

A Survey of Self-Medication Practices among Undergraduate Students in Freetown, Sierra Leone

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Abstract

Self-medication (SM) involves the use of medicines to treat illnesses without seeking the intervention of a qualified prescriber before doing so. It is common in many parts of the world and can be done appropriately or inappropriately. This study assessed the knowledge of SM, contributory factors, medications used and conditions where SM is practised among university students in Freetown, Sierra Leone. Questionnaires were pretested and administered to students of Medicine and Allied Sciences.

Results show that all participants are aware of the concept of SM, 97% had practised SM in the last six months and 71% use more than three medications concurrently. Commonly treated illnesses were headaches, pain, malaria and common cold while antibiotics, analgesics and medications for common cold were most frequently used. Participants (51%) agree that SM is not acceptable. SM seems to be a trend that is likely to continue, which confirms the need to educate people on rational drug use. Also improving their knowledge of adverse drug reactions and effects can help to curb inappropriate SM. Accessible, available and affordable healthcare may also be important in decreasing the trend.

Keywords: SM, self-medication, health, students, practice

Introduction

Self-medication (SM) is the practice of treating any self-diagnosed disorder or symptom on a patient's initiative with the use of medications or the intermittent/continued use of a medication prescribed by a physician for chronic or recurring diseases or symptoms. SM also involves the use of the medication for family members, especially in the treatment of children or geriatric patients.¹

The practice of SM is enhanced by such factors as drug availability, easy access to drugs, costlier healthcare services, fair or good knowledge of medicines and long waiting times in hospitals. SM is more common in developing countries and varies among different populations, age groups and gender.²⁻⁶ SM is used in the treatment of different disease conditions such as headaches, fever, cough, respiratory tract infections, gastrointestinal disorders and common cold.⁷⁻¹⁰ The COVID-19 pandemic with the lockdown and restrictions in movement led to a significant increase in the practice of SM.^{11,12} Though some healthcare practitioners argue that proper SM empowers patients to be proactive in the management of minor illnesses and decreases patient load in the health care facilities, studies have shown that improper SM can lead to wrong diagnosis, irrational drug use, polypharmacy and adverse drug reactions.^{6,13-16}

In recent times the concepts of responsible, appropriate or judicious and inappropriate, irrational or irresponsible SM are often used. Responsible SM is associated with cost-effectiveness when professional health services are not readily available or accessible, reduction in time and productivity spent in hospital visits, increased access to effective treatment, increased patient confidence and adherence, and reduced costs to third parties such as insurance companies and government. Conversely, inappropriate SM can result in drug dependence, drug misuse, antimicrobial resistance, incorrect diagnosis, drug-drug/drug-food interaction and increased health care costs.^{3,4,14,17,18} SM is an integral part of self-care, and governments and health insurers are increasingly encouraging self-care (including SM when appropriate), as one way of limiting the rate of increase in third party funding of health care. Self-care - the primary public health resource in the health care system - consists of the health activities and health-related decision-making of individuals, families, friends and colleagues. It includes self-medication, non-drug self-treatment, social support in illness, and first aid in everyday life.^{1,19,20} Judicious SM especially for minor and chronic health issues can be favourable for individuals and health care systems.^{3,14, 15, 21} Thus, it is important to distinguish appropriate SM from inappropriate SM, the former can be advantageous

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while the latter is not.

Though there are studies on prevalence of SM in certain diseases, there is scarcity of literature on the knowledge and prevalence of SM amongst university students in Sierra Leone. This study was thus carried out to assess the prevalence of SM and associated factors in university students in Freetown.

Methodology

Study Setting and design

This descriptive cross-sectional study was carried out at the College of Medicine and Allied Health Sciences (COMAHS), Jui, Freetown Sierra Leone from May to July, 2019. From an estimated population of 400 students, a sample size of 200 was obtained based on the Yamane formula for sample size calculation.²²

A structured questionnaire was used to collect data for the study from participants who gave informed consent. Students who did not give consent or were from other institutions were excluded from the study. Information collected comprised the demographic data of the respondents, such as age, sex, courses of study, marital status, residential areas and accommodation type (section 1). In Section 2, information on SM was sought. This section included questions on knowledge of SM, reasons for SM, frequency, diseases treated and medications used. The questionnaire was pre tested on a sample of twenty-five students and found useable;

these respondents were subsequently excluded from the study. Ethical approval was obtained from the Institutional Ethics Committee.

Data analysis

Data obtained from the questionnaires administered was sorted and coded with the Statistical Package for Social Sciences (SPSS version 20) for descriptive and inferential statistics. Data was analyzed using descriptive statistics to determine frequency and percentage distribution of respondents.

Results

A total of 200 out of 205 questionnaires administered were correctly completed giving a response rate of 97.6%. Most of the respondents were males and were 18-28 years of age. Pharmacy and diploma students were more in number, respondents were mostly single and lived in urban areas with their families. Data is presented in Table 1

Knowledge of SM is presented in table 2. All participants were familiar with the concept of SM and sourced information from personal experience (treatment of previous illness), internet, doctors, television and friends.

In Table 3, practice of SM is presented. Most respondents have practised SM at least once in the last six months and reasons include previous illness or exposure to medications, nature of illness (non-severe),

Table 1: Demographic Data of Respondents

Variable	n (%)
i. Age (years)	
18-29	152 (76)
30-39	46 (23)
>40	2 (1)
ii. Sex	
Males	134 (67)
Females	66 (33)
iii. Course of study	
Diploma I	50 (25)
Diploma II	50 (25)
Pharmacy	72 (36)
Medicine	36 (18)
iv. Marital status	
Single	149 (74.5)
Married	51 (25.5)
v. Residential area	
Urban	163 (81.5)
Rural	37 (18.5)
vi. Accommodation type	
With families	184 (92)
In hostel dormitory	16 (8)

Table 2: Knowledge of SM and sources of information of SM

Variable	n (%)
i. Knowledge of SM	
Yes	200 (100)
No	0 (0)
ii. Source of information about SM	
Personal Experience	26 (13)
Internet	24 (12)
Doctors	22 (11)
Television	20 (10)
Friends	20 (10)
Remnants from previous prescriptions	18 (9)
Previous prescriptions	16 (8)
Family members	14 (7)
Community Pharmacists	14 (7)
Radio	8 (4)
Book/booklets	8 (4)
Journals	6 (3)
Traditional and complementary medical practitioners	4 (2)

Table 3: Practice of SM

Variable	n (%)
i. Self-medication in the last 6 months	
Yes	197 (98.5)
No	3 (1.5)
ii. Frequency of SM in last 6 months	
None	3 (1.5)
Once	12 (6)
Twice	40 (20)
Thrice	55 (27.5)
> Thrice	90 (45)
iii. Reasons for SM	
Previous experience of illness	40 (20)
Previous exposure to the drug	32 (16)
Non severity of illness	30 (15)
Cost effective	26 (13)
Convenient	20 (10)
Time effective	20 (10)
Availability of medicines	20 (10)
Insufficient trust in prescriber	8 (4)
Inadequate time for hospital visit	4 (2)
iv. Disorders where SM was employed	
Aches and pains	28 (14)
Headaches	28 (14)
Common cold	28 (14)
Nasal discomforts	18 (9)
Cough	18 (9)
Diarrhoea	16 (8)
GIT	14 (7)
Skin disease	10 (5)
Sore throat	10 (5)
Menstrual	8 (4)
Skin cuts	8 (4)
Vomiting	6 (3)
Joint disorders	4 (2)
Neurological	2 (1)
Haematological	2 (1)
v. Other conditions where students self medicated	
Malaria	66 (33)
Malaria and typhoid	38 (19)
Worm infestation	28 (14)
Contraception	32 (16)
Wounds in the mouth	12 (6)
Vaginal infection	20 (10)
Asthma	4 (2)

Table 4:

Variable	n (%)
Medications commonly used	
Antibiotics	50 (25)
Analgesics	42 (21)
Medications for common cold	28 (14)
Antimalarials	20 (10)
Contraceptives	12 (6)
Vitamins	12 (6)
Topical creams	10 (5)
Antipyretics	8 (4)
Antacids and spasmolytics	6 (3)
Psychoactive medications	4 (2)
Sedatives	4 (2)
Anti-allergic medications	2 (1)
Ophthalmic medications	2 (1)
Number used at a time	
One	16 (8)
Two	42 (21)
Three	70 (35)
Four	28 (14)
Five	44 (22)
Checking for instructions from the pack	
Always	132 (66)
Sometimes	62 (31)
Never	6 (3)
Using different brands of the same product at the same time	
Yes	128 (64)
No	72 (36)
Stoppage of medication	
After symptoms resolve completely	128 (64)
Once I feel better	48 (24)
Once I complete the dose	24 (12)
Adverse reaction during SM	
Yes	128 (64)
No	72 (36)
Is SM acceptable	
Yes	102 (51)
No	98 (49)

cost and time effectiveness. Disorders where SM was practised are also presented

Details of medications commonly used, number of medications used, checking of packaging instructions and incidence of adverse drug reactions are illustrated in table 4.

Discussion

This study was carried out to evaluate the prevalence of SM, factors responsible, conditions where SM is practiced and medications frequently used among university students in Freetown, Sierra Leone.

Most respondents were aged 18-29, males and

not married. In Freetown, boys are more predominant in the community and more enrol in the university; students enter the university right after secondary school and hence tend to be young and single. In recent times, many students prefer to reside outside campus as lectures are held in town; transportation, timing, ease of access may be some factors responsible for this trend.

The respondents were all aware of SM and sources of information are personal experience (old prescription for the same illness), internet, doctors, friends and mass media. These findings are similar to studies where old prescriptions served as sources of information for SM^{10,16,23} but different from those of other studies where Pharmacists were the primary sources of information.^{6,18, 24} This difference could be due to the number of pharmacists in our study area. In Sierra Leone the doctor/pharmacist ratio is about 5:1.

Majority of the respondents (98.5%) have self-medicated at least once in the last six months and about 72% have used at least three medications concurrently to treat various illnesses. Major reasons for this include previous treatment or exposure to the medication, non-severity of illness, convenience, cost and time effectiveness. Studies conducted in Bangladesh, Ethiopia, India, Nigeria and Saudi Arabia had similar results, percentage prevalence ranged from 54-88%.^{5,8,10,16,25}

Headaches, body aches, pains (56%) and common cold (28%) were topmost indications for SM. Pain is a common experience and is one of the most common reason for hospital visits.²⁶ Mustafa and colleagues found prevalence of SM with analgesics to be 82.9% while Al-Qahtani and his colleagues documented a prevalence of 65.9% and 32.1% respectively for pain and common cold.^{6,15}

Regarding specific illnesses, in this study, malaria and typhoid had the highest incidence. Though there seem to be an association between both conditions, the precise underlying mechanisms to explain the association between malaria and *Salmonella* species infection have not been clearly elucidated.²⁷ Coinfection of malaria and typhoid is common.²⁸⁻³⁰ These disorders tend to be over diagnosed and overtreated in sub-Saharan Africa.

Antibiotics were the most commonly used medications amongst the undergraduate students of the College of Medicine and Allied Health Sciences for SM (50%), closely followed by analgesics (42%) and medications for common cold. Use of antibiotics for SM is a common problem in countries like Sierra Leone where the Laws regarding ethical products are somewhat lax and antibiotics can be purchased as over the counter drugs. Improper use of antibiotics can lead to microbial resistance which is currently a problem in chemotherapy of microbial infections worldwide. Indeed, non-prescription use of antibiotics is documented to be associated with antimicrobial-

resistant bacteria, masking of underlying infectious processes and adverse drug reactions. In addition, microbial resistant infection affects quality of life of patients, can increase mortality and places strain on the health care system.³¹⁻³⁵

Another worrisome trend seen in this study, is that respondents (71%) used more than three medications at a time and some participants (64%) used different brands of the same product simultaneously as there were either unaware of similarities in products used or did not read the packaging labels. This could lead to drug/drug interaction and increased incidence of adverse drug reactions. Irrational drug use is associated with adverse drug reactions and increased health care costs.^{12,32}

Incidence of adverse drug reactions was 64% in this study, this is not surprising as polypharmacy and use of up to three medications simultaneously was practiced as previously highlighted.

Interestingly about half of the respondents think that SM is not an acceptable practice. This was corroborated in a similar study by Gutema and colleagues.⁷

Conclusion: With the state of the health care facilities in some developing countries and the ready availability of medication information electronically, SM is likely to continue. William Osler states that one great distinguishing factor between humans and animals is the desire to take medications.³⁶ Indeed, WHO encourages and supports responsible SM for minor health issues that do not require medical consultation.³ Possible solutions can be for healthcare professionals to create more awareness on adverse effects associated with improper drug use. Education of the general public on rational drug use via mass and social media can also help to reduce the scourge of inappropriate SM. Laws regulating sale of ethical medications can be put in place (where they are lacking) or enforced where they exist. Making health care affordable, available and accessible might also be invaluable in decreasing the trend of SM.

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