Prevalence of Antibiotic Self-Medication Among University Students in Kampala, Uganda

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Abstract
Self-medication with antibiotics is a global health challenge of major public health consequences such as the development antimicrobial resistance (AMR). The objective of this study was to determine the prevalence of self-medication practices with antibiotics among the university students in Kampala. It was a descriptive cross-sectional study using a structured self- administered questionnaire among 392 University Students. Selection was by proportional allocation from three universities in Kampala, Uganda. Data was analysed using SPSS software. The prevalence of antibiotic self-medication among respondents was found to be 245 (69.4%). Male students 152 (62%) had the highest percentage of antibiotic self-medication while students aged 15-24 (68.5%) had the highest percentage of antibiotics self-medication, a higher proportion of foreigner students 119 (51.3%) self medicated on antibiotics compared to indigenous students 113 (48.7). In conclusion, the prevalence of antibiotic self-medication was high. It is recommended that the management of various higher educational institutions raise awareness on the dangers of antibiotic self medication, design and implement strategies to improve school heath services to subsequently reduce the burden of this public health problem.

Keywords: Self-medication, Antibiotics, University Students, Kampala.

Introduction

Self-medication can be defined as the self-consuming of medication without getting advice from a physician for either diagnosis or treatment (Machado-Alba *et al.*, 2014). According to a study carried out by Gebeyehu and his colleagues (2015) stated that Antibiotics are one of the major medicine across the globe that people are using in the treatment of the occurrence of the infectious and deadly disease are common without the advice of a physician. The idea and act of using this drug have created a lot of problems to human health such as the adverse effects, poor treatment attitude and long-term effects on human (Roca *et al.* 2015). Generally, self-medication is one of the global health challenges with major public health consequences, for example, the resistance of drug, destruction of essential and prominent organs in the body, also added to the death mainly interaction of antibiotic with another drug (Osemene K, Lamikanra A. 2012). Among the African countries, the prevalence of using drugs ranges from 11.9% to 76% (Sapkota *et al.,* 2010). The majority are buying antibiotics form pharmacies outlet without prescription from a physician (Gitema *et al.,* 2011) for the treatment of some infectious diseases such as cough, common cold, sore throat, runny nose, diarrhoea, menstrual symptoms, gastrointestinal tract infection, skin infection and urinary tract infection (Fadare *et al*., 2011).

The major reason why most people are using antibiotics without a prescription from a physician in treatment similar disease, very cheap, accessibility and availability of antibiotics, common diseases, accept without verification or proof of antibiotics and also use in a difficult or dangerous situation (Akrami *et al.*, 2015). The problems associated with using the drug without physician prescription in Kampala-Uganda are dangerous and rampant. It was reported by Mbonye Martin (Makerere University Reports, 2014) that self-medication has continued to increase driven by the increasing levels of poverty, poor health services and ever mushrooming drug shops with varying degree of quality. There is an increase in the antibiotic resistance even to well-tolerated antibiotics. A study in Uganda recorded the larger percentage of people (75.5%) using antimicrobial medicine without a prescription from doctor such as fever, headache, not willing to eat, pain and general weakness of the body were used to cure them without prescription (30.3%) (Moses, 2014). Knowing those reasons or causes of using the medicine without a prescription from a physician in a particular environment will provide a good way of addressing it. Kampala as a city and capital of Uganda plays a vital role in housing many foreigners and different

tribes within Uganda. This study is intended to determine the prevalence of practice self-medication with antibiotics among the university students in Kampala, Uganda.

Methodology

Study Design, Site and Population

The descriptive cross-sectional study design was used to collect data on the factors associated with self-medication of antibiotics among University Students in Kampala. A structured, self-administered questionnaire was given to individual undergraduates from the chosen universities after explanation and consented. This study was carried out among three (3) Private Universities within Kampala, namely: Kampala International University, Kansanga; Cavendish University, Nsambya; and Islamic University in Uganda, Kibuli. The population was drawn from the entire population of the three (3) selected Private Universities. The total population of all the Institutions summed up to 20,780 which is our study population.

Sample Size Determination

The sample size of the study was extracted for the study population (20780), which was determined using sloven's formulae.

$$n = \frac{N}{1 + N(0.05)^2}$$

where; n= Sample size, N= Target population, E= Margin of error (0.05), giving n= 392**.**

Sampling Strategy

Convenient sampling was used in selecting the three universities as they were easily accessible to the researcher. A simple random sampling strategy was used to sample the population of each university selected. The population of each university that was sampled from the entire university population were determined using a proportional calculation.

Table 1: Sampling Strategy

University	**Sample Population**	**Sample Size**
Kampala International University	13938	262
Islamic University In Uganda	3883	73
Cavendish University Uganda	2959	56
Total	**20,780**	**392**

Data Analysis

Data were analyzed using SPSS version 22; the information extracted from the respondents using questionnaire were entered into the SPSS using appropriate coding methods then descriptive, bivariate and multivariate analysis was done. Descriptive analysis was used to determine, common ailments related to self-medication and to analyze the rate of using the medicine without a prescription from physician, . Categorical variables were summarized using proportions and then presented in tables and graphs.

Ethical Consideration

Ethical clearance was collected from Cavendish University Uganda (CUU) Research Ethics Committee after the approval of the research. Permission was also obtained from selected universities for data collection, after proper permission by the universities, data were then collected. Informed consent was obtained from respective participants in the survey.

Results

The results of this study will be presented inform of tables and graphs with some details explanations.

Table 2: Demographic Data of University Students

Variable	Categories	Frequency	Percentage
Gender	Male	231	62.8
	Female	137	37.2
Age group	15-24	229	63.4
	25-34	111	30.7
	35 and above	21	5.8
Marital Status	Single	312	84.8
	Married	44	12
	Divorced	7	1.9

The majority 231 (62.8%) students interviewed were the male and most, 229 (63.4%) of the student were of age 15-24 years. Out of the 368 respondents, 312 (84.8%) were not married as shown in Table 2.

Table 3: The Prevalence of Self-Medication of Antibiotics Among the University Students in Kampala

Variable	Categories	Frequency	Percentage
Self-medication	Yes	245	69.4
	No	108	30.6

When the students were asked if they had ever self-medicated themselves with antibiotics, 245 (69.4%) reported yes as presented in table 3 students out of 353 students sampled practiced self-medication of antibiotics. The prevalence of self-medication was found to be 69.4%, which indicated that 7 out of every 10 Uganda students practice self-medication of antibiotics as indicated the table 3. Out of 245 students that practice self-medication of antibiotics, male students 152 (62%) have the highest percentage of anti-biotic self-medication while female students have 93 (38%). Students between the ages of 15-24 165 (68.5%) have the highest percentage of antibiotics self-medication, follow by students between the ages of 25-34, 63 (26.1%) and students between the ages of 35 and above 13 (54%). Comparing the foreigners and indigene in Uganda, foreigners 119 (51.3%) have slightly higher percentage above the indigene 113 (48.7) in antibiotic self-medication as shown in Table 4 below.

Table 4: The Distribution of the Prevalence Among the Demographic Factors

Variable	Categories	Frequency	Percentage (%)
Gender	Male	152	62
	Female	93	38
Age Group	15-24	165	68.5
	25-34	63	26.1
	35 and above	13	54
Nationality	Indigene	113	48.7
	Foreigners	119	51.3

Discussion

The prevalence of antibiotic self-medication was found to be 7 out of every 10 students. The male students' anti-biotic self-medication is almost twice as that of the female; this could be as a result of more males willing to consent to the research and also could be due to poor health-seeking altitude of male and the high tendency of risks taking by the male. Students between the ages of 15-24 have high self-medication with antibiotics while students with ages 25-34 have least in self-medication with antibiotics, this can be attributed to the likelihood of young people taking risks. Comparing the foreigners and indigenes in Uganda, the foreigner is slightly higher than indigene in antibiotic self-medication as shown in the frequency table 4. In the prevalence between the foreigners and indigenes, most of the foreigners in this study population were mainly from developing countries, the conclusion could be drawn that self-medication is a problem of developing countries which Africa is one of them.

This result is similar to a study by Yousif and Abubakar, 2014, which found 8 out of 10 prevalence of antibiotics self-medication in a population, the survey was done in Taif city. Another study by Tadele Eticha et al., however, show relatively low in the prevalence of antibiotics self-medication with 4 out of 10 among regular undergraduate students of ACMU in April 2014. So also, Girma et al., 2011 found self –medication prevalence of 2 out of 5. The above findings highlighted widely high prevalence of antibiotic self-medication. The implications of antibiotics self-medication are high resistance to the drugs, the strain on the metabolic system of the body, severity of diseases, uncontrollable diseases etc. it may also lead to a very strong strain or burden on the government budget on diseases and its curative processes. If these acts persist, it may be very hard to avert the emerging diseases and reduce diseases spread which may later result in widespread of diseases.

Conclusions

The prevalence of antibiotic self-medication was high. It is recommended that the management of various higher educational institutions raise awareness on the dangers of antibiotic self medication, design and implement strategies to improve school heath services to subsequently reduce the burden of this public health problem.

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