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Prevalence of Self-Medication among Undergraduate Students at the Faculty of Health Sciences, Lira University

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Abstract

Background: Self-medications the practice of taking medicines to cure any illness without any prescription from a healthcare provider. The prevalence of self-medication among university students is remarkably high globally and varies from country to country. This study determined the prevalence of self-medication and the sources of drugs used for self-medication among undergraduate students enrolled at the faculty of health sciences, Lira University.

Methods: A descriptive cross-sectional survey was conducted among 228 undergraduate students enrolled at the Faculty of Health Sciences, selected by stratified systematic random sampling. Data were collected using self-administered semi-structured questionnaires and analysed with SPSS version 20 statistical software.

Results: A total of 199 participants were interviewed. The overall prevalence of self-medication was 59.3%. Headache, body weakness, fever, flue, lack of appetite, and lower abdominal pain were reported as the most common complaints related to self-medication practice. Regarding the sources of drugs used for self-medication, 16.9% borrowed from friends/relatives, 11.0% used left-overs, 59.3% bought from drug shops and 12.7% from community drug shops.

Conclusion/recommendation: There is a need to educate the health science students about the disadvantages and the impacts of Self-Medication especially with prescription-only drugs not merely assuming they know as upcoming health professionals. There is a need to enforce the existing laws to discourage uncontrolled access to prescription-only drugs without prescription from trained healthcare providers and access to drug shops and pharmacies around student community.

Keywords: Self-medication; Sources; Prevalence and students

Introduction

Self-medication is the consumption of medicines by individuals without consulting a doctor or a healthcare worker to treat self-recognized illnesses.

Globally, the prevalence of self-medication is reportedly high and alarming, especially among university students in developing countries. In Asia, the highest prevalence rate (97%) of self-medication is recorded in India, followed by Pakistan (95.5%), Nepal (59%), Dubai (56%), and Saudi Arabia (34%), and China University students (47.8%). In Europe, Croatia has 88%, Greece 75%, other European countries 68%, and Turkey 45%. Data from Africa shows high prevalence rates of self-medication in Ethiopia (51.4%) and Nigeria (38.8%) [1].

In a study conducted among medical students in Sudanese Universities, 60.8% of students had self-medicated with antibiotics within the previous 12 months. The sources of these drugs were mostly community pharmacies with about 47.5% of individuals obtaining their drugs for self-medication from community pharmacies [2]. Data about self-medication among University students from the eastern parts of the Democratic Republic of Congo shows that 90.7% of University students in this area self-medicate with antibiotics [3].

In East Africa, the prevalence of self-medication of 60% was recorded in Magwaga ward, Nyamira county in Kenya [4]. The knowledge of self-medication among respondents was poor as it was found that 40% depended on physicians for information on antibiotics use, when asked if self-medication can cause harmful effects, 51% remained neutral, and when asked if there is danger in using old prescription and even someone's prescription, 65%, and 58% remained neutral respectively, and more than half of adult attitude (50%) was that self-medication can be reliable.

In a recent study about self-medication during COVID 19 pandemic period in Kenya, the overall prevalence of self-medication in Kenya increased from 36.2% before the pandemic to 60.4% during the pandemic [5]. The respondent's gender, age, marital status, level of education, participation in physical activity, and drug reaction events were significantly associated with self-medication before and during the pandemic. In Nyondo sub-county in Kenya, 61.8% of individuals have used non-prescription medications [6].

Studies in Tanzania about self-medication indicate a prevalence of 46.24% among pregnant mothers in Mwanza [7]. The leading illnesses that led to self-medication included; malaria, morning sickness, and headache. Most drugs used for self-medication were anti-emetics, antimalarial, and analgesics. In northeastern Tanzania, 58% of individuals self-medicate with antibiotics [8]. The drugs used for self-medication were; amoxicillin (43%), and an anti-protozoal agent such as metronidazole (10%). The symptoms that led to self-medication include cough (51.17%), headache/fever/malaria (25.57%), and diarrhea (21%).

In Uganda, 39% of hospitalized patients have used at least one antibiotic in the last four weeks pre-admission [9]. In a study conducted in western Uganda at Mbarara University of Science and Technology, the prevalence of self-medication among enrolled students was reported to stand at 63.5% [10]. The reasons for self-medication were; classifying illness as minor, time saving, having the previous prescription, and high consultation fees. Respondents accessed drugs for self-medication from local pharmacies (56%), private clinics (15%), and friends/family members (17%).

Recently, the prevalence of self-medication in western Uganda has been reported to have decreased from 88% to 57%, before and during the COVID 19 pandemic respectively. This was partly because of the complete restriction of movements from one district to another, closure of borders, curfew, among other measures that were set by the president of the Republic of Uganda in March 2020 to control the spread of COVID 19.Therefore, people did not probably have access to drugs from open drug markets, drug shops, and pharmacies [11].

In northern Uganda, the prevalence of self-medication during the post-conflict period was found to be 75.7%. Fever, headache, lack of appetite, and body weakness were the main symptoms most treated through self-medication. The drugs commonly used for self-medication were coartem, amoxicillin, metronidazole, and cotrimoxazole. These drugs used by respondents were mainly initiated by self and drug shop attendants [12].

However, literature about self-medication practices among student communities in northern Uganda is scarce and so this study aimed at determining the prevalence of self-medication and sources of drugs used for self-medication among undergraduate students enrolled at FHS Lira University.

Methods

Study design/setting

This was a descriptive cross-sectional survey employing the quantitative method of data collection to obtain numerical data which was used to determine the prevalence of self-medication.

The study was conducted at Lira University located in Lira city west division, Lira city between October and November 2021. The university is located approximately 11 kilometres, northwest of downtown, Lira city, off the Lira-Kamdini road. The coordinates of Lira University's main campus are 2°15'04.0"N, 32°49'16.0"E. (Latitude: 2.251111; Longitude: 32.821111). Lira city is bordered by Pader district to the north, Otuke district to the northeast, Alebtong district to the east, Dokolo district to the southeast, Apac district to the southwest, and Kole district to the west.

Study population

The study population consisted of undergraduate students enrolled at the Faculty of Health Sciences Lira University at the time of the study.

Sample size estimation

The sample size of the study was estimated following the methods for estimating sample size of cross sectional studies and we used Yamane's (1967) formula of sample size determination to determine our study sample size. $n = N / (1+Ne^2)$

Where; **n** is the sample size, **N** is the size of the population (470), **e** is the margin of error (5%). Our study population was estimated at 216 participants.

Sampling criteria

A stratified, systematic random sampling technique was used where the entire population of students enrolled at the Faculty of Health Sciences at the time of the study was stratified into the department of nursing and midwifery, department of public health, and department of psychology. (Table)

Proportionate allocation of participants was done for each stratum according to the number of students enrolled at each department. This is because the numbers of students enrolled at each department differed for every department under the Faculty of Health Sciences. Classes from each department were selected by lottery.

Participants in every class were chosen by systematic random sampling. The first member on the list was selected randomly. Subsequent participants were selected by considering the nth case as it was determined depending on the enrolment in each class.

The list of students in each class was obtained from the secretary to the Dean, FHS for use in the selection of study participants

Data collection tool(s)

A semi-structured questionnaire was used to collect social demographic characteristics such as age, sex, and, department; and other health information. It also captured information on whether the students experienced any illnesses in the past six months, how they managed the illnesses and how the treatment was initiated.

Data collection method/criteria

Data were collected using self-administered semi-structured questionnaires which were distributed to the study participants. Data was collected with the help of three trained research assistants from lecture halls after participants willingly and voluntarily consented to participate in the study.

Data management and analysis

Data entry and analysis were conducted using Microsoft Excel 2007 software (Microsoft Inc., Redmond, Washington)and SPSS version 23 (IBM) for analysis. Descriptive statistics (proportions) were used to report the prevalence of self-medication.

The prevalence of self-medication was computed using a method of analysis adopted from a study by to determine the epidemiology of self-medication in Ethiopia [13].

Univariate analysis was conducted on categorical variables; such as sex, and department. They were summarized using proportions, percentages, and frequencies. Continuous variables like age were summarized using mean, and standard deviation.

Ethical clearance

Ethical approval to conduct the study was sought from the Faculty of Health Sciences, Lira University.

Written informed consent was sought from the selected study participants before data collection. For those who were not able to write, a thumbprint was put on the consent form before responding to questionnaires.

Site permission

Permission to conduct the study was sought from the head of Departments of Midwifery, Public Health, and Community Psychology before data collection.

Results

Social-demographic Characteristics

The study recruited and administered questionnaires to 216 participants from the faculty of health sciences. A response rate of 92.1% was registered; 199 participants completed and returned the questionnaires.

Of the 199 participants, more than half (58.3%) were females, while eighty-three participants were males (41.7%). The mean age of the participants was 25.01years (±4.88SD). One hundred and twenty-six of the respondents (63.3%) were from the department of midwifery, forty-four (22.1%) were from the department of psychology, and twenty-nine (14.6%) were from the department of public health. (Table 1)

History of ill health and medicine use

Almost two-thirds of the study participants 129 (64.8%) complained of illnesses within the past 6 months. The most common complaints were; headache (31.0%), fever (23.3%), flue (4.7%), body weakness (3.9%), lack of appetite (20.9%) and lower abdominal pain (12.4%). Other clinical complaints included urinary tract infection (UTI) (2.3%), menstrual cramps (0.8%), and toothache (0.8%), as shown in table 2. (Table 2)

Medications used by students

The medicines used to manage the illnesses included mainly pain killers (31.0%), anti-malarial drugs (17.1%), antibiotics (38.8%), anti-acids (8.5%), and other medications (4.7%) as summarised in table 3. (Table 3)

Self-Medication

Among the 199 participants, one hundred eighteen (59.3%) did not involve a healthcare worker in their decision to treat themselves. Seventy-four (62.7%) were females while forty-four (37.3%) were male students. The prevalence of self-medication among undergraduate students enrolled at the faculty of Health Sciences is, therefore, higher among females compared to males.

Amongst the 118 students who self-medicated, sixty-nine students (58.5%) were enrolled in the department of midwifery; twenty-one participants (17.8%) were from the department of public health while 28 participants (23.7%) were from the department of psychology. This is because the majority of the students who were enrolled at the Faculty of Health Sciences were from the department of midwifery.

Only 5.5% of individuals who fell sick in the last 6 months from the time of the study consulted a doctor or a healthcare worker about the medicines to be taken. (Table 4)

Sources of drugs Used for self-medication

Amongst the 118 participants who self-medicated, twenty participants (16.9%) reported to have borrowed their drugs for self-medication from their friends/relatives, fifteen (12.7%) bought from community pharmacies, thirteen (11.0%) used drug left-overs in the house for self-medication while seventy participants (59.3%) bought drugs for self-medication from community drugs hops. (Table 5)

Discussion

Self-medication

From the study, the prevalence of self-medication among undergraduate students enrolled at the faculty of health sciences is 59.3%. The finding indicates that irrational use of drugs is commonly practiced among students. This may be due to students' experience of the illness in that one is not self-driven anymore for consultation at the

Table 1: Social Demographic Characteristics.

Program	BSc. Midwifery	BSc. Public Health	BSc. Community Psychology	Total
Number enrolled	286	73	111	N = 470
Percentage of total, N	60.85%	15.53%	23.62%	100%
Sample size	139	35	54	n = 228
*BSc – Bachelor of science				

Variable		Frequency (N=199)	Percentage (%)
Sex	Male	83	41.7
	Female	116	58.3
Age (years)	18-27	154	77.4
	28-37	40	20.1
	38-47	5	2.5
Department	Public Health	29	14.6
	Psychology	44	22.1
	Nursing & midwifery	126	63.3

Table 2: Symptoms of Illness.

Variable	Frequency N=129	Percentage (%)
Headache	40	31.0
Fever	30	23.3
Flue	6	4.7
Body weakness	5	3.9
Lack of appetite	27	20.9
Lower abdominal pain	16	12.4
UTI	3	2.3
Toothache	1	0.8
Menstrual Cramps	1	0.8

Table 3: Drug Categories Used for Self-medication.

Drug category	Frequency (N=129)	Percentage (%)
Pain killers	40	31.0
Antibiotics	50	38.8
Antimalarial	22	17.1
Anti acids	11	8.5
Others	6	4.7

Table 4: Prevalence of Self-medication.

Variable	Frequency N=199	Percentage (%)
I went to the hospital when I fell sick to consult the doctor about the medicine I should take.	11	5.5
I did not involve a health care worker in my decision to treat myself for the symptom(s) or condition.	118	59.3
None	70	35.2

Table 5: Sources of Drugs Used for Self-medication.

Variable	Frequency N=118	Percentage (%)
Borrowing from friends	20	16.9
Pharmacies	15	12.7
Left-overs	13	11.0
Drug shops	70	59.3

hospital, long clinical process secondary to congestion of patients at the hospital, informal accessibility of both prescription-only and over-the-counter medications in community pharmacies and drug shops. Health science students may have better knowledge and education in health sciences, contributing to self-medication.

In this study, the proportion of self-medication is more than that reported among undergraduate students in Rwanda [14], where the prevalence was 12.1%. Low proportions of self-medication were also reported in Northern Ethiopia with a rate of 32.7% [15]. A study by Albusalih, Naqvi, Ahmad, and Ahmad (2017) among medical and pharmacy students, revealed a proportion of 26% which is also lower than the prevalence of self-medication in the current study [16]. However, the proportion of self-medication in this study is similar to the results of the study by in Mansoura University [17], Egypt among first and final year students of both medical and non-medical faculties where the prevalence was 62.9%, and in Mbarara University of Science and Technology where the rate was 63.5% [18]. Other comparable findings were also reported among different student populations in various countries, 60.8% among medical students in Sudan [19], 90.7% among university students in the DRC [20], 68.0% among students of teacher's training college in Ethiopia [21], 72.9% among health science students in Eritrea [22], 87.5% reported among students in Zambia [23]. The variations in self-medication practices among different student populations in various countries could be due to differences in; study populations where a population of medical and paramedical students with some knowledge of health sciences may be highly associated with self-medication practices, social-economic gaps, sample size, sampling techniques, and medicines regulatory policy for the different countries.

The prevalence of self-medication was found to be higher in females (62.7%) compared to male (37.3%) undergraduate students. This difference in self-medication practices between genders is consistent with the results of a study by Tuyishimire et al, where the rate was 14.70% in females and 8.95% in males [24]. This may be due to females' regular monthly menstrual cycle during which there are hormonal changes that are associated with premenstrual syndrome and premenstrual dysphoric disorder which may be the common reasons for self-medication amongst females of reproductive age. However, this study did not ascertain the relationship between gender and self-medication.

Sources of drugs used for self-medication

Regarding the sources of drugs used for self-medication, 16.9% reported to have borrowed their drugs for self-medication from their friends/relatives, 12.7% bought from community pharmacies, thirteen (11.0%) used drug left-overs while 59.3% bought drugs for self-medication from community drug shops. The findings of this study are relatively different from the results of the study by where community pharmacies were the first points of care [25]. A study conducted among University students in eastern parts of DRC also reported different findings where 60.8% of respondents who self-medicated bought their drugs from community pharmacies [26].This may be because of the geographical location of the faculty of health sciences of Lira University being far from pharmacies at the time of the study and so, most students could be obtaining their drugs for self-medication from community drug shops. Comparable findings were reported by among student populations in Ethiopia where 38.2% of the respondents shared medications with friends [27]. This could be due to belief that medication borrowing and sharing reduces costs and inconveniences associated with clinical consultations. This is in line with the results of one on one interviews by to explore patients' beliefs and experiences about prescription medicine sharing, patients reported that sharing helps them to avoid treatment costs and inconveniences associated with medical visits such as booking appointments [28].

Conclusion

There is a need to educate the health science students about the disadvantages and the impacts of Self-Medication especially with prescription-only drugs not merely assuming they know as upcoming health professionals. There is a need to enforce the existing laws to discourage uncontrolled access to prescription-only drugs without prescription in drug shops and pharmacies around student community.

Similar studies should be done to determine the independent predictors of self-medication among undergraduate students enrolled at the University.

Author contribution

AK: Concept development, proposal development, data collection, data analysis, manuscript writing.

DJO: Manuscript writing

BO: proposal development, data analysis, manuscript writing.

All authors read and approved the manuscript for publication.

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Abbreviations

DRC: Democratic Republic Of Congo

FSH: Faculty of Health Sciences

OTC: Over the Counter

REC: Research ethics committee

UTI: Urinary tract infection

Declaration of conflict of interest

The authors declare no conflict of interest arising from this study.

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