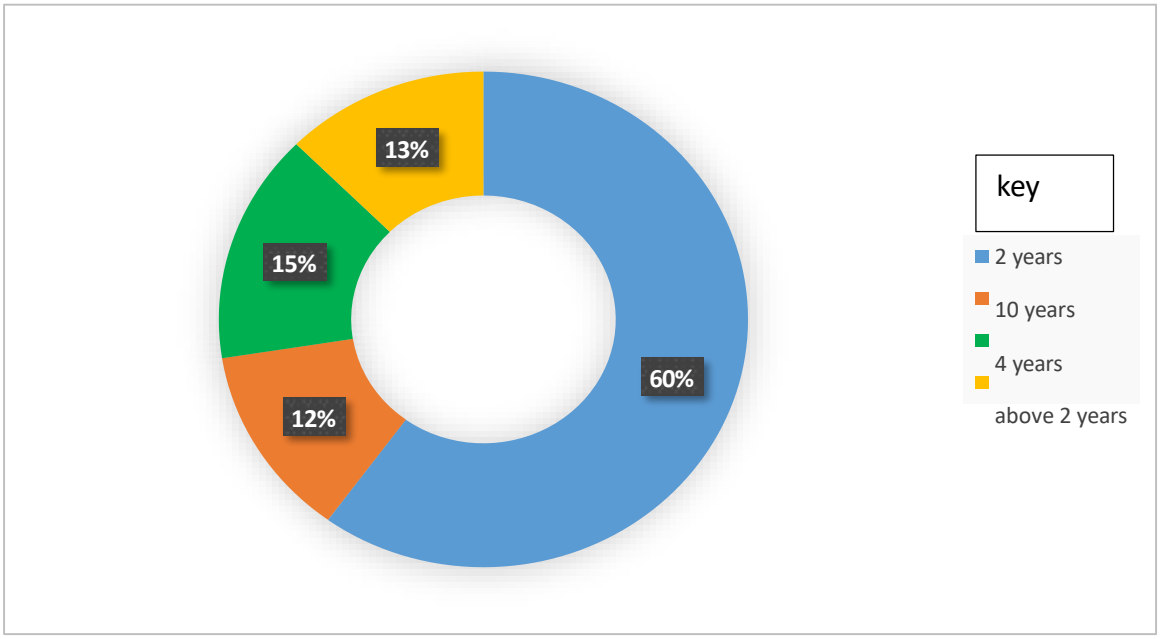

Figure 3 shows that the majority 21/40(52.5%), of the respondents reported having been on treatment for 2 years.

Table 4 represents respondents` level of knowledge about the sickness.

Variable	Response	Frequency (n=40)	Percentage (%)
Level of knowledge	Poor	9	22.5
	Good	27	67.5
	Very good	4	10

N = 40, primary data (2024).

According to table 3, the majority 27/40(67.5%), of respondents had good knowledge about the sickness.

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Health facility-related factors affecting treatment adherence among patients on surgical wards SRRH

Table 4 shows the distribution of respondents according to health facility related affecting treatment adherence (n=40)

Variables	response	Frequency (n=40)	Percentage (%)
patient-health provider`s relationship	Poor	25	62.5
	Good	11	27.5
	Very good	4	10
Treatment education	Always	8	20
	Sometimes	23	57.5
	When necessary	5	12.5
	None of the above	4	10
Training services for newly recruited staff	Always	10	25
	Sometimes	22	55
	Never	8	20
Availability of essential drugs	Always	5	12.5
	Sometimes	20	50
	Fewer times	10	25
	never	5	12.5
Continuity of service care	Delays in specialty services	27	67.5
	Early delivery of service	5	12.5
	None of the above	8	20

N = 40, primary data (2024).

The majority, 25/40 (62.5%) of respondents, reported a poor relationship. The majority of 23/40(57.5%) of respondents reported that health workers sometimes educated them on the treatment prescribed. The majority 22/40(55%) of respondents reported that sometimes newly recruited staff health workers were offered training services. The majority, 20/40 (50%) of respondents reported that essential drugs were sometimes available. The majority, 27/40 (67.5%), of respondents reported delays in specialty services,

Figure 4 shows the number of healthcare providers facilitating the early delivery of services to people (n=40)

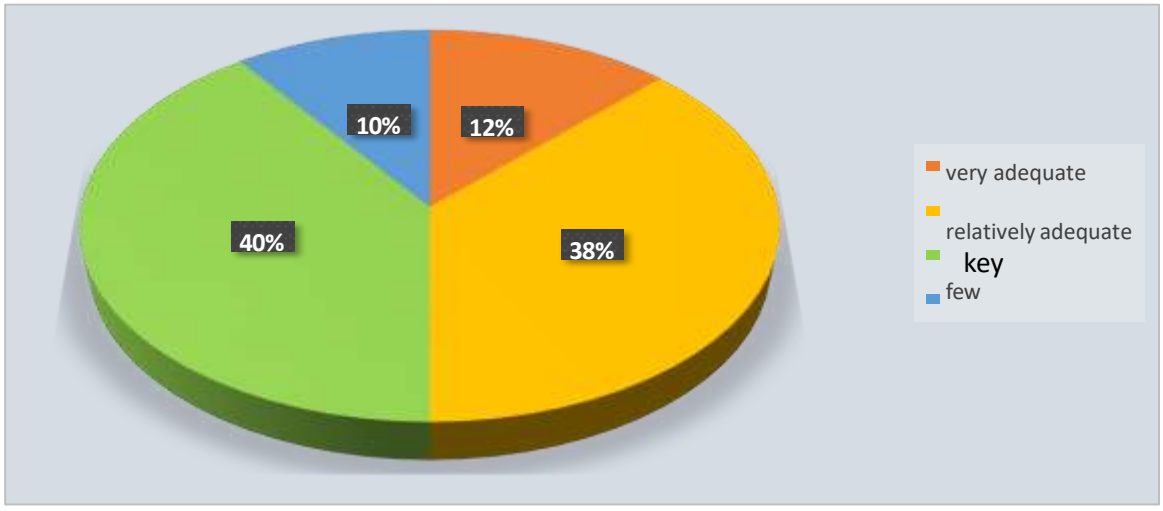

Figure 5 shows that the majority 16/40(40%), of the respondents reported a few number of health care providers, and 15/40 (37.5%) reported relatively adequate.

Discussion

The majority of respondents were above 45 years old; this could be because of the risk of comorbidities. Similarly, Pietrzykowski et al. (2020) and Berisa et al. (2018) had the same results. Most of the respondents were from rural settings, and this could be due to limited access to healthcare services, fewer healthcare providers and specialists, limited healthcare infrastructure, and limited health education resources. These results were in line with Pietrzykowski et al. (2020).

The majority of the respondents had attained only a primary level of education, this could be because of early dropout from school. Konstantinou et al. (2020) found the same results. Most of the respondents were married and single, this could be due to cultural and religious values which highly value marriage. This is the line results obtained by (Al-Noumani et al, 2023) and Seid et al, (2023).

Most of the respondents had low income levels. This could be due to chronic illnesses requiring costly treatment and comorbidities increasing healthcare expenses. Also,

the unemployment, poverty, and financial instability of respondents could have led to poor treatment adherence; this is in line with the study conducted by Pietrzykowski et al. (2020). The majority of respondents reported that they had hindrances from both family influence and treatment decisions. This could be due to unsupportive family members, family values and beliefs, and financial strains in the family that hindered treatment adherence. Also, good treatment decisions by patients could have contributed to proper treatment adherence. Similarly, Gikunda (2019) and Hall et al. (2021) found the same results.

Most of the respondents reported that they rarely had side effects of treatment. This could be due to accurate drug prescription and correct route of administration. However, this contradicts the study conducted by Zegeye et al. (2019).

The majority of the respondents forgot to take their medication sometimes, this could be due to a lack of clear medication instructions or cognitive decline since most of them are aged 45 years and above. Also, lack of family or caregiver support and limited access to reminders or tools might have led to poor treatment adherence. This is in line with a study conducted by Aminde et al. (2019) and Zegeye et al. (2019).

The study revealed that most of the participants had religious beliefs of spiritual healing and traditional beliefs, which could have contributed to poor treatment adherence. This could be due to the interpretation of illness as a test of faith, their strong faith in divine healing, belief in the spiritual causation of illness, and the use of herbal remedies or supplements. Similarly, Gikunda (2019) and Macquart et al. (2019) found the same results.

The majority of respondents reported being reminded by their husband/wife of their medication. This could be due to social support from the husband/wife through assistance with medication management, appointments, reminders, and transportation. Similarly, Al-Noumani et al. (2023) found the same results.

Most of the respondents reported that the cost of drugs was expensive., This could be due to low income or socioeconomic status, chronic conditions requiring multiple medications, and unemployment among the participants. This is in line with a study conducted by Macquart et al. (2019).

The majority of the respondents reported having been on treatment for 2 years. This could have contributed to non-treatment adherence due to increased side effects or toxicity, decreased perceived need for treatment, and complexity of long-term treatment regimens. This is in line with a study conducted by Berisa et al. (2018).

Most of the respondents had good knowledge about the sickness. This could be due to social support, improved understanding of treatment benefits and risks, and the long duration of treatment. However, my results contradict a study conducted by Berisa et al. (2018).

The majority of respondents reported poor relationships between patients and health workers. This could be due to an overwhelming number of patients in wards and poor attitudes of health workers towards their work. Similarly, Kvarnstrom et al. (2021) found the same result.

Most of the respondents reported that health workers sometimes educated them on the treatment prescribed. This could be due to limited healthcare provider time or resources, language or literacy barriers, and inadequate patient education materials. This is in line with the results of Yeam et al. (2018)

The majority of respondents reported that sometimes newly recruited staff were offered training services. This could be due to busy schedules and reluctance among hospital administrators. Similarly, Taiswa et al. (2023) had the same results.

Most of the respondents reported that essential drugs were sometimes available. This could be due to stock out of drugs, inadequate funding and budget allocation, and ineffective logistics and distribution systems. This is in line with the studies conducted by Najjuma et al. (2020) and Musinguzi et al. (2018). Additionally, Tusubira et al. (2020) had the same results.

The majority of respondents reported delays in specialty services. This could be due to limited specialist availability, overbooking or scheduling conflicts, inefficient referral processes, long waiting times, and staff shortages or

turnover. This is in line with a study conducted by Yeam et al. (2018).

Most of the respondents reported a few healthcare providers and relative adequacy. This could be due to the few recruited health personnel and the absenteeism of some health providers. Similarly, these results are in line with the results of Taiswa et al. (2023).

Conclusion

The majority of respondents (57.5%) were above 45 years old, resided in rural areas (62.5%), and had primary-level education (52.5%). Additionally, most were married (40%) or single (30%), unemployed (57.5%), and had a low-income status (52.5%).

Many respondents faced hindrances from both family and treatment decisions (32.5%), sometimes forgot to take medication (70%), and rarely experienced side effects (60%). Furthermore, a significant proportion believed in spiritual healing (45%) and traditional beliefs (37.5%). Social support played a crucial role, with most relying on spouses for medication reminders (52.5%). However, drug costs were deemed expensive by the majority (52.5%).

Many respondents reported poor relationships with healthcare providers (62.5%) and received occasional education on prescribed treatment (57.5%). Access to essential drugs was inconsistent at 50%. Healthcare provider availability was inadequate, with most reporting few providers (40%) or relatively adequate services (37.5%).

Recommendation

To the health workers: Provide personalized support and education to patients, considering their socioeconomic background and health beliefs, emphasize medication adherence, and provide reminders to patients. Offer counseling on spiritual and traditional beliefs to integrate them into treatment plans and foster strong patient-provider relationships through regular communication and empathy. Monitor and address potential side effects promptly and collaborate with family members in patient care.

To the health Facility authorities: There should be access to affordable essential drugs, increased healthcare provider staffing to address shortages, established patient education programs and support groups, developed strategies to reduce treatment costs and duration, and implemented effective patient reminder systems.

To the Ministry of Health: Develop policies addressing socioeconomic disparities in healthcare access, increase funding for rural healthcare infrastructure development, monitor and evaluate healthcare access and quality regularly, and establish national guidelines for medication management and adherence.

Acknowledgment

I would like to express my deepest gratitude to God for granting me the strength, wisdom, and guidance necessary to complete this research project.

I also extend my heartfelt appreciation to my family, particularly my parents, Mr. Dhabangi Dhasani and Ms. Nabirye Catherine, and my brother and sister-in-law, Mr. Muwanika Dhabangi Nathan and Ms. Nabakujja Justyne, for their unwavering support and encouragement throughout my academic journey.

Additionally, I thank my sisters, Namatende Rebecca and Namusobya Prossy, and my friends, Isabirye Nelson, Terwane Andrew, Muwanguzi Ezira, Mutesi Kumeima, and Wandera Aaron, for their invaluable support and motivation.

I am grateful to my research supervisor, Mr. Etiang Moses, and the principal, Mr. Itomet Francis, for their expert guidance and dedication to helping me produce this research report.

Lastly, I appreciate Soroti Regional Referral Hospital for permitting me to collect data, making this research possible.

List of Abbreviations

HMIS: Health Management Information System
IBD: Inflammatory Bowel Disease
MD: Mediterranean diet
MI: Myocardial Infarction
MMAS: Morisky Medication Adherence Scale
NCD: Non-communicable diseases
NHIS: National Health Insurance Scheme
PA: Physical activity
PCI: primary coronary intervention
SRRH : Soroti Regional Referral Hospital
T2D: Type-2 diabetes
WHO: World Health Organization

Source of funding,

This study was not funded.

Conflict of interest

The author declares no conflict of interest.

Author contributions.

Benard Mugolofa, research principal investigator.
Moses Etiang supervised the research.
Derick Modi, data cleaning, analysis, and manuscript development

Data availability

Data is available upon request.

Author Biography

Benard Mugolofa holds a diploma in comprehensive nursing from Soroti School of Registered Comprehensive Nursing.

Moses Etiang, tutor at Soroti School of Registered Comprehensive Nursing
Andrew Emorut, tutor at Soroti School of Registered Comprehensive Nursing
Derick Modi holds a bachelor's degree of science in Public Health from Lira University School of Public Health.

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Journal of World Health Research
Vol. 2 No. 5 (2025): May 2025
https://doi.org/10.71020/jwhr.v2i5.27
Original Article

PUBLISHER DETAILS:

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