

**SELF-MEDICATION PRACTICES AMONG SENIOR STUDENTS  
ATTENDING BACHELOR OF MEDICINE AND SURGERY  
AT KAMPALA INTERNATIONAL UNIVERSITY  
WESTERN CAMPUS  
UGANDA**

**RUZINDANA DAVID COZENS  
BMS/0099/123/DU**

**A RESEARCH THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE  
REQUIREMENT FOR THE AWARD OF BACHELOR OF MEDICINE  
AND BACHELOR OF SURGERY AT KAMPALA INTERNATIONAL  
UNIVERSITY**

**SEPTEMBER 2018**

#### DECLARATION

I Ruzindana David Cozens declare that this thesis 'Self-medication practices among senior students attending Bachelor of Medicine and Surgery at Kampala International University Western Campus Uganda' is my own work and that all the sources that I have used have been indicated and acknowledged by means of reference and that the work has not been submitted before at any other institutions.

Signature: \_\_\_\_\_



Date: \_\_\_\_\_

03/09/2018

#### APPROVAL

This is to approve that this research report titled "Self-medication practices among senior students attending Bachelor of Medicine and Surgery at Kampala International University Western Campus Uganda" has been prepared by Ruzindana david Cozens, BMS/0099/123/DU under my direct supervision and is now ready to be submitted to the faculty of clinical medicine and dentistry of Kampala International University western campus, for further consideration.

Supervisor: Dr. Keesing Hinda

Signature: [Signature]

Date: 3/10/18

## **DEDICATION**

I dedicate this research to my parents Mr Ruzindana Anthony and Mrs. Ruzindana Peace. To my siblings, Dr Ruzindana Kenneth, Ruzindana Mukuru Brian and Ruzindana Mbabazi Kellen and my friends and colleagues at Kampala International University.

## **ACKNOWLEDGEMENT**

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## **ABBREVIATIONS AND ACRONYMS**

KIUSHS: Kampala International University School of Health Sciences

NSAIDS: Non steroidal anti-inflammatory drugs

OTC: Over the counter

WHO: world health organization

## **DEFINITION OF TERMS**

**Self-prescription/Self Medication-** The two terms, used interchangeably in this study, refer to obtaining and consuming drugs without the advice of a physician either for diagnosis, treatment or prevention of disease by the patient and in this context, the student.

**Over the counter (OTC) drugs-** Drugs that are permissible for purchase and use without prescription

**Drugs-**Any substance that is taken or consumed for the purpose for which is to provide a cure or to manage a disease condition.

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## **ABSTRACT**

### **Background:**

Self-medication, as one element of self-care, is the selection and use of medicines by individuals to treat self-recognized illnesses or symptoms. It is use of non-prescription medicines by people on the basis of their own initiatives. Although, over the counter drugs are meant for self-medication and are of proven efficacy and safety, their improper use could have serious implications both on health care professionals and their patients or clients. Social work is one of the caring professions which involve promoting and protecting the welfare of individuals and the wider community. Since, health care professionals are also segments of the community they can also be potential candidates for social work intervention.

### **Method:**

This study aimed to assess self-medication practice among senior medical students of Kampala International University teaching Hospital. Facility based cross-sectional study was conducted among senior medical students selected using stratified random sampling technique. Sample size was calculated to be 294. Data was collected and entered in to Epi-info version 3.6 and analyzed using SPSS version 20. Descriptive statistics was employed. Statistical significance was declared at  $p\text{-value} < 0.05$ .

### **Results:**

The findings indicated that 90% of the respondents utilize self-medication and 60% of them practice self-medication for headache/ fever. And painkillers were the most widely used type of medicine. The major reason the respondents practice self-medication was found to be mild illness.

### **Conclusion:**

In the multivariate analysis, age and sex were associated with self-medication practice.

### **Recommendation:**

The findings of the study have implication on policy that there is a need to reevaluate drug and health policies of the country and formulate rules and regulations regarding drug use.

## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.1 Background**

##### **1.1.1 Historical Background**

Throughout human history the dominant paradigm of healthcare was individual self-care in the family and local community. People themselves were responsible for their own health, and that of their families. Self-care is probably not only as old as mankind but also most widely used (WSMI, 2010).

Self-care may be defined as the care taken by individuals towards their own health and wellbeing, including the care extended to their family members and others. It is what people do for their own selves to establish and maintain health, prevent and deal with illness. It is a broad concept encompassing hygiene, nutrition, lifestyle, environmental factors, socio-economic factors and self-medication (WHO, 1998).

##### **1.1.2 Theoretical Background**

Self-medication, as one element of self-care, is the selection and use of medicines by individuals to treat self-recognized illnesses or symptoms. It is use of non-prescription medicines by people on the basis of their own initiatives (WHO, 1998). Husain and Khanum (2008) also defined self-medication as obtaining and consuming medication without professional supervision regarding indication, dosage, and duration of treatment. However, self-medication is not necessarily means the consumption of modern medicines but also of herbs (Partha, Shankar & Sheno, 2002).

##### **1.1.3 Conceptual Background**

In most illness episodes, self-medication is the first option which makes it a common practice worldwide. In the treatment of minor illness, when problems are self-limited, self-medication can be used (Alano, Galafassi & Galato D, 2009). The type and extent of self-medication and the reasons for its practices may vary from country to country but it is widely practiced in both developed and developing countries. In economically deprived countries most episodes of illness are treated by self-medication. In a number of developing countries including Uganda, many drugs are dispensed over the counter without medical supervision. In this case, self-medication provides a lower cost-



alternative for people who cannot afford the cost of clinical services and for government institutions, this can reduce costs while allowing health professionals to focus on more serious health problems (Worku & G. Mariam, 2003). However, the easy availability of a wide range of drugs and in the case of developing countries, the inadequate health services result in increased proportions of drugs used for self-medication compared to prescribed drugs (Partha et al, 2002).

#### **1.1.4 Contextual Background**

Self-medication in Uganda is becoming alarming, it is imperative to assess the associated factors a study was done by Sulayman Ademola A, in 2017 to determine the prevalence and factors associated with self-medication among University students in Kampala. Descriptive cross sectional study design was used in this study, employing quantitative method of data collection. Convenient sampling was used in selecting the three universities, namely; Kampala International University, Cavendish University and Islamic University in Uganda and the universities students were sampled randomly with a total sample size of 392 students. The results reveal that 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. Ampiclox 108(31.5%), Septrin 103(30%), Flagyl 51(15%), Tetracycline 35(10%), and other types of antibiotics such as Cefuroxime 2(0.5%), Erythromycin 17(5%) and Amoxicillin 14(4%) were found to be among a common antibiotic that were self-medicated by the students. Skin diseases 116(31.5%) were found to be the most common ailments treated and sore throat 16(4.3%) being the less common ailments treated with antibiotics without prescriptions among the university students. Marital status ( $X^2=8.236$ ,  $P\text{-value}=0.041$ ), residence of the student ( $X^2=12.854$ ,  $P\text{-value}=0.005$ ), religion ( $X^2=17.967$ ,  $P\text{-value}=0.001$ ) and students faculty ( $X^2=14.824$ ,  $P\text{-value}=0.001$ ) were the socio-demographic factors associated with self-medication of antibiotics among the university students in Kampala. In conclusions, the prevalence of self-medication among university students in Kampala is high which indicates that 7 out of every 10 Uganda students practice self-medication of antibiotics. Factors such as religion, marital status, residence and faculty of the student were found to be associated with self-medication (Sulayman Ademola A, 2017)

## **1.2 Problem Statement**

Internationally, a number of studies have been conducted on various aspects of self-medication. With the existing literature it is possible to say that self-medication is well researched problem in western countries. In Uganda, there are a few studies conducted to assess the use of self-medication among the general population and students including medical students. Bekele, Argaw and Yalew, (2016) studied self-medication practices among medical, pharmacy, and health science students and found out that a remarkable amount of students had practiced self-medication (Bekele, Argaw & Yalew, 2016).

The prevalence of self-medication among university students in Uganda is high which indicates that 7 out of every 10 Uganda students practice self-medication of antibiotics. Factors such as religion, marital status, residence and faculty of the student were found to be associated with self-medication (Sulayman Ademola A, 2017).

Even though self-medication is a useful tool to treat minor ailments, improper self-medication practice may lead to serious adverse drug reactions and possibly fatal consequences. Moreover, currently, there is a worldwide concern about the emergence of antibiotic resistant strains of micro-organisms which might have been highly augmented by self-medication (Tena, 2014)

If used appropriately, self-medication could lighten the demand on doctors and make people more health conscious. However, if abused, it could delay accurate diagnosis and appropriate treatment, and could cause toxicity, side-effects, drug interaction and unnecessary expenditure (Arzi, Ashtarinezhad & Sarahroodi, 2010). In order to handle unnecessary health risk and bacterial resistance due to improperly obtained drugs, it is important to consider the manners of drug availability to consumers. Unlike in the developed countries, illegal purveyors of drugs are common in developing countries along with some practitioners (Worku et al, 2003).

### **1.3 Objective of the Study**

#### **1.3.1 General Objective**

Self-medication practice among senior students attending Bachelor of Medicine and Surgery at Kampala International University Western Campus Uganda

#### **1.3.2 Specific Objectives**

- I. To describe the magnitude of self-medication practice among senior students and cure rate following self-medication
- II. To determine the type and pattern of drugs which the students frequently self-medicate and the side effects faced due to consumption of the self-prescribed medicines
- III. To determine the factors that are responsible for self-prescription among the senior students

### **1.4 Research Questions**

- I. What is the magnitude of self-medication practice among senior students and cure rate following self-medication?
- II. What are the types and pattern of drugs which the students frequently self-medicate and the side effects faced due to consumption of the self-prescribed medicines?
- III. What are the factors that are responsible for self-prescription among the senior students?

### **1.5 Significance of the Study**

Even if self-medication using over the counter drugs is universally accepted as an important strategy to alleviate minor ailments like common cold and headache both in developed and developing countries like Uganda, it has negative impacts if misused. The rate of utilization Self-medication practice among medical students is very high among the general population. And health care students are also affected by the problem. But, since there are limited literatures on the raised issue this study will

provide a hint on the existing self-medication practices among senior students attending Bachelor of Medicine and Surgery in the study setting.

Knowing the magnitude of utilization and possible reasons responsible for high practice of self-medication among senior students attending Bachelor of Medicine and Surgery will help policy makers, program designers and implementers to design a tailored intervention that focuses on elimination and or reduction of obstacles to minimize non-prescribed drug use among medical students. Furthermore, since the aim of social work is to give service for those in need and in this case medical students could be potential clients, the results of this study will further assist the student leaders, governmental and non-governmental organizations in collaboration with Ministry of Health to be aware of the extent of self-medication among medical students and develop strategies for promoting awareness creation and improving the involvement of social workers in the health care system. Moreover, this study can serve as a motivation and a base line data for future studies that are going to be conducted on this specific area.

## **1.6 Scope of the Study**

### **1.6.1 Geographical scope**

Kampala International University School of Health Sciences (KIUSHS) is the school of health sciences of Kampala International University, a private Ugandan university. The school provides health sciences education at Certificate, Diploma, Undergraduate and Postgraduate levels. The school's campus is located in the town of Ishaka, in Bushenyi District, Western Uganda, approximately 330 kilometers (210mi), by road, southwest of Kampala, Uganda's largest city and capital. The coordinates of Kampala International University School of Health Sciences are: 0°32'19.0''S, 30°08'40.0''E (Latitude:-0.538611; Longitude: 30.144444) (Google Maps 2016).

### **1.6.2 Content Scope**

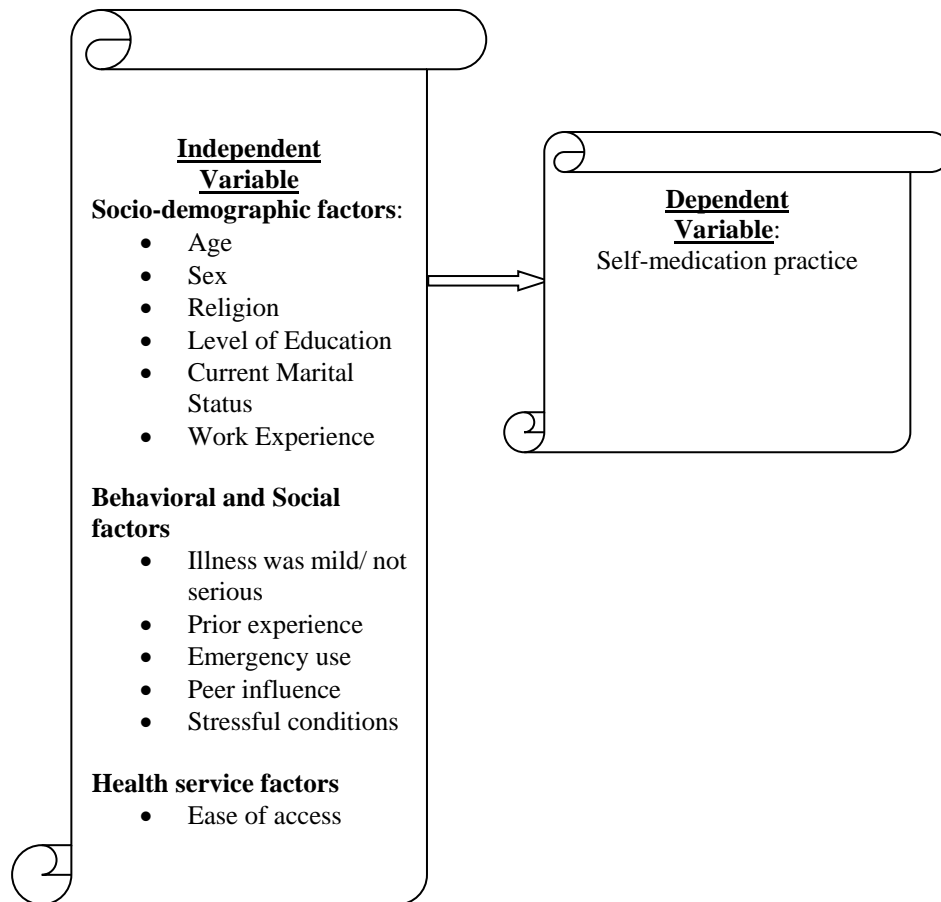
This study was limited to assessing the self-medication practice among senior students attending Bachelor of Medicine and Surgery. It will cover the self-medication practice of medical students and cure rate following self-medication, the type and pattern of

drugs which the students frequently self-medicate and the side effects faced due to their consumption and potential reasons contributing to self-medication practices

### **1.6.3 Time Scope**

Ethical approval for this study may be obtained on 5<sup>th</sup> /September/2018. Data may be collected from 10<sup>th</sup> / September/2018 to 14<sup>th</sup> / September /2018. Data may be analyzed in 17<sup>th</sup> / September /2018 to 19<sup>th</sup> / September /2018. The final thesis may be submitted for examination on 24<sup>th</sup> / September /2018.

## 1.7 Conceptual Frame Work



**Figure 1: Conceptual Framework**

Factors such as, socio-demographic, behavioral and health service factor are considered to affect self-medication practice among medical students. In this frame work, Socio-demographic factors like age, sex, educational status, religion, current marital status, monthly income, job category and work experience affects the individual's behavior towards self-medication. Behavioral and social factors like prior experience, emergency use and stressful conditions affects self-medication practice. And health service factors like ease of access, less expensive and time saving influences self-medication practice.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Prevalence of self-Medication in the general population**

As far as its prevalence is concerned, self-medication has high rate all over the world. It has high prevalence rate that is ranging from 32.5- 81.5%. Self-medication prevalence rate in developing countries is alarming that is 92%, prevalence rate in European countries is 68 % and in countries like India and Nepal are 31 % & 59 % respectively (Bollu et al, 2014).

In a study done to assess self-medication awareness and attitude among Malaysian urban population overall 83.9% of participants consumed OTC medications. The commonly consumed OTC drugs were supplements and vitamins followed by painkillers, flu/ cough remedies and sore throat products. Easy access, convenience and time saving were the most frequent reasons for self-medication (Azhar et al, 2013).

A study of the prevalence of self-medication practice among University Students in Southwestern Nigeria indicated that majority of the respondents (91.4 %) were involved in self-medication practices. Fifty three point eight percent of the students used antibiotics while 46.3 % used anti-malarial drugs for self-medication (Osemene et al, 2012)

In Ethiopia, the magnitude of general self-medication practice among the general population was studied and results showed that the majority of illnesses were treated without consultation of professionals. Previous studies in Addis Ababa and central Ethiopia showed that, the magnitude of self-medication was as high as 50% (Kitaw, 1987).

A study done in the three Gondar towns (i.e., Gondar, Dabark, & Kola-Diba), North West Ethiopia found that, the prevalence of self-medication was 27.5% in two week recall period (Abula and Worku, 2001). Similarly, another community based survey done in Jimma town showed that the prevalence of self-medication was 27.6%. (Worku et al, 2003).

Another study done to assess medication knowledge, attitude and practice among Gondar university fresh man students showed that 74% of the respondents intended to self-medicate on minor ailments like cold. Regarding where they get the medicines from, more than 75% of the students seek for non-prescription medicines in the community pharmacy (Berhanemeskel & Seada, 2008).

A community based cross-sectional survey conducted to assess self-medication practices with antibiotics among urban dwellers of Bahir dar town, North West Ethiopia, showed that prevalence of self-medication was 23.3% and out of these 17 (12.8%) of them use antibiotics for self medication. Among them, 14 (82.4%) obtained drugs from private pharmacy or drug shop without prescription and 3 (17.6%) from their friends or relatives. Respiratory tract disease 10 (58.8%), diarrhea 7 (41.2%), fever 3 (17.6%), headache 2 (11.8%), gastro intestinal tract disease 1 (5.9%) were reported symptoms of illness for the practice of self-medication. The reasons given for self-medication are previous experience with similar illness (82.2%), minor problem (17%), less expensive (11.8%) & urgency of problem (5.9%) (Tena, 2014).

## **2.2 Prevalence of Self-Medication among Health science students and reasons for practice**

There are a handful of studies conducted concerning self-medication practice among medical and health science students. Looking at this practice among medical and health science students is vital as they are future medical practioners and has a potential role in counseling patients and clients about the advantages and disadvantages of self-medication.

A comparative study on university students including health and non-health from the city of Rio Grande, Brazil was done and 86.4% of them were self-medicated. Self-medication was statistically higher among healthcare students in most cases. The overall reasons for self-medication were headache (89.7%), cold (82.9%), sore throat (58.1%), fever (56.2%), menstrual cramps (47.6%), muscle pain (41.0%), cough (36.4%) and heartburn (29.4%); and also stomachache (27.1%), nausea (26.4%), vomit



(22.3%), allergy (21.2%) and intestinal colic (14%). The most frequently used active ingredients were acetaminophen (paracetamol), dipyrrone, aspirin, phytotherapeutic compounds, and herbal tea (Corrêa da Silva, Soares & Muccillo-Baisch, 2012).

Another comparative study to assess self-medication practice among Allied and Non-Allied Health Students of the University of Santo Tomas, Philippines was done and from the 66 respondents, a total of 55 (83.3%) reported that they practice self-medication. It was found that the most common therapeutics used in self-medication is antibiotics 36 (65.5%), followed by anti-allergic and antihistamine medication 33 (60.0%), decongestants 20 (36.4%), herbal remedies 10 (18.2%), back/chest pain relievers (Paracetamol) 8 (14.5%), topical treatments and laxatives/anti-diarrheal/anti-constipation agents 7 (12.7%), back/chest pain relievers (NSAIDs) 4 (7.3%) and ulcer medications 1 (1.8%).

Self-treated health conditions in which they practice self-medication for include headache 43 (78.2%), cough and cold 42 (76.4%), fever 38 (69.1%), toothache 35 (63.6%), muscle pain 34 (61.8%), Pimples 18 (32.7%), back/chest pain 15 (27.3%), dizziness 15 (27.3%), diarrhea/constipation 14 (25.5%), fatigue/Stress 11 (20.0%), dysmenorrhea 10 (18.2%), vomiting 9 (16.4%), eye disease 8 (14.5%), ulcer/hyperacidity 5 (9.1%), Asthma attack 3 (5.5%), Stomach ache other than ulcer 3 (5.5%), Skin itchiness 2 (3.6%), Skin rashes 2 (3.6%) and weight loss 2 (3.6%).

The most common reason mentioned why the respondents practice self-medication is to save time 31 (56.4%), followed by low severity of illness 16 (29.1%), having previous episodes of same illness 12 (21.8%), and to save money 5 (9.1%). The least is due to remoteness of health-care facility 3 (5.5%). There were 6 (54.5%) out of the 11 respondents who reported that they do not practice self-medication due to fear of complications, and 1 (9.1%) due to readily available and accessible health service (Jazul & Nieto, 2014).

Knowledge, attitude and practice of self-medication among first year medical students in Chitwan Medical College, Nepal were studied and it was found that prevalence rate

of self-medication of one year period was 84%. The principal morbidities for seeking self-medication include cold and cough as reported by (85.7%) followed by pain (76.2%), fever (73%), diarrhea (47.6%) and dysmenorrhea (46%). Drugs / drugs group commonly used for self-medication included analgesics (75.8%), anti-acids (53.2%) and antipyretic (46.3%). Among reasons for seeking self-medication, 79.2% felt that their illness was minor while 61.9% preferred as it is due to previous experience. Concerning reasons against self-medication among 12 respondents who did not practice self-medication in one year period was also asked and 6 (50%) respondents were afraid of adverse drug reaction. 6 (50%), 5(33.3%) and 4(25%) are afraid of risk of using wrong diagnosis, missing actual diagnosis and drug dependence respectively. In this study, student's immediate response when they get sick was also studied and 27 (36%) responded consult a doctor, 22 (29.3%) mentioned self-medication, 22 (29.3%) said they ask for suggestion and 9 (12%) said they will wait till symptoms subside. (Mehta & Sharma, 2015).

Self-medication patterns among nursing students in North India were studied and practice of self-medication was reported by 88.24% nursing students. The most common ailment for seeking self-medication was headache (42.86%), followed by fever (29.57%), common cold/cough (22.86%) and abdominal pain (15.24%). Paracetamol (59.05%), analgesics (39.05%), antibiotics (26.67%), antihistamines and cough suppressants were most commonly used drugs/drug groups for self-medication. Among reasons for seeking self-medication, ease (33.33%) was given as the major reason by the respondents, while 22.86% felt it give them learning opportunity, 20.95% time-saving and 19.05% said cost-effectiveness (Goel & Gupta, 2013).

A study on knowledge and practices of OTC medications among second year medical students at Burdwan Medical College and Hospital, West Bengal, India was done and it was found out that they took self-medication approximately four to five times on average in last one year. The reasons mentioned to use OTC drugs include thinking disease is not serious (62%), familiar with the disease and its remedy (47%), ease and convenience (7%), Time saving (6%) and cost of physician's service (1%). Most common conditions/symptoms for self-medication were fever (89%), cough and cold

(75%), headache (67%), diarrhea (33%), any type of pain (53%) followed by minor cut, vomiting. Antipyretics (82%), cough and cold preparation (51%) and pain-killers (49%) were the most common medicines taken (Ghosh, Biswas, Mondal, Halder & Biswas, 2015).

A research conducted to assess the prevalence of self-medication among pharmacy students in Guntur, India found out that approximately 95% of the students reported the use of non-prescription drugs/ complementary medicine. Most commonly used drugs for self-medication are antipyretics (90.6%), cough and cold (78.4%), analgesics & anti-inflammatory (85%) and antibiotics (62%). And the ailments that do not need an intervention by a physician and for which self-medication was practiced include fever (89%), body pains (83%), cold (65.3%), cough (74%), headache (67.8%), diarrhea (42.7%), vomiting (38%), gastric problems (49.5%) and nutritional deficiencies (76%), allergic conditions (10.1%), minor cuts/wounds (8.3%) and constipation (15.3%). On asking for the reasons of self-medication about 46% of members prefer OTC drugs due to economic problems, 73.5% being lack of time to visit the physician and (60.3%) ignorance (Bollu et al, 2014).

Self-medication practices among medical students of a private institute in Nagpur, India was studied and student's reported self-medication in the preceding one year was 71.7%. The reasons quoted for self-medication were minor ailments 194 (55.4%) followed by quick relief 87 (24.9%) and urgency 71 (20.3%). Fever and headache 296 (84.5%) were the most frequently reported illnesses followed by acidity 188 (53.7%) and cough and cold 168 (48%) for which self-medication was practiced. Commonly used drugs were antipyretics and analgesics (80.6%), followed by antacids (55.1%), antibiotics (34.9%), antihistaminic (44.6%), gastrointestinal ailments (13.2%), skin problems (14.3%), ear/eye drops (19.7%) and topical ointment (20.6%). The main source for drug procurement was pharmacy without prescription 261 (74.6%) followed by free physician samples 46 (13.2%) and friends/relatives 39 (11.2%) (Kasulkar & Gupta, 2015).

Practices of self-medication with antibiotics among nursing students of Institute of Nursing, Karachi, Pakistan was done. More than half of nursing students 79 (52.7%)

experienced self-medication with antibiotics. The common symptoms which pre-disposed respondents to self-medication practices were fever 37 (46.8%), sore throat 27(34.2%) and runny nose 19 (24.1%). The key reasons for self-medication was knowledge about the drug 59 (74.7%) followed by convenience 13 (16.5%) and cost saving 9 (11.4%) (Ali, Ahmed, Sonekhi, Fayyaz, Zainulabdin & Jindani, 2016).

Patil (2015) studied self-medication awareness and attitude among undergraduate medical students in a tertiary medical college, Dhule, India. It was found that overall, 389 (84%) participants consumed OTC medications. Supplements/vitamins (53%) were the most frequently used OTC medications followed by painkillers (34%), flu/cough remedies (31%), sore throat products (32%) and medication for skin care (25%). Minor illness was the most common (91.2%) reason for the use of OTC medications. However 18 participants (3.9%) used OTC drugs for severe illness as well. Almost half the participants stated that self- prescription was more convenient (53%), easier to access (51%) and time-saving (42%), when compared to consulting a doctor. About 43% of the participants also thought that consulting a doctor were unnecessary as the condition that required self-medication, was a minor problem. Most of the participants purchased the OTC medications from the pharmacy (69%) with the rest obtaining them from the retail shops.

Assessment of self-medication practices among medical, pharmacy, and health science students in Gondar University, Ethiopia was done and 38.5% had practiced self-medication during the two months period preceding the study. The most common drug used in self-medication was Paracetamol, that is, 38 (46.3%). Others were analgesics constituting 20 (24.4%), followed by antacids 10 (12.2%), anti-helminthes 9 (10.9%), antibiotics 4 (4.8%), and anti-malarial 3 (3.7%). Fever and headache were the most frequently reported causes of morbidity 55 (24.8%) followed by respiratory 51 (23.9%) and gastrointestinal tract diseases 28 (13.2%). Other episodes of illness included diarrhea 19 (8.9%), malaria 13 (6.1%), pneumonia 13 (6.1%), constipation 12 (5.6%), and eye disease 8 (3.8%). Among the reasons given for self- medication, 29 (35.4%) respondents felt that they had previous experience of treating a similar illness. Twenty-five (30.5%) respondents felt that the illness was mild and did not require the service

of a physician. Eight respondents (9.8%) reported that cost-effectiveness was their major reason to practice self-medication, and 13 (15.8%) stated emergency use. Concerning where they get the medications from, 59 (72%) obtained drugs from the pharmacy or drug shop without prescription, 13 (5.9%); from their friends, 3 (3.6%); from drugs left over from prior use, and the remaining 7 (8.5%) from plant (traditional medicines) (Abay et al, 2010).

Another study done among health science students in Mekelle University showed, the prevalence of self-medication was 43.24% with most frequently reported symptom being headache 33(51.56%) followed by cough and common cold 28(44.80%), dysmenorrhea 13(20.30%), and dyspepsia 11(17.20%). Others like loss of appetite, fatigue, insomnia, stress \were also reported though few. The most common classes of drugs used in self-medication in the current study were analgesics, in particular, Paracetamol, which was reported by 31(48.44%) of the respondents followed by NSAIDs as reported by 27(42.20%) of the respondents. Other common types of medications reported were antibiotics 11(17.20%), cough syrup 8(12.50%) and antacids 5(7.80%) as Paracetamol 31(48.44%) and NSAIDs 27(42.20%) were the two most frequently consumed medications. The reasons mentioned for self-medication were prior experience 25(39.10%), mildness of the illness 24(37.5%), long waiting time 10 (15.63%), less costly 3 (4.69%), lack of interest in medical services 1(1.56%) and others 3 (4.69%). About the question regarding where they get the drugs from, 26(40.63%), 10(15.63%) and 9(14.10%) of the respondents said that they obtained the drugs for self-medication from drug retail outlet, friends/relatives, and open markets, respectively. Measures taken by those who reported illness during the three months period were also studied and 64 (43.24%) had practiced self-medication; while 57(38.52%) and 27(18.24%) of them sought medical services and took no action respectively (Gutema et al, 2011).

In another recent study done to assess the magnitude and factors associated with self-medication practices among health science students in Arsi University, Ethiopia it was found out that 54.5% of them practiced self-medication. The most common types of ailments for which the respondents reported to have accessed drugs for self-medication

were headache 169 (56.50%), followed by gastrointestinal disease 102 (34.10%), respiratory tract infection 95 (31.80%), menstrual 28 (29.20%), eye 67 (22.40%) , skin 52 (17.40%) and sexually transmitted diseases 31 (10.40%). The most common drug used in self-medication was antibiotics 179 (59.90%). Others were analgesics constituting 143 (47.80%), followed by gastrointestinal drugs 86 (28.80%), respiratory drugs 74 (24.70%), vitamins 66 (22.10%), and ORS 50 (16.70%). The major reasons indicated for self-medication by respondents were: they perceived their illness as mild or disease not serious 132 (44.1%), followed by poor quality of routine health care services at university clinic 81(27.1%) and it saves their time 60 (20.3%). Most of the drugs for self-medication were obtained from drug outlets 184 (61.50%), shop/supermarkets 89 (29.80%), relatives/friends 72 (24.10%) and left over from previous drugs 57 (19.1%) (Shimelis, Mesele & Alemayehu, 2016).

## **CHAPTER THREE**

### **METHODOLOGY**

#### **3.1 Study Design**

A facility-based cross-sectional quantitative and qualitative study design was used to assess self-medication practice among senior students attending Bachelor of Medicine and Surgery at Kampala International University Western Campus Uganda

It is described as quantitative study because it attempts to measure self-medication practices among senior medical students through the use of a questionnaire. On the other hand, it is also described as a cross-sectional survey since the study involves the administration of the research instrument (questionnaires) once only to the sample and the data generated on the measured characteristics are limited only to the specific period of the study.

#### **3.2 Sample Size Determination**

The sample size was determined using single population proportion formula for cross sectional survey as follows:

$$n = \frac{(z\alpha/2)^2 pq}{d^2} + \text{Non-response rate (Charan \& Biswas, 2013)}$$

Assuming that:

Proportion of self-medication practice among health care professionals  $P=77.6\%$  (Ali et al, 2013)

$$q = (1-p) = 22.4\%$$

$$\text{Confidence level} = 95\% = 1.96$$

$$\text{Desired precision (d)} = 0.05$$

$$\text{Non-response rate} = 10\%$$

The total required sample size was 294.

#### **3.3 Study Population**

The study population was the undergraduate senior students; both residents and non-residents. This is an ideal group because they spend most of their time in their respective rotations, therefore are accessible. The students were sampled from their different rotations to give a representative sample.

### **3.3.1 Inclusion criteria**

- I. Undergraduate senior students
- II. Students who give Informed consent

### **3.3.2 Exclusion Criteria**

- I. Post graduate students
- II. Undergraduate junior students
- III. Students who refuse to give consent

### **3.4 Sampling Technique**

Stratified sampling technique was employed to allocate samples and to select eligible study participants from the list of students. We divide the total number of students by total sample size to get the interval  $(k) = 1267/294 = 4.3 \approx 4$ . So, the questionnaires was given for every 4<sup>th</sup> student during the data collection period based on the list from each class. And the first sample was selected using lottery method.

### **3.5 Data collection Tools**

The data was collected from study participants by using pre-tested, structured, self-administered questionnaire adapted and modified from previous researches on similar topic (Ali et al, 2012). It was designed in such a way that it includes all the relevant variables to meet the study objectives which consist of 14 questions divided into two sections that cover questions to assess socio-demographic characteristics and self-medication practice of respondents including questions which are helpful to identify their reasons for practice and the type and pattern of drugs self-prescribed among themselves. The questionnaires was adapted, modified and developed in English language.

### **3.6 Data collection procedure**

Data collection tools was distributed and later on collected by the principal investigator. Respondents were approached at their respective class. Verbal consent was taken and questionnaires was given to study participants. After they responded to the questions, questionnaires was gathered by the principal investigator.



### **3.7 Data quality Management**

There are points at which the quality of data may be affected unless measures are taken at these points. These points are questionnaire designing, data collection and data entry. As this is one of the points to control the quality of data, due emphasis was given to questionnaire designing. Objective based, logically sequenced, free of scientific terms and non-leading structured questionnaire was prepared. Pre-test was undertaken on the questionnaire before the actual data collection starts and amendment was made on the necessary points. Data collection is another area of focus to keep the quality of the data. Data was collected by the principal investigator and the collected data was checked on daily basis for any incompleteness and/or consistency.

### **3.8 Data Processing and Analysis**

#### **3.8.1 Data Entry and Data Cleaning**

The Data entry and cleaning was undertaken using Epidata version 3.1. Data was checked for completeness, it was cleaned manually for inconsistencies and missing values before entry and any incomplete questionnaire was excluded from entry. Then during data entry, data was coded carefully and cleaning was undertaken by checking the categories of all variables for impossible codes, cross-tabulating two variables and looking for logically impossible combinations. After the entry of the whole questionnaire was completed, the soft copy of every questionnaire will once again be cross-checked with its hardcopy to avoid missing values, outliers and other inconsistencies before analysis.

#### **3.8.2 Data Analysis**

SPSS version 20 for windows was used for analysis. The first step before analysis was data exploration to visualize the general feature of the data to be analyzed. At univariate level, analysis of descriptive statistics was first carried out to have percentage values, frequency, mean and median to describe the study participants by socio-demographic, behavioral and health service factors. And then, bivariate analysis to test the strength of association between variables computed using odds ratio. After this bivariate logistic regression analysis was done to identify the relationship each independent variable has

with the dependent variable. Then, variables which have association with the dependent variable was taken into multivariate logistic analysis to find out which of them have factorial association with the dependent variable. Statistical significance was declared at  $p\text{-value} < 0.05$ . Finally variables having  $p$  values less than or equal to 0.05 in multivariate analysis was considered as having a statistically significant association with self-medication practice.

### **3.9 Ethical Considerations**

Ethical clearance was obtained from institutional review board (IRB) of Kampala International University-western campus. After ethical clearance received, permission to conduct the research was asked from administrative body of Kampala International University-western campus. Information sheet was prepared and given to all eligible participants of the study to obtain informed verbal consent. All participants was informed the aim and purpose of the study and their participation was voluntarily. Name of the participant was omitted from the questionnaire; instead code number was used to ensure confidentiality throughout the study period. The researcher will make sure that there is no harm or risk on the respondents for being participants of the research.

### **3.10 Study limitation and Delimitation**

The study was carried out in only one university in Uganda; thus the results therefore may not be generalized to the whole student's communities in the Uganda universities. The study was based on self-reporting on self-medication, therefore dependent on the respondent's honesty.

Convenience sampling was done and this may introduce bias and the results should be treated cautiously.

## CHAPTER FOUR

### DATA PRESENTATION AND ANALYSIS

#### 4.1 Socio-demographic characteristics of the study population

A total of 268 respondents with response rate of 91.2% participated in the study. The median age of respondents was 27 years with the minimum and maximum age of 24 and 39 years respectively. From the respondents, 153 (57%) were females, 209(78%) of the respondents were Christians and 185 (69%) of the study subjects were single.

**Table 1: Socio-demographic characteristics of respondents, Kampala international university Western Campus Bushenyi, Uganda (n=268)**

Characteristics	Frequency	Percentage
<b>Age</b>		
20-29	142	53
30-39	126	47
<b>Sex</b>		
Male	115	43
Female	153	57
<b>Religion</b>		
Muslim	54	20
Catholic	180	67
Protestant	29	11
Other	5	2
<b>Marital status</b>		
Single	185	69
Married	83	31

#### 4.2 Self-Medication practice of study participants

When asked about the time when they got sick recently 142 (53%) of the study participants said a week ago. Concerning the immediate action they took when they got

sick, 241 (90%) responded they self-medicated of which 108 (43%) said they self-medicated once for their last illness (Table 2).

Among those who practice self-medication, 151 (60%) did so for headache/fever whereas, 10 (4%) mentioned other reason which is back pain. Regarding the question which asks what type of medication they use for self-medication, 193 (77%) said painkillers and 1 (0.4%) said other type of medication which is folic acid (Table 2).

**Table 2: Self-Medication practice among students**

<b>Variables</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Last time of sickness recently (n=268)</b>		
Week ago	142	53
Month ago	67	25
Three months ago	29	11
Six months ago	3	1
≥Year ago	27	10
<b>Immediate Action (n=268)</b>		
Consulted a doctor	11	4
Self-medicated	241	90
Ignored	16	6
<b>Frequency of self-medication (n=251)</b>		
Once	108	43
Twice	50	20
Three times	45	18
Four times	3	1
≥ Five times	45	18
<b>Type of disease* (n=251)</b>		
Respiratory tract infection	118	47
Eye disease	20	8
Gastro intestinal symptoms	85	34
Headache/Fever	151	60

Skin disease/Injury	25	10
Maternal/Menstrual pain	63	25
Others (back pain)	10	4
<b>Type of Medication* (n=251)</b>		
Painkillers	193	77
Antibiotics	83	33
Cough Syrup	45	18
Antacid	45	18
Oral Contraceptive Pills	10	4
Vitamins	25	10
Other (folic acid)	1	0.4

\*Note: due to multiple responses for type of disease and type of medication is possible, sum of percentages >100

#### 4.3 Reasons for self-medication practice and place of access for drugs

The major reason mentioned by the study participants who practice self-medication was mild illness 180 (67%) and 3 (1%) of the respondents mentioned other reasons like I do not trust the medical person's skill, I know the disease and because the pain was severe 177 (66%) of the respondents said that they got the medicines for self-medication from pharmacy followed by work place 105 (39%), friends 32 (12%) and drug retail shops 21(8%) respectively (Table 3).

**Table 3: Reasons for practice of self-medication and place of access of drugs among students**

Variables	Frequency	Percentage
<b>Reasons for self-medication*</b>		
Emergency use	126	47
Mild illness	180	67
Less expensive	54	20
Saves time	126	47

Prior experience	88	33
Ease of access	86	32
Peer influence	21	8
Stressful conditions	46	17
Privacy	13	5
Other	3	1
<b>Place*</b>		
Work place	105	39
Pharmacy	177	66
Drug retail shops	21	8
Friends	32	12

\*Note: Due to multiple reasons for practice of self-medication and place where to find the drugs is possible, sum of percentages >100

#### 4.4 Negative consequences of self-medication

Of all study participants 233 (87%) responded self-medication has negative consequence on the health professional. Of which 163 (61%) said drug resistance as a consequence on health care professionals.

**Table 4: Consequence of self-medication on health care professionals**

Effect of self-medication	Frequency	Percentage
<b>Negative consequence</b>		
Yes	233	87
No	38	14
<b>Consequence on HCPs</b>		
Drug dependence	153	57
Drug resistance	163	61
Drug reaction	91	34
Worsening of disease	51	19

Note: Due to multiple responses for reasons for not self-medicated is possible, sum of percentages >100

#### 4.5 Reasons mentioned for not practicing self medication

Concerning the reasons for study participants who had no practice of self-medication 10 (39%) said it's because the illness was self-limited meaning it gets resolved by itself without any intervention (Table 5).

**Table 5: Reasons for not self-medicated**

Reasons for not self-medicated * (n=26)	Frequency	Percentage
Self-limited	10	39
Severe pain	4	14
Hate medicines	4	14
Prefer hospital	8	29
Side-effects	8	29

Note: Due to multiple responses for reasons for not self-medicated is possible, sum of percentages >100

## **CHAPTER FIVE**

### **DISCUSSION OF RESULTS CONCLUSIONS AND RECOMMENDATIONS**

#### **5.1 DISCUSSION**

##### **5.1.1 Self-medication practice of respondents**

Self-medication behavior has become a global trend that has been internationally reported as being on rise and can have positive as well as negative impacts. It has been noted that the increased trend of self-medication practice is not only detected in countries with advanced economy but also in developing countries (Sharif et al, 2015). In this study, the prevalence of self-medication practice of medical students was examined. According to the result, high percentage (90%) of the respondents practiced self-medication as an immediate action for their recent illness. This finding is in agreement with a study done in Malaysia among health care professionals (Ali et al, 2013), in Karachi Pakistan among pharmacists and non-pharmacists (Shoaib et al, 2013), in India among nurses and midwives (Swopna et al, 2016), in United Arab Emirates among pharmacists (Sharif et al, 2015) and in Ghana among doctors and pharmacists (Boateng, 2009). However, this current study included medical students and not specific to the professionals these reviewed studies included.

##### **5.1.2 Association between socio-demographic characteristics and self-medication practice**

In the multivariate analysis it was found that respondents who are females were found to be more likely to practice self-medication than their male counterpart. This is in accordance with another study done among medical students of a private institute in Nagpur, India (Kaskular et al, 2015) and a study done on university students in Arsi University, Ethiopia (Bekele et al, 2016). This might be related to the physiological difference they have and how they react to pain. Females have more disease burden than males including pains related to maternal and menstrual effects. However, this issue has to be explored further to reach for possible explanatory reasons.

##### **5.1.3 Association between type of disease and self-medication practice**

Based on the results of the study, the most common illness the study participants said they practice self-medication for is headache/fever. This is in line with a study



conducted in United Arab Emirates in which headache and fever were the most common symptoms for practicing self-medication (Sharif et al, 2015). Again in another study done in North India (Goel et al, 2013) headache was the most common symptom for self-medication practice.

#### **5.1.4 Association between type of medication and self-medication practice**

Concerning the type of medicine they use for self-medication, the majority (85%) of the respondents said painkillers (analgesics) followed by antibiotics. This result has similarity with other studies conducted at different places. A study done in Brazil among nursing workers from public hospitals in Rio de Janeiro stated that the most used subgroup of drugs was analgesics (Barros et al, 2009). In a study conducted in West Bengal India (Gosh et al, 2015) antipyretics and analgesics was the most common class of drugs self-medicated by majority of the participants of the study. Also in another study done in Ghana among doctors and pharmacists, analgesics and antibiotics were the first and the next most used drugs for self-medication (Boateng, 2009). Similarly, a study done among health care professionals in South West Nigeria indicated analgesics as the main type of medicine used for self-medication followed by antibiotics (Babtunde et al, 2016). In a comparative study done among pharmacists and non-pharmacists in Pakistan drug commonly used for self-medication practice includes antibiotics and analgesics (Shoaib et al, 2013). According to WHO (2009), the rampant irrational uses of antibiotics not only lead to wastage of medical resources, but also contribute to the emergence of multi-drug resistant pathogens which is potentially dangerous for both individuals and societies. Anti-microbial resistance is one pitfall of self-medication (WHO, 2001).

#### **5.1.5 Association between reason for self-medication and self-medication practice**

In the present study, the major reason mentioned by the study participants who practice self-medication was mild illness which is similar with a study done in United Arab Emirates where majority of the participants responded 'health problem is not serious' as a reason for practicing self-medication (Sharif et al, 2015). It is also in line with another study done among health care professionals in South-west Nigeria, in which mild sickness is among the main reason for self-medication practice (Babatunde et al, 2016).

#### **5.1.6 Association between self-medication practice and place of access for drugs**

Regarding source of medication, majority (66%) of the respondents said they got the medications for self-medication from pharmacy. Similarly, in the study done among pharmacists in United Arab Emirates, the main source of obtaining medication was the pharmacy (Sharif et al, 2015).

#### **5.1.7 Negative consequences of self-medication**

According to Barros et al (2009), inappropriate self-medication can cause undesirable consequences and effects, iatrogenic diseases and mask progressive diseases. It can also result in wastage of resources, resistance to pathogen and generally entails serious health hazard. Similarly, majority of the participants in this study responded improper self-medication has negative consequences on the health professional and the patients/clients.

As a negative consequence of improper self-medication on health care professionals, 61% mentioned drug resistance. And ... (69%) said negligence on the patients/clients. This finding has a similarity with a study on health care professionals in a Private University, Malaysia which stated that the consequences of inappropriate self-medication among HCPs have been found to have severe implications including legal, ethical, health defects, negative impacts on patient and quality of health care delivery (Ali et al, 2013). Also a review on prevalence and measure of self-medication done in Pakistan stated that the cost of negative outcomes as a consequence of self-medication may include wastage of resources, increased resistance of pathogens, and generally entails serious health hazards such as adverse reactions, drug interactions and prolonged suffering (Sherazi et al, 2012). Similarly a study done in Ghana stated that the consequences of self-medication among pharmacists and physicians have been found to have disastrous implications including legal, ethical, health defects on the health personnel, negative effects on the patient and on the quality of health delivery as a whole (Boateng, 2009).

### **5.1.8 Reasons mentioned for not practicing self-medication**

Majority of the respondents who said they do not practice self-medication mentioned the illness was self-limited meaning the disease condition was diminished/ resolved by itself without Self-medication practice among health care professionals and its effect among patients/ clients any intervention as the main reason for not practicing self-medication followed by fear of the side-effects. This is similar with a study done among medical students in Nepal and health care professionals in Malaysia in which they responded risk of adverse reaction as a reason against self medication (Ali et al, 2013).

## **5.2 CONCLUSIONS**

In this study self-medication practice among senior medical students was found to be high (90%). From the total respondents, 60% of them responded they practice self-medication for headache or fever. And painkillers were the most widely used type of medicine for self-medication followed by antibiotics. This is a serious problem which needs a better focus and intervention keeping in mind the alarming rate of antibiotic resistant pathogens.

The finding of this study showed that 'mild illness' is the major reason for self-medication practice mentioned by the study participants. And concerning the place of access of drugs for self-medication the majority said from pharmacy followed by their work place. Access of drugs from work place is mentioned in the second place. This might mean that they are taking from what is supposed to be accessed by the clients/patients at the health institution. This calls for a need of better drug control system in the hospital.

From the study participants, 86% agreed that improper self-medication practice has negative consequences both on the health care professional and the patients they care for. From the consequences on health care professionals, 61% of them responded drug resistance. Among the reasons mentioned as a consequence on the patients/clients, 69% accounts for negligence.

This needs to be investigated further by incorporating the views of the patients/clients to reach for a better intervention.

Based on the points mentioned above, it can be concluded that, self-medication practice among medical students is more prevalent which must be explored in detail so as to reach for an effective intervention.

### **5.3 RECOMMENDATIONS**

The findings of the study, self-medication practice among senior medical students has the following social work implications with regards to practice, education, research and policy.

#### **Implication for social policy**

The health policy and the drug policy of the country are the major policy areas related to this study. The health policy of Uganda under its general strategies mentioned that health education shall be strengthened for creating awareness in the population about the rational use of drugs. The drug policy of the country also mentioned under its general strategies concerning drug use, that appropriate education, promotion, counseling etc. shall be offered in every possible way to raise the public awareness about drug use. However, both policy documents did not mention specific points regarding self-medication and the drugs that are safe to be utilized without the doctor's prescription. In this regard, there is a need to reevaluate the policies and formulate rules and regulations regarding drug use.

As we can see from the findings of the study majority of the respondents tend to self-medicate and get an immediate relief from their symptoms rather than seeking a holistic care like by having discussion with other health care professionals and medical social workers about what causes their problem. The symptom may arise from uncomfortable work environment, stressful conditions, from their social environment etc which means it might be beyond physical need rather psychosocial and spiritual. Hence, the role of social workers in the health care setting is very vital for addressing the psychosocial and spiritual needs of the patients (health care professionals in this case), by participating in multidisciplinary teams so that, they can get service in a holistic approach.

The other thing the medical social workers can do is that encouraging the healthcare professionals to enter the patient role meaning like any other person seeking health care services, health care professionals should also be encouraged through appropriate

provision of health care services rather than getting self-medicated. This could be the potential solution to decrease the high prevalence of self-medication among health care professionals.

### **Implication to social work education**

As noted from the findings of the study the involvement of social workers in the health care setting by incorporating them as team members is very important. Since one of the field placement areas for social work students is health institutions, students and their field liaisons should recommend on observed gaps in health care delivery.

### **Research Implication**

To the best of my knowledge, very few studies have been conducted regarding self-medication practice among medical students. It is very clear that there is a research gap regarding this issue. Since this research explored prevalence of self-medication among medical students, it can serve as a beginning point for researchers who are interested to do further researches on the issue.

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## **APPENDIX I: INFORMED CONSENT**

Dear Respondent; my name is Ruzindana David Cozens. Currently I am undergraduate student at Kampala International University-Western Campus. I am conducting a research to assess self-medication practice among students attending bachelor of medicine and surgery Kampala International University western campus.

**Purpose:** The main purpose of the study is to collect information necessary to describe the level of self-medication practice among health care professionals and in order to identify the gap to recommend possible solutions. To attain this purpose your honest and genuine participation is very important and highly appreciable. I, therefore, kindly request you to fill this questionnaire as accurately and carefully as possible.

**Risk:** By participating in this research, you may feel that it has some discomfort especially on wasting time about 10-15 minutes to fill out the questionnaires. We hope that you will choose to participate in this study for the sake of the benefit. There is no risk of any sort that was incurred by participating in this study.

**Benefit:** Participants in this study will receive no direct benefit from the study since participation is voluntary and there are no incentives. However the outcomes of the study was indirectly beneficial in improving the practice.

**Confidentiality:** Please be assured that all the information gathered was kept strictly confidential and your name does not need to be written in any page of the questionnaire. Only the researcher has access of the information and uses it for the study purpose only. You have a full right not to participate in this study. You can choose not to respond to some or all questions if you do not want to give your response. You have also the full right to withdraw from this study at any time you wish if you find it uncomfortable.

**Whom to contact:** If you need more information and if you have question here is the contact address of the investigator.

Tell: 0784-472559

Email:

**Kampala International University**

Questionnaire code -----

## Part I: Respondents Socio-demographic characteristics

- ## Part II: Questions regarding self-medication practice

- a) Respiratory Tract Infection (E.g. cough, cold, etc.) Yes ☐ No ☐
- b) Eye disease Yes ☐ No ☐
- c) Gastrointestinal symptoms(e.g Diarrhea, constipation, etc) Yes ☐ No ☐
- d) Headache/Fever Yes ☐ No ☐
- e) Skin disease/Injury Yes ☐ No ☐
- f) Maternal/Menstrual pain Yes ☐ No ☐
- g) Others, Specify-----

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- a) Pain-killers b) Antibiotics c) Cough syrup d) Antacid e) Oral Contraceptive pills f) Vitamins g) Other, (specify)-----

10. What was (were) your reason(s) of self-medication with drugs? (**Answer each of the following choices by putting a tick mark**)

- |                                  |  |
|----------------------------------|--|
| a) Emergency use                 | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| b) illness was mild/ not serious | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| c) Less expensive                | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| d) Saves time                    | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| e) Prior experience              | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| f) Ease of access                | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| g) Peer influence                | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| h) Stressful conditions          | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| i) Privacy                       | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| j) Others, (specify) -----       |  |

11. How did you respond to the drug after self medication (**Multiple responses are possible**)? a) got healed b) not healed c) Got side effect (Specify).....

12. From where do you get the drugs for self-medication? (**Multiple responses are possible**) a) Pharmacy b) Drug retail shops c) Friends d) Others, (specify)-----

13. Do you think improper practice of self-medication among medical students has negative consequences? (**If No, stop here**)

b) Yes ☐ No ☐

14. If yes, what are the negative consequences on the health care professionals themselves? (**Multiple responses are possible**) a) Drug Dependency b) Drug resistance c) Adverse drug reactions d) Worsening of the disease condition e) Others, (specify)-----

15. If not self-medicated, what was your reason? (**Multiple responses are possible**)

a) The illness was self-limited b) The illness was severe c) I hate taking medicines d) I prefer to go to hospital e) Fear of the side effects f) Others, (specify) -----

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### Appendix III: WORK PLAN

ACTIVITY	MONTHS					
	august	september	september	september	september	october
Proposal writing						
Approval of research proposal						
Data collection						
Data analysis						
Dissertation write up						
Report submission						

#### APPENDIX IV: Budget

ACTIVITY	ITEM	QUANTITY	UNIT PRICE	TOTAL
Proposal writing	Stationary	6 reams	15,000	90,000
	Typing	1	150,000	150,000
	Printing			140,000
Data collection tools	Questionnaires	360	300	100,000
	Pens	10	500	5,000
Transport				300,000
Data collection	Two assistants		50,000	100,000
Food and Housing			150,000	150,000
Miscellaneous				300,000
<b>TOTAL</b>				<b>1,335,000</b>

## APPENDIX V: MAP OF UGANDA



## APPENDIX VI: MAP OF ISHAKA MUNICIPALITY





## APPENDIX VII: INTRODUCTORY LETTER

KAMPALA INTERNATIONAL UNIVERSITY

WESTERN CAMPUS

P.BOX 71, ISHAKA

DATE: 5/09/2018

THE EXECUTIVE DIRECTOR/DEAN  
FACULTY OF CLINICAL MEDICINE  
AND DENTISTRY, KAMPALA INTERNATIONAL  
UNIVERSITY WESTERN CAMPUS

Dear sir,

RE: KIND REQUEST FOR AN INTRODUCTORY LETTER FOR RESEARCH


DATA COLLECTION

I am Ruzindana David Cozens, BMS/0099/123/DU, class 5.1, doing a research entitled "SELF-MEDICATION PRACTICES AMONG SENIOR STUDENTS ATTENDING BACHELOR OF MEDICINE AND BACHELOR SURGERY AT KAMPALA INTERNATIONAL UNIVERSITY WESTERN CAMPUS".

I kindly request for an introductory letter to enable me to collect data from Kampala International University Western Campus.

I will be glad, if my request is taken into consideration.

Yours faithfully,



RUZINDANA DAVID COZENS

BMS/0099/123/DU

*No objection  
However, lets get  
the data collection  
tool of objective  
of the study.*

