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Original Article

FACTORS CONTRIBUTING TO NON-ADHERENCE TO ANTIBIOTICS AMONG THE YOUTH ATTENDING ST. FRANCIS HOSPITAL NSAMBYA, KAMPALA DISTRICT, A CROSS-SECTIONAL STUDY.

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Abstract

Background

Non-adherence to antibiotics among youth is a serious health issue that can lead to antibiotic resistance and prolonged illness. This study aimed to identify the factors contributing to non-adherence to antibiotics among youth attending St. Francis Hospital, Nsambya, in Kampala District.

Methodology

A descriptive cross-sectional study design with a simple random sampling technique was employed; data were collected from a sample of 50 respondents using a semi-structured questionnaire with closed-ended questions as the data collection tool. Data was later analyzed manually using tally sheets, computed into frequencies and percentages using the Microsoft Excel program with bar graphs, pie charts, and tables for easier interpretation.

Results

50 respondents participated in this study, 26 were males, while 24 were females. 56% of the respondents were between 21-25 years of age, whereas the least of the respondents (24%) were in the age range of 15-20 years. The majority, 64% of the respondents, were single, and a minority (4%) were divorced. 42% of the respondents found it difficult to purchase antibiotics 60% of the respondents didn't have health literature about antibiotic medications. 40% stopped taking the antibiotic medications as the symptoms and signs stopped. 36% were strongly influenced by friends (peers), and 40% didn't think it was essential to finish the antibiotic dose. 52% of the respondents had poor health care provider relationships with patients and didn't follow up on their patients' medications.

Conclusion

Poor knowledge and a health care provider relationship with patients, little or no information given to the patients about the antibiotics, and no follow-up of medications by the patients proved to be a hindering factor to adherence

Recommendations

Awareness of antibiotic resistance among patients of the outpatient department and neighboring communities is to be conducted

Key words: Non-Adherence, Antibiotics, St. Francis Hospital Nsambya, Kampala District

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Background of the study

According to the WHO, Antibiotics are one of the antimicrobial agents that are used globally and prescribed for the prevention and treatment of microbial infections. Medication adherence is defined as the degree to which the behavior of a patient taking medication is consistent with the standard recommendations from a health care provider (Jimmy & Jose, 2011). In clinical practice, non-adherence to prescribed regimens has always been a concern, with higher adherence rates usually observed in acute conditions compared to chronic ones. According to the WHO, it reported that 50% in developed countries. In Africa, community drug retail outlets (CDROs) are common in Ethiopia due to their ease of access, wider availability of medicines, shorter wait times, and longer working hours. In Uganda, a low-income country, in 2016, the prevalence of non-adherence to treatment guidelines when prescribing antibiotics was 82.6%. Non-adherence patterns are influenced by diverse factors such as age, gender, income, self-care orientation, etc. Although health care providers are guided by Standard Treatment Guidelines, including dispensing antibiotics as "prescription-only drugs" in Uganda, these are inadequately enforced (Obakiro et al., 2022). The youth are more susceptible to failure in adhering to& lack of knowledge about the possible outcomes and how it will affect them socially, economically, and health-wise in St. Francis Hospital, Nsambya, Kampala District. Therefore, this study aims to identify

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the factors contributing to non-adherence to antibiotics among youth attending St. Francis Hospital, Nsambya, in Kampala District.

Methodology

Study Design

A descriptive cross-sectional study was used to employ quantitative methods of data collection. This type of research design is used because it identifies the characteristics of observed phenomena and doesn't require a lot of time and resources, with a close analysis of the situation.

Study Area

This study was carried out at St. Francis Hospital, which is a suitable, accessible focal point where the researcher can access the youth attending Nsambya, Kampala district. It' s a Catholic Mission Hospital founded way back in 1903, owned by the little sisters of St. Francis of Assisi. It has both general and private patient facilities. It is located 2.7Km from Kampala Central Business District off Ggaba Road along Hanlon and Kevina roads on Nsambya Hill in Makindye Division, one of the administrative divisions of the city, under the Kampala Capital City Authority.

Study Population

In this study, the study populations were the youth who were residents of Nsambya and received their treatment at St. Francis Hospital.

Sample size determination

Sample size was calculated using QR/T (Burton, 1965) Where;
Q= Total number of days spent in data collection
R= maximum number of respondents who were interviewed per day
T= Maximum time taken on each respondent per day
Values: Q= 10 days
R= 5 Respondents
T= 1 hour Therefore, n=QR/T N= (10×5)1
=50 respondents
Therefore, the sample size for this study was 50 respondents.

Sampling Technique

In this study, a simple random sampling technique was used to select respondents. This sampling technique was preferred because I was able to select a sample size that has an unbiased representation, is simple, and is free from bias in the population

Data Collection Method

The questionnaire method was used in this study since many respondents can be reached at the same time and provides anonymity to respondents, which puts them at ease and encourages them to answer truthfully.

Data Collection Tools

This study used a self-administered semi-structured questionnaire with closed-ended questions developed on the basis of a literature review. This questionnaire enabled respondents to freely give answers to the questions and was easy to use.

Data collection procedure

The youth was assessed using semi-structured questions, and was explained to him/her until they confirmed that he/she understood. Data was collected using a well-structured questionnaire that was completed by face-to-face interviews with the respondents. Data included information regarding participants' demographics, individual factors, health facility factors, and community factors contributing to non-adherence to antibiotics.

Study variables

This research aimed at determining the factors contributing to non-adherence to antibiotics among the youth. Therefore, according to the study, the independent variable included factors contributing and the dependent variable is non-adherence to antibiotics.

Quality control

In order to ensure the collection of quality data, a semi-structured questionnaire was pre-tested on 10 eligible youth. The test was used to determine the reliability and the validity of the questions; in addition, the captured information was modified to improve clarity before undertaking the study.

Inclusion criteria

Youth who were residents of Nsambya who received their treatment services from the outpatient department pharmacy of St. Francis Hospital and consented were eligible to be included in the study.

Exclusion criteria

Youth who were critically ill, didn't consent, and those who weren't present on that day were excluded from the study.

Data Management

Data management describes the way to organize & store the data that a research project has accumulated in the most efficient way possible, responsible for the sharing, access, preservation & secure disposal of data. Managing research saves time and money and increases the accuracy and quality of research.

Data Analysis and Presentation

Data analysis was checked for completeness through tallying, coding, and editing. Raw data was cleaned and entered into the computer using Microsoft Excel for frequency distribution tables and pie-charts. Results were presented using frequency distribution tables, charts, and graphs.

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Ethical consideration

A letter of introduction was obtained from Kampala School of Health Sciences' research committee, which introduced the researcher and sought permission, and carried out the study with assurance of confidentiality. The study was commenced after the acceptance letter had been acquired, and the objectives of the study were explained to participants, and they consented to participate in the study. Any information, including their names, obtained from the respondents was kept confidential, and questionnaires were stored in a lockable case.

Results

Demographic data

Table 1: Shows the distribution of respondents according to demographic data. (N=50)

Response	Frequency(f)	Percentage (%)
Age (Years)		
15-20	12	24
21 – 25	28	56
26 – 30	20	40
Total	**50**	**100**
Marital status		
Single	32	64
Married	12	24
Separated	4	8
Divorced	2	4
Total	**50**	**100**
Religion		
Catholic	20	40
Pentecostal	8	16
Muslim	6	12
Protestant	16	32
Total	**50**	**100**
Gender		

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Female	24	48
Male	26	52
Total	**50**	**100**
Level of education		
No formal education	3	6
Primary education	7	14
Secondary education	8	16
Tertiary education	32	64
Total	**50**	**100**
Occupation		
Employed	12	24
Peasant farmer	4	8
Self-employment	10	20
Unemployment	10	20
Student	26	52
Total	**50**	**100**
Nationality		
Ugandan	30	60
Somali	8	16
Tanzanian	1	2
Kenyan	9	18
Others	2	4
Total	**50**	**100**

N=50, Data Source: Primary Data, 2024.

From Table 1, the study found that 56% of the respondents were between 21-25 years of age, whereas the least of the respondents (24%) were in the age range of 15-20 years. In regard to marital status, the study found that the majority (64%) of the respondents were single, and a minority (4%) were divorced. The study discovered that 40% of the respondents were catholic and the least (14%) were Muslim. Based on the findings, most (52%) of the respondents were male, and the least (48%) were female. The study further revealed that the majority (64%) of the respondents had acquired a tertiary education, and a minority 6% did not have any formal education. Based on the findings of the study, most (52%) of the respondents were students, and at least 8% were peasant farmers. The findings of the study also showed that the majority (60%) of the respondents were Ugandans, and the minority (4%) of the respondents belonged to other nationalities.

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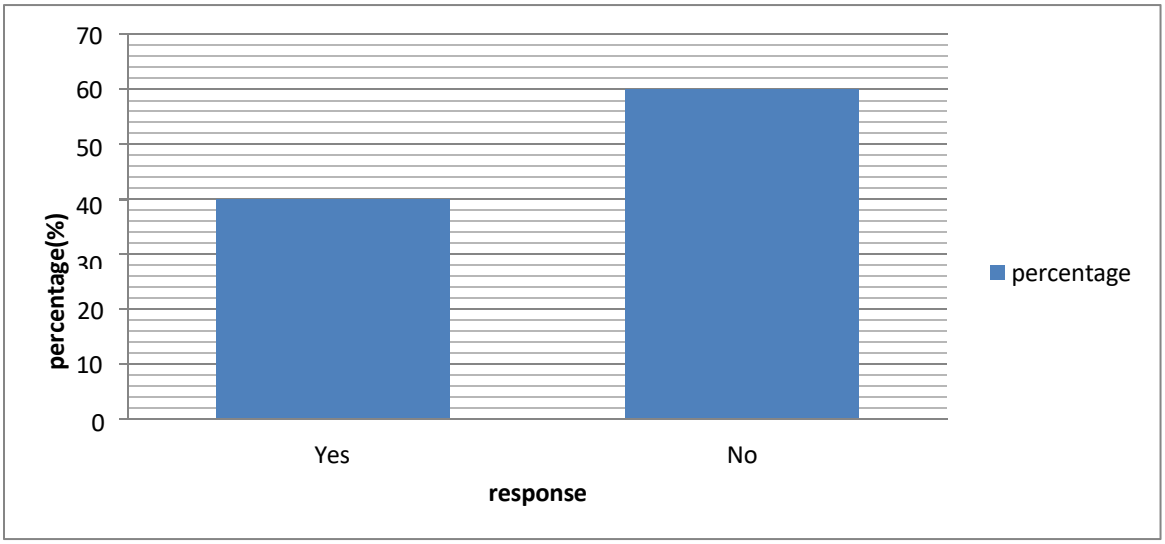
Individual factors contributing to non-adherence to antibiotics among the youth

Table 2 shows the responses to the cost of the antibiotic medication.

Response	Frequency (f)	Percentage (%)
Easy to afford	14	28
Difficult to afford	21	42
Unaffordable	15	30
Total	**50**	**100**

According to Table 2, most (42%) of the respondents found it difficult to purchase the antibiotic medication for their given treatment, whereas the least (28%) of the respondents found it easy to afford the antibiotic medication.

Figure 1: Shows the following responses according to the questions asked of the respondents regarding their knowledge about antibiotics



According to Figure 1, the majority of the respondents (60%) didn't have any health literature about antibiotics, whereas the minority (40%) had some knowledge about antibiotics.

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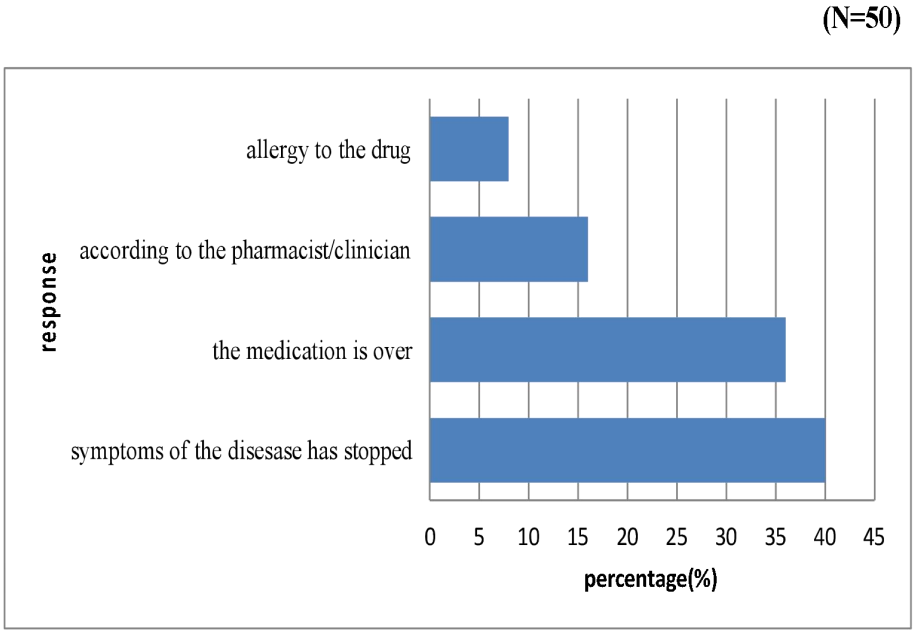
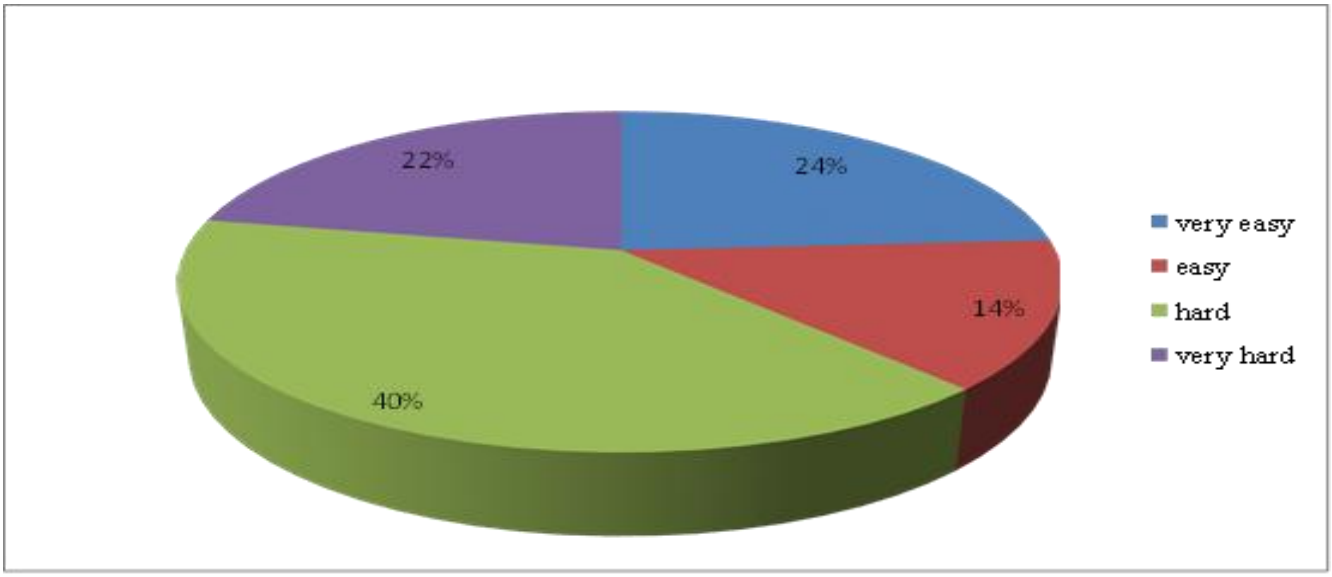
Figure 2: Shows the distribution of respondents according to when they stopped the antibiotic treatment.



According to Figure 2, most (40%) of the respondents stopped taking the antibiotic medication as soon as the symptoms stopped, whereas the least (8%) of the respondents had an allergy to the drug and hence stopped the medication.

Figure 3: The figure below shows the distribution of respondents on the ease of taking the antibiotic medication.



According to the pie chart, 40% of the 50 respondents, 40% found it hard to take the antibiotics, whereas 14% found it easy to take the antibiotic medication.

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Community related factors contributing to non-adherence to antibiotics among the youth.

Table 3: Shows the distribution of respondents according to how peers influence and family size influence on antibiotic medication.

Response	Frequency(f)	Percentage (%)
Peer influence		
Very strongly	8	16
Strongly	18	36
Not at all	10	20
Fairly	14	28
Total	**50**	**100**
Family size		
Strongly	24	48
Doesn't matter	12	24
I don't live with family	8	16
Minimal	6	12
Total	**50**	**100**

Table 3. The study revealed that 36% of the respondents are strongly influenced by their peers (friends), whereas 20% of the respondents were not at all influenced by their peers. It also shows that 48% of the respondents were influenced by the size of their family, and 12% were minimally influenced by their family size.

Table 4: Shows the distribution of respondents according to whether it's essential to finish the whole course of antibiotic prescription and if they had missed any doses in the last two weeks.

Response	Frequency(f)	Percentage (%)
Yes	6	12
No	20	40
I don't know	14	28
I think so	10	20
Total	**50**	**100**
Missed doses in the last two weeks		
Yes	25	50
No	18	36
I don't know	7	14
Total	**50**	**100**

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Table 4 shows that 40% of the respondent don't think it's essential to finish the whole course of antibiotic prescription whereas 12% of the respondents thought it was necessary to finish the course of antibiotic prescription and it also shows that most (50%) of the respondents had missed their doses in the previous two weeks whereas the least (14%) didn't know whether they missed their antibiotic doses.

Figure 4: Shows the distribution of respondents according to if there was a distraction from taking antibiotic medication.

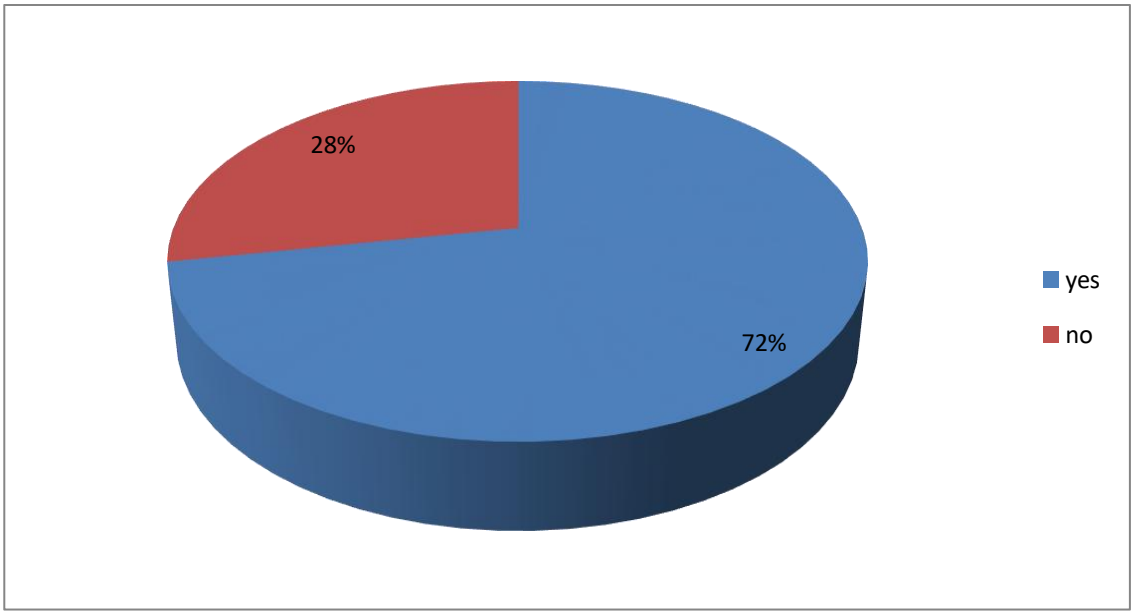

Figure 4 shows that the majority (72%) of the respondents had distractions that stopped them from taking their medication, whereas the minority (28%) of the respondents didn't have any distractions when taking the medication.

Health facility-related factors contributing to non-adherence to antibiotics among the youth

Table 5: Shows the distribution of respondents according to the health care provider's relationship with the patients

Response	Frequency (f)	Percentage (%)
Good	2	4
Fair	18	36
Poor	26	52
Bad	4	8
Total	**50**	**100**

According to Table 5, 52% of the respondents' poor relationship with the health care provider, whereas 4% had a good relationship with their health care providers.

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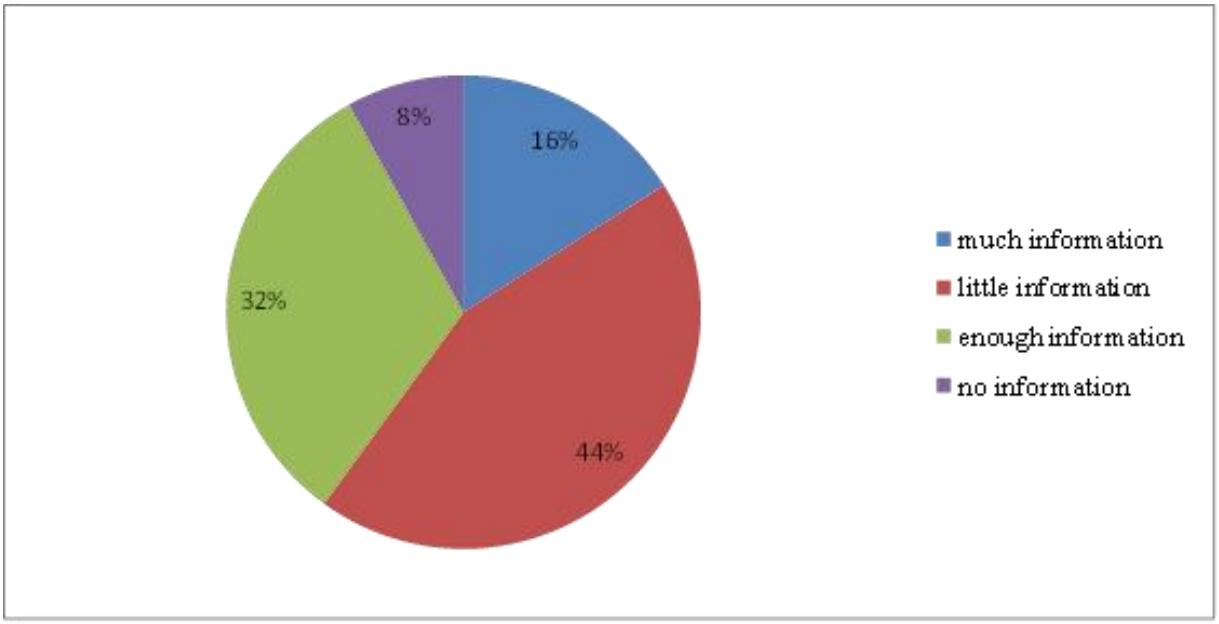
Figure 5 shows the distribution of the respondents according to how much information is given to the patient about the medication side effects.



According to the pie chart, it revealed that 44% of the respondents were given little information about the side effects of the antibiotic medication, and there were 8% of the respondents weren't given any information about the side effects of the antibiotic medication.

Table 6: Shows the distribution of respondents according to whether the health care provider did a follow up on their medication.

Response	**Frequency (f)**	**Percentage (%)**
Yes	6	12
No	26	52
Not sure	18	36
Total	**50**	**100**

Table 6 showed that most (52%) of the respondents didn't get follow-up on their medications, whereas the least 12%of the respondents were followed up by the health care providers on their antibiotic medication.

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Figure 6: Shows the distribution of respondents according to how often the health care provider educated them on their prescription.

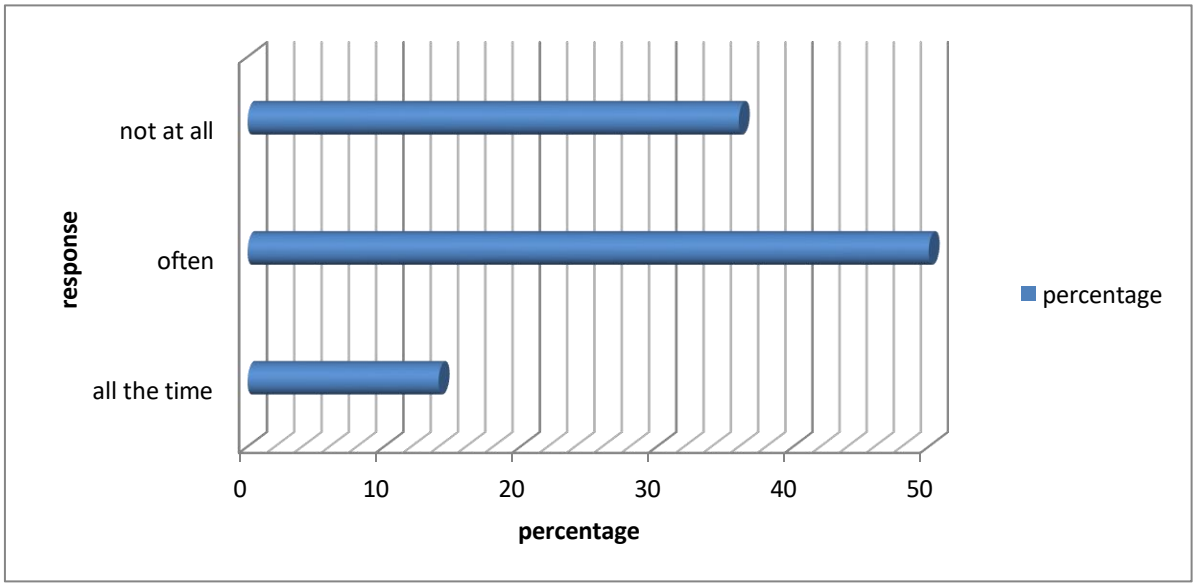

Figure 6 shows that most (52%) of the respondents didn't get education about their prescription, whereas the least (12%) population got education about their prescription of antibiotics.

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Discussion

Individual factors contributing to non-adherence to antibiotics

The study showed the following findings; that 42% of the respondents found difficulty in purchasing the antibiotic drugs and this was due to the high prices placed which the youth were not able to afford on their attributing to the study conducted showed that price of antibiotics (40.9%) and how they knew the dosage was enquired from the seller (85.1%) (Dache et al., 2021). The study revealed that 42% of the respondents found it difficult to take their antibiotic medications this was due to the complexity in the dosing regimen for example penicillin V is given four times a day has hindered the adherence to the medication correlating with the study done showed that medicine complexity and financial costs were barriers to adherence (Hanghoj et al., 2014). The majority of the respondents (60%) didn't have any health literature about antibiotics which was linked to the low levels of health education about antibiotics this made it difficult to understand the reason to adhere to antibiotic medications at the hospital attributing to the study carried out with the results conducted by (Hossain et al., 2023) there is an urgent need for comprehensive statutory antibiotics control rules as well as measures for appropriate information, education and surveillance. The study found that 40% of the respondents stopped taking the antibiotic medications as soon as the symptoms stopped because as soon as the signs and symptoms surpasses the need to finish the dose decreases and sometimes the fear of adverse effects has inhibited the adherence to antibiotics therefore the study agreed with a research carried out in Pakistan stating that the discontinuation of antibiotics was significantly associated with concerns about potential adverse effects and a lack of fundamental knowledge regarding their use (Haider et al., 2024).

Community factors contributing to non-adherence to antibiotics among the youth attending St. Francis Hospital, Nsambya

36% of the respondents are strongly influenced by their friends and 48% were influenced by family size when purchasing and taking antibiotics this is so due to the youth age and wanting things to be done with friends advice and no individual decision making, this research agrees with the study carried out where that 19.34% of the respondents took antibiotics in the absence if specialist recommendation, simply based on advice of family and friends (Voidăzan et al., 2019). The research showed that 40% of the respondents didn't think it's essential to finish the whole course of antibiotic prescription and 50% missed their antibiotic doses in the past two weeks because they believe that as long as the disease symptoms subside or the antibiotics is finished there's no need to adhere to the dose attributing to previous studies conducted that discontinuing treatment once the symptoms improve, changing antibiotic due to ineffectiveness, difficulty in taking prescribed doses, non-availability of pharmacy, and busy work schedule could be some of the socioeconomic factors (Haider et al., 2024). Similarly, in a U.S. outpatient study, non-adherence was frequently linked to inconvenience, forgetfulness, and beliefs that antibiotics are not needed once one feels better, echoing patterns seen in your findings, Suda et al. (2014). Furthermore, it showed that the majority (72%) of the respondents had distractions that stopped them from taking their medication; these distractions included friends, academics, and, in some cases, some would change their drug dosing, thus leading to non-adherence to antibiotics (Dache et al., 2021).

Health facility factors contributing to non-adherence to antibiotics among the youth attending St. Francis Hospital, Nsambya

Health facility factors contributing to non-adherence among the youth was one of the objectives of this study data interpretation was done to produce the following findings; most (52%) of the respondents had poor relationship with the health care provider this was because the patient-prescriber relationship was not so much implemented and the communication between them was not so effective due to the number of patients that have to be dispensed too was high the study attributed to a study conducted in China to reduce the rate of drug non adherence moreover, a positive provider-patient relationship was required to stick to the right treatment regimen (Tong et al.,2018). Additionally, it revealed that 44% of the respondents were given little information about the side effects of the antibiotic medication thus prompting the patients to stop taking the medications due to comfortability, this relates with a study conducted in Bangladesh, the findings could be attributed to the fact that health care providers frequently fail to effectively communicate with their patients about basic treatment information (Mohiuddin et al.,2019)

Conclusion

This study sought to assess the individual factors contributing to non-adherence to antibiotics among the youth attending St. Francis Hospital, Nsambya, in Kampala district, and it established that the

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demographic data were between 21-25 years of age, male, and students, showing that non-adherence occurs mainly among male youth. The individual factors were the high cost of antibiotics due to the high charges placed on drugs, a lack of literature about antibiotics, stopping medication after the disease symptoms subsided, and also found that they had taken the medication, which led to them not adhering to the antibiotic dosing regimen. The findings also sought to find out the community factors contributing to non-adherence to antibiotics among the youth attending St. Francis Hospital, Nsambya, which were that they were strongly influenced by their peers (friends) and family in their community. Some didn't think it was essential to finish the whole course of antibiotic prescription, missed their doses in the past two weeks, and had distractions that stopped them from taking their medication due to fear of adverse effects; therefore, they were not able to finish their respective antibiotic medications. The study revealed that the health facility factors contributing to non-adherence to antibiotics among the youth attending St. Francis hospital, Nsambya were that a poor relationship with the health care provider because of a lack of effective communication and formation of patient-prescriber relationship, and they were given little information about the side effects of the antibiotic medication, which led to non-adherence. Some didn't get education about their prescription, thus leading to non-adherence to the medications, and also didn't get follow-up on their medications of antibiotics, which facilitated the non-adherence to antibiotics.

Recommendations

This study was about factors contributing to non-adherence to antibiotics among the youth attending St. Francis Hospital, Nsambya. The following:

The facility is recommended to provide cost-effective antibiotics, especially for the youth, and much information and awareness about antibiotic use and resistance to ensure adequate knowledge and understanding about the action of antibiotics and potential side effects.

The facility is also recommended to advise its health workers about creating interpersonal relationships with their patients, aligning with effective communication in order to create good healthcare provider relationships.

Health workers are recommended to carry out follow-ups on the patients on their antibiotic medications to ensure that the patients complete their doses, and also to educate them on their prescriptions given by the prescribers after they have been dispensed.

The Ministry of Health, together with the director of Clinical Services, should conduct antibiotic awareness of drugs and its resistance programs for outpatient departments to aid in educating patients about antibiotic use.

The patients at the outpatient department are recommended not to rely on friends and family members for information on antibiotic use and adherence to prevent drug resistance and possible further complications.

The patients are also recommended not to stop taking antibiotics when the disease signs and symptoms have reduced or ceased, or in cases of adverse drug reactions, the patients are recommended to contact or inform their health care provider about it to provide an alternative antibiotic or an antidote when it's severe, and avoid missing doses.

The patients are also recommended to avoid distractions when taking their antibiotic medications so as to create adherence to the dosing regimens.

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List of Abbreviations

AMR: Antimicrobial Resistance
CDRO: Community Drug Retail Outlet, MoH, Ministry of Health
NNAT: Non-adherence to Antibiotic Treatment
SMA: Self-Medication with Antibiotics
SSA: Self Storage with Antibiotics
WHO: World Health Organization

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SES: Socioeconomic status
HCP: Health Care Providers
HBM: Health Belief Model

Source of funding
The study was not funded.

Conflict of interest
The author declares no conflict of interest.

Author contributions
Patience Emmanuela Mbegbu was the principal investigator.
Sania Nakasolo supervised the research project.

Data availability
Data is available upon request.

Informed consent
All the participants consented to the study.

Author's Biography
Patience Emmanuela Mbegbu holds A Diploma in Pharmacy from Kampala School of Health Sciences.
Sania Nakasolo is a tutor at Kampala School of Health Sciences.

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