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An Assessment of Prescribing and Dispensing Practices in Health Facilities of Bushenyi District

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ABSTRACT

The inappropriate use of pharmaceuticals is a growing concern worldwide due to associated health risks and economic costs. The World Health Organization (WHO) estimates over half of all medicines are prescribed, dispensed, or used irrationally. This study aimed to assess the prescribing and dispensing practices in health facilities of Bushenyi District, Uganda, using WHO's core drug use indicators. Prescribing indicators like average number of drugs per encounter, percentage of drugs prescribed by generic name, encounters with antibiotics/injections prescribed, and drugs from essential lists were accessed. Patient care indicators like consultation time, dispensing time, drugs adequately labeled and patients' dosage knowledge were evaluated. Facility indicators covered availability of essential drug lists, key drugs, qualified prescribers and dispensers. The cross-sectional study surveyed 20 health facilities. The 20 health facilities surveyed in Bushenyi District included 3 hospitals, 1 health centre IV, 6 health centre IIIs and 10 health centre IIs. Data was collected retrospectively for 600 prescribing encounters and prospectively for 600 patient care encounters. The results showed a high average number of drugs per encounter (2.59), moderate generic prescribing (81.32%), high antibiotic use (46%), low injection use (8.83%), and high adherence to essential drug lists (95.83%). Short consultation (5.54 minutes) and dispensing times (61.47 seconds), inadequate labeling (48.03%), and suboptimal patient knowledge (91.5%) were observed. Essential drug list availability was high (95%), but key drug stocks (76.49%) and qualified staff percentages were low (45% prescribers, 5% dispensers). The findings identified several shortfalls like irrational prescribing patterns, poor patient care practices, and inadequate facilities that require interventions.

Keywords: Rational Drug Use, Prescribing Indicators, Patient Care Indicators, Drug Use Indicators

INTRODUCTION

Medicines play an important role in healthcare delivery, and when used properly, can help cure diseases, relieve symptoms, and alleviate patient suffering. However, the irrational utilization of medicinal products persists as a formidable challenge confronting a majority of healthcare systems globally [1]. With the increasing quantity and variety of pharmaceuticals available today in both developed and developing countries, their potential inappropriate use is a growing concern [2]. Not only the health risks associated with inappropriate drug prescription but also the economic cost to facilities and patients must be considered [3]. As a result, strategies to identify, resolve and prevent inappropriate pharmaceutical use have been the topic of numerous articles, conferences and studies [2]. The World Health Organization (WHO) estimates that more than half of all medicines are prescribed, dispensed or sold inappropriately, and that half of all patients fail to take them correctly [4]. The overuse, underuse or misuse of medicines results in wastage of scarce resources and widespread health hazards. Examples of irrational use of medicines include polypharmacy (use of too many medicines per patient); inappropriate use of antimicrobials, often with inadequate dosage; over-use of injections when oral formulations would be more appropriate; failure to prescribe in accordance with clinical guidelines; inappropriate self-medication of prescription-only medicines; and non-adherence to dosing regimes [5, 6, 7]. The basic principles of appropriate prescribing are: to make an accurate diagnosis, decide whether drug treatment is necessary, choose the best available drug, select the most appropriate dosage form, prescribe the drug in adequate quantity, monitor the treatment, and inform and involve the patient [8]. WHO's Action Programme on Essential Drugs (DAP) was established to support countries in developing National Drug Policies based on essential drugs and promoting rational drug use. In 1985, WHO convened a major conference in Nairobi on the rational use of drugs [8]. To encourage a standard approach to measuring problems in drug use, the International Network for Rational Use of Drugs (INRUD) coordinated the development of standard drug use indicators and encouraged indicator studies in several developing countries during 1990-1992 [9].

An essential tool for assessing drug use is an objective method to measure prescribing patterns and behaviors at health facilities that can describe drug utilization issues [9]. The core drug use indicators developed by WHO/INRUD are a simple tool to quickly and reliably assess critical aspects of pharmaceutical use in primary healthcare. Results can point to particular drug use issues needing further

examination. The drug use indicators measure performance in three areas related to rational drug use: prescribing practices by health providers, key elements of patient care including consultation and dispensing, and availability of facility-specific factors supporting rational use like essential drug lists and staffing [9]. A small set of standardized core indicators covering these areas is recommended for drug use surveys. While the core indicators do not measure all important aspects of drug utilization, during field testing in 12 developing countries including Uganda, they proved feasible to measure and informative as first-level indicators of prescribing behaviors, patient care, and health facility factors influencing rational drug use [10, 11].

METHODOLOGY

Study Design

The study was cross-sectional in nature using both retrospective and prospective data from sixty (60) encounters selected by simple random sampling in 20 public health facilities. The study was based on the prescribing indicators, patient care indicators and health facility indicators [9].

Study Setting

The study was conducted in Bushenyi District in Western Uganda. Bushenyi District is bordered by Bunyaruguru District, Sheema District, Buhweju District and Mitooma District.

Study Population

The total number of accessible health facilities was 36 which included all private and public health facilities comprising hospitals, health centre IV's, health centre Ill's, and health centre II's drawn from the entire Bushenyi District in Western Uganda.

Sample Size

The study was conducted on a sample of 20 health facilities and samples of 30 prescribing and 30 patient care indicators per health facility making the total number of sample encounters to be 1,200.

Inclusion Criteria

- Patients who received drugs from the dispensing room of the health facilities.
- Adults who consented.

Exclusion Criteria

- Those who did not consent.
- Patients who were below 18 years of age.

Sampling Techniques

Sampling techniques for both the facilities and prescribing and dispensing encounters was a systematic random sampling involving generation of a sample frame and determination of a sample interval.

Drawing a sample of health facilities

A cross-sectional study was conducted across public and private health facilities in Bushenyi District. To select a sample of 20 facilities, a systematic random sampling method was employed. All 36 facilities were numbered in a list. The sampling interval was calculated as $36/20 = 1.8$. Rounding up the interval to 2, a random start between 1 and 2 was chosen using paper lots, which was 1. The first sampled facility was number 1 from the list. Subsequent facilities were identified by adding the interval of 1.8 to the previous facility number and rounding up. This process continued until 20 facilities were selected, which were: Bushenyi, Bwera, Kainamo, Kyabugimbi, Kyeizooba, Numba, Rutooma, BMC-Katungu, RH-Uganda, Kakanju, Ruharo, Kashozi, Kyamuhunga, Nyabubare, Rushinya, Swazi, Comboni, KIU-TH, Ankole Tea Factory, and Ishaka Adventist. This systematic random sampling method ensured representative coverage of facilities across the district.

Drawing a retrospective sample of patient encounters

For each of the 20 sampled health facilities, the study required a sample of 30 prescribing encounters and 30 dispensing encounters. To obtain these samples, the total number of encounters over the study period was determined from the facility's logbook or outpatient drug registers, which served as the sampling list. The total number of encounters was then divided by the desired sample size of 30 to calculate the sampling interval. This systematic sampling approach accounted for potential variations due to seasonal effects and different times of the day when encounters occurred. The calculated interval was used to systematically select the 30 prescribing and 30 dispensing encounters from the register for each facility.

Prospective methods for sampling encounters

Collecting data for patient care and facility indicators required prospective sampling methods. The approach differed slightly for the core indicator groups and depended on the facility layout and procedures. For prescribing information, the researcher observed 30 consecutive patient encounters by sitting with the prescriber or just outside the treatment room, timing the consultation duration. If multiple prescribers were working, encounters were sampled across them proportionately.

For other patient care indicators like dispensing time, data was collected in the dispensing area by observing a number of consecutive patients. For indicators requiring more time, it may have been necessary to skip some patients who had already passed through the system.

Facility indicator information was facility-specific and did not require prospective sampling of patient encounters. The sampling methods aimed to capture a representative range of prescribing and patient care

activities through a combination of consecutive and systematic sampling approaches adapted to each facility's operations.

Prescribing indicators

The prescribing indicators focused on measuring outpatient prescribing practices. Data for the five core prescribing indicators was collected retrospectively from outpatient registers that recorded patient details, diagnoses, and treatments prescribed. The specific indicators captured were:

i. Average number of drugs prescribed per encounter (C), as a measure of polypharmacy, calculated by recording the total drugs per patient.

$C = B / A$

A= Total number of encounters for which data were collected, including cases where no drugs were given.
B= Total number of drugs prescribed during the encounters.

ii. Percentage of drugs prescribed using generic names (E), indicating cost-effective procurement, obtained by noting the generic drugs per prescription.

$E = (D / B) * 100\%$

D=Total number of generic drugs prescribed.
B= Total number of drugs prescribed.

iii. Percentage of encounters where an antibiotic was prescribed (G), to assess potential overuse, based on the antibiotics prescribed per patient.

$G = (F / A) * 100\%$

F= Total number of patients who received one or more antibiotics.
A=Total number of encounters.

iv. Percentage of encounters with an injectable prescribed (I), determined by the total injections per prescription.

$I = (H / A) * 100\%$

H= Total number of patients who received one or more injections.
A= Total number of encounters.

v. Percentage of drugs prescribed from the essential drugs list or formulary (K), showing adherence to national drug policies, based on listing drugs from the essential list per prescription.

$K = (J / B) * 100\%$

J= Total number of Essential Drugs List (EDL) drugs prescribed.
B=Total number of drugs prescribed.

Collecting this prescribing data retrospectively from patient records allowed an objective assessment of several key prescribing practices related to rational use of medicines in the outpatient setting.

Health facility indicators

The ability to prescribe drugs rationally was influenced by many features of the working environment. Particularly important components were an adequate supply of essential drugs, availability of essential drug list and availability of qualified dispensers and prescribers.

i. Availability of copy of essential drugs list or formulary indicated the extent to which copies of the national essential drugs list or local formulary were available at health facilities. If a national essential drugs list or a local formulary existed for a given health facility then the indicator was scored "yes" and vice versa.

ii. Availability of key drugs which measured the availability at health facilities of key drugs recommended for the treatment of some common health problems. A shortlist of 10-15 essential drugs was compiled and used as a check list.

iii. Availability of qualified prescribers. This was collected by recording the number of qualified prescribers who included clinical officers, medical doctors or specialist consultants working on the day of the survey.

iv. Availability of qualified dispensers. Data was collected by recording the number of qualified dispensers who included dispensers with diploma in pharmacy and pharmacists working on the day of the survey.

Patient care indicators

The patient care indicators focused on assessing various aspects of patient experiences in healthcare facilities and the competency of staff in dealing with prescribed medications. These indicators were recorded and summarized using a patient care form. They included:

1. Average consultation time (P): This measured the duration medical personnel spent with patients during consultation and prescribing, observed and timed from when the patient entered to when they left the consultation room.

$P = O / N$ min

O=Total consultation time observed, measured in minutes.
N=Total number of cases observed.

2. Average dispensing time (S): This measured the time spent by personnel dispensing drugs to patients, observed from when the patient submitted the prescription to when they left the counter.

$S = R / Q$ sec

R=Total dispensing time observed, measured in seconds.

Q=Total number of cases observed.

3. Percentage of drugs actually dispensed (U): This assessed the facility's ability to provide prescribed drugs, recorded by the number of drugs given to patients.
   U = (T / B1) * 100%
   T= Total number of drugs dispensed.
   B1= Total number of drugs prescribed for the specific group of patients.
4. Percentage of drugs adequately labeled: This evaluated the accuracy of drug labeling, including essential information like patient name, drug description, dosage regimen, strength, precautions, and quantity dispensed, observed on drug packages.
   W = (V / T) * 100%
   V= Total number of drugs with adequate labels for each patient.
   T= Total number of drugs dispensed.
5. Patients' knowledge of correct dosage (Z): This measured patients' understanding of dosage instructions for the drugs received, assessed through structured interviews asking about how and when to take the medicines and the prescribed dosage.
   Z = (Y / X) * 100%
   Y= Total number of patients who correctly report the dosage for all their drugs.
   X=Total number of patients questioned.

A structured patient interview form was utilized for data collection.

Instrumentation

The research was done with the help of different data collection forms which included prescribing indicators form, detailed indicators encounter form, patient care form, facility summary form, facility indicators reporting form, drug use indicators consolidation form. The research was also done by the use of questionnaires that assessed the knowledge of the patient on the drugs they received.

Research procedure

The research procedure involved several steps:

i. Selecting a sample of encounters: The researcher either drew samples from historical records or waited at the health facility until the necessary number of patients had been diagnosed, treated, and interviewed.
ii. Filling in encounter forms: Data was collected on both prescribing encounters and episodes of patient care, with each type of encounter recorded on a form containing necessary data for calculating various indicators.
iii. Observing episodes of patient care: Data was entered on a patient care form, and if necessary, observation and interview indicators were recorded for different patient groups.
iv. Completing a facility summary form: After recording all prescribing and patient care encounters at a facility, a facility summary form was filled out, including descriptive and indicator-related information such as facility name and identifier, data collection details, personnel involved, methods used, number of encounters completed, drug availability, and staffing qualifications.
v. Review of completed forms: A verification procedure was established to ensure the completeness and quality of the collected data.
vi. Calculating results for each facility: Data on prescribing, patient care, and facility indicators were calculated and summarized on respective forms for analysis.

This comprehensive process ensured systematic data collection and analysis to evaluate healthcare facility performance.

Data Collection Procedures

Data was collected by the researcher. Thirty (30) encounters per facility for all the 20 facilities were sampled for a period covering one year, from 1st November 2010 to 30th October 2011, which amounted to 600 encounters in total for all the 20 facilities for prescribing indicators and then thirty (30) consecutive encounters per health facility for the 20 facilities which amounted to 600 encounters totaling to 1200 encounters.

Ethical Considerations

The study did not raise any significant ethical issues because the methods of study are regularly employed in research in Uganda. The issues studied fell within the regular activities and mandate of the Ministry of Health (MOH). However, permission was sought and obtained from Ministry of Health, health facilities and respondents themselves before the actual study was conducted. Confidentiality of the information accessed during study is of paramount importance. Before interviewing the subjects, an informed consent was sought from them through a Consent Form

Limitations to the study

i. Sample size discrepancy: While the retrospective data had a large enough sample size for comparisons between past and current prescribing practices, the prospective data from individual facilities was too small for cross-facility comparisons. Additionally, the one-day collection of prospective data may not adequately represent prescribing practices.
ii. Potential inaccuracies in timing data: Consulting and dispensing times collected in a single day may be inaccurate due to factors such as staff absence, potentially skewing results.

iii. Impact of consent form: The presence of a consent form may have influenced subjects' behavior, potentially distorting the validity of results, as subjects operated within an experimental environment.

iv. Observer bias: Observation of health workers could introduce bias, as their behavior might deviate from normal due to the presence of investigators. This experimental environment may have influenced results' validity.

v. Limited assessment of patient knowledge: The method of determining patients' knowledge of dosage by merely asking about quantity and frequency may not fully reflect the adequacy of patient drug education.

These limitations suggest the need for caution when interpreting the study's findings and highlight areas for potential improvement in future research.

RESULTS

Table 1: The Comparative Core Drug Indicators for the Study Who Standard Values and Previous Drug Use Indicator Study in Uganda

INDICATOR	STUDY FINDINGS	PREVIOUS DRUG USE INDICATOR STUDY IN UGANDA	WHO STANDAR DVALUES	MEAN CORE DRUG INDICATOR ACCORDING TO LEVEL OF HEALTH CARE			
				HOSPI TALS	HC IV	HC III	HC II
Average number of Drugs prescribed	2.59	1.9	**1.6-1.8**	2.50	3.10	2.52	2.62
% of drugs prescribed By generic names	81.32	-	**100**	88.74	76.34	80.96	79.73
% of encounters with an antibiotic prescribed	46.00	56	**20.0-26.8**	50.00	53.33	45.56	44.33
% of encounters with an Injection prescribed	8.83	48	**13.4-24.1**	11.11	10.00	7.78	8.67
% of drugs prescribed on EDL	95.83	-	**100**	91.84	96.77	93.96	98.06
Average consultation time(min)	5.54	-	**20**	7.28	3.17	5.71	5.15
Average dispensing time (sec)	61.47	-	**180**	55.64	77.97	63.92	60.11
% of drugs actually Dispensed	89.10	-	**100**	94.94	87.95	86.52	90.61
% of drugs adequately Labeled	48.03	-	**100**	59.25	83.56	55.30	36.75
% correct patient Knowledge of dosage	91.50	-	**100**	91.11	90.00	93.89	90.33
% availability of key indicator drugs	76.49	-	**100**	94.87	92.31	71.80	72.31
% availability of EDL or Formulary	95.00	-	**100**	100.00	100.00	100.00	90.00
% of available qualified Prescribers	45.00	-	**100**	100.00	50.00	58.33	20.00
% of available qualified Dispensers	5.00	-	**100**	33.33	0.00	0.00	0.00

Study findings vs who standards p-value $=2.25488 \text{ X } 10^{45}$ ($P < 0.05$)
Study findings vs earlier studies in Uganda p-value $= 4.1386 \text{ x } 10^{-8}$ ($p<0.05$)

PRESCRIBING INDICATORS

i. Average number of drugs per encounter

From table 1, the average number of drugs per encounter was 2.59 with hospitals having an average number of 2.50, health centre IV having 3.10, health centre IIIs having 2.52 and health centre IIs having 2.62. Figure 1 shows the average number of drugs prescribed per health facility that was surveyed with the highest being Kyabugimbi with 3.1 and the lowest being RH-Uganda with 1.73.

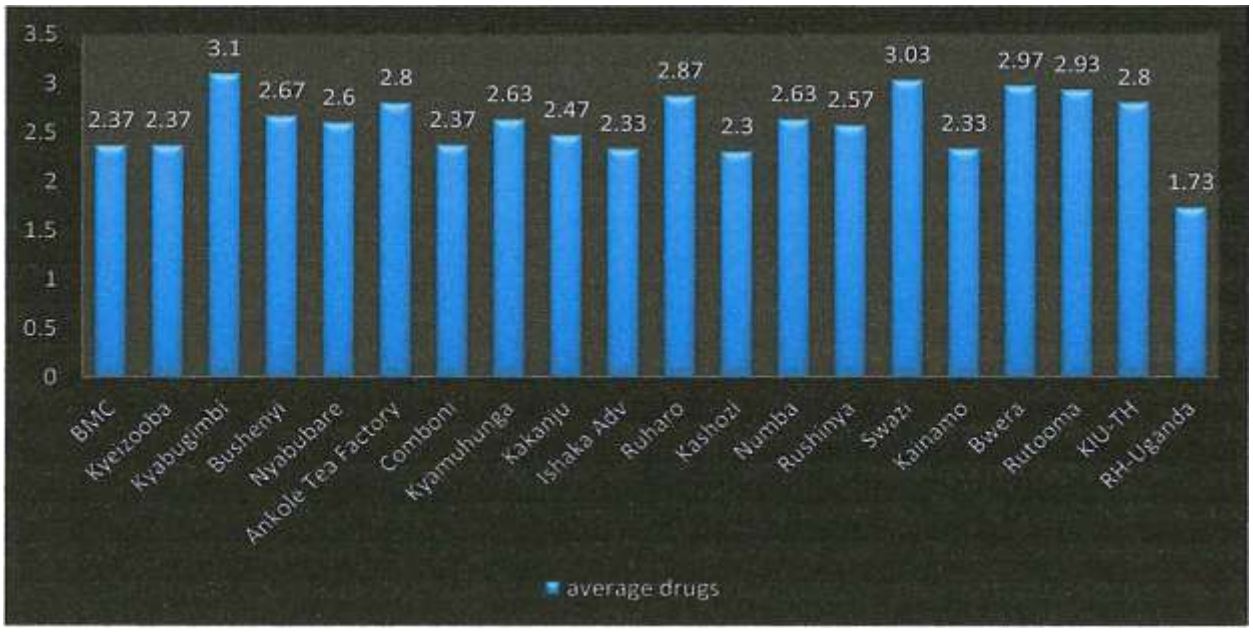

Figure 1: A Bar Graph Showing the Average Number of Drugs Per Facility

ii. Percentage of drugs prescribed by generic name

From table 1, the average percentage of drugs prescribed by generic name was 81.32%. Drugs prescribed by generic names were high in hospitals at 88.74 %and lowest in health centre IV at 76.34%. Figure 2 shows the percentage of drugs prescribed by generic names per health facility surveyed with the highest generic prescription in Comboni at 97.18% and lowest in Bwera at 64.04%.

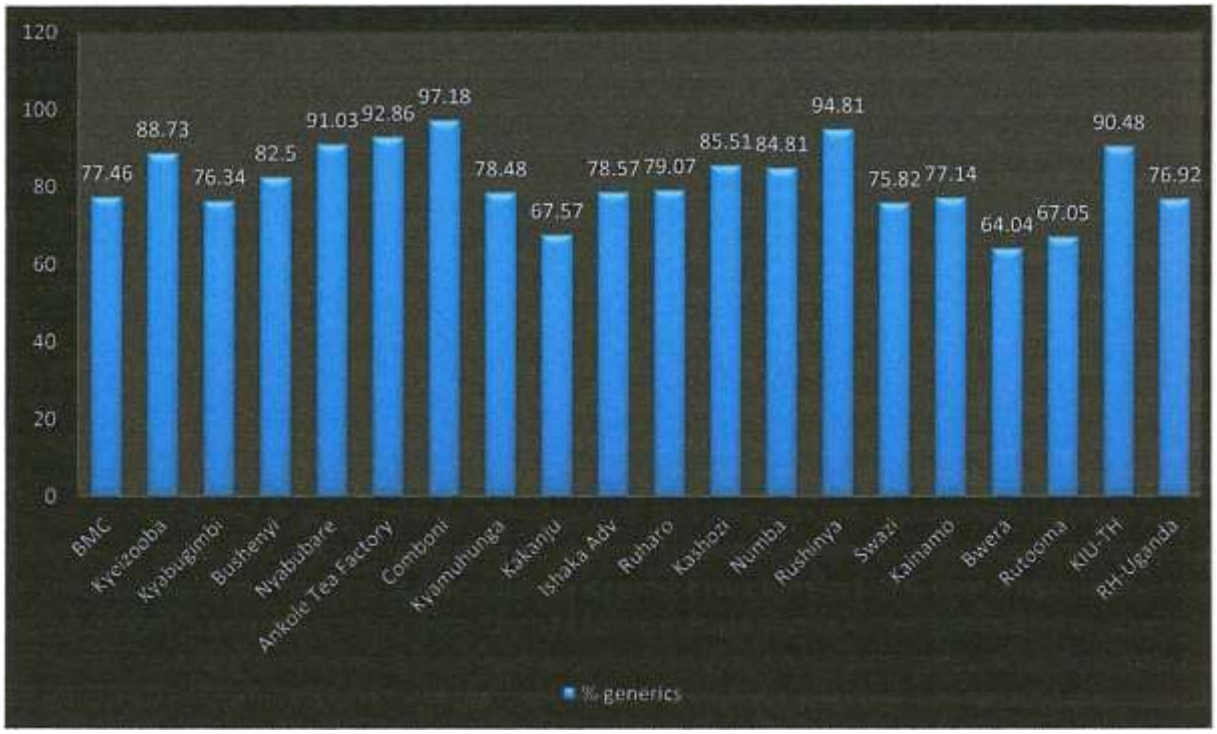

Figure 2: A Bar Graph Showing Percentage of Drugs Prescribed by Generic Names Per Health

Facility

iii. Percentage of encounters with an antibiotic and injection prescribed and drugs prescribed from essential list or formulary

In table 1 and figure 5 the percentage of encounters with an antibiotic was 46%, the percentage of encounters with injections prescribed was 8.83% and the percentage of drugs prescribed from the essential list or local formulary was 95.83%. The highest percentage of antibiotics was prescribed in Swazi with 66.67% and the lowest being in RH- Uganda with 20%, the highest percentage of injections were prescribed in RH-Uganda with 23.33% and the lowest being in Kyeizooba, Nyabubare, Ankole Tea Factory, Kashoziand, Rushinya with 3.33% while the number of drugs prescribed from essential list were highest at 100% in Kyamuhunga, Nyabubare, Ruharo, Kashozi, Numba, Rushinya, Swazi, Kainamo, BweraandRutooma and lowest at 84.51% in BMC. These results can also be seen in figures 3 and 4.

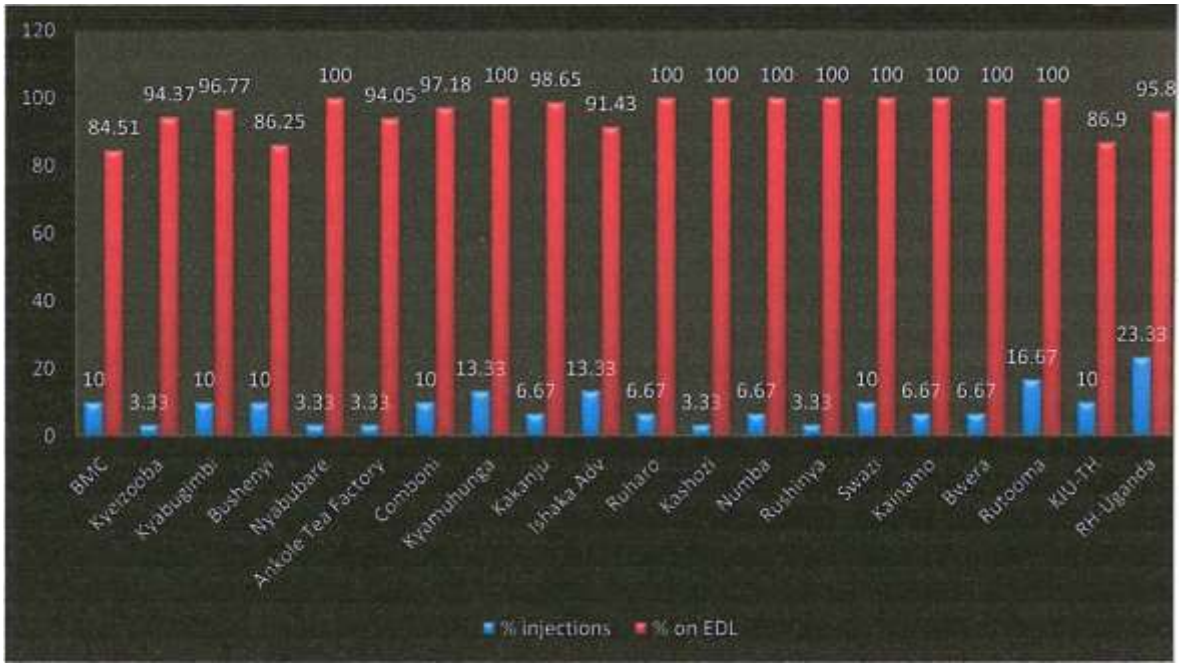

Figure 3: A bar graph showing percentage of antibiotics prescribed per health facility.

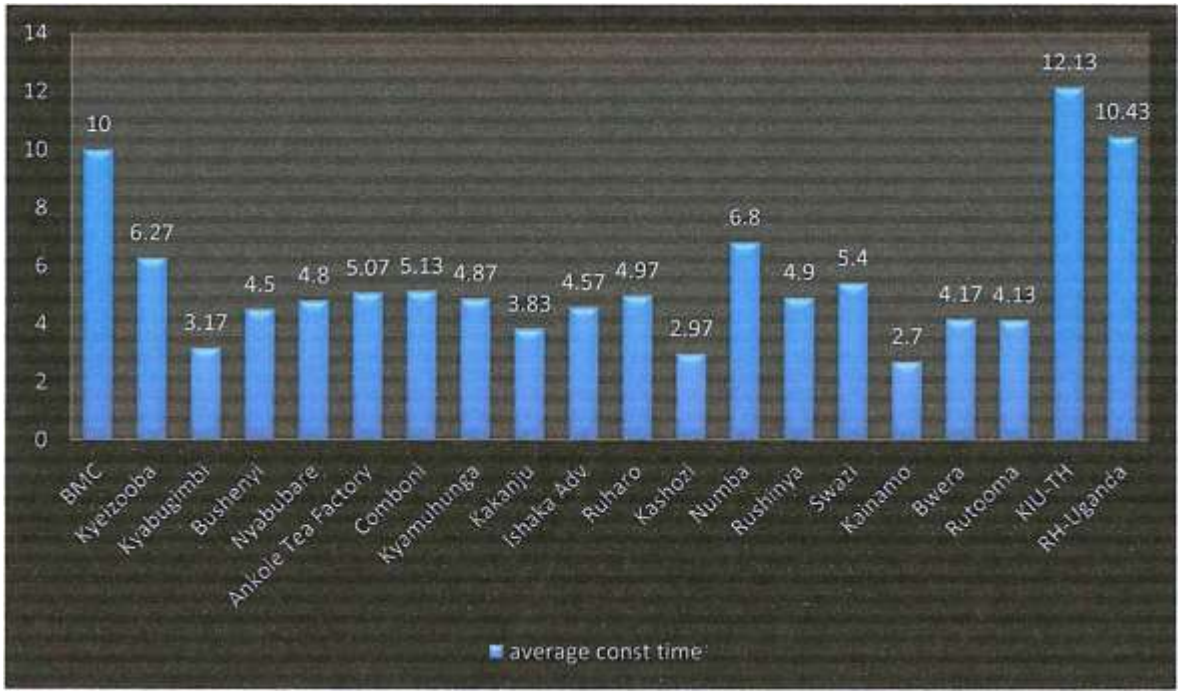

Figure 4: A bar graph showing percentage of injections prescribed and number of drugs prescribed from EDL per health facility.

PATIENT CARE INDICATORS

i. Average consultation time and dispensing time

From table 1, the average consultation time was 5.54 minutes and the average dispensing time for facilities was 61.47 seconds. The highest average consultation time was observed in KIU-TH at 12.13 minutes and the lowest at Kainamo with 2.7 minutes as seen infigure 5 while the highest dispensing time was observed in BMC at 124.23 seconds and the lowest in Ishaka Adventist Hospital 24.63 seconds as seen infigure 6.

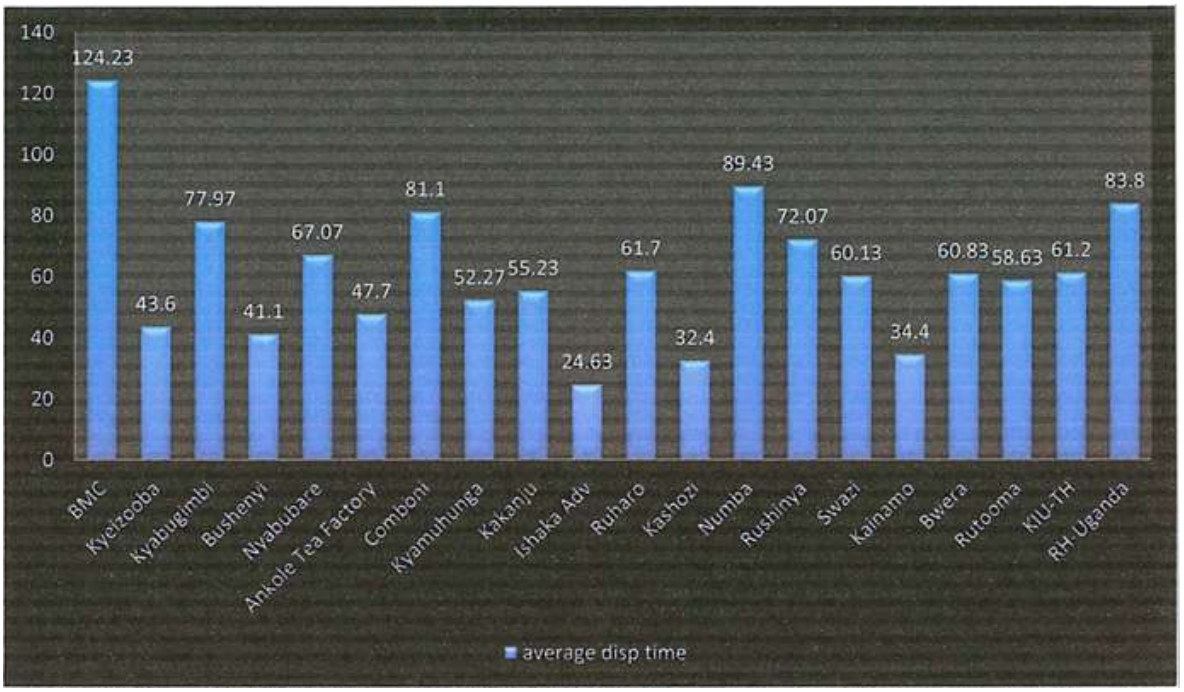

Figure 5: A bar graph showing average consultation time per health facility.

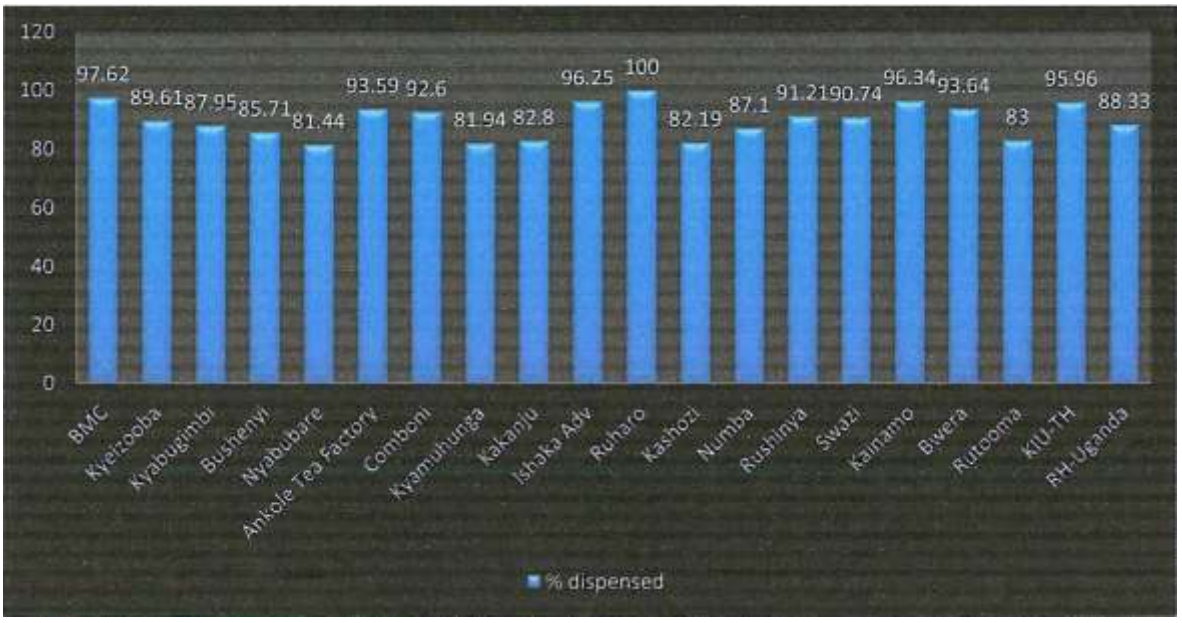

Figure 6: A bar graph showing average dispensing time per health facility.

ii. Percentage of drugs actually dispensed, adequately labelled and patients' knowledge of correct dosage

From table 1, the percentages of drugs actually dispensed, adequately labelled and patients' knowledge of correct dosage were 89.9%, 48.03%and 91.5% respectively. Ruharo recorded the highest percentage of drugs actually dispensed at 100%while the lowest was observed in Nyabubare at 81.44%, the highest percentage of drugs correctly labelled was 98.78% at BMC while the lowest was0%at Numba and Bwera and lastly patient's knowledge ofc01Tect drugdosage was highest at100% in BMC and Nyabubare and lowest at 83.33% in kyamuhunga and Rutooma. These results can be seen from figure 7, 8 and 9.

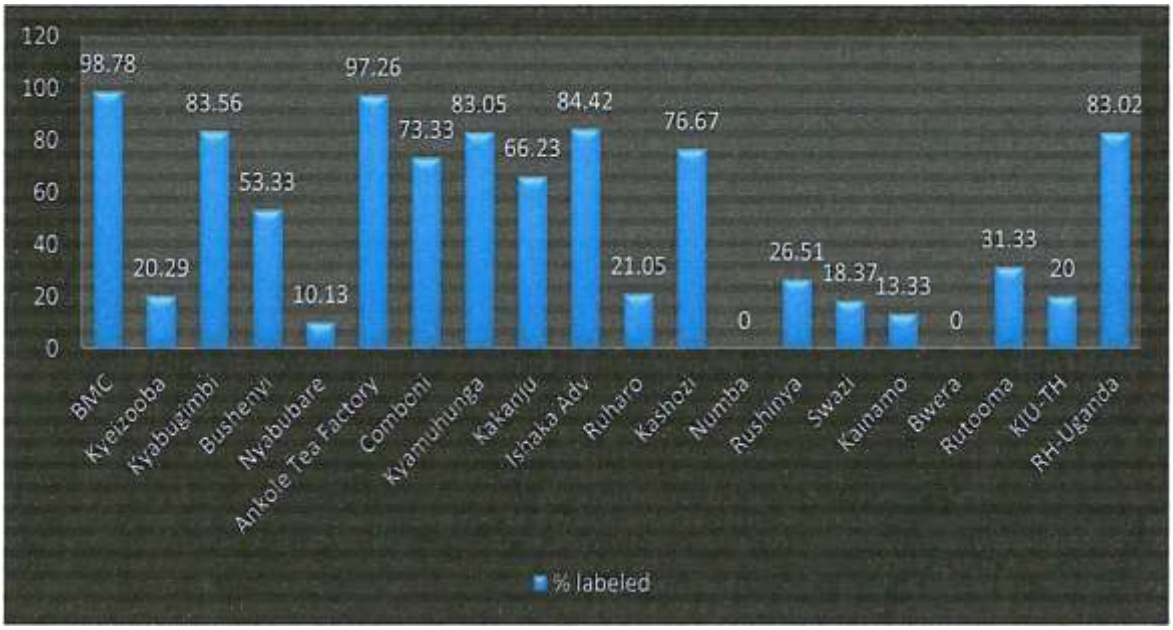

Figure 7: A Bar Graph Showing the Percentages of Drugs Dispensed Per Health Facility

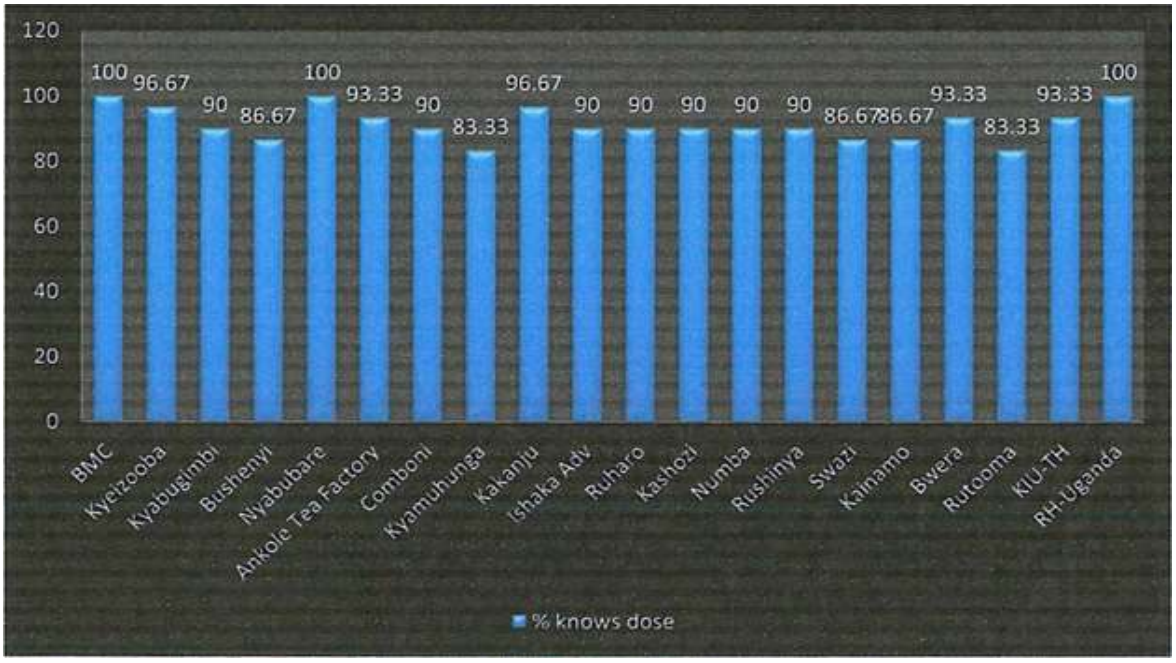

Figure 8: A Bar Graph Showing the Percentages of Drugs Correctly labelled Per Health Facility

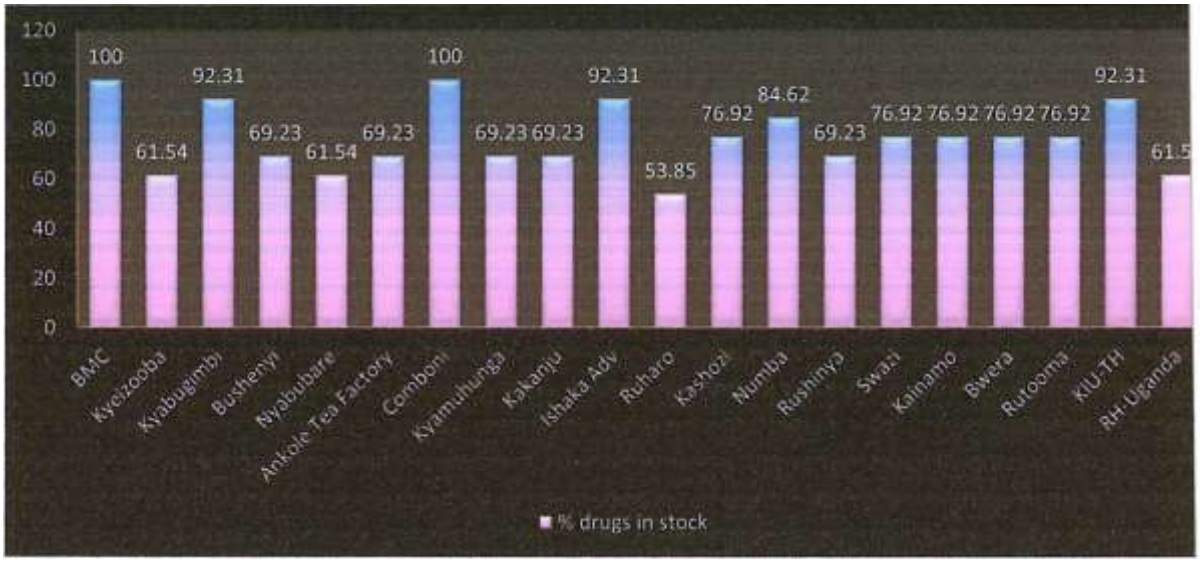

Figure 9: A Bar Graph Showing the Percentages of Patient's Correct Knowledge of Dose Per Health Facility

HEALTH FACILITY INDICATORS

i. Percentage of available key drugs and Essential drug list or formulary

From table 1, the percentage of available key drugs was 76.49% and essential drug list or formulary was available in 95% of the health facilities. From figure 10, BMC and Comboni had the highest percentage of available key drugs at100% while Ruharo had the lowest at 53.85%. Of the health facilities surveyed only Bwera lacked essential drug formulary.

ii. Availability of qualified prescribers and qualified dispensers

In table 1 and Figure 11, the percentage of facilities with qualified prescribers and facilities with qualified dispensers were 45% and 5% respectively. Only Comboni and Ishaka Adventist had 50% of qualified dispensers and the rest of the facilities had no qualified dispensers while and the rest either 50% or 100% of qualified prescribers as seen in figure 10.

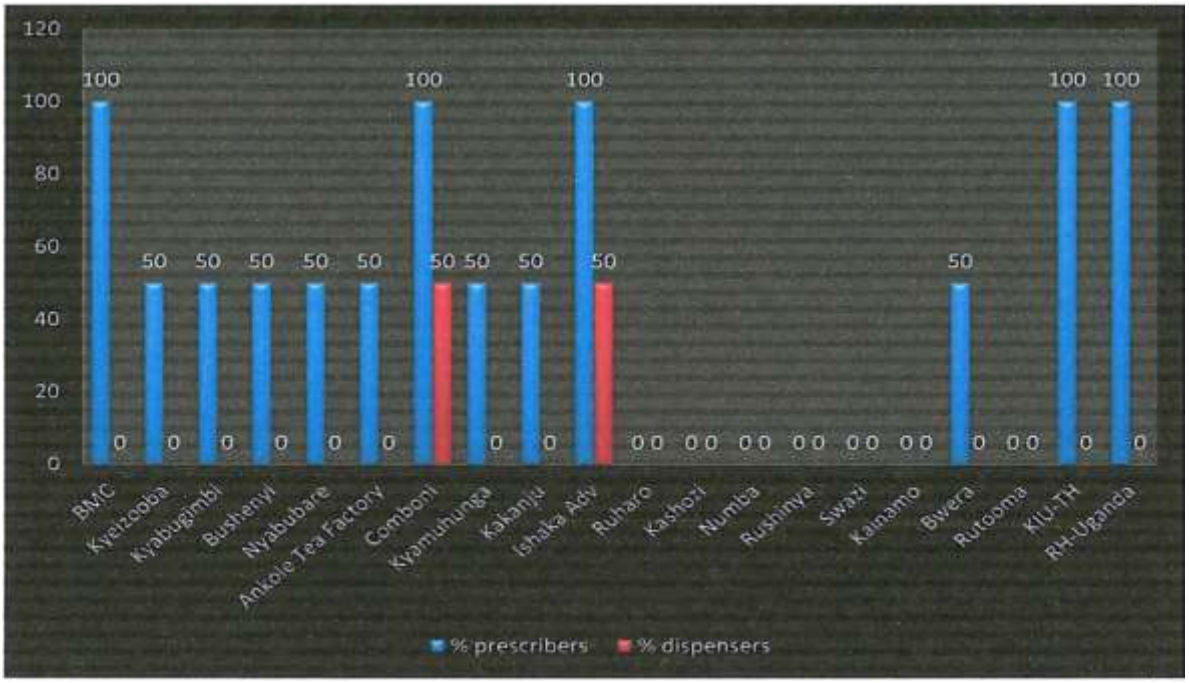

Figure 10: A bar graph showing the percentages of qualified prescribers and dispensers per health facility.

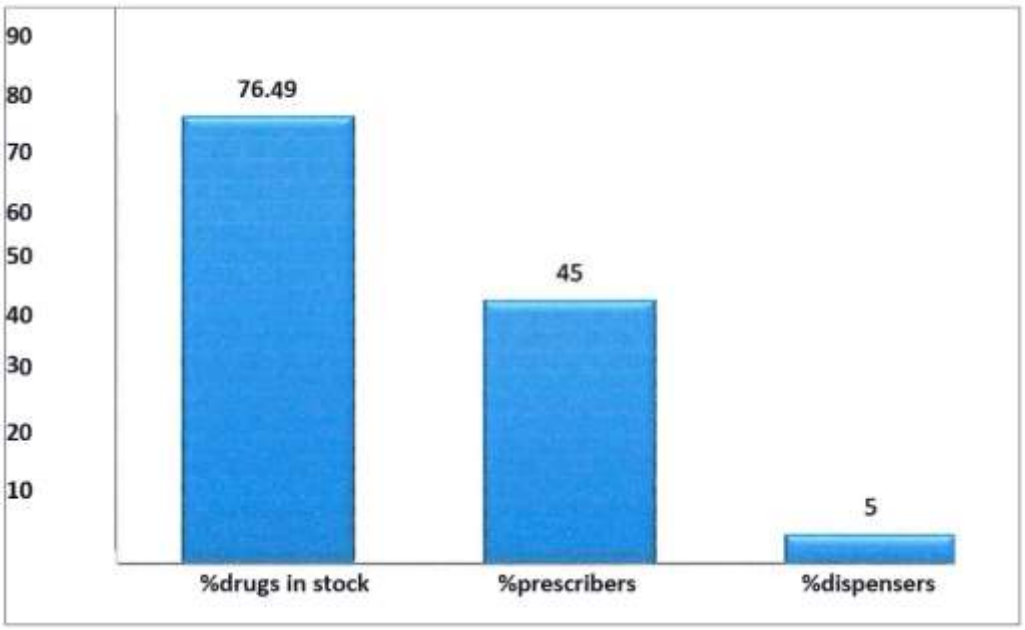

Figure 11: A Graph Showing Percentages of Drugs in Stock and Availability of Qualified Prescribers and Dispensers

DISCUSSION

The prescribing and dispensing practices at health facilities play a crucial role in ensuring patient safety and effective healthcare delivery [12]. Inappropriate prescribing and dispensing can lead to adverse drug events, medication errors, and therapeutic failures [13]. The study findings reveal several key insights into the prescribing and dispensing practices at health facilities in Bushenyi District, highlighting important areas that require interventions to promote more rational use of medicines. The average number of drugs per encounter was 2.59, higher than the WHO standard of 1.6-1.8. Potential reasons include drug shortages, lack of prescriber training, patient influences, and financial incentives for polypharmacy. The percentage of drugs prescribed by generic name was 81.23%, lower than the 100% WHO standard. This could stem from prescribers' inadequate generic drug knowledge, pharmaceutical promotion of branded products, and training biased towards branded drugs. At 46%, antibiotic use exceeded the WHO's 20-26.8% benchmark, though improved from 56% in an earlier Ugandan study. HIV/AIDS and cultural beliefs favoring antibiotics, plus lack of diagnostic facilities, likely contributed. Injection use was low at 8.83% versus 48% previously, possibly reflecting increased availability of other dosage forms and parenteral supply issues at public facilities. The 95.82% of prescribed drugs that were on the essential drug list is attributable to prescriber attitudes, knowledge of the list's role and contents, and government supply prioritization. The average consultation time of 5.54 minutes was likely impacted by heavy workloads from personnel shortages, with only 45% of prescribers properly qualified to optimize interactions. The very short average dispensing time of 61.47 seconds hampered effective labeling, dispensing and patient counseling - a consequence of high dispenser workloads and lack of trained pharmacy staff (only 5%). A whooping 89.9% of prescribed drugs were actually dispensed, below WHO standards due to drug supply issues at public facilities and patients purchasing elsewhere or lacking funds at private sites. Only 48.03% of dispensed drugs were adequately labeled, reflecting the dearth of trained dispensers, high workloads, lack of supervision, and packaging material shortages. Patient medication knowledge averaged 91.5% versus 100% ideally, indicating suboptimal consultation quality and dispenser counseling - a marker of poor patient-dispenser interaction. Essential drug lists were available at 95% of sites, suggesting reasonable policy implementation regarding procurement and prescribing. The 76.49% availability of surveyed key drugs pointed to stocking challenges at public facilities and variable private sector supply, though the limited drug list provided an incomplete picture. Statistical analysis confirmed the study results differed significantly from WHO standards and prior Ugandan data, with p-values <0.05. Individual facility p-values ranged from 7.9x10^-16 at Comboni Hospital (closest to standards) to 1.9x10^-82 at Kainamo Health Center II (farthest from standards), highlighting how site-specific factors heavily influenced prescribing practices. In summary, the study revealed important deviations from ideal drug use patterns in Uganda, with personnel shortages, dispenser training deficits, drug supply issues, and cultural forces as potential drivers requiring remediation through health workforce investments, better procurement, and public education. Continued monitoring is needed to guide quality improvement efforts.

CONCLUSION

The study revealed several deficiencies in prescribing and dispensing practices at health facilities in Bushenyi District that need to be addressed to improve healthcare quality. It found a high number of drugs

prescribed per encounter, high rates of generic and antibiotic prescribing, and frequent prescribing from essential drug lists, but very low rates of injection prescribing. Consultation and dispensing times were very short, with low percentages of drugs actually dispensed, adequately labeled, and patients knowledgeable about correct dosages compared to WHO standards. While essential drug availability was high, key drug availability was low. Alarmingly, the number of qualified prescribers and dispensers was unacceptably low.

Recommendation

Based on the study, the researcher recommends that antibiotic prescribing should align with Uganda Clinical Guidelines and interventions be developed to address high antibiotic prescription rates. Frequent refresher courses should be conducted for clinicians on proper prescribing and patient counseling. Treatment guidelines and training should emphasize correct labeling and patient education. The Ministry of Health should use validated drug management indicators to monitor and evaluate National Drug Policy implementation, continually reviewing indicators to measure prescribing and dispensing trends in public and private sectors. Future studies should assess patient knowledge on dosage, side effects, indications, contraindications and precautions of prescribed drugs.

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