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Original article

Prevalence and factors associated with self-medication among students at Bishop Sisto Mazoldi secondary school, Wakiso district. A cross-sectional study.

Denis Lagen Apatum*, Franscisco Ssemuwemba, Hasifa Nansereko, Jane Frank Nalubega
Mildmay Institute of Health Sciences

ABSTRACT

Background:

When practiced responsibly, self-medication offers significant advantages like symptom relief and reduced costs. Conversely, inappropriate Self-medication imposes significant public health concerns and complications. This study determined the factors associated with self-medication among students at Bishop Sisto Mazoldi Secondary School, Wakiso District.

Methodology:

A cross-sectional study design was employed, utilizing quantitative methods of data collection. A sample of 60 respondents was obtained through a simple random sampling technique, and a questionnaire method was used to collect data on socio-demographic factors, prevalence, and common sources of medicines. Data was analyzed using Microsoft Excel and presented in tables, charts, figures, and graphs.

Results:

Findings show that the majority of respondents (50.0%) were aged between 10 and 14 years, with an equal representation of male and female students (50.0%). Parental education levels were predominantly secondary (41.7%), and most students (58.3%) were in lower secondary (O-level). The prevalence of self-medication among students was high, with 78.3% of respondents reporting that they self-medicated. The majority (40.4%) self-medicated once, and most (29.8%) did so for four days. A significant proportion (78.7%) could recall the name of the drug, and 74.5% read instructions before use. Despite this, 14.9% reported experiencing adverse drug reactions. On the source of medication, students commonly sourced medications from pharmacies (66.7%), and half of them (50.0%) were influenced by the availability of drugs. Notably, 78.3% of respondents obtained medication without a doctor's prescription.

Conclusion:

The high rate of self-medication among students, often termed as irresponsible use, could impart long-term consequences on their health and indirect burdens to caregivers.

Recommendation:

There should be collaborative efforts from the Ministry of Health, schools, parents, and healthcare workers to regulate access, educate students, and provide proper healthcare guidance regarding self-medication practices.

Keywords: *Self-medication, Bishop Sisto Mazoldi secondary school, Adverse effects, Toxicity.*
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Corresponding author: *Denis Lagen Apatum.*
Mildmay Institute of Health Sciences.

BACKGROUND

Munyambabazi & Mubangizi (2022) characterize self-medication as the practice of utilizing various treatments to alleviate symptoms of disease or to manage one's emotional state without professional intervention. It is a common practice worldwide, especially among students who often use over-the-counter (OTC) drugs without professional guidance. While the practice provides temporary relief, it poses serious health risks, including incorrect dosage, drug resistance, adverse reactions, and dependency. Common reasons include management of pain, fever, headache, and menstrual cramps. These medicines are safe if taken as recommended, but misuse may result in long-term complications, including gastrotoxicity, hepatotoxicity, nephrotoxicity, cardio-toxicity, and increased mortality burdens (Brennan et al., 2021).

In the United States America opioid self-medication is one of the most high-profile public health scandals of the 21st century, with millions of people unknowingly becoming dependent on opioids, including students in secondary schools. The United Kingdom had the world's highest rate of opioid consumption in 2019, and opiate-related drug poisoning deaths (Roberts et al., 2021).

In Uganda, an estimated 78% of the population actually had medicines in their households, while 68% reported that at least one person in their midst self-medicated, and 56% had family members with medical expertise (Munyambabazi & Mubangizi, 2022). An estimated 60% self-medicated more with painkillers, 68% had ever received a prescription medicine recommendation from a member of the community, 94% had pharmacies or drug stores close to their houses, and 85% were encouraged by pharmacies or drug stores to purchase medications whenever they became ill before seeing a doctor. This

study determined the factors associated with self-medication among students at Bishop Sisto Mazoldi Secondary School, Wakiso District.

METHODOLOGY

Study design

A descriptive cross-sectional study design was used to determine factors associated with self- medication among students at Bishop Sisto Mazoldi Secondary School, Wakiso District.

Study area

This study was conducted at Bishop Sisto Mazoldi Secondary School, Wakiso District. The school is located in Lwezza, in Wakiso District, approximately 11km from Kampala, the capital city of Uganda. The school is a private, mixed-gender secondary school offering both O-Level and A-Level education. It operates as both a day and boarding institution and serves students from surrounding urban and peri-urban communities.

Study population

This study was conducted among students of Bishop Sisto Mazoldi Secondary School located in Wakiso District.

Sample size determination

The sample size for this study was determined using the Kish & Leslie (1965) formula for a single population proportion:

$n = Z^2 \times p(1 – p) / d^2$, Where:

Z = 1.96 (standard normal value at 95% confidence)

p = 0.20 (estimated prevalence of self-medication among students)

d = 0.10 (margin of error). Substituting in the formula:

$n = (1.96)^2 \times 0.20(1 – 0.20) / (0.10)^2$

$n = 3.8416 \times 0.20 \times 0.80 / 0.01$

$n = 3.8416 \times 0.16 / 0.01$

$n = 0.614656 / 0.01$

$n = 61.47$

Therefore, the calculated sample size was approximately 60 participants.

Sampling technique

A simple random sampling was used to enroll participants until the desired sample size was obtained.

Sampling procedure

All members of the population were assigned a unique sequential number, and then the desired sample size was determined.

Data collection method

An interviewer-administered questionnaire was used to collect data. The questionnaire was composed of three sections. The first section was related to socio-demographic characteristics of the participants, such as age and gender. The second part included questions related to the prevalence of self-medication, and the third part included questions related to the available sources from which students obtain medications.

Pretesting of the data collection tool

The pretesting of the questionnaire was done among 10 respondents at Kajjansi Progressive Secondary School, Wakiso District. This helped to assess the accuracy and reliability of questionnaires, and adjustments were made before applying them in the study.

Data collection procedure

Questionnaires were given out to participants who could read and write, filled and later collected at an agreed time. Those who could not read and write were guided. A high level of discretion was kept to protect the identities and views of the respondents.

Data analysis and presentation

Data processing was done manually through coding, editing, and tallying. The raw data were entered into the computer program Microsoft Excel, analyzed, and used to generate tables, pie-charts, graphs, and figures to present findings.

Independent Variables

Factors associated with self-medication among students, prevalence, and common sources of self-medicated drugs.

Dependent Variable

Self-medication practices.

Quality Control

Pretesting questionnaires was done after a pilot study, and double-checking of the study instruments and responses as well. Pretesting enabled the determination of the validity and reliability of the study tool and permitted adjustments to be made.

Inclusion criteria

The study involved all students at Bishop Sisto Mazoldi Secondary School, Wakiso District, who had consented to the study.

Exclusion criteria

Students at Bishop Sisto Mazoldi secondary school, who consented but were not present at the time of study.

Ethical considerations

The supervisor reviewed and approved the study. Additionally, an official permission letter was obtained from the research ethics committee of Mild May Institute of Health Sciences, and presented to the Head teacher of Bishop Sisto Mazoldi Secondary School for approval to conduct the study. Also, informed consent was sought from all study participants before they were enrolled in the study. Confidentiality was maintained by using study numbers and not the names of the participants. Also, the participants were free to withdraw from the study at any time with implications.

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RESULTS

Socio-demographic data of respondent

Table 1: Social demographic data factors associated with self-medication among students at Bishop Sisto Mazoldi secondary school, Wakiso district, (n = 60).

Statement	Response	Frequency	Percentage (%)
a) Age: How old are you?	10-14	30.0	50.0
	15-19	20.0	33.3
	20-24	7.0	11.7
	25 or above	3.0	5.0
b) Gender: What is your gender	Male	30.0	50.0
	Female	30.0	50.0
c) Parents' educational level: What class are your parents in?	None	3.0	5.0
	Primary	15.0	25.0
	Secondary	25.0	41.7
	Tertiary	17	28.3
d) EduQuestion: What class are you in?	Lower secondary (O' level)	35.0	58.3
	Upper secondary (A.' level)	25.0	41.7
e) Religion: What is your religion?	Roman Catholic	35.0	58.3
	Muslim	15.0	25.0
	Anglican	7.0	11.7
	Other (specify)	3.0	5.0
f) Residence: Where do you currently Reside during the holiday?	Urban	40.0	66.7
	Rural	20.0	33
g) Income: What is your source of income?	Parent	45.0	75.0
	Self	10.0	16.7
	Donation/Sponsorship	5.0	8.3

From the information in Table 1, the findings indicate that the majority, 30 (50.0%) of the respondents were aged between 10 and 14 years.

The study further showed that there was an equal representation of male and female respondents, each constituting 30 (50.0%).

Additionally, the highest level of parental education was secondary education, 25 (41.7%). The study also documented that 34 (58.3%) of the respondents were in lower secondary (O-level).

Furthermore, the findings documented majority, 34 (58.3%) of the respondents were Roman Catholics. In addition to the above, most 40 (66.7%) respondents resided in urban areas. The study obtained that the highest source of income was parental support, 40 (75.0).

Prevalence of self-medication among students at Bishop Sisto Mazoldi Secondary School, Wakiso District.

Table 2: Prevalence and source of the drug for self-medication practice among students (n = 60).

Statement	Answer	Frequency	Percentage (%)
Prevalence of self-medication: Have you ever practiced self-medication In your lifetime?	Yes	47	78.30%
	No	13	21.70%

Table 2 shows that the majority, 45 (78.30%) of the students reported that they were self- medicating. This indicated the prevalence of self-medication is 47 (78.30%), which is high.

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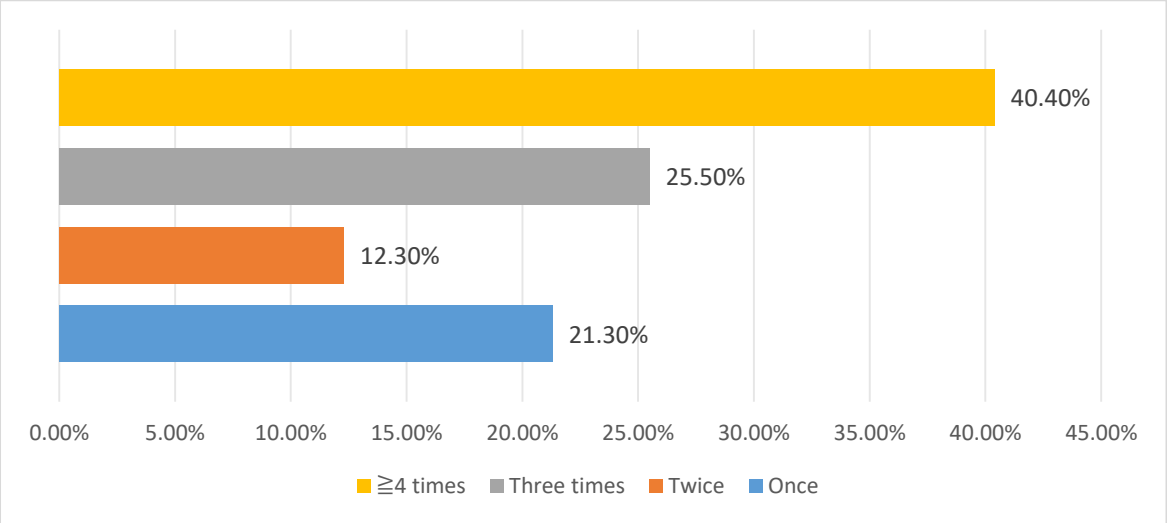
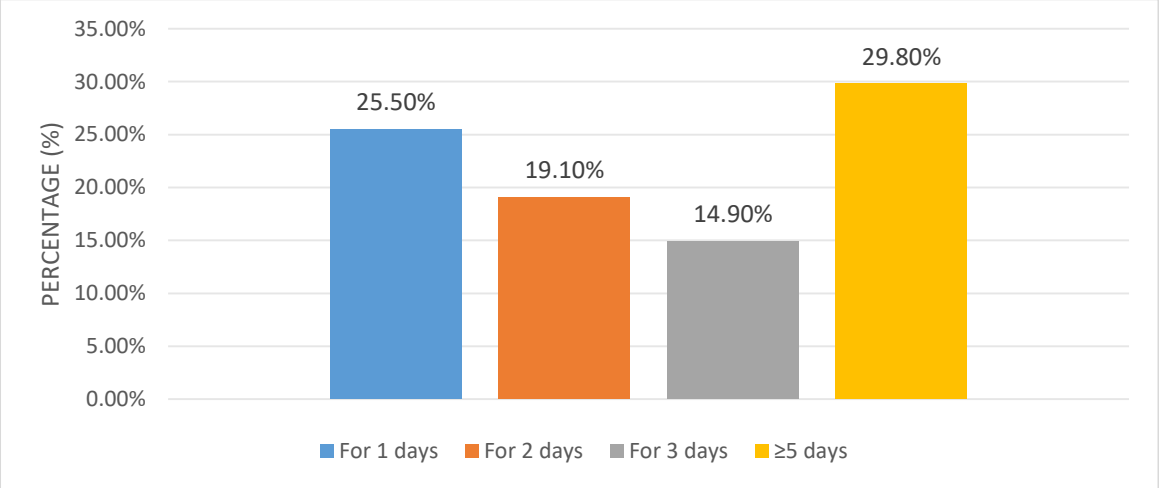
Figure 1: Shows the distribution of respondents according to how many times they have practiced self-medication in their lifetime (n = 47).



From the data in Figure 1, 19 (40.40%) of the respondents self-medicated once.

Figure 2: Shows the distribution of respondents according to duration of self-medication (n = 47).



From Figure 2, 14 (29.80%) of the respondents self-medicated for four days. Figure 3: Shows the distribution of respondents according to whether they remember the name of the drug (n = 47).

Figure 3: Shows the distribution of respondents according to whether they remember the name of the drug (n = 47).

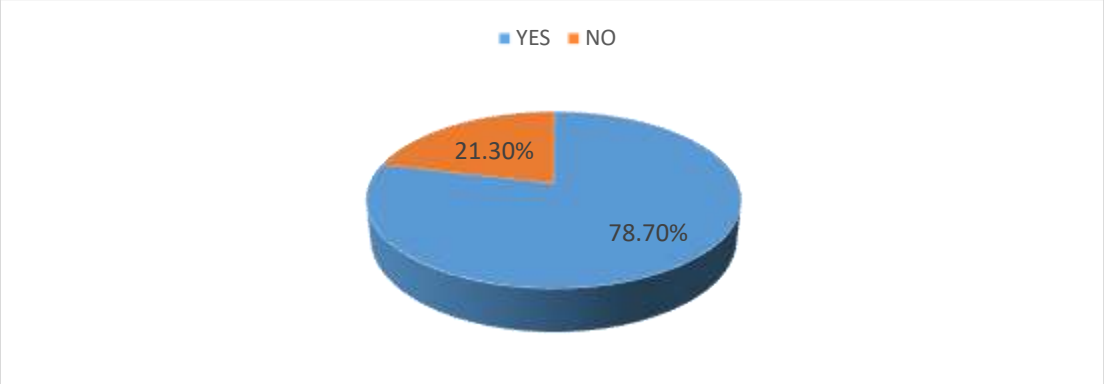
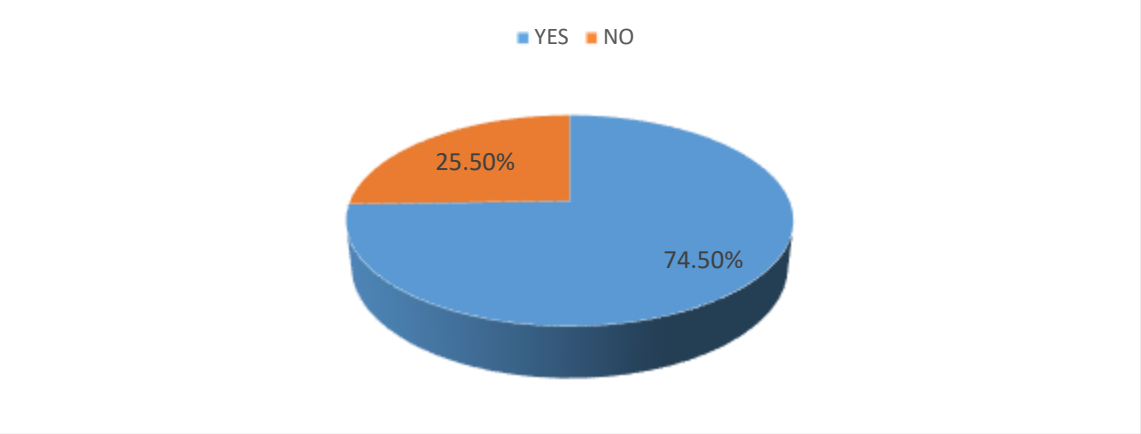


Figure 3 showed that the highest number, 37 (78.70%) number of respondents remembered the name of the drug.

Figure 4: Shows the distribution of respondents according to whether they always read the instructions (n = 47).



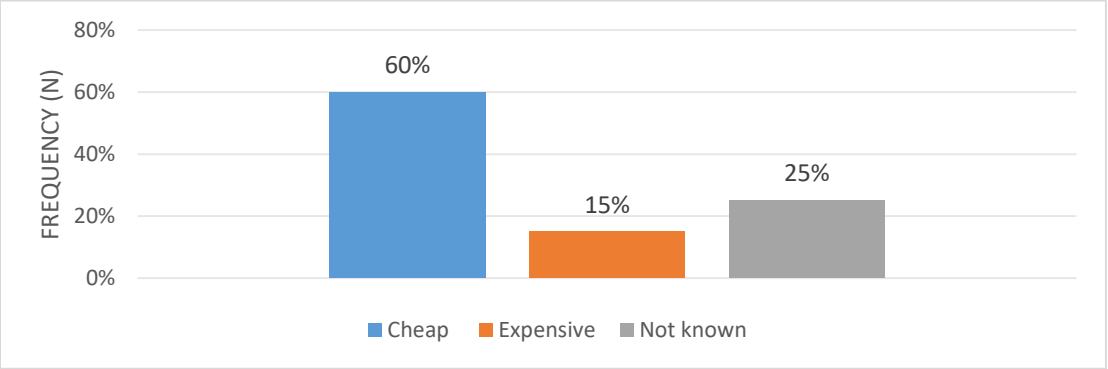
From the data in Figure 4, the majority, 35 (74.50%) of the respondents, did read the instructions before self-medicating.

Table 3: Shows the distribution of the respondents according to whether they have ever faced adverse drug reactions following self-medication (n = 60).

Statement	Answer	Frequency	Percentage (%)
Have you ever faced any adverse drug reactions following self- medication?	Yes	7	14.90%
	No	40	85.10%

From table 3, 51 (85.10%) of the respondents never faced any adverse drug reactions following self-medication.

Figure 5: Shows the distribution of respondents according to the cost of the drug (n = 47).



From figure 5, more than half 30 (59.60%) of the respondents reported that the cost of the drug was cheap.

The availability and accessibility of common medication sources used by students for self-medication at Bishop Sisto Mazoldi Secondary School, Wakiso District.

Table 4: Shows the distribution of the respondents according to where they usually obtain medication when they are sick (Multiple responses allowed) (n = 60).

Statement	Response	Frequency	Percentage (%)
Where do you usually obtain medication when you are sick?	Pharmacy	40	66.70%
	Friends	6	10.00%
	Family(parents, siblings, relatives)	10	16.70%
	School clinic	8	13.30%
	Market vendors	5	8.30%
	Traditional herbalists	4	6.70%
	Others e.g streets	2	3.30%

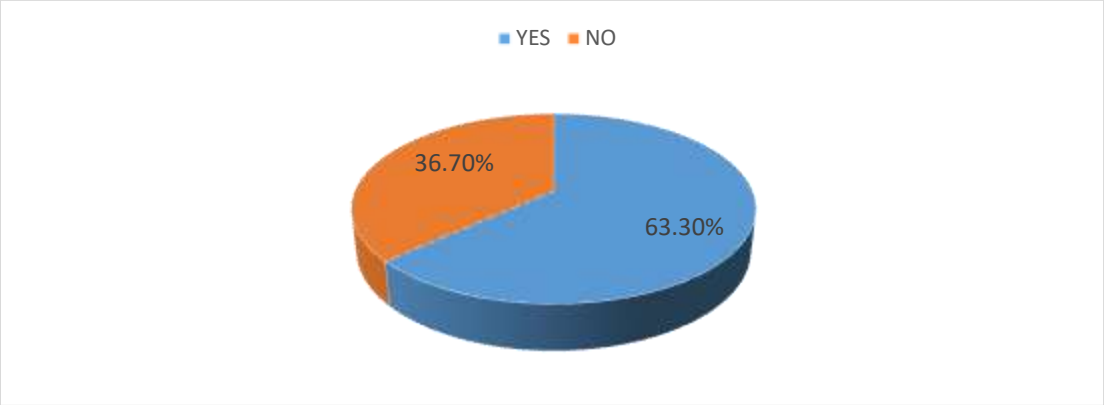
From the data in Table 4, 40 (66.70%) of the respondents documented that they obtain medication from a pharmacy.

Table 5: Shows the distribution of the respondents according to what influences their choice of medication source. (Multiple responses allowed) (n = 60).

Statement	Answer	Frequency	Percentage (%)
What influences your choice of medication source?	Availability of the drug	30	50.00%
	Cost of the drug	25	41.70%
	Advice from friends or family	20	33.30%
	Experience with the drug	18	30.00%
	Advertisement/media influence	12	20.00%
	Other (specify: self-decision)	5	8.30%

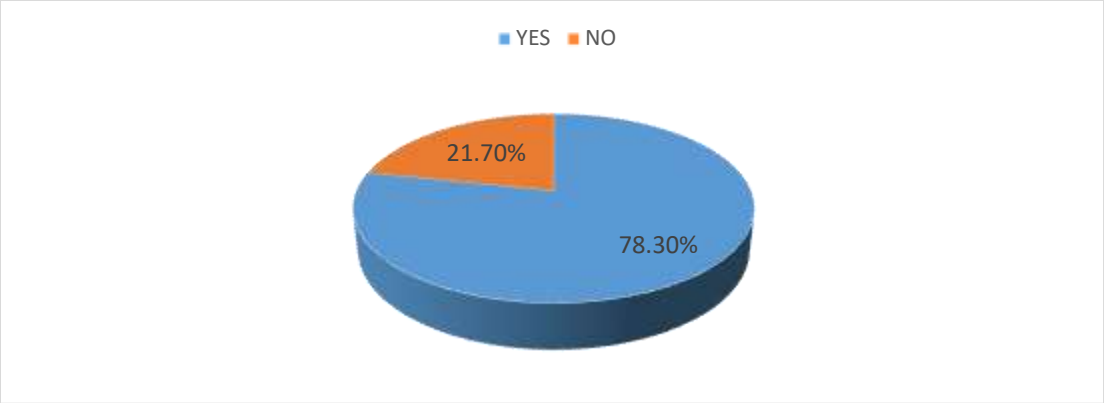
From the information in Table 5, half 30 (50.00%) of the respondents reported that they are influenced by the availability of drugs to self-medicate.

Figure 6: Shows the distribution of respondents according to whether they check the date of expiry before medication (n = 60).



From the information in Figure 6, the majority, 38 (63.30%), checked the date of expiry before medication.

Figure 7: Shows the distribution of respondents according to whether they ever obtained medication without a doctor's prescription (n = 60).



From Figure 7, 47 (78.30%) of the respondents reported that they ever obtained medication without a doctor's prescription.

DISCUSSION

Socio-demographic data factors associated with self-medication among students at Bishop Sisto Mazoldi secondary school, Wakiso district.

The majority, 30 (50.0%) of the respondents were aged between 10 and 14 years. This finding aligns with studies indicating that younger individuals, especially adolescents, frequently engage in self-medication due to curiosity, peer influence, and easy access to over-the-counter (OTC) drugs (Subashini & Udayanga, 2020). The high prevalence of self-medication among younger students raises concerns about the long-term consequences, including drug resistance, incorrect dosage, and potential dependency (Munyambabazi & Mubangizi, 2022).

Additionally, there was an equal representation of male and female respondents, each constituting 30 (50.0%). Gender has been identified as a critical factor in self-medication behaviour, with some studies indicating that females are more likely to self-medicate due to health consciousness and menstrual-related pain, while males often do so for convenience and reluctance to seek medical attention (Zeru et al., 2020). However, the equal distribution in this study suggests that both genders engage in self-medication equally, which may reflect increasing accessibility to medications for both boys and girls in secondary schools.

Furthermore, the highest level of parental education was secondary education 25 (41.7%). Previous studies have shown that parental education influences students' health choices, including self-medication. Higher parental education levels are associated with better health literacy and awareness of the risks of self-medication (Kifle et al., 2021). However, students from less-educated households may lack proper guidance, increasing their likelihood of engaging in self-medication without understanding the associated risks.

The majority, 35 (58.3%) of the respondents were in lower secondary (O-level). Research indicates that younger students in lower secondary education are more likely to self-medicate due to inexperience and limited knowledge about proper medication use (Munyambabazi & Mubangizi, 2022). Conversely, upper secondary students may have better awareness of drug safety and could be more cautious in their self-medication practices. However,

accessibility to medications remains a key factor regardless of the education level.

The majority, 35 (58.3%) of the respondents were Roman Catholics. Religion has been shown to influence health behaviour, including self-medication, as some religious beliefs encourage faith-based healing while others promote conventional medicine use (Elmahi et al., 2022). However, in this study, the dominance of Roman Catholic students suggests that religion might not be a major determinant of self-medication among students in this setting.

Most 40 (66.7%) respondents resided in urban areas. This is consistent with findings that students in urban areas have greater access to pharmacies, drug shops, and informal markets where medications are readily available without prescriptions (Munyambabazi & Mubangizi, 2022). In contrast, rural students may have limited access to medical facilities, potentially leading to reliance on traditional medicine rather than pharmaceutical drugs.

The highest source of income was parental support, 45 (75.0%). Financial dependency on parents suggests that students may have limited purchasing power, which could affect the types of medications they access. Studies have shown that students who rely on parental support for finances may still engage in self-medication if their guardians provide funds without closely monitoring how they are spent (Kifle et al., 2021). The lower percentage of students depending on donations or sponsorships may indicate that economically disadvantaged students have fewer opportunities to access and purchase medications for self-medication.

The prevalence of self-medication among students at Bishop Sisto Mazoldi secondary school, Wakiso district.

The study conducted at Bishop Sisto Mazoldi Secondary School in Wakiso district revealed a high prevalence of self-medication at 47 (78.3%), aligning with global and regional trends. Comparable studies indicate that self-medication is widespread among students, with prevalence rates such as 80.84% in Saudi Arabia (Loni et al., 2023), 52.4% in Ethiopia (Zeru et al., 2020), and 63.5% among students at Mbarara University of Science and Technology in Uganda. These statistics highlight that self-medication is a common phenomenon, particularly among students, due to factors such as easy access to drugs, cost-saving measures, and the perception of self-diagnosed ailments as minor.

Furthermore, among students at Bishop Sisto Mazoldi, 24 (40.4%) self-medicated once. Additionally, most students (29.8%) self-medicated for four days, while 10.6% did so for five or more days. These findings raise concerns about prolonged self-medication, which may lead to drug resistance, dependency, and adverse drug reactions. Similar studies have shown that frequent self-medication can result in health complications, particularly when students use painkillers, antibiotics, or opioids without medical supervision (Munyambabazi & Mubangizi, 2022).

The study also indicated that 47 (78.7%) of respondents remembered the drug names, which suggests a certain level of drug awareness. Fortunately, 45 (74.5%) read drug instructions before self-medication, reflecting a cautious approach. Findings from Eritrean universities (Gebregziabher et al., 2024) showed that 34.3% had engaged in self-medication within the past six months, and 18.8% supported over-the-counter antibiotic use for minor illnesses, demonstrating that a lack of awareness of proper medication use contributes to the problem. Similarly, a study in Tanzania (Shitindi et al., 2024) indicated that 59.6% of students lacked sufficient knowledge about self-medication, increasing the likelihood of adverse effects.

A significant majority, 51 (85.1%) of Bishop Sisto Mazoldi students reported experiencing no adverse reactions. This suggests that while many students may not notice immediate health effects, the long-term consequences of self-medication remain unknown. Drug-related deaths due to self-medication, especially opioid misuse, have been reported in different regions, including the USA, England, and Europe (Rudd, 2016; Volkow & McLellan, 2016). Additionally, 59.6% of the students considered drugs cheap, while 14.9% found them expensive. This affordability contributes to frequent self-medication, particularly with painkillers and antibiotics. In other regions, students have cited high hospital consultation costs and time-saving as reasons for self-medication (Akande-Sholabi et al., 2021; Munyambabazi & Mubangizi, 2022).

The availability and accessibility of common medication sources used by students for self-medication at Bishop Sisto Mazoldi Secondary School, Wakiso District.

This study reveals that most students 40 (66.70%) obtain medications from pharmacies, which is consistent with findings from various studies worldwide. Pharmacies are one of the most common and accessible sources for self-medication, especially in low- and middle-income countries. This finding mirrors results from a study in Saudi Arabia, where pharmacies were the most used source for young people due to their convenience and the lack of prescription requirements (Siraj et al., 2022). Similar trends have been observed in Uganda, where pharmacies, drug shops, and informal vendors are commonly used sources of medication, particularly because of their proximity and affordability (Brian et al., 2025). However, while pharmacies provide easy access, the absence of medical guidance can contribute to misuse. In Uganda, as in many parts of Sub-Saharan Africa, pharmacies and drug shops may sometimes sell prescription-only medications without a prescription, raising concerns about the improper use of drugs like antibiotics, painkillers, and other potent medications (Makeri et al., 2025).

Half of the students reported being influenced by the availability of drugs to self- medicate. This is a key factor in the self-medication practices of students globally. The accessibility of drugs, both in terms of physical proximity and ease of acquisition (often without prescriptions), encourages self-medication. This aligns with findings in African countries like Nigeria and Ethiopia, where

students frequently obtain medications due to their affordability and the lack of strict regulations (Munyambabazi & Mubangizi, 2022; Mengesha et al., 2024). The influence of drug availability on self-medication also underscores the importance of regulating access to over-the-counter (OTC) drugs, particularly antibiotics, to prevent misuse and antimicrobial resistance, which is a growing concern in both Uganda and globally (Makeri et al., 2025).

Additionally, the study documented that37 (63.30%) of the respondents reported checking the date of expiry before taking medications. This behavior suggests some level of responsibility and awareness among students regarding the safety of medications, a positive sign that could be nurtured through educational programs. However, the remaining proportion who may not check expiry dates highlights an opportunity for improving awareness about the importance of medication safety. This also aligns with concerns raised in studies about students' lack of knowledge regarding the risks of expired medications (Fleary et al., 2013).

Furthermore, a significant finding in the study stated that 47 (78.30%) of students reported obtaining medications without a doctor's prescription. This is consistent with the global trend where self-medication is often practiced without medical oversight. Studies in Uganda and other African countries (Ghana and Ethiopia) show that students frequently obtain medications, including antibiotics, without prescriptions (Gebregziabher et al., 2024; Makeri et al., 2025). This practice raises serious concerns, particularly with the widespread misuse of antibiotics, which contributes to antimicrobial resistance. The ease of access to these drugs, without necessary medical checks, exacerbates the risk of ineffective treatments and potential long- term health issues.

CONCLUSION

The study found that self-medication was more prevalent among younger students (ages 10– 14), which is consistent with global findings. Additionally, while religious background was not found to be a major determinant, living in urban areas provided greater access to pharmacies and informal drug vendors. The study revealed a high prevalence of self-medication. The most common source of medications for students at Bishop Sisto Mazoldi was pharmacies.

RECOMMENDATION

Develop national health awareness campaigns that focus on educating both students and parents about the risks of self-medication. These campaigns should be integrated into the national curriculum and local community outreach programs to improve health literacy.

Parents should be educated on the dangers of self-medication and the importance of closely monitoring their children's health practices. Parent workshops and informational resources can be provided to help guide their children toward safe medication use.

Schools should set up school health programs that include counselling and access to medical professionals. These services can provide alternatives to self-medication and offer students proper guidance on managing minor health issues.

Schools should partner with local pharmacies and health centers to provide students with safe, controlled access to medications and ensure they are educated on proper drug use.

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Finally, I want to express my gratitude to my family, friends, and colleagues for their support, tolerance, and understanding. I sincerely appreciate their presence in my life, as their encouragement and support served as a continual source of inspiration.

LIST OF ABBREVIATIONS

NMRA:	National Medicines Regulatory Authority
OTC:	Over-the-Counter (drugs)

SOURCE OF FUNDING

The study was not funded.

CONFLICT OF INTEREST

The author declares that there was no conflict of interest.

AUTHOR CONTRIBUTIONS

DLA- Developed study, pretested research tools, and collected data.
HN- Supervised the Study.
FS- Supervised the Study.
JFN-Supervised the Study

DATA AVAILABILITY

Data is available upon request.

INFORMED CONSENT

There was full disclosure; full comprehension, and respondents voluntarily consented to participate in the study.

AUTHOR BIOGRAPHY

Denis Lagen Apatum is a student at Mildmay Institute of Health Sciences, pursuing a diploma in clinical medicine and community health.
Hasifah Nansereko is a research supervisor at Mildmay Institute of Health Sciences.
Francisco Ssemuwemba is a research supervisor at Mildmay Institute of Health Sciences.
Jane Frank Nalubega is a research supervisor at Mildmay Institute of Health Sciences.

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